Appendix A: Initial Study-Notice of Preparation and Comment Letters

NOTICE OF PREPARATION
ENVIRONMENTAL IMPACT REPORT

DATE: March 2007

TO: Responsible and Trustee Agents
Interested Organizations and Individuals

FROM: **City of San Ramon**
Planning/Community Development Department

SUBJECT: NOTICE OF PREPARATION OF A DRAFT SUBSEQUENT ENVIRONMENTAL IMPACT REPORT (SEIR) - SAN RAMON CITY CENTER PROJECT

Lead Agency
CITY OF SAN RAMON
Planning/Community Development Department
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San Ramon, CA 94583
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925.973.2560
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Consulting Firm Preparing the Draft SEIR
Michael Brandman Associates
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Project Location. The San Ramon City Center Project is located in the City of San Ramon in Contra Costa, California (see Exhibits 1 and 2). As shown on Exhibit 3, the Project site is comprised of four parcels, which encompass 39.09 acres. Parcels 3A and Bishop Ranch 2, consisting of 11.29 acres and 14.57 acres, respectively (totaling 25.86 acres), are to the north of Bollinger Canyon Road. Parcel BR2 is the developed Bishop Ranch 2 property at the northwest corner of Bollinger Canyon Road and Camino Ramon, which will be removed. Parcel 1A, consisting of 9.66 acres, is at the southeast corner of Bollinger Canyon Road and the existing Bishop Ranch 1 entrance. Parcel 1B, now a parking lot consisting of 3.57 acres, is at the southwest corner of Bollinger Canyon Road and the existing Bishop Ranch 1 entrance. The site is within the Bishop Ranch Business Park and adjacent to the Iron Horse Trail.

Project Sponsors' Names and Addresses
City of San Ramon
Planning/Community Development Department
2226 Camino Ramon
San Ramon, CA 94583

Sunset Development Company
P.O Box 640
San Ramon, CA 94583

General Plan Designation. Mixed Use

Zoning. City Center Mixed Use

Description of the Proposed Project. The City of San Ramon and Sunset Development Company, as co-applicants, are proposing approximately 2,168,000 square feet (sq ft) as part of the San Ramon City

Center Project (herein referred to as the Project or proposed Project). The Project will be a new transit-oriented, mixed-use development for the City of San Ramon within the Bishop Ranch Business Park. Located at the crossroads of Camino Ramon and Bollinger Canyon Road, San Ramon City Center sits at the entrance to Bishop Ranch Business Park and is centrally located in the City, adjacent to Central Park and its community center. San Ramon City Center is an infill project that is pedestrian friendly, mixed use, and transit oriented. The major components are residential, a lifestyle retail center including an arts cinema, restaurants, a premium "boutique" hotel, three Bishop Ranch Class A office buildings, a new City Hall with Council Chamber and a library for San Ramon, and a transit hub. The Project reflects the City's desire for a downtown center in conformance with San Ramon's General Plan, Zoning Ordinance, and Economic Development Strategic Plan.

The following components are currently planned for the Site:

- **Class A Office**: Will include a net of 158,897 square feet, as 194,652 square feet of the existing Bishop Ranch 2 will be torn down and 328,220 square feet of Office was previously entitled in the Second Amendment to the Chevron Park Annexation and Development Agreement, dated May 28, 2002.
- **Hotel**: A premium "boutique" hotel with 169 rooms, totaling 139,867 sq ft.
- **Retail/Cinema**: A lifestyle retail center that will include an art-screen cinema, gourmet restaurants, and destination retail attractions, occupying 635,042 sq ft.
- **Residential**: The proposed Project will include 488 residential dwelling units, each approximately 1,095 sq ft, totaling 550,669 sq ft.
- **Professional Office/Retail Flex**: 50,142 sq ft. of small Professional Office, which may be converted to Retail, is proposed.
- **City Hall**: The Project would include a new City Hall with Council Chamber, library, and transit hub, totaling 110,490 sq ft.
- **Parking**: Nine parking structures containing 6,657 spaces and an additional future shared reserve parking structure of 539 spaces are proposed for the Project. To replace the existing Bishop Ranch 1 parking structure once it is torn down, a tenth parking structure consisting of 1,300 spaces will be developed on the Bishop Ranch 1 site.

The proposed Project will also require discretionary permits/ministerial approvals. Specifically the following approvals and permits are being requested:

1. Development Plan and Development Plan Amendment (Amendment to City DP-00-300-001)
2. Conditional Use Permits for Hotel and Cinema (Theater)
3. Minor Use Permits
4. Architectural Review
5. Minor Subdivision
6. Lot Line Adjustment

7. Demolition Permit

Development Agreement Amendments:

1. Development Agreement Amendment (Fifth Amendment to City/Sunset Annexation and Development Agreement)
2. Development Agreement Amendment (Third Amendment to City/Chevron [Sunset Assumption] Annexation and Development Agreement).

Surrounding Land Uses and Setting. The San Ramon City Center Project site is surrounded by a variety of office/professional, commercial, and recreational (e.g., park) uses. Immediately surrounding the Project site to the north is Bishop Drive, to the south is Bishop Ranch 1, to the east are the Iron Horse Trail and San Ramon Central Park, and to the west are Sunset Drive and the Shops at Bishop Ranch retail center. Land uses within the Project area but not directly adjacent to the Project site include the City of San Ramon Community Center, the Chevron office complex, the AT&T office complex, and various other office structures.

Other Public Agencies Whose Approval is Required. No other public agency is required to approve the San Ramon City Center Project SEIR. However, development under the Project may require approval of State, federal, and responsible trustee agencies that may rely on this SEIR for decisions in their area of expertise.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this Project, as discussed within the checklist on the following pages.

■ Aesthetics	□ Agriculture Resources	■ Air Quality
■ Biological Resources	■ Cultural Resources	■ Geology/Soils
■ Hazards/Hazardous Materials	■ Hydrology/Water Quality	■ Land Use/Planning
□ Mineral Resources	■ Noise	■ Population/Housing
■ Public Services	■ Recreation	■ Transportation/Traffic
■ Utilities/Service Systems		

DETERMINATION

On the basis of this initial evaluation:

□ I find that the proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed Project could have a significant effect on the environment there will not be a significant effect in this case because revisions in the Project have been made by or agreed to by the Project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

■ I find that the proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed Project, nothing further is required.

Signature	Date
Printed Name	Title

INITIAL STUDY/ENVIRONMENTAL CHECKLIST

The purpose of this Initial Study is to identify the potential environmental impacts associated with the implementation of the proposed. Pursuant to Section 15367 of the CEQA Guidelines, the City is the Lead Agency in the preparation of this Initial Study, and any additional environmental documentation required for the Project. The City has primary responsibility for approval or denial of the Project. The City of San Ramon has determined that analysis of the Project's environmental effects is best provided through use of a Subsequent EIR (SEIR), tiering off of the previously certified EIRs prepared for the San Ramon 2020 General Plan and the 2003 San Ramon Civic Center project. An SEIR is permitted under CEQA when there is a change in the conditions analyzed in the original EIR (CEQA Guidelines Section 15162). The intended use of this document is to determine the level of environmental analysis required to adequately prepare the Project SEIR and to provide the basis for input from public agencies, organizations, and interested members of the public. The remainder of this section provides a brief description of the Project location and the characteristics of the Project. This section includes an environmental checklist that gives an overview of the potential impacts that may result from Project implementation. This section also elaborates on the information contained in the environmental checklist, providing justification for the responses provided in the environmental checklist.

I. AESTHETICS **Would the project:**	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	■	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	■
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	■	☐
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	☐	■	☐	☐

The Project site is relatively flat and is built-up and urban in nature. The General Plan and General Plan EIR do not identify any scenic resources that meet any commonly accepted criteria for a scenic vista. Additionally, the Project would not affect offsite views or scenic vistas. Therefore, development of this site would not affect a scenic vista. These issues will not be addressed further in the SEIR. However, the proposed Project will alter the visual character of the Project area. The introduction of urban uses would result in an increase in light and glare. In addition, Project implementation has the potential to increase nighttime illumination in the Project area, which may impact nighttime views from surrounding hillside residents. Aesthetic impacts will be assessed in terms of visibility of the Project, alteration of the visual setting, sensitivity of viewpoints, and long-term implications in relation to the City of San Ramon 2020 General Plan and Zoning Ordinance. The SEIR will address the potential aesthetic impacts of the proposed Project, and—as applicable—mitigation measures will be recommended to reduce significant impacts.

II. AGRICULTURAL RESOURCES **In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation (CDC) as an optional model to use in assessing impacts on agriculture and farmland.** **Would the project:**	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use	☐	☐	☐	■
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	■
c) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	■

The Project site does not contain Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Land uses surrounding the Project site are urban in nature. Project implementation will result in an extension of the existing urban land uses. Thus, impacts on the loss of agricultural resources and the conversion of Farmland would not occur. Therefore, no further analysis is required in the SEIR.

III. AIR QUALITY **Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations** **Would the project:**	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	■	☐	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	■	☐	☐	☐

III. AIR QUALITY **Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations** **Would the project:**	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?	■	□	□	□
d) Result in significant construction-related air quality impacts?	□	■	□	□
e) Expose sensitive receptors to substantial pollutant concentrations?	□	■	□	□
f) Create objectionable odors affecting a substantial number of people?	□	□	■	□

The Bay Area Air Quality Management District (BAAQMD), in cooperation with the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG), has prepared the 2005 Bay Area Ozone Strategy and the 2000 Clean Air Plan (air quality plans) for the San Francisco Bay Air Basin (Air Basin). These plans set forth a comprehensive program that will lead the Air Basin into compliance with all federal and State air quality standards. Accordingly, conformance with the air quality plans for development projects is determined by demonstrating compliance with local land use plans and/or population projections. A consistency cumulative impact determination will be prepared for the proposed Project and evaluated in accordance with BAAQMD and CEQA Guidelines, and is included in the SEIR to ensure that the Project is consistent with the goals of the BAAQMD air quality plans. However, additional information is required to confirm this finding; therefore, these effects will be further evaluated in the SEIR.

In the short-term, the proposed Project will result in construction-related air quality impacts. Activities such as earthmoving, excavation, grading operations, construction vehicle traffic, and wind blowing over-exposed earth will generate fugitive particulate matter emissions and exhaust emissions that may affect local and regional air quality. In the long term, vehicle emissions are the primary source of air pollution. The change of traffic patterns or the addition of traffic has the potential to affect local and regional air emissions. The SEIR will provide an air quality assessment to address the Project's short-term emissions from construction activities and long-term emissions from daily vehicle trips to and from the site, in addition to stationary emissions from power and gas consumption and machinery and equipment onsite. The SEIR will also estimate Project-generated emissions of greenhouse gases, evaluate the Project's incremental contribution to global warming impacts, and discuss the Project's compliance with recent

State legislation of global warming (AB-1493 and AB-32). Project design features and mitigation measures will be identified, as necessary

Sensitive populations, such as children, senior citizens, and chronically ill persons, are more susceptible to the effects of air pollution than is the general population. Long-term vehicular emission from operation of the proposed Project could result in carbon monoxide hot spots that pose a health risk to sensitive receptors. This impact is expected to be less than significant with mitigation. However, additional information is required to confirm this finding; therefore, these effects will be evaluated further in the SEIR.

To ensure control of objectionable odors, all uses in the proposed Project would be required to comply with federal, State, and County health and environmental standards. This impact is expected to be less than significant; however, additional information is required to confirm this finding. These effects will be evaluated further in the SEIR.

IV. BIOLOGICAL RESOURCES **Would the project:**	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	■	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	■	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	■	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	■	☐

IV. BIOLOGICAL RESOURCES **Would the project:**	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	■	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	■

The project site is highly disturbed and is not likely to support any special status plant or wildlife species. A biological resources assessment, which includes a general biological survey and field reconnaissance and is consistent with the requirements of the City, CEQA, the USFWS, the CDFG, and other pertinent reviewing agencies will be prepared for the proposed project. Based on the findings of the California Natural Diversity Database, burrowing owls have been identified within the vicinity of the project area. The biological resource assessment will confirm the existing conditions and the potential for sensitive biological resources onsite. Mitigation measures will be established and implemented following the completion of the biological resource assessment. This issue will be further evaluated in the SEIR.

Previous biological studies indicate that the project site does not contain any sensitive natural communities, riparian habitat, or federally protected wetlands. The Biological Resources Assessment will include a habitat assessment that will determine if these findings are still valid. Therefore, these issues will be further evaluated in the SEIR.

The project site does not contain any features typically associated with wildlife movement corridors (e.g., riparian corridors, arroyos, ridgelines). Moreover, the project site is surrounded on all sides by urban development. While wildlife movement is not expected to be adversely affected by the proposed project, the biological resources assessment will be necessary to confirm this finding. Therefore, this issue will be further evaluated in the SEIR.

Division C4 Chapter III of the San Ramon City Code regulates tree preservation. The proposed project would result in the removal of trees that would fall under the jurisdiction of the City Code. While the project would comply with the applicable requirements and not result in any significant impacts, further evaluation in the SEIR will be required.

The project site is not within the boundaries of an adopted habitat conservation plan, natural community conservation plan, or other approved habitat conservation plan. Therefore, this issue will not require further evaluation in the SEIR.

V. CULTURAL RESOURCES Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in 15064.5?	☐	☐	☐	■
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to 15064.5?	☐	☐	■	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	■	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	■	☐

The Project site has been previously disturbed and located in a built-up urban area containing numerous existing structures. However, there is always the possibility that unknown archaeological resources exist below the ground surface. Therefore, a record search will be requested from the Northwest Information Center in Rohnert Park to determine if any cultural resource sites have been previously recorded within or adjacent to the Project. In addition, a record search will be requested from the University of California, Berkeley, Museum of Paleontology, to determine the likelihood of paleontological resources within the Project area.

Project implementation will be in accordance with Public Resources Code § 5097.98 and Health and Safety Code 7050.5, in the event that human remains are discovered on the Project site. Additionally, as required by the CEQA Guidelines §15064.5(e), if evidence of prehistoric or historic resources or human remains is discovered during the course of excavation for a development Project, all activities in the immediate vicinity of the discovery must cease until a qualified archaeologist has been given the opportunity to examine the resources or remains. The results of the record searches and any additional pertinent information will be reviewed and included in the SEIR.

VI. GEOLOGY AND SOILS **Would the project:**	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	☐	☐	☐	■
ii) Strong seismic ground shaking?	☐	☐	■	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	■
iv) Landslides?	☐	☐	☐	■
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	■	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	■	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	■	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	■

Like most of northern California, the Project site is in a seismically active area, and it is likely that the Project will experience significant ground shaking during its lifetime. According to the City's General Plan, the site is located in an area that is likely to experience strong shaking from earthquake activity. A geotechnical report will be prepared for the proposed Project and summarized in the SEIR. As part of the recommendations expected to be provided in the geologic report, the proposed structures would be constructed in accordance with the California Building Standards Code's seismic design requirements. These requirements contain specific design standards for structures that reduce exposure risks to seismic hazards. Through compliance with seismic design requirements, the potential for ground shaking would not be expected to significant. However, this issue will require will require further evaluation in the SEIR.

The project site does not contain any known earthquake faults, including faults mapped on an Alquist-Priolo Fault Zoning Map. The geologic conditions of the project site indicate that the potential for seismic-related ground failure is extremely low. The project site contains flat relief and is not near any slopes of 10 percent or more that could be susceptible to earthquake-induced landslides. Therefore, these issues do not require further evaluation in the SEIR.

Short-term construction activities would be required to comply with applicable erosion control requirements of the National Pollution Discharge Elimination System. While not expected to be significant, this will require further evaluation in the SEIR.

While there are no known unstable geologic units or soils on the project site, the geotechnical report will determine if this finding is still valid. Therefore, this impact will be further evaluated in the SEIR.

The project site is located in an area that may contain expansive soils. The geotechnical report will provide recommendations for proper remediation of these conditions, if they do indeed existing on the project site. While not expected to be significant, this impact will be further evaluated in the SEIR.

The project would be served by sanitary sewer and would not require the installation of septic or alternative wastewater disposal systems. Therefore, this issue does not require further evaluation in the SEIR.

VII. HAZARDS AND HAZARDOUS MATERIALS **Would the project:**	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	■	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	■	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	■	☐

VII. HAZARDS AND HAZARDOUS MATERIALS **Would the project:**	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	■
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	■
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	■
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	■	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	■

The potential exists that hazardous materials associated with the operation of construction equipment and use of building materials in the development of the Project could be transported, used, or stored onsite on a short-term basis. Additionally, hazardous materials associated with cleaning products, heating and ventilation systems, and automobiles could also be transported and used onsite during long-term operation of the Project. However, compliance with all applicable federal, State, and local regulations for the proper usage, storage, transport, and disposal of hazardous materials and wastes would be required, which would reduce the potential for exposure to the public or environment to a less than significant level.

Uses proposed at the Project site are not anticipated to result in the creation of health hazards. Moreover, the uses proposed under the Project are not expected to use, generate, or dispose of hazardous materials in large quantities. Since additional information is required to confirm this finding, these effects will be further evaluated in the SEIR.

Iron Horse Middle School and the portion of Central Park used for physical education activities by the school are within a quarter-mile of the Project site. While it is not anticipated that the uses of the proposed Project would expose the school, or its students, faculty, or staff, to hazardous emissions or materials, additional information is required to confirm this finding and, therefore, these effects will be further evaluated in the SEIR.

A Phase I environmental site assessment (ESA) will be conducted for the proposed Project to investigate the likelihood or potential presence of hazardous materials contamination at the Project site. The ESA will conform to the most recent American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments: Phase I ESA Process, Designation E 1527-00. As part of the Phase I ESA, a review of environmental databases at the federal, State, regional, and local levels for the known hazardous materials sites will be conducted for the Project site and surrounding areas. This information, including all relevant findings, will be summarized in the SEIR and included in its entirety as an appendix.

The Project site is not located in an airport land use plan, within two miles of a public airport, or within the vicinity of a private airstrip. Therefore, no impacts would occur and these effects will not be evaluated further in the SEIR.

The proposed Project would be required to comply with the California Fire Code as contained in the California Building Standards Code, which are state-recognized compilations of proposed rules, regulations, and standards. In addition, the Project site is not within or adjacent to a wildland fire risk area and, therefore, would not expose people to significant risks involving wildfires. Impacts in both these instances would be less than significant. These impacts will not be evaluated further in the SEIR.

VII. HYDROLOGY AND WATER QUALITY **Would the project:**	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	■
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	■
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site?	☐	☐	■	☐

VII. HYDROLOGY AND WATER QUALITY **Would the project:**	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	□	□	■	□
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	□	■	□	□
f) Otherwise substantially degrade water quality?	□	■	□	□
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	□	□	□	■
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	□	□	□	■
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam	□	□	□	■
j) Inundation by seiche, tsunami, or mudflow	□	□	□	■

Development of the proposed Project would be subject to State and regional water quality standards. Any development on the Project site would be required to implement Best Management Practices (BMPs) in order to comply with the National Pollutant Discharge Elimination System (NPDES). Additionally, the Project would be required to comply with the guidelines established by the Storm Water Pollution Prevention Plan (SWPPP). No impacts are anticipated, therefore, further analysis in the SEIR is not required.

The proposed Project would be served by the East Bay Municipal Utilities District (East Bay MUD) potable water system. No wells would be drilled as part of the proposed Project. The Project is consistent with the growth assumptions established under the City of San Ramon General Plan, and it is anticipated that the water supply system will be adequate to serve the proposed Project. No impacts are expected to occur; therefore, further analysis in the SEIR is not required.

There are no creeks, streams, rivers, or other water bodies on the Project site. A small drainage is located on the east side of the Iron Horse Trail. The proposed Project would result in a decrease in ground absorption onsite, while increasing the quantity of surface water and possible changes to the existing drainage patterns. However, these onsite changes would not adversely affect the current drainage patterns in the areas surrounding the Project site. The proposed Project would include stormwater-related drainage improvements designed in accordance with applicable standards to ensure that stormwater flows from the Project site would not inundate the City's system and create a flood hazard. In addition, a General Permit for Storm Water Discharge from the San Francisco Bay Area Regional Water Quality Control Board (RWQCB) would be required. The provisions of this permit require that a SWPPP be prepared and implemented. The SWPPP sets forth structural and non-structural BMPs that would ensure that erosion is properly controlled during construction activities. Impacts are expected to be less than significant. However, additional information is required to confirm this finding; therefore, these effects will be further evaluated in the SEIR.

The Project site is not located within a 100-year flood zone, nor is it near a levee or dam. The proposed Project will not experience inundation from seiche, tsunami, or mudflow. No impacts are expected to occur; therefore, further analysis in the SEIR is not required.

Hydrology, flooding, and water quality will be further addressed in a hydrology study report that conforms to applicable water quality regulations, including the RWQCB NPDES program (i.e., C.3 requirements), the Contra Costa County Flood Control and Water Conservation District requirements, and the General Plan policies regarding flooding and water quality. Relevant findings will be summarized in the SEIR and included in its entirety as an appendix. As applicable, mitigation measures will be recommended.

IX. LAND USE AND PLANNING **Would the project:**	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community	☐	☐	☐	■
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	■	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	■

The discussion of land use and planning in the SEIR will utilize and be based upon analysis provided in Section 4.1 of the previously approved San Ramon 2020 General Plan EIR and Section 4.1 of the previously approved City Civic Center Project EIR.

The proposed Project would not physically divide an established community, since it would not displace existing housing. Therefore, there would be no impact, and this effect will not be evaluated further in the SEIR. The Project site is designated as Mixed Use in the City of San Ramon General Plan and specifically City Center/Mixed Use in the Zoning Ordinance and thereby is in conformance. Proposed land uses are consistent with the Mixed Use and City Center/Mixed Use land use designations. However, intensification of development within the Project area may result in conflicts with surrounding existing and proposed land uses and neighborhoods. In addition, Project implementation will alter community character, including views, street patterns, building types (e.g., mass and scale). The City's General Plan establishes requirements for compatible development including buffering, screening controls, and performance standards. Impacts are expected to be less than significant. However, additional information is required to confirm this finding; therefore, these effects will be further evaluated in the SEIR. As applicable, mitigation measures will be recommended.

The Project site does not occur within an area established in a Habitat Conservation Plan or a Natural Community Conservation Plan. Therefore, there would not be any conflicts with these types of plans, and these effects are not evaluated further in the SEIR.

X. MINERAL RESOURCES **Would the project:**	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	■
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	■

The California Division of Mines and Geology has not identified any known mineral resources on the Project site or within the surrounding area. The Project will not result in the loss of a known mineral resource that would be of state, regional, or local value and therefore, no significant mineral resource impacts are expected to occur. No further analysis is required in the SEIR.

XI. NOISE **Would the project result in:**	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	■	☐	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	■	☐	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	■	☐	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	■	☐	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	■
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	■

Project construction and operation would result in both short-term (temporary) and long-term (permanent) increases in noise levels. Short-term noise impacts would occur during grading and construction activities. Long-term noise impacts would be associated with noise from vehicular traffic including residents, employees, visitors, truck deliveries, tenants, and noise from the operation of stationary mechanical equipment. The noise created could potentially exceed the thresholds established by the City of San Ramon and may adversely affect nearby sensitive receptors. While building code requirements and typical development standards such as building setbacks, walls, landscaping, and building insulation may prevent substantial increases in the ambient noise levels of adjacent areas, it is unclear whether anticipated increases in noise levels from the Project would exceed established noise thresholds. This is considered a potentially significant impact. Potential short-term and long-term noise impacts, as well as potentially adverse impacts on sensitive receptors, will be further evaluated in the SEIR.

Minimal, temporary groundborne vibrations and groundborne noise may be created during construction and site development during a short period of time. Impacts are expected to be less than significant with mitigation. However, additional information is required to confirm this finding; therefore, these effects will be further evaluated in the SEIR.

The proposed Project is not within the vicinity of a private airstrip, an airport land use plan, or within two miles of a public airport. No impacts are expected to occur; therefore, further analysis in the SEIR is not required.

A noise assessment report will be prepared that provides analysis of short-term and long-term noise levels. This analysis will evaluate noise levels using the City of San Ramon's Noise Element land use compatibility guidelines and ordinances. The report findings will be summarized in the SEIR and presented in its entirety as an appendix. As applicable, mitigation measures will be recommended.

XII. POPULATION AND HOUSING **Would the project:**	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	■	☐	☐
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	■
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	■

Lands surrounding the Project site are highly developed with various land uses including office space, parkland/recreation, and commercial. The proposed Project is considered an infill project. The employment generated by the proposed Project could affect the City of San Ramon's job-housing ratio. The SEIR will evaluate Project projections for consistency with census data and forecasts developed by the California Department of Finance and the Association of Bay Area Governments. The findings of this evaluation and measures to mitigate significant impacts will be included, as appropriate, in the SEIR.

The proposed Project will not result in displacing existing housing or populations. Therefore, no population and housing displacement impacts are expected to occur with implementation of the proposed Project. Further analysis in the SEIR is not required.

XIII. PUBLIC SERVICES **Would the project result in:**	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
a) Fire protection?	□	■	□	□
b) Police protection?	□	■	□	□
Substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
c) Schools?	□	□	■	□
d) Parks?	□	■	□	□
e) Other public facilities?	□	□	■	□

The discussion of public services in the SEIR will utilize and be based upon analysis provided in Section 4.6 of the previously approved San Ramon 2020 General Plan EIR and Section 4.8 of the previously approved City Civic Center Project EIR.

The proposed Project would introduce new populations into the area, which would create a demand for additional fire, police, schools, and parks. More specifically, subsequent to the development of the site, an incremental increase in potential fire hazards and emergency response situations would occur. The increased demand for emergency services would have the potential to adversely affect fire protection services. Similarly, as traffic increases in the area, it is likely there will be an increase in traffic related accidents and emergencies, which will require the response of the police and/or the fire department. Additionally, an increase in development may result in an incremental increase in theft, burglaries, and other such crimes that require police services. The Project would also include additional housing; therefore, there would be additional school-age children generated as a result of these residential uses onsite Moreover, persons could relocate to this area of the City for job-related opportunities on the

Project site that may result in an additional increase in the number of school-age children. Similarly, this additional housing would increase the need for park uses. The Project would also install street lighting that may be included in the City's Lighting and Landscape District. These issues will be further addressed in the SEIR and, as applicable, mitigation measures will be recommended.

XIV. RECREATION **Would the project:**	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	■	☐	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	■	☐	☐

The proposed Project does not involve the construction or expansion of recreational facilities. However, the Project would result in facilitating access/connectivity to the Iron Horse Trail from residential uses proposed directly adjacent to this existing facility. Additionally, because of its proximity from the overall site, the Iron Horse Trail will not only likely be utilized by new residents, but also by retail center shoppers, hotel guests, office workers from Bishop Ranch, visitors to the new City Hall, and library users associated with the Project. Therefore, recreation impacts may occur from development of the proposed Project. Moreover, the City of San Ramon maintains a standard of 6.5 acres of public parks per 1,000 residents. In order to meet this requirement, developers make contributions to the City's park system through the Parkland Dedication Ordinance. The Parkland Dedication Ordinance would apply, due to the residential component of the Project. Recreational issues will be further addressed in the SEIR and, as applicable, mitigation measures will be recommended.

XV. TRANSPORTATION/TRAFFIC **Would the project:**	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	■	☐	☐
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	■	☐	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?	☐	☐	☐	■
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	■	☐
e) Result in inadequate emergency access?	☐	■	☐	☐
f) Result in inadequate parking capacity?	☐	■	☐	☐
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	■

The discussion of transportation/traffic in the SEIR will utilize and be based upon analysis provided in Section 4.2 of the previously approved San Ramon 2020 General Plan EIR and Section 4.2 of the previously approved City Civic Center Project EIR.

Project-related traffic could significantly impact, either cumulatively or individually, the level of service established by the City of San Ramon or the Contra Costa Transportation Authority. Project implementation may conflict or hinder the ability to achieve the objectives of the Tri-Valley Transportation Plan. A detailed traffic/parking study is being prepared and will undergo an independent peer review to ensure the analysis is adequate in its assessment of the Project-generated traffic on the local circulation system, parking lot facilities, driveways, loading areas, bike paths, and pedestrian walkways on and surrounding the site. Appropriate Project design features or mitigation measures will be recommended, as necessary. Moreover, the Project would be subject to design review by the fire and police departments to assure that adequate emergency access is provided by the proposed access points.

Because of its distance from public airports or private airstrips, the Project would not affect air traffic patterns. This issue will not be further evaluated in the SEIR. The proposed Project would also not conflict with adopted policies, plans, or programs supporting alternative transportation. Rather, one of the proposed Project's objectives is to encourage pedestrian activity and traffic reduction throughout San Ramon. Therefore, there would be no impact to alternative transportation and this effect will not be evaluated further in the SEIR.

XVI. UTILITIES AND SERVICE SYSTEMS **Would the project:**	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	□	□	■	□
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	□	■	□	□
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	□	■	□	□
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	□	■	□	□
e) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	□	■	□	□
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	□	□	■	□
g) Comply with federal, state, and local statutes and regulations related to solid waste?	□	□	■	□

The discussion of utilities and service systems in the SEIR will utilize and be based upon analysis provided in Section 4.6 of the previously approved San Ramon 2020 General Plan EIR and Section 4.8 of the previously approved City Civic Center Project EIR.

An intensification of land uses onsite will result in increasing the demand placed upon utility and service systems. Implementation of the proposed Project would increase onsite population and thereby increase the demand for water, in addition to the amount of wastewater, solid waste, and stormwater generated at the Project site. Because of the size of the proposed Project, a Water Supply Assessment (WSA) will be required to determine the available water supply for the Project. East Bay MUD will prepare the WSA as outlined in SB 610 and recent CEQA case law and will address water resource issues that pertain to the proposed Project. The assessment report will be incorporated into the SEIR and applicable mitigation measures will be recommended. Implementation of the Project would require the installation of new or upgraded onsite water, wastewater, and stormwater drainage facilities. The proposed Project may also require extensions and connections to existing infrastructure offsite, and these facilities may need to be upgraded to accommodate flows from the proposed Project. The size of the proposed project would require a review of landfill capacity. In addition, the proposed project would be required to submit a Recycling Plan to the City outlining how waste diversion would be accomplished during construction and operations of the project. The Project would not generate hazardous wastes or materials that require special handling. . The SEIR will examine the Project-related impacts upon utility and service systems. As applicable, mitigation measures will be recommended.

XVII. URBAN DECAY **Would the economic changes associated with the proposed project result in physical changes to the environment that would result in:**	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) A substantial degradation to the existing character or quality of its surroundings?	☐	■	☐	☐

Implementation of the proposed Project would add approximately 700,000 sq ft of additional retail space to an existing market area, which could result in closing of existing retail businesses that could occur because of this increased amount of retail space. The direct effects of store closings are economic and social in nature and generally result in the loss of revenue and jobs, which are not considered a direct physical impact to the environment. However, store closings and long-term vacancies could result in indirect physical impacts to the environment, because buildings and stores could be vacant and in some cases abandoned altogether, which could lead to a variety of conditions associated with urban decay. These adverse visual conditions could be any of the following: deferred maintenance leading to building deterioration, graffiti, boarded windows and doors, broken sidewalks, dead landscaping, illegal dumping of refuse, and illegal parking of commercial vehicles.

An assessment will be prepared that provides analysis of the Project’s potential to create conditions associated with urban decay. The report findings will be summarized in the SEIR. As applicable, mitigation measures will be recommended.

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE Does the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	■	☐	☐
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects).	☐	■	☐	☐
c) Have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	■	☐	☐

The Project site is in a built-up urban area and does not contain significant biological resources or cultural resources. A biological resources assessment will be prepared to confirm that potential impacts on sensitive (e.g., threatened or endangered) plant or animal species would be less than significant. The SEIR will also conduct a cultural resources assessment to evaluate impacts on archaeological, paleontological, and historic resources. It is expected that all potential impacts to biological and cultural resources can be reduced to a level of less than significant after mitigation. Therefore, the proposed Project is not expected to degrade the quality of the environment—including substantially impacting habitat for populations of fish, wildlife, or plant communities—nor to have an effect on rare or endangered plant or animal species, or significant historic, paleontological, or prehistoric resources.

The proposed Project and other reasonably foreseeable projects in the City of San Ramon could result in impacts that are cumulatively considerable. The SEIR will evaluate the possibility of any potentially significant cumulative impacts of planned projects in the vicinity of the proposed Project. These issues will be addressed further in the SEIR.

The proposed Project could potentially result in environmental effects that have adverse impacts on human beings, either directly or indirectly. Potential impacts associated with air quality, noise, traffic, etc., could affect human populations. These potentially significant impacts will be further evaluated in the SEIR.

April 3, 2007

RECEIVED
APR 6 - 2007
CITY OF SAN RAMON
PLANNING SERVICES

Debbie Chamberlain, Planning Manager
Planning Department, Planning Services Division
City of San Ramon
2226 Camino Ramon
San Ramon, CA 94583

RE: Response to Request for Comments - City Center Mixed Use Project

Dear Mrs. Chamberlain:

The Town of Danville is in receipt of the Request for Comments - City Center Mixed Use Project transmittal. We appreciate the opportunity to comment on this project.

The Town's review of the project will focus primarily on potential traffic-related impacts which the project could have upon the sub-region and region. Namely, whether and how, the intensification of build-out within Bishop Ranch could generate increased traffic congestion that might potentially affect traffic on Interstate 680, the dynamics of Dougherty Valley traffic, and surface streets running north and south through the San Ramon Valley.

At this point it appears that traffic related studies for the proposal have yet to be completed or not yet ready for distribution. With this understanding we would like to comment that the traffic analysis conducted for the project should include the following components:

1. **Study Intersections/Locations**: Given the regional nature of the City Center project, it would be appropriate for the traffic analysis to include an assessment of the project on the level-of-service associated with the intersections located within the immediate vicinity of the project site and beyond, including:

   - Bollinger Canyon Road/Alcosta Boulevard
   - Bollinger Canyon Road/I-680 NB & SB On-Ramps
   - Bollinger Canyon Road/I-680 NB & SB Off-Ramps
   - Bollinger Canyon Road/San Ramon Valley Boulevard
   - Norris Canyon Road/Alcosta Boulevard
   - Norris Canyon Road/Camino Ramon

- Norris Canyon Road/San Ramon Valley Boulevard
- Crow Canyon Road/ Alcosta Boulevard
- Crow Canyon Road/ Camino Ramon
- Crow Canyon Road/I-680 NB & SB On-Ramps
- Crow Canyon Road/I-680 NB & SB Off-Ramps
- Crow Canyon Road/San Ramon Valley Boulevard

2. **Trip Generation**: The traffic analysis should document the AM peak hour, school PM peak hour, commute PM peak, and daily trip generation based on ITE *Trip Generation, 7th Edition*, as well as the *San Diego Trip Generation Manual*, which is a recognized source of trip generation data for the development patterns associated with the western United States.

   Calculations for projected employees should be broken down into specific each categories to assure the assumptions on employees per square footage are consistent with accepted ITE Manual standards.

3. **Trip Distribution and Assignment**: Given the regional nature of the project, it would be appropriate to estimate the amount of current and future traffic that would utilize inter-jurisdictional roadways, such as San Ramon Valley Boulevard, Camino Ramon, and Crow Canyon Road.

4. **Assessment of Impact on Non-Vehicular Travel Corridors**: Given the location of the Iron Horse Trail within the vicinity of the proposed project, it would be appropriate to assess the impact of the new traffic impacts on the ability of non-vehicular access across Bollinger Canyon Road and Crow Canyon Road.

5. **Assessment of Impact on the Capacity of Interstate 680**: Consistent with requirements of Caltrans, the traffic analysis should include an assessment of the new demand on the interstate, particularly during the AM and commute PM peak hours.

6. **Scenarios**: Consistent with CCTA's Technical Procedures, the traffic study should document the AM, school PM, and commute PM peak hour traffic conditions for:

   - Existing Conditions
   - Existing Plus Proposed Project Conditions

- Existing Plus Proposed Project Plus Cumulative Conditions

Calculation of levels-of-service should be consistent with the methodology specified in the CCTA's *Technical Procedures*. Also consistent with the Technical Procedures, it would be appropriate – given the scale and regional nature of the project – to conduct a supplemental analysis of delay using a delay based methodology consistent with the Highway Capacity Manual (HCM). The traffic analysis should also utilize the CCTA's new Countywide Travel Demand Forecasting Model for future scenarios.

6. **Other**: In reviewing potential traffic related impacts as the project moves forward, it would be helpful to know the status of the other parcels within Bishop Ranch in terms of the potential to add to the square footage figures previously assumed within the current traffic models. Do property owners such as AT&T, Chevron, Toyota or others have the ability to add any additional square footage and/or to intensify their uses? If so, has this development been anticipated in current traffic models? If additional square footage may be added based on an unexercised, active entitlement, what is the development potential covered by the entitlement?

   Are current Tax Assessor's/Metroscan records correct in showing that DSRSD owns the two southeasterly parcels in Bishop Ranch (respectively being 15.25 acres and 2.58 acres in size)? What is the anticipated future use of these properties?

   With a "transit hub" cited for inclusion within the City Center Project, will the existing 1.33-acre City-owned transit hub site at the northeast quadrant of Bishop Ranch Business Park be redeveloped? If so, will this site's redevelopment be factored into the environmental review of the City Center Project?

   Please clarify how the methodology used for the project's traffic analysis, in setting forth "Existing", "Existing Plus Project", and Existing Plus Project Plus Build-out" addresses the 328,220 square feet of Office use "previously entitled in the Second Amendment to the Chevron Park Annexation and Development Agreement (assumed by Sunset), dated May 28, 2002". Is this footage included? If so, where? Is this square footage exempted from current transportation impact fees?

If you have any questions regarding this letter, please contact me at (925) 314-3305 at your convenience.

Sincerely,

TOWN OF DANVILLE
Tai J. Williams, Transportation Director

RECEIVED
APR 6 - 2007
CITY OF SAN RAMON
PLANNING SERVICES

c: Town Manager
Development Services Director
Chief of Planning
Transportation staff

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STATE OF CALIFORNIA
Governor's Office of Planning and Research
State Clearinghouse and Planning Unit

Arnold Schwarzenegger
Governor

Cynthia Bryant
Director

RECEIVED
3 2007
CITY OF SAN RAMON
PLANNING SERVICES

Notice of Preparation

April 4, 2007

To: Reviewing Agencies

Re: San Ramon City Center Project
SCH# 2007042022

Attached for your review and comment is the Notice of Preparation (NOP) for the San Ramon City Center Project draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Phil Wong
City of San Ramon
2226 Camino Ramon
[redacted]
San Ramon, CA 94583

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Senior Planner, State Clearinghouse

Attachments
cc: Lead Agency

Document Details Report
State Clearinghouse Data Base

SCH# 2007042022
Project Title San Ramon City Center Project
Lead Agency San Ramon, City of

Type **NOP** Notice of Preparation

Description The City of San Ramon and Sunset Development Company, as co-applicants, are proposing approximately 2,168,000 square feet (sq. ft.) as part of the San Ramon City Center Project. The project will be a new transit-oriented, mixed-use development for the City of San Ramon within the Bishop Ranch Business Park. The proposed project will also require discretionary permits/ministerial approvals.

Lead Agency Contact

Name Phil Wong
Agency City of San Ramon
Phone (925) 973-2560 **Fax**
email planning@sanramon.ca.gov
Address 2226 Camino Ramon
P.O. Box 5148
City San Ramon **State** CA **Zip** 94583

Project Location

County Contra Costa
City San Ramon
Region
Cross Streets Bollinger Canyon Road
Parcel No.
Township **Range** **Section** **Base**

Proximity to:

Highways
Airports
Railways
Waterways
Schools
Land Use Mixed use; City Center Mixed Use

Project Issues Aesthetic/Visual; Air Quality; Biological Resources; Archaeologic-Historic; Geologic/Seismic; Toxic/Hazardous; Water Quality; Landuse; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Traffic/Circulation; Other Issues

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Reviewing Agencies Resources Agency; Department of Parks and Recreation; Department of Water Resources; Department of Fish and Game, Region 3; Native American Heritage Commission; California Highway Patrol; Caltrans, District 4; Department of Toxic Substances Control; Regional Water Quality Control Board, Region 2

Date Received 04/04/2007 **Start of Review** 04/04/2007 **End of Review** 05/03/2007

Note: Blanks in data fields result from insufficient information provided by lead agency.

NOP Distribution List ure **County:** CONTRA COSTA **SCH#** 2007042023

esources Agency

- [x] **Resources Agency**
  Nadell Gayou
- [ ] **Dept. of Boating & Waterways**
  David Johnson
- [ ] **California Coastal Commission**
  Elizabeth A. Fuchs
- [ ] **Colorado River Board**
  Gerald R. Zimmerman
- [ ] **Dept. of Conservation**
  Roseanne Taylor
- [ ] **California Energy Commission**
  Paul Richins
- [ ] **Dept. of Forestry & Fire Protection**
  Allen Robertson
- [ ] **Office of Historic Preservation**
  Wayne Donaldson
- [x] **Dept of Parks & Recreation**
  Environmental Stewardship Section
- [ ] **Reclamation Board**
  DeeDee Jones
- [ ] **S.F. Bay Conservation & Dev't. Comm.**
  Steve McAdam
- [x] **Dept. of Water Resources**
  Resources Agency
  Nadell Gayou
- [ ] ______________
  Conservancy

sh and Game

- [ ] **Depart. of Fish & Game**
  Scott Flint
  Environmental Services Division
- [ ] **Fish & Game Region 1**
  Donald Koch
- [ ] **Fish & Game Region 2**
  Banky Curtis
- [x] **Fish & Game Region 3**
  Robert Floerke
- [ ] **Fish & Game Region 4**
  Julie Vance
- [ ] **Fish & Game Region 5**
  Don Chadwick
  Habitat Conservation Program
- [ ] **Fish & Game Region 6**
  Gabrina Gatchel
  Habitat Conservation Program
- [ ] **Fish & Game Region 6 I/M**
  Gabrina Getchel
  Inyo/Mono, Habitat Conservation Program
- [ ] **Dept. of Fish & Game M**
  George Isaac
  Marine Region

Other Departments

- [ ] **Food & Agriculture**
  Steve Shaffer
  Dept. of Food and Agriculture
- [ ] **Depart. of General Services**
  Public School Construction
- [ ] **Dept. of General Services**
  Robert Sleppy
  Environmental Services Section
- [ ] **Dept. of Health Services**
  Veronica Malloy
  Dept. of Health/Drinking Water

Independent Commissions,Boards

- [ ] **Delta Protection Commission**
  Debby Eddy
- [ ] **Office of Emergency Services**
  Dennis Castrillo
- [ ] **Governor's Office of Planning & Research**
  State Clearinghouse
- [x] **Native American Heritage Comm.**
  Debbie Treadway
- [ ] **Public Utilities Commission**
  Ken Lewis
- [ ] **State Lands Commission**
  Jean Sarino
- [ ] **Tahoe Regional Planning Agency (TRPA)**
  Cherry Jacques

Business, Trans & Housing

- [ ] **Caltrans - Division of Aeronautics**
  Sandy Hesnard
- [ ] **Caltrans - Planning**
  Terri Pencovic
- [x] **California Highway Patrol**
  Shirley Kelly
  Office of Special Projects
- [ ] **Housing & Community Development**
  Lisa Nichols
  Housing Policy Division

Dept. of Transportation

- [ ] **Caltrans, District 1**
  Rex Jackman
- [ ] **Caltrans, District 2**
  Marcelino Gonzalez
- [ ] **Caltrans, District 3**
  Jeff Pulverman
- [x] **Caltrans, District 4**
  Tim Sable
- [ ] **Caltrans, District 5**
  David Murray
- [ ] **Caltrans, District 6**
  Marc Birnbaum
- [ ] **Caltrans, District 7**
  Cheryl J. Powell
- [ ] **Caltrans, District 8**
  Dan Kopulsky
- [ ] **Caltrans, District 9**
  Gayle Rosander
- [ ] **Caltrans, District 10**
  Tom Dumas
- [ ] **Caltrans, District 11**
  Mario Orso
- [ ] **Caltrans, District 12**
  Bob Joseph

Cal EPA

Air Resources Board

- [ ] Airport Projects
  Jim Lerner
  - [ ] Transportation Projects
    Ravi Ramalingam
  - [ ] Industrial Projects
    Mike Tollstrup
- [ ] **California Integrated Waste Management Board**
  Sue O'Leary
- [ ] **State Water Resources Control Board**
  Jim Hockenberry
  Division of Financial Assistance
- [ ] **State Water Resources Control Board**
  Student Intern, 401 Water Quality Certification Unit
  Division of Water Quality
- [ ] **State Water Resouces Control Board**
  Steven Herrera
  Division of Water Rights
- [x] **Dept. of Toxic Substances Control**
  CEQA Tracking Center
- [ ] **Department of Pesticide Regulation**

Regional Water Quality Control Board (RWQCB)

- [ ] **RWQCB 1**
  Cathleen Hudson
  North Coast Region (1)
- [x] **RWQCB 2**
  Environmental Document Coordinator
  San Francisco Bay Region (2)
- [ ] **RWQCB 3**
  Central Coast Region (3)
- [ ] **RWQCB 4**
  Teresa Rodgers
  Los Angeles Region (4)
- [ ] **RWQCB 5S**
  Central Valley Region (5)
  - [ ] **RWQCB 5F**
    Central Valley Region (5)
    Fresno Branch Office
  - [ ] **RWQCB 5R**
    Central Valley Region (5)
    Redding Branch Office
- [ ] **RWQCB 6**
  Lahontan Region (6)
  - [ ] **RWQCB 6V**
    Lahontan Region (6)
    Victorville Branch Office
- [ ] **RWQCB 7**
  Colorado River Basin Region (7)
- [ ] **RWQCB 8**
  Santa Ana Region (8)
- [ ] **RWQCB 9**
  San Diego Region (9)
- [ ] **Other** ______________

Last Updated on 09/10/06

William B. Walker, M.D.
Health Services Director
Sherman L. Quinlan, REHS, MPH
Environmental Health Director
Richard K. Lee, REHS
Environmental Health Assistant Director

CONTRA COSTA
HEALTH SERVICES

Contra Costa
Environmental Health
2120 Diamond Blvd., Suite 200
Concord, California 94520
Ph (925) 646-5225
Fax (925) 646-5168
www.cocoeh.org

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APR 9 - 2007
CITY OF SAN RAMON
PLANNING SERVICES

MEMO

Date: April 5, 2007

To: Debbie Chamberlain, Planning Manager
City of San Ramon Planning Division

From: Joe Doser, Contra Costa Environmental Health Jo

RE: City Center Mixed Use Project

I am in receipt of your Planning Department application packet (dated April 3, 2007) for The City Center Mixed Use Project. Any facilities selling or giving away food will need a health permit from Contra Costa Environmental Health to operate. The applicant will need to have plans for any of these facilities approved by Contra Costa Environmental Health prior to the issuance of a building permit.

It is also recommended that you add a condition that any abandoned wells or septic tanks on the property be properly destroyed with a permit from Contra Costa Environmental Health.

If you have any questions, I can be reached at (925) 646-5225, ext. 211

cc: Jocelyn Habal

JD:km

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
111 GRAND AVENUE
P. O. BOX 23660
OAKLAND, CA 94623-0660
PHONE (510) 286-5505
FAX (510) 286-5559
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April 9, 2007

CC680575
CC-680-R2.89
SCH2007042022

Debbie Chamberlain
City of San Ramon
2226 Camino Ramon
San Ramon, CA 94583

Dear Ms. Chamberlain:

San Ramon City Center Project – Notice of Preparation

Thank you for including the California Department of Transportation (Department) in the early stages of the environmental process for the proposed project. The comments presented below are based on the Notice of Preparation for the San Ramon City Center Project. As lead agency, the City of San Ramon is responsible for all project mitigation, including improvements to State Highways. The project's fair share contribution, financing, scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures. Any required roadway improvements should be completed prior to issuance of the project's building permit. While an encroachment permit is only required when the project involves work in the State Right of Way, the Department will not issue an encroachment permit until our concerns are adequately addressed.

Traffic Impact Analysis

The Department is primarily concerned with impacts to the State Highway System. Specifically, a detailed Traffic Impact Analysis (TIA) should identify impacts to Interstate 680 with and without the proposed City Center Mixed Use Project traffic. The TIA should include, but is not limited to the following:

1. Information on the project's traffic impacts in terms of trip generation, distribution, and assignment. The assumptions and methodologies used in compiling this information should be addressed.

2. Average Daily Traffic and AM and PM peak hour volumes on all significantly affected streets and highways, including crossroads and controlling intersections.

3. Schematic illustration of the traffic conditions for: 1) existing, 2) existing plus project, and 3) cumulative for the intersections in the project area.

4. Calculation of cumulative traffic volumes should consider all traffic-generating developments, both existing and future, that would affect the State Highway facilities being evaluated.

5. Mitigation measures should consider highway and non-highway improvements and services. Special attention should be given to the development of alternate solutions to circulation problems that do not rely on increased highway construction.

6. All mitigation measures proposed should be fully discussed, including financing, scheduling, implementation responsibilities, and lead agency monitoring.

We encourage the City of San Ramon to coordinate preparation of the study with our office, and we would appreciate the opportunity to review the scope of work. Please see the Caltrans' *"Guide for the Preparation of Traffic Impact Studies"* at the following website for more information:
http://www.dot.ca.gov/hq/traffops/developserv/operationalsystems/reports/tisguide.pdf

We look forward to reviewing the TIA, including Technical Appendices, for this project as soon as it is available. Please send two copies to

Christian Bushong
Office of Transit and Community Planning Office
California Department of Transportation, District 4
P. O. Box 23660
Oakland, CA 94623–0660

Should you require further information or have any questions regarding this letter, please call Christian Bushong of my staff at (510) 286-5606.

Sincerely,

for TIMOTHY C. SABLE
District Branch Chief
IGR/CEQA

c: State Clearinghouse

Contra Costa County

Public Works Department

255 Glacier Drive
Martinez, CA 94553-4825
Telephone: (925) 313-2000
FAX: (925) 313-2333
Web site: www.co.contra-costa.ca.us/depart/pw

Maurice M. Shiu
Public Works Director

R. Mitch Avalon
Deputy Director

Heather J. Ballenger
Deputy Director

Julia R. Bueren
Deputy Director

Patricia R. McNamee
Deputy Director

April 10, 2007

Debbie Chamberlain, Planning Manager
City of San Ramon
Planning Division
2226 Camino Ramon
San Ramon, CA 94583

RE: Notice of Preparation of a DEIR for City Center Mixed Use Project

Dear Ms. Chamberlain,

Contra Costa County Public Works Department has reviewed the Notice of Preparation of a Draft Environmental Impact Report (DEIR) for the City Center Mixed Use Project and offers the following comments regarding the DEIR's scope and content relevant to our agency.

The eastern boundary of the project borders the Iron Horse Corridor (Corridor), which is owned by the County and maintained and administered by the County Public Works Department. Any elements of the project which will impact the Corridor should be discussed in the DEIR. Additionally, the DEIR should recognize the County's role in approving, licensing, and permitting any work that occurs within the Iron Horse Corridor.

The County encourages developments adjacent to the Iron Horse Corridor to landscape the Corridor as part of their projects, and the City of San Ramon may wish to consider including landscaping within the Iron Horse Corridor as a part of this project. Landscaping installed within the Corridor would need to comply with the Iron Horse Corridor Landscape Element, which is available online at www.ironhorse.info. Bound copies are available upon request. In addition to complying with the Landscape Element, there would need to be consideration given to the long-term maintenance requirements of landscaping installed in the Corridor, as the County would not be able to take responsibility for maintaining it.

Thank you for considering these comments during the preparation of the DEIR for this project. Our Department looks forward to working with the City through the continued project development. Please direct all future correspondence regarding this project to my attention at:

John Pulliam
Contra Costa County Public Works Department
255 Glacier Drive
Martinez, CA 94553-4825

I may also be reached, Monday through Thursday, at (925) 313-2165.

Sincerely,

John Pulliam
Associate Civil Engineer
Transportation Engineering

JP:tr
G:\TransEng\EIR\San Ramon\San Ramon City Center\Notice of City Center EIR.doc

cc: S. Kowalewski, Transportation Engineering
C. Peccianti, Real Property
S. Goetz, Community Development Department
P. Roche, Community Development Department
David Hudson, Iron Horse Corridor Advisory Committee Member

Chamberlain, Debbie

From: Clark, Piere
Sent: Tuesday, April 10, 2007 10:11 AM
To: Chamberlain, Debbie
Cc: Willnecker, Luisa
Subject: FW: San Ramon City Center Mixed Use Project NOP

Forwarded to Debbie.

From: Tim Jensen [mailto:tjens@pw.cccounty.us]
Sent: Tuesday, April 10, 2007 10:11 AM
To: Planning Services (public)
Subject: San Ramon City Center Mixed Use Project NOP

Debbie Chamberlain, Planning Manager;

We have reviewed the San Ramon City Center Mixed Use Project Notice of Preparation of a Draft Environmental Impact Report, which we received on April 4, 2007. We have no existing or proposed facilities that would be impacted by this project. The site will drain into City-maintained storm drains and into the Alameda County flood control system. The Hydrology and Water Quality section appears to be adequate for this project.

The Flood Control District is available to review technical aspects of this project such as hydrology, hydraulics, storm water quality, and maintenance under our Fee for Service Program. We appreciate the opportunity to review drainage aspects of developments within the City and welcome continued coordination.

Tim Jensen
Associate Civil Engineer
Current Development
CCC PWD, Flood Control
255 Glacier Drive
Martinez, CA 94553
(925) 313-2396

SAN RAMON VALLEY FIRE PROTECTION DISTRICT

Administration
Phone: 925-838-6600
Fax: 925-838-6629
www.srvfpd.dst.ca.us

1500 Bollinger Canyon Road
San Ramon, California 94583

Fire Prevention
Phone: 925-838-6600
Fax: 925-838-6696

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May 1, 2007

Ms. Debbie Chamberlain,
Planning Manager
2226 Camino Ramon
San Ramon, CA 94583

Subject: City Center Mixed Use Project

Dear Ms. Chamberlain,

The San Ramon Valley Fire Protection District (the "District") recently received the Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the proposed City Center Mixed Use Project. After reviewing the NOP the District has identified two primary areas of concern: the introduction of high rise buildings and the development of a large mixed use public assembly/mercantile/residential complex. The following represents those issues relating to the provision of fire and emergency services that the District feels should be included in the study.

Impacts on service levels:

> The nature of fire fighting operations in high rise buildings limits the use of elevators to travel up to the level where a fire or fire alarm occurs. Firefighters responding to a fire emergency must walk up the stairwells carrying the equipment they need to use to fight the fire. This creates several issues, there are delays in response and setup time to begin fire fighting operations, it tires the firefighters so their effectiveness is reduced, and it requires a significant number of personnel to be committed to the scene to carry equipment up to a staging area just below the fire floor. Short of adding additional personnel assigned to the fire stations in the immediate area one way to mitigate this concern is to install equipment cabinets and pressurized air systems capable of refilling breathing apparatus air bottles inside or adjacent to the stairwells to reduce the amount of equipment that must be carried up the stairs.

Another concern is the impact that the number of false fire alarms may be generated by this project would have on the District's resources. A response to a fire alarm in the high-rise building will commit approximately 13 firefighting personnel for about 30 minutes to respond to, investigate and restore the alarm. Thirteen personnel constitute about 25% of the District's total available staffing on duty at a given time that would be unavailable to respond to other emergencies in the District. A possible mitigation plan for this impact is for the developer and the City to work with the District to specify, install, and maintain the most reliable technology and design into the fire alarm systems. They should also create and implement an education/mitigation program for the occupants to minimize false alarms.

The project would introduce high-rise buildings into the District. This impact is more difficult to quantify but it can clearly be said that firefighting and emergency operations in high rise buildings is much different than the more moderately sized buildings currently in existence. At this time the District has no facilities to train for these types of incidents. As a result the District would expect that the developer and/or the City contribute their fair share towards providing a training facility suitable for high-rise firefighting training for the District.

Impact on communication:

During fire emergencies in high rise buildings communications is a key ingredient to effective and efficient firefighting operations. It is also critical to the safety of firefighters working in the buildings. Unfortunately buildings of this nature are not conducive to using portable radios on the interior as the building construction tends to block or interfere with transmissions. The building should incorporate radio repeaters or similar technology to boost the effectiveness of radio communications.

Finally we feel it is important to verify that adequate firefighting water is available through the public water infrastructure to meet the fire flow requirements for the project.

We would like to thank you for the opportunity to provide input into the scope of the environmental impact study. We feel that all of these potential negative impacts should be studied in conjunction with the other environmental factors to assure that adequate mitigation is incorporated into the document. If you have any questions please contact the undersigned at (925) 838-6686. Thank you for your assistance in this matter.

Sincerely,

Michael Mentink, Deputy Fire Marshal
San Ramon Valley Fire Protection District

P.O. Box 24055
Oakland, CA 94623-1055
Phone: 510 287-1301
Fax: 510 287-0790

EBMUD

Fax

To:	Phil Wong, Director	**From:**	William Kirkpatrick
Fax:	(925) 806-0118	**Date:**	May 3, 2007
Phone:	(925) 973-2560	**Pages:**	3
Re:	DEIR San Ramon City Center Project	**CC:**	

☐ **Urgent** ☐ **For Review** ☐ **Please Comment** ☐ **Please Reply** ☐ **Please Recycle**

Comments

Original to Follow

From the desk of Sue Baker
Secretary to Bill Kirkpatrick
(510) 287-1104

EAST BAY MUNICIPAL UTILITY DISTRICT

May 3, 2007

Phil Wong, Director
City of San Ramon
Planning/Community Development Department
2226 Camino San Ramon
San Ramon, CA 94583

Re: Notice of Preparation of a Draft Environmental Impact Report for the San Ramon City Center Project, San Ramon

Dear Mr. Wong:

East Bay Municipal Utility District (EBMUD) appreciates the opportunity to review the Notice of Preparation of a Draft Environmental Impact Report (EIR) for the San Ramon City Center Project located in the City of San Ramon (City). EBMUD has the following comments.

WATER SERVICE

EBMUD's Amador Pressure Zone, with a service elevation between 340 and 540 feet, will serve the proposed development. A main extension, at the project sponsor's expense, will be required to serve the proposed development. Off-site pipeline improvements, also at the project sponsor's expense, may be required to meet domestic demands and fire flow requirements set by the local fire department. Off-site pipeline improvements include, but are not limited to, replacement of existing water mains to the project site. When the development plans are finalized, the project sponsor should contact EBMUD's New Business Office and request a water service estimate to determine costs and conditions for providing water service to the proposed development. Engineering and installation of water mains and services requires substantial lead-time, which should be provided for in the project sponsor's development schedule.

EBMUD owns and operates 8-inch, 12-inch, and 16-inch water distribution and recycled water pipelines in Bishop Drive, Camino Ramon, and Bollinger Canyon Road. These pipelines provide water service to the existing property and surrounding area. The integrity of these pipelines needs to be maintained at all times. Any proposed construction activity within the roadways would need to be coordinated with EBMUD and may require relocation of the pipelines, at the project sponsor's expense.

WATER RECYCLING

EBMUD's Policy 8.01 requires that customers of EBMUD use nonpotable water for nondomestic purposes when it is of adequate quality and quantity, available at reasonable cost, not detrimental to public health and not injurious to plant life, fish and wildlife. The proposed project is located within the service area boundary of EBMUD's San Ramon Valley Recycled Water Project and is within a City-designated Water Reuse Area. The City has a dual plumbing ordinance which requires areas that will be served with recycled water to dual plumb in advance. The San Ramon City Center Project will require design and installation of separate piping systems for recycled water during construction of the project. The City should coordinate closely with EBMUD regarding the layout and installation of dual-plumbing systems for appropriate uses of recycled water.

WATER CONSERVATION

The proposed project presents an opportunity to incorporate water conservation measures. EBMUD would request that the City include in its conditions of approval a requirement that the project sponsor comply with the City's Landscape Ordinance No. 218. EBMUD staff would appreciate the opportunity to meet with the project sponsor to discuss water conservation programs and best management practices applicable to the integrated projects. A key objective of this discussion will be to explore timely opportunities to expand water conservation via early consideration of EBMUD's conservation programs and best management practices applicable to the project.

If you have any questions concerning this response, please contact David J. Rehnstrom, Senior Civil Engineer, Water Service Planning, at (510) 287-1365.

Sincerely,

W.R. Kirkpatrick

William R. Kirkpatrick
Manager of Water Distribution Planning

WRK:TNS:sb
sb07_69.doc

cc: Jason Brandman, Vice President
Michael Brandman Associates
Bishop Ranch 3
2633 Camino Ramon, Suite 460
San Ramon, CA 94583

East Bay Regional Park District
2950 Peralta Oaks Court
P. O. Box 5381
Oakland, CA 94605-0381
Phone - 510/635-0135
FAX - 510/569-1417

FAX

TO: Debbie Chamberlain
AGENCY: City of San Ramon planning
FAX#: (925) 806-0118
FROM: Jamie Perkins / Jim Townsend
DATE: 5-4-07
RE:

Total number of pages being faxed (including cover sheet): 4

Original will X ______ Original will NOT ______ be mailed.

X FOR YOUR INFORMATION
___ PLEASE REVIEW AND COMMENT
___ PLEASE CALL ME
___ AT YOUR REQUEST
___ AS WE DISCUSSED
___ OTHER

COMMENTS:

IF THERE ARE ANY PROBLEMS WITH THE TRANSMITTAL OF THIS MESSAGE, PLEASE CALL Jamie AT (510) 544-2611 THANK YOU.

East Bay Regional Park District

2950 PERALTA OAKS COURT P.O. BOX 5381 OAKLAND CALIFORNIA 94605-0381 T. 510 635 0135 F. 510 569 4319 TDD. 510 633 0460 WWW.EBPARKS.ORG

May 4, 2007

Debbie Chamberlain
Planning Manager
City of San Ramon Planning Division
2226 Camino Ramon
San Ramon, CA 94583
Via fax (925) 806-0118

RE: Iron Horse Trail – Bishop Ranch, San Ramon
Notice of Preparation: City Center Mixed Use Project

Dear Ms. Chamberlain:

East Bay Regional Park District (the "District"), has received the Notice of Preparation for the Subsequent Environmental Impact Report (SEIR) for the proposed transit-oriented, mixed-use, San Ramon City Center Project and would like to make the following comments.

The Iron Horse Trail, located just east of the proposed project, is the District's most popular trail. The District operates and maintains the paved multi-use asphalt trail and gravel shoulders (within a 20-foot wide corridor) under a license agreement with Contra Costa County. The County owns the former Southern Pacific railroad right of way and corridor on either side of the trail (www.ironhorse.info). The trail is both a primary recreational feature in the Diablo and San Ramon Valley as well as an important component of the non-motorized transportation system in Contra Costa County. The trail currently extends 30 miles between Concord and Pleasanton and connects directly to both the Dublin/Pleasanton and Pleasant Hill BART Station areas. Construction of an additional one mile of trail is underway in Pleasanton and the trail is planned to continue south to the District's Shadow Cliffs Regional Recreation Area and eastward through the City of Livermore. When completed, the trail will span over 40 miles and make connections between Alameda and Contra Costa County bisecting nine communities and providing convenient access to parks, schools, libraries, employment centers, residential areas and major multi-modal transportation facilities, including BART.

The trail's development adjacent to the existing Bishop Ranch Business Park was supported by the San Ramon General Plan in the 1970's and was specifically completed as a component of the business park as a model of integrating a non-motorized transportation corridor and a recreation facility with a large employment center for use by employees and residents in the community. The District is supportive of the proposed project pedestrian-friendly objectives in the SEIR which emphasize the promotion of and encouragement of public transit alternatives to the automobile, including non-motorized transportation modes, (BART, bus travel, and use of the Iron Horse Regional Trail) while providing mixed use employment, residential, and retail development. A similar urban development project which incorporated concepts of "New Urbanism" and pedestrian friendly design and mixed uses was recently completed for the Pleasant Hill BART Station area under the direction of the Contra Costa County Redevelopment Agency. The Iron Horse Trail was consistently brought out as the major regional facility which provides non-motorized transportation opportunities for commuters, school-aged children, and residents who will be able to safely access the trail to travel to shopping areas, other residential areas, and other multi-modal transportation facilities thereby reducing vehicle emissions and creating an enhanced "livable community".

Potential Environmental Impacts

Under VII. Hydrology and Water Quality on page 15, the SEIR should address any hydrologic impacts from the proposed project on the Iron Horse Trail and County corridor to ensure that decreases in ground absorption rates onsite, increases of surface water, and possible changes to existing drainage patterns, do not impact the integrity, surface or subsurface of the adjacent Iron Horse Trail pavement or its aggregate base.

As stated in the NOP, under XII., Population and Housing (pg. 19), and XIV Recreation (pg.21), the SEIR should address the increases in use and population groups of the existing Iron Horse Trail which could result in substantial physical deterioration of the Trail which could occur, or be accelerated, unless mitigation for this use is incorporated into the proposed project. Appropriately spaced Iron Horse Trail access points will need to be designed and maintained to safely transition bicyclists and pedestrians to and from the proposed project and consider ADA design standards, speed limits, adequate lines of sight, emergency vehicle access, lighting, etc. Also, as stated in the SEIR, the City of San Ramon maintains a standard of 6.5 acres of public parks per 1000 residents. In order to meet this requirement, developers make contributions to the City's park system through the Parkland Dedication Ordinance, which would apply due to the residential component of the project. Financing bicycle and pedestrian friendly facilities at the Center, on arterials and connectors in the project area, and seamless integration of the proposed project and access to the Iron Horse Trail and the existing San Ramon Central Park and Community Center through a linear greenway should be considered as appropriate uses of these funds.

Under XV. Transportation/Traffic (pg.22), generated increases in new traffic on the local circulation system, including bicycle paths and pedestrian walkways, would be deemed a less than significant impact on the environment if mitigation is incorporated. Staging/Parking for trail users should be identified which could include dedicated parking in the vicinity of the Iron Horse Trail and regulating parking to allowed shared parking for trail users, including weekends. The proposed project will attract trail users who will want to access the proposed Center.

Recommended bicycle and pedestrian network guidelines for planning and design, including trail/roadway intersection considerations, bike parking, signal standards, bicycle lockers and storage options, etc. are outlined in the 2003 Contra Costa Countywide Bicycle Plan prepared for the Contra Costa County Transportation Authority. This document was developed by a countywide bicycle and pedestrian plan advisory committee, including the East Bay Regional Park District, in order to provide consistent guidelines for bicycle and pedestrian planning countywide and provide information facilities which could be incorporated into the proposed project design to ensure safe bicycle and pedestrian travel as an alternative to vehicle travel to and from the proposed City Center.

Thank you for the opportunity to comment on the proposed San Ramon City Center Project. I can be reached at (510) 544-2602 should you have any questions about the Iron Horse Trail and the role of the East Bay Regional Park District adjacent to the proposed project area.

Sincerely,

Janne Pertam for

Jim Townsend
Trail Development Program Manager

cc: Louis Guzman, Contra Costa County Trails Supervisor
John Pulliam, Contra Costa County Transportation Engineering

Points to Consider for the Civic Center C.E.Q.A. "Scoping Session"

E/R will be required because of the substantial environment consequences of the plan, as well as the induced consequences.

- History of the increasing number of stories allowed to be built in San Ramon would be useful.
  - -From three to five stories, and how that came about.
  - -Later proposal for a plan that includes seven story buildings (about six years ago) and culminatory of that effort. How does this plan compare to the earlier plan that included three – seven story buildings.
  - - Most recent Civic Center planning process prior to this one. How that process worked/outcome.
  - - This plan, how it came about, comparisons to the last planning process; addition to plan of and eight story buildings/city and citizens amenities relative to last plan/costs and indebtness this plan relative to last plan.
- Traffic consequences of this plan-primarily resulting in the addition of three –eight story buildings - need to be fully evaluated and understood. Car numbers from a fully developed Dougherty Valley on Bollinger Canyon Rd obviously will need to be incorporated in the traffic study.
- Growth inducing component of this plan and it's eight story buildings will likely be profound and will need to be fully explored.
  - -The economics of cost/benefit for converting current buildings of one or two story to eight story need to be present as part of a growth inducement evaluation.
  - -The question as to the physical and financial feasibility of adding two or three more stories to current five story buildings should be evaluated.

-The changing of high-rise height standard from five to eight stories will need to be fully studied, with a twenty year comparison of a San Ramon with eight story standard compared to five story standards.

-The growth inducing aspects of a gradual progression of commercial building height limit increases should be examined. What is the likelihood of this current eight story proposal being just a step in an upward progression? Assuming it is - what growth effect will result?

-Growth pressure on the residential end of the city growth, from significantly increases white collar (& to a lesser extent - blue collar) workforce will need to be examined. For example: increasing height of commercial buildings can often induce increasing heights of apartment and condo buildings.

*Finally, the question of compliance with the General Plan and its height constraints; and this Plan, with its proposal for eight story buildings, needs to be thouroughly examined.

Respectfully submitted,

Jim Blickenstaff
Former Councilmember
Mt. Diablo Sierra Club Chair

CC

Appendix B: Air Quality Analysis

Air Quality Analysis Report
San Ramon City Center
City of San Ramon, Contra Costa County, California

Prepared for:

City of San Ramon
Planning/Community Development Department
2226 Camino Ramon
San Ramon, CA 94583
925.973.2560

Contact: Debbie Chamberlain, Planning Manager

Prepared by:

Michael Brandman Associates
Bishop Ranch 3
2633 Camino Ramon, Suite 460
San Ramon, CA 94583
925.830.2733

Contact: Jason M. Brandman, Project Manager
Author: Joe O'Bannon, Senior Air Quality Scientist

June 2007

TABLE OF CONTENTS

LIST OF TABLES

LIST OF EXHIBITS

SECTION 1: INTRODUCTION

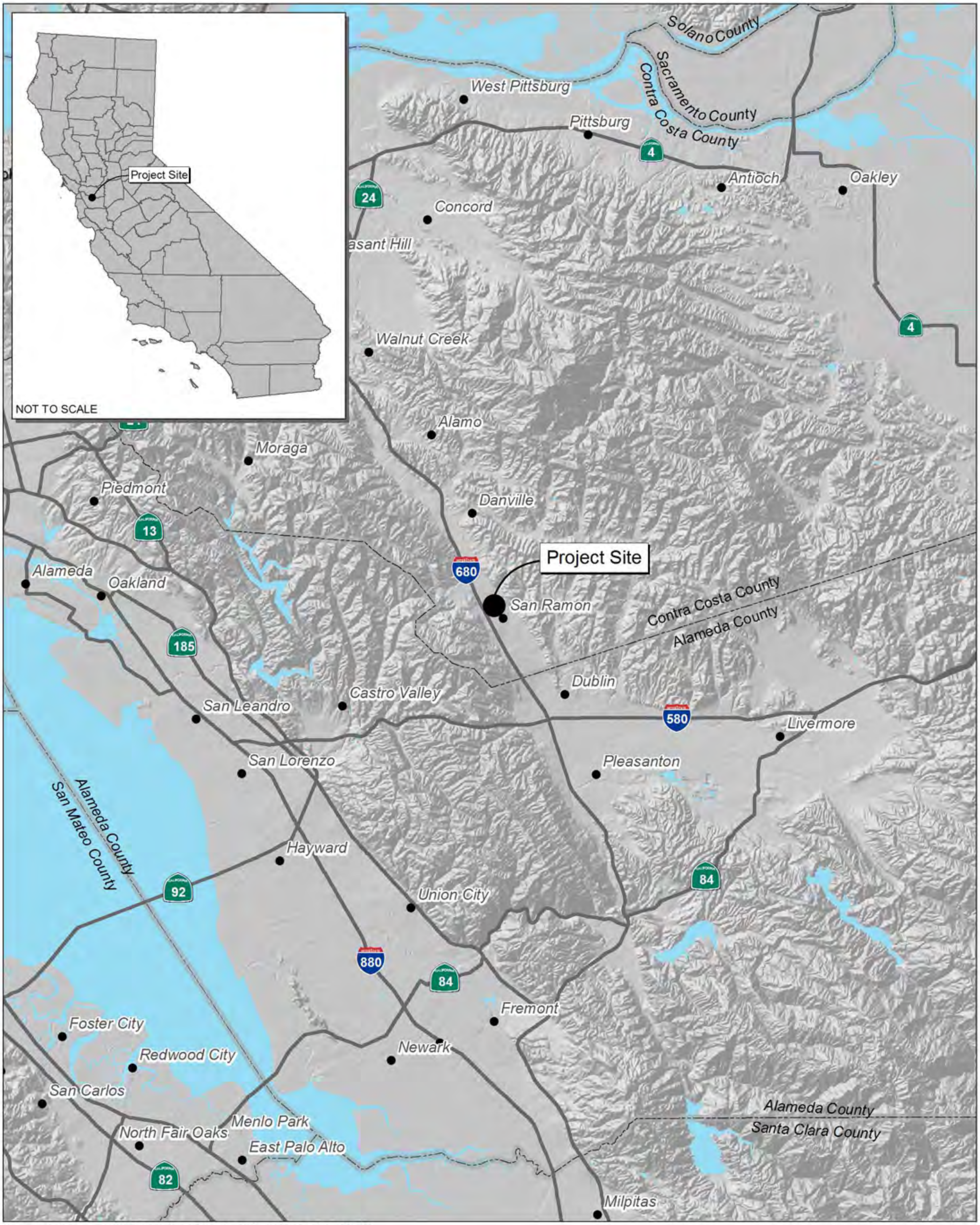
1.1 - Purpose and Methods of Analysis

The following air quality analysis was prepared to evaluate whether the expected criteria air pollutant emissions generated from the proposed project would cause significant impacts to air resources in the project area. The analysis also provides an analysis of global warming impacts. This assessment was conducted within the context of the California Environmental Quality Act (CEQA, California Public Resources Code Sections 21000, et seq.). The methodology follows the CEQA Air Quality Handbook prepared by the Bay Area Air Quality Management District (BAAQMD) for quantification of emissions and evaluation of potential impacts to air resources. As recommended by BAAQMD staff, URBEMIS 2002 version 8.7.0, developed and approved by the California Air Resources Control Board (CARB), was used to quantify some project-related emissions.

1.2 - Project Description and Location

The San Ramon City Center Project is located in the City of San Ramon in Contra Costa, California (Exhibits 1 and 2). As shown in Exhibit 2, the project site comprises four parcels, which encompass 39.09 acres. Parcels 3A and Bishop Ranch 2, consisting of 11.29 acres and 14.57 acres, respectively (totaling 25.86 acres), are north of Bollinger Canyon Road. Parcel BR2 is the developed Bishop Ranch 2 property at the northwest corner of Bollinger Canyon Road and Camino Ramon, which will be removed. Parcel 1A, consisting of 9.66 acres, is at the southeastern corner of Bollinger Canyon Road and the existing Bishop Ranch 1 entrance. Parcel 1B, now a parking lot consisting of 3.57 acres, is at the southwest corner of Bollinger Canyon Road and the existing Bishop Ranch 1 entrance. The site is within the Bishop Ranch Business Park and adjacent to the Iron Horse Trail.

The City of San Ramon and Sunset Development Company, as co-applicants, are proposing approximately 2,168,000 square feet as part of the San Ramon City Center Project (herein referred to as the project or proposed project). The project will be a new transit-oriented, mixed-use development for the City of San Ramon within the Bishop Ranch Business Park. Located at the crossroads of Camino Ramon and Bollinger Canyon Road, San Ramon City Center sits at the entrance to Bishop Ranch Business Park and is centrally located in the City, adjacent to Central Park and its community center. San Ramon City Center is an infill project that is pedestrian friendly, mixed use, and transit-oriented. The major components are residential; a lifestyle retail center including an arts cinema, restaurants, a premium “boutique” hotel, three Bishop Ranch Class A office buildings, a new City Hall with Council Chamber, and a library for San Ramon; and a transit hub. The project reflects the City’s desire for a downtown center that conforms with San Ramon’s General Plan, Zoning Ordinance, and Economic Development Strategic Plan.



Source: Census 2000 Data, The CaSIL, MBA GIS 2007.

Michael Brandman Associates

NORTH

5 2.5 0 5 Miles

Exhibit 1
Regional Location Map

24910007 • 06/2007 | 1_regional.mxd

CITY OF SAN RAMON • SAN RAMON CITY CENTER PROJECT
AIR QUALITY ANALYSIS REPORT

Source: Terraserver.

Michael Brandman Associates

24910007 • 07/2007 | 2_local_aerial.mxd

Exhibit 2
Local Vicinity Map
Aerial Base

1.2.1 - Alternatives

Also considered in this analysis are the alternatives to the proposed project required by CEQA and described below.

Reduced Density - Option 1

This option consists of eliminating the Plaza District from the proposed project and developing only Bishop Ranch 1A and the City Hall and Transit Center. Bishop Ranch 1A and the City Hall and Transit Center would be identical in size, design, and use as envisioned by the proposed project. Under this alternative, Bishop Ranch 2 would be retained and Sunset Development and Parcel 3A would remain undeveloped.

Reduced Density - Option 2

This option consists of eliminating the Bishop Ranch 1A and the City Hall and Transit Center components and developing only the Plaza District. The Plaza District would be identical in size, design, and use as envisioned by the proposed project. Under this alternative, Sunset Development would exercise its existing 328,220-square-foot office entitlement on Parcel 1A.

City Civic Center Alternative

This option consists of developing the project detailed in City Civic Center Environmental Impact Report (EIR), certified by the San Ramon City Council in December 2003 (State Clearinghouse No. 2003072022). The City Civic Center's air quality impacts were documented in that EIR.

No Project Alternative

Under the No Project Alternative, the project site would remain in its existing condition and the proposed project would not be developed. Under this alternative, Sunset Development would exercise its existing 328,220-square-foot office entitlement on Parcel 1A.

SECTION 2: SETTING

2.1 - Regulatory Setting

Air pollutants are regulated at the national, State, and air basin level; each agency has a different degree of control. The United States Environmental Protection Agency (EPA) regulates at the national level. The California Air Resources Board (CARB) regulates at the State level. The BAAQMD regulates at the air-basin level.

2.1.1 - Federal and State Regulatory Agencies

The EPA handles global, international, national, and interstate air pollution issues and policies. The EPA sets national vehicle and stationary source emission standards, oversees approval of all State Implementation Plans (SIP), provides research and guidance in air pollution programs, and sets National Ambient Air Quality Standards (NAAQS), also known as federal standards. There are NAAQS for six common air pollutants, called criteria air pollutants, which were identified from provisions of the federal Clean Air Act (CAA) of 1970. The six criteria pollutants are:

- Ozone (O_3)
- Particulate matter (PM_{10} and $PM_{2.5}$)
- Nitrogen dioxide (NO_2)
- Carbon monoxide (CO)
- Lead
- Sulfur dioxide (SO_2)

The NAAQS were set to protect the health of sensitive individuals; thus, the standards continue to change as more medical research is available regarding the health effects of the criteria pollutants.

CARB has overall responsibility for statewide air quality maintenance and air pollution prevention. The SIP for the State of California is administered by CARB. A SIP is a document prepared by each state describing existing air quality conditions and measures that will be followed to attain and maintain NAAQS. CARB also administers California ambient air quality standards, or State standards, for the 10 air pollutants designated in the California Clean Air Act (CCAA). All of the national criteria pollutants are regulated by the State, but California adds 4 pollutants. The additional State air pollutants are:

- Visibility-reducing particulates
- Hydrogen sulfide
- Sulfates
- Vinyl chloride

The national and State ambient air quality standards and the most relevant effects are summarized in Table 1.

Table 1: Ambient Air Quality Standards

Air Pollutant	Averaging Time	California Standard	National Standard	Most Relevant Effects
Ozone	1 hour	0.09 ppm	—	(a) Pulmonary function decrements and localized lung edema in humans and animals; (b) risk to public health implied by alterations in pulmonary morphology and host defense in animals; (c) increased mortality risk; (d) risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (e) vegetation damage; (f) property damage
	8 hour	0.070 ppm	0.08 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) impairment of central nervous system functions; (d) possible increased risk to fetuses
	8 hour	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO_2)	1 hour	0.18 ppm*	—	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; (c) contribution to atmospheric discoloration
	Mean	0.030 ppm*	0.053 ppm	
Sulfur Dioxide (SO_2)	1 hour	0.25 ppm	—	Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma
	24 hour	0.04 ppm	0.14 ppm	
	Mean	—	0.030 ppm	
Particulate Matter (PM_{10})	24 hour	50 $\mu g/m^3$	150 $\mu g/m^3$	(a) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) declines in pulmonary function growth in children; (c) increased risk of premature death from heart or lung diseases in the elderly
	Mean	20 $\mu g/m^3$	—	
Particulate Matter ($PM_{2.5}$)	24 hour	—	35 $\mu g/m^3$	
	Mean	12 $\mu g/m^3$	15 $\mu g/m^3$	
Sulfates	24 hour	25 $\mu g/m^3$	—	(a) Decrease in ventilatory function; (b) aggravation of asthmatic symptoms; (c) aggravation of cardio-pulmonary disease; (d) vegetation damage; (e) degradation of visibility; (f) property damage
Lead	30-day	1.5 $\mu g/m^3$	—	(a) Learning disabilities; (b) impairment of blood formation and nerve conduction
	Quarter	—	1.5 $\mu g/m^3$	

Notes:
ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter
Mean = Annual Arithmetic Mean; 30-day = 30-day average; Quarter = Calendar quarter
* The nitrogen dioxide ambient air quality standard was amended on February 22, 2007. These changes become effective after regulatory changes are submitted and approved by the Office of Administrative Law, expected in 2007.
Source: CARB, Ambient Air Quality Standards, 2007.

2.1.2 - Bay Area Air Quality Management District

The project is in the San Francisco Bay Area Air Basin (Basin), which consists of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties; the western portion of Solano County; and the southern portion of Sonoma County. The local agency with jurisdiction over air quality in the Basin is the Bay Area Air Quality Management District (BAAQMD or District). The BAAQMD—the State's first regional agency dealing with air pollution—was created by the California Legislature in 1955. The District is responsible for controlling and permitting industrial pollution sources (such as power plants, refineries, and manufacturing operations) and widespread area-wide sources (such as bakeries, dry cleaners, service stations, and commercial paint applicators) and for adopting local air quality plans and rules.

The latest air quality plan in the Basin is the Bay Area 2005 Ozone Strategy, which was prepared in cooperation with the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG) and was adopted on January 4, 2006. The Strategy shows "how the San Francisco Bay Area will achieve compliance with the State one-hour air quality standard for ozone as expeditiously as practicable and how the region will reduce transport of ozone and ozone precursors to neighboring air basins." (BAAQMD 2006)

2.1.3 - Local Government

Local government's responsibility for air quality increased significantly with the passage of the CCAA and the federal CAA 1990 amendments. Both pieces of legislation place new emphasis on reducing motor vehicle trips and vehicle miles traveled at the local level. Although the District is required to address air quality standards by way of transportation control measures (TCMs) and indirect source programs in its air quality attainment plans, cities and counties, through their Councils of Government, are responsible for much of the implementation.

The project is located in the City of San Ramon. San Ramon is located in southern Contra Costa County and is surrounded by the communities of Danville and Dublin, and unincorporated areas of Alameda and Contra Costa counties. The San Ramon General Plan 2020 (San Ramon 2002), voter-approved March 5, 2002, contains guiding and implementing policies that together articulate a vision for San Ramon and provides protection for the City's resources by establishing planning requirements, programs, standards, and criteria for project review. Listed below are policies and programs contained in the General Plan that are pertinent to the protection of air quality.

2.2 - Pollutants of Concern

Pollutants are generally classified as either criteria pollutants or non-criteria pollutants. Federal ambient air quality standards have been established for criteria pollutants, whereas no ambient standards have been established for non-criteria pollutants. For some criteria pollutants, separate standards have been set for different periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values (such as protection of crops, protection of materials, or avoidance of nuisance conditions). A summary of Federal ambient air quality standards (NAAQS) and State ambient air quality standards—or California Ambient Air Quality Standards (CAAQS)—for criteria pollutants and the attainment status of the San Francisco Bay Area Air Basin is shown in Table 1.

For reasons described below, the criteria pollutants of greatest concern for the proposed project are ozone (O_3), inhalable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), and carbon monoxide (CO). Other pollutants of concern are toxic air contaminants and asbestos.

2.2.1 - Ozone

Ozone is not emitted directly into the air, but is formed by a photochemical reaction in the atmosphere. Ozone precursors, which include reactive organic gases (ROG) and oxides of nitrogen (NO_x), react in the atmosphere in the presence of sunlight to form ozone. Because photochemical reaction rates depend on the intensity of ultraviolet light and air temperature, ozone is primarily a summer air pollution problem. Often, the effects of emitted ROG and NO_x are felt a distance downwind of the emission sources. Ozone is subsequently considered a regional pollutant. Ground-level ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials.

Ozone can irritate lung airways and cause inflammation much like a sunburn. Other symptoms include wheezing, coughing, pain when taking a deep breath, and breathing difficulties during exercise or outdoor activities. People with respiratory problems are most vulnerable, but even healthy people who are active outdoors can be affected when ozone levels are high. Chronic ozone exposure can induce morphological (tissue) changes throughout the respiratory tract, particularly at the junction of the conducting airways and the gas exchange zone in the deep lung. Anyone who spends time outdoors in the summer is at risk, particularly children and other people who are active outdoors. Even at very low levels, ground-level ozone triggers a variety of health problems, including aggravated asthma, reduced lung capacity, and increased susceptibility to respiratory illnesses like pneumonia and bronchitis.

Ozone also damages vegetation and ecosystems. It leads to reduced agricultural crop and commercial forest yields; reduced growth and survivability of tree seedlings; and increased susceptibility to diseases, pests, and other stresses such as harsh weather. In the United States alone, ozone is responsible for an estimated $500 million in reduced crop production each year. Ozone also damages the foliage of trees and other plants, affecting the landscape of cities, national parks and forests, and recreation areas. In addition, ozone causes damage to buildings, rubber, and some plastics.

Ozone is a regional pollutant, as the reactions forming it take place over time, and materializes downwind from the sources of the emissions. As a photochemical pollutant, ozone is formed only during daylight hours under appropriate conditions, but it is destroyed throughout the day and night. Thus, ozone concentrations vary depending upon both the time of day and the location. Even in pristine areas, there is some ambient ozone that forms from natural emissions that are not controllable. This is termed background ozone. The average background ozone concentrations near sea level are in the range of 0.015 to 0.035 parts per million (ppm), with a maximum of about 0.04 ppm (CARB 2005).

A Federal standard for ozone had been set for a 1-hour averaging time of 0.12 ppm but was officially revoked in June 2005.

Reactive Organic Gases

Reactive organic gases (ROG) are defined as any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participate in atmospheric photochemical reactions. ROG consist of nonmethane hydrocarbons and oxygenated hydrocarbons. Hydrocarbons are organic compounds that contain only hydrogen and carbon atoms. Nonmethane hydrocarbons are hydrocarbons that do not contain the unreactive hydrocarbon, methane. Oxygenated hydrocarbons are hydrocarbons with oxygenated functional groups attached.

It should be noted that there are no State or national ambient air quality standards for ROG because they are not classified as criteria pollutants. They are regulated, however, because a reduction in ROG emissions reduces certain chemical reactions that contribute to the formulation of ozone. ROG also are transformed into organic aerosols in the atmosphere, which contribute to higher PM_{10} and lower visibility.

Nitrogen Oxides

During combustion of fossil fuels, oxygen reacts with nitrogen to produce nitrogen oxides or NO_x. This occurs primarily in motor vehicle internal combustion engines and fossil fuel-fired electric utility and industrial boilers. Whereas one form of NO_x, nitrogen dioxide (NO_2), is a criteria pollutant, NO_2 by itself is not a pollutant of concern in the Basin. Of concern is the property of NO_x as an ozone precursor, which means that when it is emitted into the atmosphere, it helps form or cause ozone to be formed. When NO_x and ROG are released in the atmosphere, they can chemically react with one another in the presence of sunlight to form ozone. NO_x can also be a precursor to PM_{10} and $PM_{2.5}$.

Because NO_x and ROG are ozone precursors, the health effects associated with ozone (as discussed above) are also indirect health effects associated with significant levels of NO_x and ROG emissions.

2.2.2 - Particulate Matter (PM_{10} and $PM_{2.5}$)

Particulate matter (PM) is the term for a mixture of solid particles and liquid droplets found in the air. Some particles, such as dust, dirt, soot, or smoke, are large or dark enough to be seen with the naked eye. Others are so small they can only be detected using an electron microscope.

Particle pollution includes “inhalable coarse particles,” with diameters larger than 2.5 micrometers and smaller than 10 micrometers and “fine particles,” with diameters that are 2.5 micrometers and smaller. For reference, $PM_{2.5}$ is approximately one-thirtieth the size of the average human hair.

These particles come in many sizes and shapes and can be made up of hundreds of different chemicals. Some particles, known as primary particles, are emitted directly from a source, such as construction sites, unpaved roads, fields, smokestacks, or fires. Others form in complicated reactions in the atmosphere of chemicals such as sulfur dioxides and nitrogen oxides that are emitted from power plants, industries, and automobiles. These particles, known as secondary particles, make up most of the fine particle pollution in the country.

Particle exposure can lead to a variety of health effects. For example, numerous studies link particle levels to increased hospital admissions and emergency room visits—and even to death from heart or lung diseases. Both long- and short-term particle exposures have been linked to health problems. Long-term exposures, such as those experienced by people living for many years in areas with high particle levels, have been associated with problems such as reduced lung function and the development of chronic bronchitis, and even premature death. Short-term exposures to particles (hours or days) can aggravate lung disease, causing asthma attacks and acute bronchitis, and may increase susceptibility to respiratory infections. In people with heart disease, short-term exposures have been linked to heart attacks and arrhythmias. Healthy children and adults have not been reported to suffer serious effects from short-term exposures, although they may experience temporary minor irritation when particle levels are elevated.

In 2005, BAAQMD released a Staff Report (BAAQMD 2005) that analyzes the sources of PM in the Bay Area. Based on 2000–2003 ambient air monitoring data, BAAQMD and CARB estimated that the $PM_{2.5}$ fraction of total PM accounted for approximately 60 percent of PM_{10} during the winter and approximately 45 percent during the rest of the year. On days when the PM standards are exceeded, $PM_{2.5}$ can account for as much as 90 percent of PM_{10}. On an annual basis, CARB estimated that $PM_{2.5}$ constituted approximately 50 percent of the PM_{10} levels.

Based on the inventory data, BAAQMD has determined that combustion activities such as residential woodburning, construction/demolition activities, road dust, and emissions from on- and off-road engines were identified as significant sources of PM_{10} emissions in the Bay Area. However, while the inventory was helpful in determining potential PM_{10} sources in the region, it did not provide the full picture of the makeup of the region’s PM. The nature of particulates is that larger, coarser particles tend to settle out of the air closer to their emission source, while smaller particles, such as the size of $PM_{2.5}$, tend to remain suspended in the air longer and travel further.

BAAQMD’s analysis showed that, for annual average $PM_{2.5}$, the largest source categories are on- and off-road motor vehicle exhaust and carbon from cooking and woodburning activities. These categories include both directly emitted PM and secondary PM, such as ammonium nitrate formed by atmospheric reactions of ammonia with nitrogen oxides from motor vehicles and other combustion sources. Geological dust was found to be a minor component of ambient PM.

Subsequently, it was determined that during the winter, residential wood smoke and cooking were major contributors to ambient PM. Combustion $PM_{2.5}$, which includes vehicle exhaust, was the second major component of $PM_{2.5}$ and a significant component of PM_{10}. Ammonium nitrate was also a principal component of ambient PM. Road dust and other dust-producing activities also contributed to ambient PM_{10} but not significantly to $PM_{2.5}$, and they had a more local impact.

2.2.3 - Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless gas that is formed when carbon in fuel is not burned completely. It is a component of motor vehicle exhaust, which contributes about 56 percent of all CO emissions nationwide. Other non-road engines and vehicles (such as construction equipment and boats) contribute about 22 percent of all CO emissions nationwide. Higher levels of CO generally occur in areas with heavy traffic congestion. In cities, 85 to 95 percent of all CO emissions may come from motor vehicle exhaust. Other sources of CO emissions include industrial processes (such as metals processing and chemical manufacturing), residential woodburning, and natural sources such as forest fires. Woodstoves, gas stoves, cigarette smoke, and unvented gas and kerosene space heaters are sources of CO indoors. The highest levels of CO in the outside air typically occur during the colder months of the year when inversion conditions are more frequent. The air pollution becomes trapped near the ground beneath a layer of warm air.

CO is a public health concern because it combines readily with hemoglobin, reducing the amount of oxygen transported in the bloodstream. The health threat from lower levels of CO is most serious for those who suffer from such heart-related diseases as angina, clogged arteries, or congestive heart failure. For a person with heart disease, a single exposure to CO at low levels may cause chest pain and reduce that person’s ability to exercise; repeated exposures may contribute to other cardiovascular effects. High levels of CO can affect even healthy people. People who breathe high levels of CO can develop vision problems, reduced ability to work or learn, reduced manual dexterity, and difficulty performing complex tasks. At extremely high levels, CO is poisonous and can cause death.

Motor vehicles are the dominant source of CO emissions in most areas. CO is described as having only a local influence because it dissipates quickly. High CO levels develop primarily during winter, when periods of light winds combine with the formation of ground-level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Because CO is a product of incomplete combustion, motor vehicles exhibit increased CO emission rates at low air temperatures. High CO concentrations occur in areas of limited geographic size sometimes referred to as hot spots. Since CO concentrations are strongly associated with motor vehicle emissions, high CO concentrations generally occur in the immediate vicinity of roadways with high traffic volumes and traffic congestion, active parking lots, and in automobile tunnels. Areas adjacent to heavily traveled and congested intersections are particularly susceptible to high CO concentrations.

2.2.4 - Other Criteria Pollutants

The standards for the other criteria pollutants are either being met or are unclassified in Contra Costa County, and the latest pollutant trends suggest that these standards will not be exceeded in the foreseeable future.

2.2.5 - Other pollutants of concern

Toxic Air Contaminants

In addition to the criteria pollutants listed above, Toxic Air Contaminants (TACs) are another group of pollutants of concern. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Cars and trucks release at least forty different toxic air contaminants. The most important, in terms of health risk, are diesel particulates, benzene, formaldehyde, 1,3-butadiene, and acetaldehyde. Public exposure to TACs can result from emissions from normal operations as well as from accidental releases. Health effects of TACs include cancer, birth defects, neurological damage, and death.

Toxic air contaminants are less pervasive in the urban atmosphere than the criteria air pollutants but are linked to short-term (acute) or long-term (chronic or carcinogenic) adverse human health effects. There are hundreds of different types of toxic air contaminants, with varying degrees of toxicity. Sources of toxic air contaminants include industrial processes, commercial operations (e.g., gasoline stations and dry cleaners), and motor vehicle exhaust.

According to the 2005 California Almanac of Emissions and Air Quality (CARB 2005), the majority of the estimated health risk from TACs can be attributed to relatively few compounds, the most important of which is diesel particulate matter (DPM). DPM is a subset of $PM_{2.5}$ because the size of diesel particles are typically 2.5 microns and smaller. The identification of DPM as a toxic air contaminant in 1998 led CARB to adopt the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-fueled Engines and Vehicles (Plan) in September 2000. The Plan’s goals are a 75-percent reduction in DPM by 2010 and an 85-percent reduction by 2020 from the 2000 baseline. Diesel engines emit a complex mixture of air pollutants, composed of gaseous and solid material. The visible emissions in diesel exhaust—particulate matter or PM—include carbon particles or “soot.” Diesel exhaust also contains a variety of harmful gases and over 40 other cancer-causing substances. California’s identification of DPM as a toxic air contaminant was based on its potential to cause cancer, premature deaths, and other health problems. Exposure to DPM is a health hazard, particularly to children whose lungs are still developing and to the elderly who may have other serious health problems. Overall, diesel engine emissions are responsible for the majority of California’s potential airborne cancer risk from combustion sources (CARB 2000).

Asbestos

Asbestos is the name given to a number of naturally occurring fibrous silicate minerals that have been mined for their useful properties such as thermal insulation, chemical and thermal stability, and high tensile strength. The three most common types of asbestos are chrysotile, amosite, and crocidolite. Chrysotile, also known as white asbestos, is the most common type of asbestos found in buildings. Chrysotile makes up approximately 90–95 percent of all asbestos contained in buildings in the United States.

Project construction sometimes requires the demolition of existing buildings where construction occurs. Buildings often include materials containing asbestos. Most demolitions and many renovations are subject to an asbestos inspection prior to start of activity. The demolition, renovation, or removal of asbestos-containing building materials is subject to the limitations of the National Emissions Standards for Hazardous Air Pollutants (NESHAP) regulations as listed in the Code of Federal Regulations requiring notification, inspection, and compliance with local air district regulations (in this case, BAAQMD Regulation 11, Rule 2: Hazardous Materials; Asbestos Demolition, Renovation and Manufacturing).

In addition, asbestos is found in a natural state. Exposure and disturbance of rock and soil that naturally contain asbestos can result in the release of fibers to the air and consequent exposure to the public. Asbestos most commonly occurs in ultramafic rock that has undergone partial or complete alteration to serpentine rock (serpentinite) and often contains chrysotile asbestos. In addition, another form of asbestos, tremolite, can be found associated with ultramafic rock, particularly near faults. Sources of asbestos emissions include unpaved roads or driveways surfaced with ultramafic rock, construction activities in ultramafic rock deposits, or rock quarrying activities where ultramafic rock is present.

To address some of the health concerns associated with exposure to asbestos from these activities, CARB has adopted two Airborne Toxic Control Measures (ATCMs). CARB has an ATCM for construction, grading, quarrying, and surface mining operations requiring the implementation of mitigation measures to minimize emissions of asbestos-laden dust. This ATCM applies to road construction and maintenance, construction and grading operations, and quarries and surface mines when the activity occurs in an area where naturally occurring asbestos is likely to be found. Areas are subject to the regulation if they are identified on maps published by the Department of Conservation as ultramafic rock units or if the APCO or owner/operator has knowledge of the presence of ultramafic rock, serpentine, or NOA on the site. The ATCM also applies if ultramafic rock, serpentine, or asbestos is discovered during any operation or activity.

In addition, CARB has an ATCM for surfacing applications. This ATCM applies to any person who produces, sells, supplies, offers for sale or supply, uses, applies, or transports any (1) aggregate material extracted from property where any portion of the property is located in a geographic ultramafic rock unit or (2) aggregate material extracted from property that is NOT located in a geographic ultramafic rock unit, if the material has been evaluated at the request of the Air Pollution Control Officer (APCO) and has been determined to be ultramafic rock or serpentine; tested at the request of the APCO and determined to have an asbestos content of 0.25 percent or greater; or determined by the owner/operator of a facility to be ultramafic rock, serpentine, or material that has an asbestos content of 0.25 percent or greater. The ATCM prohibits person from using, applying, selling, supplying, or offering for sale or supply any restricted material for surfacing unless it has been tested and determined to have an asbestos content that is less than 0.25 percent.

2.2.6 - Greenhouse Gases

Constituent gases of the Earth's atmosphere called atmospheric greenhouse gases (GHG) play a critical role in the Earth's radiation budget by trapping infrared radiation emitted from the Earth's surface, which would otherwise have escaped into space. Prominent GHG contributing to this process include carbon dioxide (CO_2), methane (CH_4), ozone, water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs). This phenomenon, known as the "Greenhouse Effect," is responsible for maintaining a habitable climate. Anthropogenic emissions of these GHG in excess of natural ambient concentrations are responsible for the enhancement of the Greenhouse Effect and have led to a trend of unnatural warming of the Earth's natural climate, known as global warming or climate change. Emissions of these gases that induce global warming are attributable to human activities associated with industrial/manufacturing, utilities, transportation, residential, and agricultural sectors (CEC 2006a). Transportation is responsible for 41 percent of the State's GHG emissions, followed by electricity generation (CEC 2006a). Emissions of CO_2 and NO_x are by-products of fossil fuel combustion. Methane, a potent GHG, results from off-gassing associated with agricultural practices and landfills. Sinks of CO_2 include uptake by vegetation and dissolution into the ocean.

Global warming is a global problem, and GHGs are global pollutants, unlike criteria air pollutants and TACs, which are pollutants of regional and local concern. Worldwide, California is the 12^{th} to 16^{th} largest emitter of CO_2 and is responsible for approximately 2 percent of the world's CO_2 emissions (CEC 2006a, 2006b). In 2004, California produced 492 million gross metric tons of carbon dioxide-equivalent (CEC 2006a).

Various local and statewide initiatives to reduce the State's contribution to GHG emissions have raised awareness that, even though the possible outcomes and feedback mechanisms associated with climate change are not yet fully understood, global warming is already upon us, and the potential for environmental, social, and economic disaster over the long term is great. Cooperation on a global scale will be required to reduce GHG emissions to a level that will slow the warming trend, and the direct air quality impact of increasing GHG emissions into the global system is incrementally cumulative.

In September 2006, California's governor, Arnold Schwarzenegger, signed Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006. AB 32 established regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide

GHG emissions, and it is the first of its kind worldwide (ARB 2006b). AB 32 applies to major stationary sources of emissions only but acknowledges the urgency of this potential threat to the environment.

At the time of writing, no air districts within California, including BAAQMD, have a recommended emission threshold for determining significance associated with GHGs from development projects.

Direct and Indirect Aerosol Effects

Aerosols, including particulate matter, reflect sunlight back to space. As attainment designations for particulate matter are met and fewer particulate matter emissions occur, the cooling effect of anthropogenic aerosols would be reduced, and, instead, the greenhouse effect would be further enhanced. Similarly, aerosols act as cloud condensation nuclei to aid in cloud formation and increase cloud lifetime. Clouds efficiently reflect radiation back to space.

The indirect effect of aerosols on clouds and precipitation efficiency would be reduced, amplifying the greenhouse effect again.

The Cloud Effect

As global temperature rises, the ability of the air to hold moisture increases, and facilitation of cloud formation occurs. If the increase in cloud cover occurs at low or middle altitudes, resulting in clouds with greater liquid water path such as stratus or cumulus clouds, more radiation would be reflected back to space, resulting in a negative feedback, wherein the side effect of global warming acts to balance itself. If cloud formation occurs at higher altitudes in the form of cirrus clouds, these clouds actually allow more light to pass through than they reflect and, ultimately, act as GHG themselves, resulting in a positive feedback wherein the side effect of global warming acts to enhance the process. This feedback mechanism, known as the Cloud Effect, is poorly understood.

Other Feedback Mechanisms

As global temperature continues to rise, methane gas, which is trapped in permafrost, would be released into the atmosphere. Methane is approximately 20 times as efficient a GHG as CO_2. This phenomenon would accelerate and enhance the warming trend. As polar and sea ice extent continues to diminish, the Earth's albedo, or reflectivity, would decrease simultaneously. More incoming solar radiation would be absorbed by the Earth rather than being reflected back to space, in turn, further enhancing the Greenhouse Effect and associated global warming. These and other competing feedback mechanisms are still in the process of being coupled and forecast by the scientific community. It is not known at this time how the ultimate balance between all the variables will be equated to a particular temperature increment. Regardless, there is no longer debate within the scientific community that anthropogenic GHG emissions are linked to a trajectory of unnatural warming of the planet.

2.3 - Physical Setting

2.3.1 - Local Climate

The project is located in the City of San Ramon in Contra Costa County. This region is located within the Bay Area Air Basin (Basin). Regional and local air quality is impacted by dominant airflows, topography, atmospheric inversions, location, season, and time of day.

Large Scale Influences

A semi-permanent, high-pressure area centered over the northeastern Pacific Ocean dominates the summer climate of the West Coast. Because this high-pressure cell is quite persistent, storms rarely affect the California coast during the summer. Thus, the conditions that persist along the coast of California during summer are a northwesterly airflow and negligible precipitation. A thermal low-pressure area from the Sonoran-Mojave Desert also causes air to flow onshore over the San Francisco Bay Area much of the summer.

The steady northwesterly flow around the eastern edge of the Pacific high-pressure cell exerts stress on the ocean surface along the west coast. This induces upwelling of cold water from below. Upwelling produces a band of cold water off San Francisco approximately 80 miles wide. During July, the surface waters off San Francisco are 3 degrees Fahrenheit (°F) cooler than those off Vancouver, more than 700 miles farther north. Air approaching the California coast, already cool and moisture-laden from its long trajectory over the Pacific, is further cooled as it flows across this cold bank of water near the coast, thus accentuating the temperature contrast across the coastline. This cooling is often sufficient to produce condensation—a high incidence of fog and stratus clouds along the Northern California coast in summer.

In winter, the Pacific High weakens and shifts southward, upwelling ceases, and winter storms become frequent. Almost all of the Bay Area’s annual precipitation takes place in the November through April period. During the winter rainy periods, inversions are weak or nonexistent, winds are often moderate, and air pollution potential is very low. During some periods in winter when the Pacific high becomes dominant, inversions become strong and often are surface-based; winds are light and pollution potential is high. These periods are characterized by winds that flow out of the Central Valley into the Bay Area.

Topography

The San Francisco Bay Area is characterized by complex terrain consisting of coastal mountain ranges, inland valleys, and bays. Elevations of 1,500 feet are common in the higher terrain of this area. Normal wind flow over the area is distorted in the lowest levels. This is particularly true when the air mass is stable and the wind velocity is not strong. With stronger winds and unstable air masses moving over the area, this distortion is reduced. The distortion is greatest when low-level inversions are present with the surface air beneath the inversion, flowing independently of the air above the inversion. This latter condition is very common in the summer, the surface air mass being the sea breeze.

Winds

In summer, the northwesterly winds to the west of the Pacific coastline are drawn into the interior through the Golden Gate and over the lower portions of the San Francisco Peninsula. Immediately to the south of Mount Tamalpais, the northwesterly winds accelerate considerably and come more nearly from the west as they stream through the Golden Gate. This channeling of the flow through the Golden Gate produces a jet that sweeps eastward but widens downstream producing southwesterly winds at Berkeley and northwesterly winds at San Jose; a branch curves eastward through the Carquinez Strait and into the Central Valley. Wind speeds may be locally strong in regions where air is channeled through a narrow opening such as the Carquinez Strait, the Golden Gate, or San Bruno Gap. For example, the average wind speed at San Francisco International Airport from 3 a.m. to 4 p.m. in July is about 20 miles per hour (mph), compared with only about 8 mph at San Jose and less than 7 mph at the Farallon Islands.

The sea breeze between the coast and the Central Valley commences near the surface along the coast in late morning or early afternoon; it may be first observed only through the Golden Gate. Later in the day, the layer deepens and intensifies while spreading inland. As the breeze intensifies and deepens, it flows over the lower hills farther south along the Peninsula. This process frequently can be observed as a bank of stratus clouds “rolling over” the coastal hills on the west side of the Bay. The depth of the sea breeze depends in large part upon the height and strength of the inversion. The generally low elevation of this stable layer of air prevents marine air from flowing over the coastal hills. It is unusual for the summer sea breeze to flow over terrain exceeding 2000 feet in elevation.

In winter, the Bay Area experiences periods of storminess and moderate-to-strong winds and periods of stagnation with very light winds. Winter stagnation episodes are characterized by outflow from the Central Valley, nighttime drainage flows in coastal valleys, weak onshore flows in the afternoon, and otherwise light and variable winds.

Temperature

In summer, the distribution of temperature near the surface over the Bay Area is determined in large part by the effect of differential heating between land and water surfaces. This process produces a large-scale gradient between the coast and the Central Valley, as well as small-scale, local gradients along the shorelines of the ocean and bays. The temperature contrast between coastal ocean water and land surfaces 15 to 20 miles inland reaches 35°F or more on many summer afternoons. At night, this contrast usually decreases to less than 10°F.

The winter mean temperature maxima and minima reverse the summer relationship in that daytime variations are small while mean minimum (nighttime) temperatures show large differences and strong gradients. The moderating effect of the ocean influences warmer minimums along the coast and penetrating the Bay. Coldest temperatures are in the sheltered valleys, implying strong radiation inversions and very limited vertical diffusion. An anomaly of warmer temperatures in the Santa Clara Valley over San Jose is clearly an urban "heat island" effect, most pronounced on winter nights. Such heat islands are proportional to structure density and appear over San Francisco and Oakland.

Inversions

A primary factor in air quality is the mixing depth (i.e., the vertical dimension available for dilution of contaminant sources near the ground). Over the Bay Area, the frequent occurrence of temperature inversions limits mixing depth and, consequently, limits the availability of air for dilution. A temperature inversion may be described as a layer of warmer air over cooler air.

On most days, higher altitudes mean lower air temperatures. This is because most of the sun's energy is converted to sensible heat at the ground, which in turn warms the air at the surface. The warm air rises in the atmosphere, where it expands and cools. Sometimes, however, the temperature of air actually increases with height. This condition is known as temperature inversion, because the temperature profile of the atmosphere is inverted from its usual state. There are two major types of temperature inversion: surface inversions, which occur near the Earth's surface, and aloft inversions, which occur higher above the ground than surface inversions. Surface inversions are the most important in the study of air quality.

For the most part, surface inversion patterns correlate with seasonality. The strong inversions typical of summer are formed by subsidence, the heating of downward-moving air in the high-pressure anticyclone over the western Pacific. The surface inversions typical of winter are formed by radiation as air is cooled in contact with the Earth's cold surface at night. While these seasonal correlations are most prevalent, both inversion mechanisms may operate at any time of the year. At times, surface inversions formed by radiational cooling may reinforce the subsidence inversion aloft, particularly in fall and winter. The thick, strong inversion resulting in this case is especially effective in trapping pollutants.

The vertical temperature structure over the Bay Area is taken by the National Weather Service (NWS) twice daily, at 4 a.m. and 4 p.m., at Oakland International Airport. NWS reports that the inversion types found vary widely in seasonal patterns and over a 24-hour period. Localized inversion variations resulting from the numerous terrain types within the Bay Area have also been observed.

In the morning, the seasonal variations are most dramatic. From June through September, there are only two days per year, on average, with no inversion below 5,000 feet. March and April have fewer morning inversions. The occurrence of surface inversions is highest from October through January, when the characteristic radiation inversion predominates. A wide cluster of cases between 500 to 2,500 feet dominates from May through September, when the summer subsidence inversion over the marine layer dominates. There is substantial day-to-day variability in the depth of the marine layer.

In the afternoon data, two differences from the morning data are most striking and significant. First is the frequent disappearance of the surface radiation inversion that dominates the winter nights. In these months, a surface inversion observed in the morning persists through the afternoon less than 20 percent of the time. However, a corresponding afternoon increase may be noted in the cases from 500 to 2,500 feet. Thus, the inversion is frequently raised and perhaps weakened, but not destroyed. Second is the afternoon lowering of the marine inversion that dominates the summer months. In July and August, the afternoon inversions are frequently in the 500- to 1,000-foot interval, compared with the 1,000- to 1,500-foot interval in the morning.

Precipitation

Moderately wet winters and dry summers characterize the San Francisco Bay Area climate. Winter rains (December through March) account for about 75 percent of the average annual rainfall; about 90 percent of the annual total rainfall is received in the November–April period; and between 15 June15 and September 22, normal rainfall is typically less than 0.10 inch.

Annual precipitation amounts show great differences in short distances. Annual totals exceed 40 inches in the mountains and are less than 15 inches in the sheltered or “shadowed” valleys. The frequency of winter rain is more uniform, however, with 10 days per month (December through March) being typical.

During rainy periods, ventilation and vertical mixing are usually high; consequently, pollution levels are low. However, there are frequent winter dry periods lasting over a week. It is during some of these periods that CO and particulate pollution episodes develop.

Climate in the Diablo and San Ramon Valleys

In the Bay Area, the California Coast Range splits into a western and eastern range, with the San Francisco Bay between the two ranges. East of the eastern Coast Range lies the Diablo and San Ramon valleys, which have a northwest to southeast orientation. The northern portion is known as Diablo Valley and the southern portion as San Ramon Valley. The east side of the valleys is bordered by the Black Diamond Hills and Mt Diablo.

The Diablo Valley is a broad valley, approximately 5 miles wide and 10 miles long. The Carquinez Strait is at its north end; in the south, it tapers into the San Ramon Valley. Major cities in the Diablo Valley are Concord and Walnut Creek. Martinez at the north end is better characterized by the Carquinez Strait region.

San Ramon Valley continues south from the Diablo Valley, extending from south of Walnut Creek to Dublin. The valley is long and narrow, approximately 12 miles long and 1 mile wide. At its southern end, it opens to the Amador Valley. Its major towns are Danville and San Ramon.

The Coast Range on the west side of these valleys is 1,500 to 2,000 feet high. This is sufficiently high to block much of the marine air from reaching the valleys. During the daytime, there are two weakly predominant flow patterns: up-valley flow and westerly flow across the lower elevations of the Coast Range. On clear nights, a surface inversion sets up and separates the surface flow from the upper layer flow. When this happens, the terrain channels the flow down-valley toward the Carquinez Straits. This down-valley drainage pattern can be observed all the way to Martinez at the end of the valley.

Wind speeds in these valleys rank as some of the lowest in the Bay Area. For example, in the middle of the Diablo Valley, the District station in Concord reports annual average wind speeds of 4.7 mph, and Danville in the middle of the San Ramon Valley reports annual average wind speeds of 5 mph. However, winds can pick up in the afternoon near the town of San Ramon because it is located at the eastern end of the Crow Canyon gap. Through this gap, polluted air from cities near the bay is able to travel across Hayward to the valley during the summer months.

Air temperatures are cooler in the winter and warmer in the summer because these valleys are further from the moderating effect of large water bodies and because the Coast Range blocks marine air flow. In the Diablo Valley during the winter, Concord records daily maximum temperatures in the mid 50s. During the summer, average daily maximum temperatures are in the high 80s to 90 degrees. Average minimum temperatures in winter are in the low- to mid-40s. Temperatures in the San Ramon Valley would be similar to temperatures in Concord.

These valleys rarely experience fog during the summer. In the winter, however, tule fogs are common at night. This phenomenon is named after the tule grass wetlands (*tulares*) of the Central Valley. Tule fogs form on cold, clear nights when winds are light and there is abundant moisture on the ground, as happens after a rainstorm. Alternatively, the tule fog can be advected from the Central Valley through the Carquinez Strait and Livermore Valley. These fogs usually burn off during the day but occasionally can last for a week or two before being dissipated by the next storm.

Shielded by the Coast Range to the west, rainfall amounts in the Diablo Valley are relatively low. For example, Martinez in the north reports an annual average of 18.5 inches, while Walnut Creek reports 19 inches. Rainfall in the San Ramon Valley is expected to be similar because of the similar orientation of the terrain.

2.3.2 - Local Air Quality

Emission Sources

California is a diverse state with many sources of air pollution. To estimate the sources and quantities of pollution, CARB, in cooperation with local air districts and industry, maintains an inventory of California emission sources. Sources are subdivided into four major emission categories: stationary sources, area-wide sources, mobile sources, and natural sources. Stationary source emissions are based on estimates made by facility operators and local air districts. Emissions from specific facilities can be identified by name and location. CARB and local air district staffs estimate area-wide emissions. Emissions from area-wide sources may be either from small individual sources, such as residential fireplaces, or from widely distributed sources that cannot be tied to a single location, such as consumer products and dust from unpaved roads. CARB staff estimates mobile source emissions with assistance from districts and other government agencies. Mobile sources include on-road cars, trucks, and buses and other sources such as boats, off-road recreational vehicles, aircraft, and trains. CARB staff and the air districts also estimate natural sources. These sources include geogenic (e.g., petroleum seeps) and biogenic (vegetation) sources, and wildfires.

Table 2 summarizes estimated 2005 emissions of key criteria air pollutants from major categories of air pollutant sources. For each pollutant, estimated emissions are presented for Contra Costa County. No further spatial refinement is available (CARB, 2007).

Table 2: Contra Costa County 2005 Emissions Inventory (tons/day)

Emission Category	ROG	CO	NO_x	PM_{10}	$PM_{2.5}$
Fuel combustion	1.95	14.36	21.90	3.27	3.24
Waste disposal	0.44	0.01	0.11	0	0
Cleaning and surface coatings	2.87	0	0	0	0
Petroleum production and marketing	14.24	12.30	0.72	0.59	0.54
Industrial processes	3.11	0.94	2.26	1.94	1.33
Solvent evaporation	10.73	0	0	0	0
Miscellaneous processes	2.37	25.00	2.89	23.97	7.80
On-road motor vehicles	22.51	224.95	39.48	1.39	0.93
Other mobile sources	8.91	68.98	27.39	1.82	1.64
Natural sources	11.35	0.12	0	0.01	0.01
TOTAL	**78.48**	**346.66**	**94.75**	**32.99**	**15.49**

Notes:
All values in tons per day. 2005 is estimated from a base year inventory for 2004 based on growth and control factors available from CARB. The sum of values may not equal total shown, due to rounding.
Source: CARB, 2007.

Contra Costa County is similar to many other portions of California and the United States in general in that a large portion of the CO emissions comes from on-road mobile sources (65 percent), with the majority coming from passenger cars and trucks. NO_x is also dominated by on-road mobile sources but to a lesser degree, 42 percent come from passenger cars and trucks; but heavy-duty diesel trucks supply a larger portion (26 percent) of that on-road total. Other significant NO_x sources in Contra Costa County include off-road equipment primarily from construction (19 percent) and petroleum refining combustion (13 percent). In Contra Costa County, almost 30 percent of the ROG emissions come from on-road motor vehicles, 15 percent from biogenic sources, and 9 percent from consumer products. PM_{10} primarily comes from an emissions category called miscellaneous processes, which includes a variety of subcategories. In terms of Contra Costa County's emissions, these subcategories are primarily paved road dust, construction and demolition, and residential fuel combustion. Even though the majority of $PM_{2.5}$ also comes from the same subcategories, another significant source is combustion (21 percent), primarily from petroleum refineries.

Monitoring Data

Meteorology acts on the emissions released into the atmosphere to produce pollutant concentrations. These airborne pollutant concentrations are measured throughout California at air quality monitoring sites. CARB operates a statewide network of monitors. Data from this network are supplemented with data collected by local air districts, other public agencies, and private contractors. There are more than 250 criteria pollutant monitoring sites in California. Each year, more than ten million air quality measurements from all of these sites are collected and stored in a comprehensive air quality database maintained by CARB.

Existing levels of ambient air quality and historical trends and projections of air quality in the project area are best documented from measurements made near the project site. The air quality monitoring station closest to the site is located in Hayward on La Mesa Drive, approximately 8 miles south-southwest of the project. The only pollutant measured at this station is ozone. The nearest monitoring station measuring particulate matter, carbon monoxide, and nitrogen dioxide is located in Livermore on Rincon Avenue, approximately 11 miles east-southeast of the project. Table 3 summarizes 2004–2006 published monitoring data. The data shows that no federal standards were violated at any of the nearest air monitoring stations. The State standard for ozone during a 1-hour average was violated only in year 2006 at the Hayward station, and the State standard for PM_{10} during a 24-hour period and as an annual average was violated only in 2006. The data shows that no exceedances of State or federal standards were observed in 2004 and 2005.

Table 3: Ambient Air Monitoring Data (2004–2006)

Air Pollutant, Averaging Time (Units)	2004	2005	2006
Ozone (Hayward)			
Max 1 Hour (ppm) Days > CAAQS (0.09 ppm)	0.088 0	0.093 0	**0.101** 2
Max 8 Hour (ppm) Days > CAAQS (0.07 ppm) Days > NAAQS (0.08 ppm)	0.070 ND 0	0.070 ND 0	0.071 ND 0
Particulate Matter (PM_{10}) (Livermore)			
Mean (µg/m^3)	20.0	18.8	**21.8**
24 Hour (µg/m^3) Days > CAAQS (50 µg/m^3) Days > NAAQS (150 µg/m^3)	48.8 0 0	49.4 0 0	**69.2** 3 0

Table 3 (Cont.): Ambient Air Monitoring Data (2004–2006)

Air Pollutant, Averaging Time (Units)	2004	2005	2006
Particulate Matter ($PM_{2.5}$) (Livermore)			
Mean (µg/m^3)	10.2	9.0	ID
24 Hour (µg/m^3) Days > NAAQS (35 µg/m^3)	40.8 0	32.1 0	50.8 0
Carbon Monoxide (Livermore)			
Max 8 Hour (ppm) Days > CAAQS (9.0 ppm) Days > NAAQS (9.0 ppm)	1.81 0 0	1.79 0 0	1.79 0 0
Nitrogen Dioxide (Livermore)			
Mean (ppm)	0.014	0.014	0.014
Max 1 Hour (ppm) Days > CAAQS (0.25 ppm)	0.063 0	0.072 0	0.064 0

> = exceed
µg/m^3 = micrograms per cubic meter
ND = no data
CAAQS = California Ambient Air Quality Standard
Mean = Annual Arithmetic Mean
ppm = parts per million
ID = insufficient data
max = maximum
NAAQS = National Ambient Air Quality Standard
Source: CARB Air Quality Data/Statistics/Top 4 Summary, May 7, 2007.

2.3.3 - Sensitive Receptors

The location of a development project is a major factor in determining whether it will result in localized air quality impacts. The potential for adverse air quality impacts increases as the distance between the source of emissions and members of the public decreases. Impacts on sensitive receptors are of particular concern. For purposes of CEQA, the BAAQMD identifies sensitive receptors as facilities that house or attract children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Hospitals, schools, convalescent facilities, and residential areas are examples of sensitive receptors. Commercial and industrial facilities are not included in the definition because employees do not typically remain onsite for 24 hours. However, when assessing the impact of pollutants with 1-hour or 8-hour standards (such as nitrogen dioxide and carbon monoxide), commercial and/or industrial facilities would be considered sensitive receptors for those purposes.

The nearest sensitive receptors to the proposed project are listed below:

- Residence Inn: 1071 Market Place, approximately 180 feet east of Parcel 1A
- Reflections Condominiums: 205 Reflections Drive, approximately 210 feet east of Parcel 1A
- Iron Horse Middle School: 12601 Alcosta Boulevard, approximately 2,000 feet northeast of Parcel 3A

2.3.4 - Attainment Status

Air basins where ambient air quality standards are exceeded are referred to as "nonattainment" areas. If standards are met, the area is designated as an "attainment" area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered "unclassified." National nonattainment areas are considered severe, serious, or moderate as a function of deviation from standards.

As shown in Table 4, the Bay Area is in nonattainment for the national and State 1-hour ozone standard and the State PM_{10} standard. As shown in the table, the Bay Area is in nonattainment for the State 1-hour ozone standard, national 8-hour ozone standard, State 24-hour and annual PM_{10} standards, and the State annual $PM_{2.5}$ standard. This means that the area experiences poor air quality at times.

Table 4: Bay Area Air Basin Attainment Status

Pollutant	Averaging Time	State Status	National Status
Ozone	1-hour	Nonattainment	Not Applicable [1]
	8-hour	Unclassified	Nonattainment [2]
Carbon monoxide	1-hour and 8-hour	Attainment	Attainment [3]
Nitrogen dioxide	1-hour	Attainment	No federal standard
	Annual	No State standard	Attainment
Sulfur dioxide	24-hour; 1-hour	Attainment	Attainment
PM_{10}	24-hour	Nonattainment	Unclassified
	Annual	Nonattainment	No federal standard [4]
$PM_{2.5}$	24-hour	No State standard	Unclassified
	Annual	Nonattainment	Attainment

Notes:
[1] The national 1-hour ozone standard was revoked by EPA on June 15, 2005.
[2] In June 2004, the Bay Area was designated as a marginal nonattainment area of the national 8-hour ozone standard.
[3] In April 1998, the Bay Area was redesignated to attainment for the national 8-hour carbon monoxide standard.
[4] EPA revoked the annual PM_{10} standard on September 21, 2006.
Source: BAAQMD, 2007

SECTION 3: THRESHOLDS OF SIGNIFICANCE

3.1 - CEQA Guidelines

For the purpose of this analysis, the following thresholds of significance, derived from the State CEQA Guidelines (Appendix G) and advisory CEQA thresholds suggested by BAAQMD, have been used to determine whether implementation of the project or alternatives under consideration would result in significant air quality impacts.

Based on Appendix G of the State CEQA Guidelines, an air quality impact is considered significant if implementation of the proposed project or alternatives under consideration would do any of the following. Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan;

b) Violate any air quality standard or contribute substantially to an existing or protected air quality violation;

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);

d) Expose sensitive receptors to substantial pollutant concentrations; or

e) Create objectionable odors affecting a substantial number of people.

CEQA guidelines define a significant effect on the environment as “a substantial, or potentially substantial, adverse change in the environment.” To determine if a proposed project would have a significant impact on air quality, the type, level, and impact of emissions generated by the proposed project must be evaluated. While the final determination of whether or not a project is significant is within the purview of the lead agency pursuant to Section 15064(b) of the State CEQA Guidelines, SCAQMD recommends that its quantitative air pollution thresholds be used to determine the significance of project emissions. If the lead agency finds that the proposed project has the potential to exceed these air pollution thresholds, the project should be considered to have significant air quality impacts.

3.2 - Regional Significance Thresholds

As stated in Appendix G, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the above determinations. These thresholds are primarily based on the BAAQMD CEQA Guidelines (BAAQMD 1999). However, the District is in the process of updating these Guidelines, and, therefore, practical modifications of some of the published thresholds are being recommended in practice (Greg Tholan, May 3, 2007, pers. comm.). Where a difference is recommended, it will be so noted. The BAAQMD suggests that an air quality impact is considered significant if implementation of the proposed project or alternatives under consideration would cause any of the following impacts.

3.2.1 - Construction Impacts

Construction-related emissions are generally short-term in duration but may still cause adverse air quality impacts. The BAAQMD historically considered PM_{10} the pollutant of greatest concern with respect to construction activities. PM_{10} emissions can result from a variety of construction activities, including excavation, grading, demolition, vehicle travel on paved and unpaved surfaces, and vehicle and equipment exhaust. The District is concerned that construction-related emissions can cause substantial increases in localized concentrations of PM_{10} and can lead to adverse health effects, as well as nuisance concerns such as reduced visibility and soiling of exposed surfaces.

Historically, the District had identified a set of feasible PM_{10} control measures for construction activities that were considered the determining factor of significance for construction activities. However, the District is increasingly recognizing the importance PM_{10} and $PM_{2.5}$ from construction activities and the emissions of carbon monoxide and ozone precursors from construction equipment. Therefore, the District no longer recommends that quantification of construction emissions is not necessary.

Since the BAAQMD have not yet officially set specific thresholds of significance for construction activities but would like analyses to assign it greater importance, this report will use the threshold established by the BAAQMD for operational emissions. Therefore, an air quality impact is considered significant if implementation of the proposed project or alternatives under consideration would generate construction-related emissions that exceed 80 lb/day for NO_x, ROG, or PM_{10}.

3.2.2 - Project Operations

For many types of land use development, such as office parks, shopping centers, residential subdivisions and other indirect sources, motor vehicles traveling to and from the projects represent the primary source of air pollutant emissions associated with project operations. Significance thresholds established by the BAAQMD are discussed below and address the impacts of these indirect source emissions on local and regional air quality. Thresholds are also provided for other potential impacts related to project operations, such as odors and toxic air contaminants.

Total Emissions

Total emissions from project operations should be compared to the thresholds provided in Table 5. Total operational emissions evaluated under this threshold should include all emissions from motor vehicle use associated with the project. A project that generates criteria air pollutant emissions in excess of the annual or daily thresholds in Table 5 would be considered to have a significant air quality impact.

Table 5: BAAQMD Operational Significance Thresholds

Pollutant	Operation (pounds per day)
Oxides of nitrogen (NO_x)	80
Reactive organic gases (ROG)	80
Particulate matter (PM_{10})	80
Source: BAAQMD CEQA Guidelines, 1999.	

Local Carbon Monoxide Concentrations

Localized carbon monoxide concentrations should be estimated for projects in which (1) vehicle emissions of CO would exceed 550 pounds per day; (2) project traffic would significantly impact intersections or roadway links operating at Level of Service (LOS) D, E or F or would cause LOS to decline to D, E or F; or (3) project traffic would increase traffic volumes on nearby roadways by 10 percent or more unless the increase in traffic volume is less than 100 vehicles per hour. A project contributing to CO concentrations exceeding the CAAQS of 9 ppm averaged over 8 hours and 20 ppm for 1 hour would be considered to have a significant impact.

Odors

While offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and the District. Any project with the potential to frequently expose members of the public to objectionable odors would be deemed to have a significant impact.

3.2.3 - Greenhouse Gases

The BAAQMD is one of the most progressive air districts in the State concerning GHGs and climate change issues. In 2005, the Bay Area Air District initiated a Climate Protection Program, and on June 1, 2005, the District Board of Directors adopted a resolution establishing a Climate Protection Program, acknowledging the link between climate protection and programs to reduce air pollution in the Bay Area. A central element of the District's climate protection program is the integration of climate protection activities into existing District programs. In addition, the District's climate protection program emphasizes collaboration with ongoing climate protection efforts at the local and State levels, public education and outreach, and technical assistance to cities and counties. In November 2006, the District prepared a District-wide Source Inventory of Bay Area Greenhouse Gas Emissions.

While neither the California Appendix G Guidelines, nor any judicial decision, CEQA regulation, or statute require an evaluation of a project's impact on greenhouse gases, consistent with the public policy rationale underlying AB 32, this report does, in fact, fully analyze the project's impacts on greenhouse gas emissions. As defined under AB 32, greenhouse gas emissions include the following:

carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

Global Warming Potential

Greenhouse gases have varying global warming potential (GWP). The GWP is the potential of a gas or aerosol to trap heat in the atmosphere; it is the "cumulative radiative forcing effects of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to a reference gas." (EPA 2006d) One teragram of carbon dioxide equivalent (Tg CO_2 Eq.) is essentially the emissions of the gas multiplied by the GWP. One teragram is equal to one million metric tons. The carbon dioxide equivalent is a good way to assess emissions because it gives weight to the GWP of the gas. Atmospheric lifetime and GWP of selected gases, summarized in Table 6, shows that GWP ranges from 1 to 23,900.

Table 6: Global Warming Potentials

Greenhouse Gas	Global Warming Potential (100 year time horizon)
Carbon dioxide (CO_2)	1
Methane (CH_4)	21
Nitrous oxide (N_2O)	310
HFC-23	11,700
HFC-134a	1300
HFC-152a	140
PFC: Tetrafluoromethane (CF_4)	6,500
PFC: Hexafluoroethane (C_2F_6)	9,200
Sulfur hexafluoride (SF_6)	23,900
Source: EPA 2006k	

Regarding GHG, the BAAQMD has not identified a significance threshold to use in CEQA documents. Further, it appears that no other air district in California has generated a significance threshold pertaining to GHG. The State has identified statewide emissions in the year 1990 as a goal through adoption of AB 32. If this goal were attained, California would generate less GHG than it does today. It is recognized, though, that there is no simple measure available to determine if a single project would advance toward or away from this goal. Because GHG are global, a project that shifts the location of where someone lives or works, by itself, may or may not contribute new GHG. For example, someone may move from Southern California (and from the South Coast Air Quality Management District) to the project site, and while this would likely increase emissions within the Basin, it is not conclusive that this would result in generation of more GHG globally. In fact, if a person moves from one location, where they have long commutes and a land use pattern that requires substantial energy use, to a project that promotes shorter and fewer vehicle trips, more walking and less energy use, it could be argued that the new project would result in a potential reduction in generation of global GHG.

The California Environmental Protection Agency (CalEPA) Climate Action Team (CAT) developed a report that "proposes a path to achieve the Governor's targets that will build on voluntary actions of California businesses, local government and community actions, and State incentive and regulatory programs" (CAT 2006) needed to reduce activities which contribute to global climate change . There are no adopted thresholds to assess the significance of project impacts. The report indicates that the strategies will reduce California's emissions to the levels proposed in Executive Order S-3-05.

The California State Legislature adopted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires CARB, the State agency charged with regulating statewide air quality, to adopt rules and regulations that by 2020 would achieve a reduction in greenhouse gas emissions equivalent to the statewide inventory levels of 1990. On or before June 30, 2007, CARB is required to publish a list of discrete greenhouse gas emission reduction measures that can be implemented. On April 20, 2007, CARB published its proposed early actions (CARB 2007) that include discrete early action measures, additional greenhouse gas reduction strategies, and criteria and toxic control measures.

The basis for these greenhouse gas reduction goals that California has adopted into law is provided in the United Nations Intergovernmental Panel on Climate Change climate models that predict the climate stabilizing at approximately 2 degrees Celsius rise in average temperatures long-term.

Given this information, it can be argued that the AB 32, Executive Order S-3-05, and the CAT report constitute substantial evidence as defined in CEQA that development projects need to reduce greenhouse gas emissions to the target levels by adopting the reduction measures in order to find that the project's incremental contribution to global climate change impacts are not significant.

If the project is not consistent with those strategies that the Lead Agency deems are feasible, then a project could potentially be deemed to have a significant impact concerning global climate change.

3.2.4 - Cumulative Impacts

The BAAQMD has set the threshold for cumulative significance, as any proposed project that would individually have a significant air quality impact would also be considered to have a significant cumulative air quality impact. Additionally, for any project that does not individually have significant operational air quality impacts, the determination of significant cumulative impact should be based on an evaluation of the consistency of the project with the local general plan and of the general plan with the regional air quality plan.

If a project is proposed in a city or county with a general plan that is consistent with the Clean Air Plan and the project is consistent with that general plan (i.e., it does not require a general plan amendment), then the project will not have a significant cumulative impact (provided, of course, the project does not individually have any significant impacts). No further analysis regarding cumulative impacts is necessary.

In a jurisdiction with a general plan consistent with the Clean Air Plan, a project may be proposed that is not consistent with that general plan because it requires a general plan amendment (GPA). In such instances, the cumulative impact analysis should consider the difference(s) between the project and the original (pre-GPA) land use designation for the site with respect to motor vehicle use and potential land use conflicts. A project would not have a significant cumulative impact if (1) vehicle miles traveled (VMT) from the project would not be greater than the VMT that would be anticipated under the original land use designation and (2) the project would not result in sensitive receptors being close to sources of objectionable odors, toxics, or accidental releases of hazardous materials.

For a project in a city or county with a general plan that is not consistent with the Clean Air Plan, the cumulative impact analysis should consider the combined impacts of the proposed project and past, present, and reasonably anticipated future projects. ("Reasonably anticipated future projects" should include, at a minimum, projects of which the Lead Agency is aware based on applications for permits and other land use entitlements, environmental documents, and discussions with probable future developers.) A project would have a significant cumulative impact if these combined impacts would exceed any of the thresholds established above for project operations. A quantitative analysis of past, present, and future projects would be required as part of this determination. The analysis should also address how the project and past, present, and future projects would influence population and vehicle use projections.

SECTION 4: IMPACT ANALYSIS

This section calculates the expected emissions from the construction and operation of the project as a necessary requisite for assessing the regulatory significance of project emissions on a regional level. It also analyzes areas of concern on a qualitative level where no recognized calculation methodologies exist.

4.1 - Construction Unmitigated Impacts

Short-term impacts will include fugitive dust and other particulate matter, as well as exhaust emissions generated by earthmoving activities and operation of grading equipment during site preparation. Construction emissions are caused by onsite or offsite activities. Onsite emissions principally consist of exhaust emissions (NO_x, SO_x, CO, ROG, PM_{10}, and $PM_{2.5}$) from heavy-duty construction equipment, motor vehicle operation, and fugitive dust (mainly PM_{10}) from disturbed soil. Offsite emissions are caused by motor vehicle exhaust from delivery vehicles, as well as worker traffic, but also include road dust (PM_{10}). Major construction-related activities include the following:

- Grading/clearing, including the excavation
- Excavation and earth moving for infrastructure construction of the utilities, both on and offsite, and dwelling unit foundations and footings
- Building construction
- Asphalt paving of access roads throughout the development
- Application of architectural coatings for things such as dwelling stucco and interior painting

Construction equipment such as scrapers, bulldozers, forklifts, backhoes, water trucks, and industrial saws are expected to be used on the project site and will result in exhaust emissions. During the finishing phase, paving operations and application of architectural coatings will release ROG emissions. Construction emission can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions.

Construction fleet was estimated using a spreadsheet developed by the San Joaquin Valley Unified Air Pollution Control District for their Indirect Source Rule. The project and Reduced Density Option 2 emissions include those from the demolition of the existing building on Bishop Ranch 2. The project’s construction plan is to phase out construction of the projects different parcels over a period of years. The construction timeline is detailed in Table 7. Because the threshold of significance is based on maximum pounds per day (lbs/d) and the construction timeline has overlapping schedules, more than one parcel would be having activity at the same time. Therefore, construction emissions were estimated on a maximum lbs/d for each year of activity.

Table 7: Project Construction Plan

Parcel	Construction Begins	Duration of Construction
Plaza District	Fall 2008	24 month
Bishop Ranch 1A – Phase 1	Mid-2008	14 months
Bishop Ranch 1A – Phase 2	Mid-2009	14 months
Bishop Ranch 1A – Phase 3	Mid-2010	14 months
City Hall & Transit	Mid-2009	18 months
Source: Sunset Development Company 2007		

4.1.1 - Construction Impact from Project

Table 8 summarizes these construction-related emissions (without mitigation) for the proposed project. Only emissions with quantifiable thresholds are presented. The emission estimates were derived from the project description using the CARB URBEMIS Version 8.7 emission model. The URBEMIS data files are provided in Appendix A.

Table 8: Project Construction Emissions (Unmitigated)

Year	Maximum Emissions (lbs/d)			
	ROG	NO_x	CO	PM_{10}
Regional Threshold	**80**	**80**	**550**	**80**
Year 2008	38.2	309.2	285.7	123.0
Significant Impact?	No	**Yes**	No	**Yes**
Year 2009	303.7	339.1	334.8	137.0
Significant Impact?	**Yes**	**Yes**	No	**Yes**
Year 2010	330.2	161.0	270.8	39.4
Significant Impact?	**Yes**	**Yes**	No	**Yes**
Year 2011	101.2	18.0	34.3	0.9
Significant Impact?	**Yes**	No	No	No
Source: Michael Brandman Associates, 2007				

The information shown in Table 8 indicates that for the proposed project, the BAAQMD construction emission thresholds will be exceeded in 2008 for NO_x and PM_{10} emissions; in 2009 and 2010 for ROG, NO_X, and PM_{10} emissions; and in 2011 for ROG emissions only. Therefore, without mitigation, the short-term construction emissions are considered to have a significant impact.

4.1.2 - Construction Impact from Reduced Density Option 1

Table 9 summarizes these construction-related emissions (without mitigation) for the Reduced Density Alternative Option 1. Only emissions with quantifiable thresholds are presented. The emission estimates were derived from the project description using the CARB URBEMIS Version 8.7 emission model. The URBEMIS data files are provided in Appendix A.

Table 9: Reduced Density Option 1 Construction Emissions (Unmitigated)

Year	Maximum Emissions (lbs/d)			
	ROG	NO_x	CO	PM_{10}
Regional Threshold	**80**	**80**	**550**	**80**
Year 2008	11.5	94.1	83.7	35.5
Significant Impact?	No	**Yes**	No	No
Year 2009	115.8	134.6	142.2	50.2
Significant Impact?	**Yes**	**Yes**	No	No
Year 2010	142.8	105.3	131.6	36.2
Significant Impact?	**Yes**	**Yes**	No	No
Year 2011	101.2	18.0	34.3	0.9
Significant Impact?	**Yes**	No	No	No
Source: Michael Brandman Associates, 2007				

The information shown in the above table indicates that for the Reduced Density Alternative Option 1, the BAAQMD construction emission thresholds will be exceeded in 2008 for NO_x and PM_{10} emissions; in 2009 and 2010 for ROG and NO_x emissions; and in 2011 for ROG emissions only. Therefore, without mitigation, the short-term construction emissions are considered to have a significant impact.

4.1.3 - Construction Impact from Reduced Density Option 2

Table 10 summarizes these construction-related emissions (without mitigation) for the Reduced Density Alternative Option 2. Only emissions with quantifiable thresholds are presented. The emission estimates were derived from the project description using the CARB URBEMIS Version 8.7 emission model. The URBEMIS data files are provided in Appendix A.

Table 10: Reduced Density Option 2 Construction Emissions (Unmitigated)

Year	Maximum Emissions (lbs/d)			
	ROG	NO_x	CO	PM_{10}
Regional Threshold	**80**	**80**	**550**	**80**
Year 2008	37.3	282.7	289.8	128.1
Significant Impact?	No	**Yes**	No	**Yes**
Significant Impact?	**Yes**	**Yes**	No	**Yes**
Year 2009	308.0	228.6	244.5	88.1

Table 10 (Cont.): Reduced Density Option 2 Construction Emissions (Unmitigated)

Year	Maximum Emissions (lbs/d)			
	ROG	NO_x	CO	PM_{10}
Year 2010	187.4	55.7	139.2	3.2
Significant Impact?	**Yes**	No	No	No
Source: Michael Brandman Associates, 2007				

The information shown in the above table indicates that for the Reduced Density Alternative Option 2, the BAAQMD construction emission thresholds will be exceeded in 2008 for NO_X emissions; in 2009 for ROG, NO_X, and PM_{10} emissions; and in 2010 for ROG emissions only. Therefore, without mitigation, the short-term construction emissions are considered to have a significant impact.

4.1.4 - Construction Impact from the No Project Alternative

Table 11 summarizes these construction-related emissions (without mitigation) for the No Project Alternative. Only emissions with quantifiable thresholds are presented. The emission estimates were derived from the project description using the CARB URBEMIS Version 8.7 emission model. The URBEMIS data files are provided in Appendix A.

Table 11: No Project Alternative Construction Emissions (Unmitigated)

Year	Maximum Emissions (lbs/d)			
	ROG	NO_x	CO	PM_{10}
Regional Threshold	**80**	**80**	**550**	**80**
Year 2008	10.5	67.7	87.9	40.6
Significant Impact?	No	No	No	No
Year 2009	120.1	24.1	41.8	1.2
Significant Impact?	**Yes**	No	No	No
Source: Michael Brandman Associates, 2007				

The information shown in the above table indicates that for the No Project Alternative, the BAAQMD construction emission thresholds will only be exceeded in 2009 for ROG emissions. Therefore, without mitigation, the short-term construction emissions are considered to have a significant impact.

4.2 - Construction Mitigations

AQC-1 The project owner shall designate an onsite AQCMM who shall be responsible for directing compliance with the following Best Available Control Measures for fugitive dust mitigation during project construction.

AQC-2 For any earthmoving which is more than 100 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100 feet in length in any direction.

AQC-3 For all disturbed surface areas (except completed grading areas), apply dust suppression in a sufficient quantity and frequency to maintain a stabilized surface; any areas that cannot be stabilized, as evidenced by wind-driven dust, must have an application of water at least twice per day to at least 80 percent of the unstabilized area.

AQC-4 For all disturbed surface areas that are completed grading areas, apply water to at least 80 percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind-driven fugitive dust, excluding any areas that are inaccessible because of excessive slope or other safety conditions.

AQC-5 For all inactive disturbed surface areas, apply water to at least 80 percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind-driven fugitive dust, excluding any areas that are inaccessible because of excessive slope or other safety conditions.

AQC-6 For all unpaved roads, water all roads used for any vehicular traffic once daily and restrict vehicle speed to 15 mph.

AQC-7 For all open storage piles, apply water to at least 80 percent of the surface areas of all open storage piles on a daily basis when there is evidence of wind-driven fugitive dust.

AQC-8 To provide track-out control, pave or apply chemical stabilization at sufficient concentration and frequency to maintain a stabilized surface starting from the point of intersection with the public paved surface, and extending for a centerline distance of at least 100 feet and width of at least 20 feet.

AQC-9 Provide rerouting or rapid cleanup of temporary sources of mud and dirt on unpaved roads. In addition, street sweeping of roads adjacent to the project site should be done to reduce fugitive dust from traffic.

AQC-10 During rough grading and construction, access to the site should require an apron to be built into the project site from the adjoining paved roadways. The apron should be paved or have a petroleum-based palliative applied. All petroleum-based palliatives will comply with BAAQMD's Regulation 6, Rule 15.

AQC-11 During rough grading and construction, streets including shoulders adjacent to the project site should be swept at least once per day to reduce fugitive dust from traffic, or as required by governing body, to remove silt which may have accumulated from construction activities.

AQC-12 All diesel-fueled engines used in the construction of the project shall use ultra-low sulfur diesel fuel, which contains no more than 15 ppm of sulfur, or alternative fuels (i.e., reformulated fuels, emulsified fuels, compressed natural gas, or power with electrification). Low sulfur diesel fuel (500 ppm of sulfur content) shall be used only if evidence is obtained and maintained from the fuel supplier(s) that ultra-low sulfur diesel fuel is infeasible. CEQA Public Resource Code Section 21061.1 defines "feasible" as capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors.

AQC-13 To the extent that equipment and technology is available and cost-effective, the contractors are encouraged to use catalyst and filtration technologies, and retrofit existing engines in construction equipment.

AQC-14 Develop a traffic plan to minimize traffic flow interference from construction activities. The plan may include advance public notice of routing, use of public transportation, and satellite parking areas with a shuttle service. Schedule operations affecting traffic for off-peak hours. Minimize obstruction of through-traffic lanes. Provide a flag person to guide traffic properly and ensure safety at construction sites.

4.3 - Construction Impacts with Mitigations

4.3.1 - Construction Impact from Project

Table 12 summarizes the mitigated construction-related emissions for the proposed project. Only emissions with quantifiable thresholds are presented. The emission estimates with mitigations were derived from the project description using the CARB URBEMIS Version 8.7 emission model. The URBEMIS data files are provided in Appendix A.

Table 12: Mitigated Project Construction Emissions

Year	Maximum Emissions (lbs/d)			
	ROG	NO_x	CO	PM_{10}
Regional Threshold	**80**	**80**	**550**	**80**
Year 2008	10.1	228.8	54.2	18.1
Significant Impact?	No	**Yes**	No	No

Table 12 (Cont.): Mitigated Project Construction Emissions

Year	Maximum Emissions (lbs/d)			
	ROG	NO_x	CO	PM_{10}
Year 2009	149.5	232.1	137.2	20.2
Significant Impact?	**Yes**	**Yes**	No	No
Year 2010	164.2	119.4	136.3	7.1
Significant Impact?	**Yes**	**Yes**	No	No
Year 2011	50.7	12.9	19.6	0.3
Significant Impact?	No	No	No	No
Source: Michael Brandman Associates, 2007				

The information shown in Table 12 indicates that for the proposed project, even with all feasible mitigations, the BAAQMD construction emission thresholds will still be exceeded in 2008 for NO_x emissions and in 2009 and 2010 for ROG and NO_X emissions. Therefore, even with mitigation, the short-term construction emissions are still considered to have a significant impact, therefore the impacts from construction emissions are significant and unavoidable.

4.3.2 - Construction Impact from Reduced Density Option 1

Table 13 summarizes the mitigated construction-related emissions for the Reduced Density Alternative – Option 1. Only emissions with quantifiable thresholds are presented. The emission estimates with mitigations were derived from the project description using the CARB URBEMIS Version 8.7 emission model. The URBEMIS data files are provided in Appendix A.

Table 13: Mitigated Reduced Density Option 1 Construction Emissions

Year	Maximum Emissions (lbs/d)			
	ROG	NO_x	CO	PM_{10}
Regional Threshold	**80**	**80**	**550**	**80**
Year 2008	3.6	71.4	19.2	5.3
Significant Impact?	No	No	No	No
Year 2009	54.0	83.6	39.8	7.5
Significant Impact?	No	**Yes**	No	No
Year 2010	69.3	79.8	44.8	5.7
Significant Impact?	No	No	No	No
Year 2011	50.7	12.9	19.6	0.3
Significant Impact?	No	No	No	No
Source: Michael Brandman Associates, 2007				

The information shown in Table 13 indicates that for the Reduced Density Alternative Option 1, even with all feasible mitigations, the BAAQMD construction emission thresholds will still be exceeded in 2009 for NO_x emissions. Therefore, even with mitigation, the short-term construction emissions are still considered to have a significant impact, therefore the impacts from construction emissions are significant and unavoidable.

4.3.3 - Construction Impact from Reduced Density Option 2

Table 14 summarizes the mitigated construction-related emissions for the Reduced Density Alternative – Option 1. Only emissions with quantifiable thresholds are presented. The emission estimates with mitigations were derived from the project description using the CARB URBEMIS Version 8.7 emission model. The URBEMIS data files are provided in Appendix A.

Table 14: Mitigated Reduced Density Option 2 Construction Emissions

Year	Maximum Emissions (lbs/d)			
	ROG	NO_x	CO	PM_{10}
Regional Threshold	**80**	**80**	**550**	**80**
Year 2008	7.6	198.1	46.7	19.6
Significant Impact?	No	**Yes**	No	No
Year 2009	155.8	164.4	121.8	13.1
Significant Impact?	**Yes**	**Yes**	No	No
Year 2010	95.0	39.7	91.5	1.5
Significant Impact?	**Yes**	No	No	No
Source: Michael Brandman Associates, 2007				

The information shown in Table 14 indicates that for the Reduced Density Alternative Option 2, even with all feasible mitigations, the BAAQMD construction emission thresholds will still be exceeded in 2008 for NO_X emissions; in 2009 for ROG and NO_X emissions; and in 2010 for ROG emissions. Therefore, even with mitigation, the short-term construction emissions are still considered to have a significant impact, therefore the impacts from construction emissions are significant and unavoidable.

4.3.4 - Construction Impact from the No Project Alternative

Table 15 summarizes the mitigated construction-related emissions for the No Project Alternative. Only emissions with quantifiable thresholds are presented. The emission estimates with mitigations were derived from the project description using the CARB URBEMIS Version 8.7 emission model. The URBEMIS data files are provided in Appendix A.

Table 15: Mitigated No Project Alternative Construction Emissions

Year	Maximum Emissions (lbs/d)			
	ROG	NO_X	CO	PM_{10}
Regional Threshold	**80**	**80**	**550**	**80**
Year 2008	1.2	40.7	11.7	6.8
Significant Impact?	No	No	No	No
Year 2009	60.3	16.0	24.4	0.4
Significant Impact?	No	No	No	No
Source: Michael Brandman Associates, 2007				

The information shown in Table 15 indicates that for the No Project Alternative with feasible mitigations, the BAAQMD construction emission thresholds will not be exceeded. Therefore, without mitigation, the short-term construction emissions are considered to have a less than significant impact.

4.4 - Project Operations Impacts

Project operations cause long-term emissions considering they occur over the life of the project. The project has the potential to add vehicular emissions, emissions from area sources, carbon monoxide hot-spots, and odors. Additionally the project has the potential to have an adverse effect on global climate change through emissions of greenhouse gases.

4.4.1 - Total Emissions Impacts

Emissions from developmental projects are traditionally considered for project build-out. Emission sources consist of mobile emissions and area source emissions. Mobile emissions estimates are derived from motor vehicle traffic. Area Source emissions estimates are derived from the consumption of natural gas, electricity, and consumer products, as well as emissions resulting from landscape maintenance. An estimate of the daily total long-term project emissions is derived by combining both mobile and stationary emissions (natural gas consumption, consumer product consumption, paint applications, and landscape maintenance). Total daily emissions were estimated for summer because summer is the ozone season.

In the analysis of the proposed project and Reduced Density Alternative Option 2, the action includes the demolition of the existing office building on Bishop Ranch 2. In order to account for the reduction of emissions that would come from that demolition, Table 16 shows current level of emissions for that office complex. Where appropriate these emissions will be subtracted from the estimated totals.

Table 16: Existing Bishop Ranch 2 Emissions

Pollution Source	Emissions (pounds per day)					
	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Area Source Emissions	2	1	2	0	0	0
Mobile Emissions	22	26	288	0	25	6
Emissions Totals (lbs/day)	**24**	**27**	**270**	**0**	**25**	**6**
Source: Michael Brandman Associates, 2007						

Total Emissions from Project without Mitigations

Unmitigated emissions for the proposed project were calculated using the CARB URBEMIS for Windows Version 8.7 model using trip generation rates supplied by the Traffic Impact Analysis (DMJM Harris/AECOM 2007) and are presented in Table 17.

Table 17: Total Emissions from Project without Mitigations

Pollution Source	Emissions (pounds per day)					
	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Area Source Emissions	47	20	33	>1	>1	>1
Mobile Emissions	256	301	3,059	2	367	92
Emissions Totals (lbs/day)	**302**	**322**	**3,092**	**3**	**367**	**92**
Minus existing operations	24	27	270	0	25	6
Adjusted Emissions (lbs/day)	**278**	**295**	**2,822**	**3**	**342**	**86**
BAAQMD Thresholds	80	80	550	N/A	80	N/A
Exceed Threshold	**Yes**	**Yes**	**Yes**		**Yes**	
Source: Michael Brandman Associates, 2007						

The information shown in Table 17 indicates that for the proposed project, the BAAQMD total emissions emission thresholds will be exceeded for ROG, NO_x, CO, and PM_{10} emissions. Therefore, without mitigation, the total project long-term emissions are considered to have a significant impact.

Total Emissions from Reduced Density Alternative Option 1 without Mitigations

Unmitigated emissions for the Reduced Density Alternative Option 1 were calculated using the CARB URBEMIS for Windows Version 8.7 model using trip generation rates supplied by the Traffic Impact Analysis (DMJM Harris/AECOM 2007) and are presented in Table 18.

Table 18: Total Emissions from Reduced Density Alternative Option 1 without Mitigations

Pollution Source	Emissions (pounds per day)					
	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Area Source Emissions	8	5	6	0	>1	>1
Mobile Emissions	98	117	1,203	1	146	37
Emissions Totals (lbs/day)	**106**	**123**	**1,209**	**1**	**146**	**37**
BAAQMD Thresholds	80	80	550	N/A	80	N/A
Exceed Threshold	**Yes**	**Yes**	**Yes**		**Yes**	
Source: Michael Brandman Associates, 2007						

The information shown in Table 18 indicates that for the Reduced Density Alternative Option 1, the BAAQMD total emissions emission thresholds will be exceeded for ROG, NO_X, CO, and PM_{10} emissions. Therefore, without mitigation, the total project long-term emissions are considered to have a significant impact.

Total Emissions from Reduced Density Alternative Option 2 without Mitigations

Unmitigated emissions for the Reduced Density Alternative Option 2 were calculated using the CARB URBEMIS for Windows Version 8.7 model using trip generation rates supplied by the Traffic Impact Analysis (DMJM Harris/AECOM 2007) and are presented in Table 19.

Table 19: Total Emissions from Reduced Density Alternative Option 2 without Mitigations

Pollution Source	Emissions (pounds per day)					
	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Area Source Emissions	39	15	27	>1	>1	>1
Mobile Emissions	158	184	1,856	1	221	55
Emissions Totals (lbs/day)	**197**	**199**	**1,883**	**2**	**221**	**55**
Minus existing operations	24	27	270	0	25	6
Adjusted Emissions (lbs/day)	**173**	**172**	**1,613**	**2**	**196**	**49**
BAAQMD Thresholds	80	80	550	N/A	80	N/A
Exceed Threshold	**Yes**	**Yes**	**Yes**		**Yes**	
Source: Michael Brandman Associates, 2007						

The information shown in Table 19 indicates that for the Reduced Density Alternative Option 2, the BAAQMD total emissions emission thresholds will be exceeded for ROG, NO_X, CO, and PM_{10} emissions. Therefore, without mitigation, the total project long-term emissions are considered to have a significant impact.

Total Emissions from the No Project Alternative without Mitigations

Unmitigated emissions for the Reduced Density Alternative Option 2 were calculated using the CARB URBEMIS for Windows Version 8.7 model using trip generation rates supplied by the Traffic Impact Analysis (DMJM Harris/AECOM 2007) and are presented in Table 20.

Table 20: Total Emissions from the No Project Alternative without Mitigations

Pollution Source	Emissions (pounds per day)					
	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Area Source Emissions	3	2	2	0	0	0
Mobile Emissions	32	38	397	>1	48	12
Emissions Totals (lbs/day)	**35**	**40**	**400**	**>1**	**48**	**12**
BAAQMD Thresholds	80	80	550	N/A	80	N/A
Exceed Threshold	No	No	No		No	
Source: Michael Brandman Associates, 2007						

The information shown in the above table indicates that for the No Project Alternative, the BAAQMD total emissions emission thresholds will not be exceeded. Therefore, without mitigation, the total project long-term emissions are considered to have a less than significant impact.

4.4.2 - Project Operation Mitigations

Due to the magnitude and overall significance of the proposed project, the following mitigations are proposed for implementation.

AQO-1 The project owner shall provide bicycle-enhancing infrastructure that includes bikeways/paths (Class I or II) connecting to a bikeway system, secure bicycle parking, and bicycle storage areas at employment facilities and multifamily residential developments.

AQO-2 The project owner shall ensure that the project will provide multiple and/or direct pedestrian access (e.g., defined paths, “as the crow flies” access, etc.) to adjacent, complementary land uses and throughout the project.

AQO-3 The project owner shall design sidewalks and bikeways to separate pedestrian and bicycle pathways from vehicle paths by use of a barrier or “green” buffer strip. Sidewalks and bikeways shall be designed to be accommodating and appropriately sized for anticipated future pedestrian and bicycle use.

AQO-4 The project owner shall implement design parameters where the project provides a development pattern that eliminates physical barriers such as walls, berms, landscaping, ditches, and slopes between residential and non-residential uses so as not to impede bicycle or pedestrian circulation. Such pathways shall be easy to navigate, designed to facilitate pedestrian movement through the project, and create a safe environment for all potential users (pedestrian, bicycle and disabled) from obstacles and automobiles.

AQO-5 The project owner shall provide Class II bicycle parking facilities on site non-residential land uses. Bicycle parking facilities shall be near destination points (within 50 feet of entrances) and easy to find.

AQO-6 The project owner shall provide Class II bicycle parking at public parking garages.

AQO-7 The project owner shall provide shower and locker facilities to encourage employees to bike and/or walk to work.

AQO-8 The project owner shall encourage the local transit service provider to install appropriate transit enhancing infrastructure on the project site, such as transit shelters, benches, street lighting, route signs and displays, and/or bus turnouts/bulbs.

AQO-9 The project owner shall provide display case or kiosk displaying transportation information in a prominent area accessible to employees or residents. Case/kiosks shall provide ridesharing information, transit schedules, and bicycle route and path information.

AQO-10 The project owner shall ensure that the commercial portions of the project will allow for an adequate buffer (to be determined by the BAAQMD) between any dry cleaning operation or gasoline dispensing facility and any sensitive receptors (e.g., schools, households, etc.).

AQO-11 The project owner shall provide 110-volt and 220-volt outlets at project-loading docks so that trucks can connect with these outlets to power their auxiliary equipment.

AQO-12 The project owner shall provide natural dispersal of CO in parking structures so CO will be directed away from the sensitive receptors by partially enclosing the parking structure and installing a mechanical ventilation system that dispenses the exhaust appropriately.

AQO-13 The project owner shall provide adequate ingress and egress at entrances to public facilities to minimize vehicle idling and traffic congestion and dedicated turn lanes as appropriate.

AQO-14 The project owner shall provide a parking lot design that includes clearly marked and shaded pedestrian pathways between transit facilities, adjacent sidewalks, and building entrances.

AQO-15 The project owner shall provide loading and unloading facilities for transit and carpool/vanpool users with clear visible signage.

AQO-16 The project owner shall provide grass paving, tree shading, or reflective surface for unshaded parking lot areas, driveways, or fire lanes that reduce standard black asphalt paving by 10 percent or more.

AQO-17 The project owner shall install cool paving and utilize high albedo and construction materials to increase the reflectivity of roads, driveways, and other paved surfaces.

AQO-18 The project owner shall provide residents low nitrogen oxide-emitting and/or high-efficiency water heaters.

AQO-19 The project owner shall allow only natural gas fireplaces in the development. Conventional open-hearth fireplaces shall not be permitted.

AQO-20 The project owner shall install a central heating, ventilation, and air conditioning (HVAC) to maintain all condominium and apartment units under positive pressure. The HVAC systems should include high-efficiency filters for particulates and a carbon filter to remove other chemical matter.

AQO-21 The project owner shall install cool paving and utilize high albedo and construction materials to increase the reflectivity of roads, driveways, and other paved surfaces.

AQO-22 The project owner shall join a local Transportation Management Association (TMA) and prepare employer-based trip reduction plans and implement feasible travel demand management (TDM) measures for a project of this type. This would include a ride-matching program, guaranteed ride home programs, coordination with regional ridesharing organizations, and a transit incentives program.

AQO-23 The project owner shall provide dedicated daily shuttle trips from/to the project to nearby housing, shopping, health care, public services, and other nearby trip attractors to reduce automobile use.

AQO-24 The project owner shall provide dedicated daily shuttle trips from/to the project to nearby housing, shopping, health care, public services, and other nearby trip attractors to reduce automobile use.

4.4.3 - Total Emissions Mitigated Impacts

URBEMIS was used to estimate emissions reductions from mitigation measures. However, many of the proposed mitigations do not have appropriate calculations in the program; therefore, exact quantification cannot be accomplished. What are presented in the analysis are the results of emissions reductions from quantifiable mitigations; actual potential reductions would be more than is presented.

Mitigated Emissions Impact from Project

Mitigated emissions for the proposed project were calculated using the CARB URBEMIS for Windows Version 8.7 model using trip generation rates supplied by the Traffic Impact Analysis (DMJM Harris/AECOM 2007) and are presented in Table 21.

Table 21: Mitigated Emissions from Project

Pollution Source	Mitigated Emissions (pounds per day)					
	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Area Source Emissions	46	16	30	0	>1	>1
Mobile Emissions	184	208	2,119	2	254	64
Emissions Totals (lbs/day)	**230**	**225**	**2,149**	**2**	**254**	**64**
Minus existing operations	24	27	270	0	25	6
Adjusted Emissions (lbs/day)	**206**	**198**	**1,897**	**2**	**229**	**58**
BAAQMD Thresholds	80	80	550	N/A	80	N/A
Exceed Threshold	**Yes**	**Yes**	**Yes**		**Yes**	
Source: Michael Brandman Associates, 2007						

The information shown in the above table indicates that for the proposed project, even with all quantifiable emission reductions included, the BAAQMD total emissions emission thresholds will be still be exceeded for ROG, NO_x, CO, and PM_{10} emissions. Therefore, the total project long-term emissions are considered to have a significant and unavoidable impact.

Mitigated Emissions Impact from Reduced Density Alternative Option 1

Mitigated emissions for the Reduced Density Alternative Option 1 were calculated using the CARB URBEMIS for Windows Version 8.7 model using trip generation rates supplied by the Traffic Impact Analysis (DMJM Harris/AECOM 2007) and are presented in Table 22.

Table 22: Mitigated Emissions from the Reduced Density Alternative Option 1

Pollution Source	Mitigated Emissions (pounds per day)					
	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Area Source Emissions	8	4	5	0	>1	>1
Mobile Emissions	76	89	916	1	110	28
Emissions Totals (lbs/day)	**84**	**93**	**922**	**1**	**110**	**28**
BAAQMD Thresholds	80	80	550	N/A	80	N/A
Exceed Threshold	**Yes**	**Yes**	**Yes**		**Yes**	
Source: Michael Brandman Associates, 2007						

The information shown in Table 22 indicates that for the Reduced Density Alternative Option 1, even with all quantifiable emission reductions included, the BAAQMD total emissions emission thresholds will be still be exceeded for ROG, NO_X, CO, and PM_{10} emissions. Therefore, the total project long-term emissions are considered to have a significant and unavoidable impact.

Mitigated Emissions Impact from Reduced Density Alternative Option 2

Mitigated emissions for the Reduced Density Alternative Option 2 were calculated using the CARB URBEMIS for Windows Version 8.7 model using trip generation rates supplied by the Traffic Impact Analysis (DMJM Harris/AECOM 2007) and are presented in Table 23.

Table 23: Mitigated Emissions from the Reduced Density Alternative Option 2

Pollution Source	Mitigated Emissions (pounds per day)					
	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Area Source Emissions	39	12	25	>1	>1	>1
Mobile Emissions	108	119	1,203	1	143	36
Emissions Totals (lbs/day)	**145**	**132**	**1,228**	**1**	**143**	**36**
Minus existing operations	24	27	270	0	25	6
Adjusted Emissions (lbs/day)	**121**	**105**	**958**	**1**	**118**	**30**
BAAQMD Thresholds	80	80	550	N/A	80	N/A
Exceed Threshold	**Yes**	**Yes**	**Yes**		**Yes**	
Source: Michael Brandman Associates, 2007						

The information shown in Table 23 indicates that for the Reduced Density Alternative Option 2, even with all quantifiable emission reductions included, the BAAQMD total emissions emission thresholds will be still be exceeded for ROG, NO_x, CO, and PM_{10} emissions. Therefore, the total project long-term emissions are considered to have a significant and unavoidable impact.

Mitigated Emissions Impact from the No Project Alternative

The No Project Alternative did not require a calculation for mitigated emission because the unmitigated emissions were less than significant.

4.4.4 - Localized Carbon Monoxide Concentrations

The project and all alternatives are well over the recommended threshold value of 550 lbs/d of CO as established in the BAAQMD CEQA Guidelines. Therefore, further analysis is required. The proposed project has been shown in the Traffic Operations Evaluation for San Ramon City Center Project conducted by DMJM Harris (2007) has the most expected impact on local intersections, so it is the primary focus of this analysis.

Since CO is a localized problem, it sometimes requires additional analysis beyond total project emissions quantification. Projects with sensitive receptors or projects that could negatively impact levels of service (LOS) of existing roads need to use the University of California Davis, Institute of Transportation Studies (ITS) document Transportation Project-Level Carbon Monoxide Protocol (Garza, et al. 1997), hereafter referred to as the CO Protocol, to determine the potential to create a CO hot spot. A CO hot spot is a localized concentration of CO that is above the State or Federal 1-hour or 8-hour ambient air standards. Localized high levels of CO are associated with traffic congestion and idling or slow-moving vehicles. The proposed project has the potential to negatively impact the LOS on adjacent roadways as well as have idling vehicles queued in the drive-thru area and, therefore, would require a CO hotspot analysis.

The significance of project-related CO impacts is generally based on guidance presented in the CO protocol. This document presents a series of criteria that are used to determine the significance of impacts. According to the CO Protocol, intersections with Level of Service (LOS) E or F require detailed analysis. In addition, intersections that operate under LOS D conditions in areas that experience meteorological conditions favorable to CO accumulation require a detailed analysis.

As presented in the Traffic Operations Evaluation (DMJM Harris 2007), study area intersections are projected to operate at an LOS D or better during peak hours with the improvements listed. Based on Section 4.7.4 of the CO Protocol, the proposed project is not considered to have the potential for resulting in a significant CO air quality impact. Therefore, this impact is considered less than significant.

4.4.5 - Odors Impacts

Land uses included in the proposed project and the alternatives are residential and commercial. While some relatively minor odor generators may occur, the location of a major odor source is considered unlikely. There were no odors detected during site reconnaissance. The potential exists that future development of land slated for commercial use could result in odor problems depending on how close the odor source is to residences. However, the BAAQMD has a public nuisance rule (Regulation 1-301) designed to prevent odor sources from becoming a problem. Any actions related to odors are based on citizen complaints to local governments and the local air districts. BAAQMD Regulation 7 would be applicable if the BAAQMD receives odor complaints from ten or more complainants within a 90-day period. Regulation 1-301 reads:

> No person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property. For purposes of this section, three or more violation notices validly issued in a 30 day period to a facility for public nuisance shall give rise to a rebuttable presumption that the violations resulted from negligent conduct.

The existence of Regulation 1-301 and Regulation 7 will prevent commercially generated odorous emissions—should they occur—from growing into a significant problem, as citizen complaints will force those emissions to be controlled. These Regulations gives the BAAQMD the authority to shut down emission sources, including odorous sources, which the District deems are a nuisance to the community. Consequently, the potential for odor impacts from the commercial properties on the proposed project and all the alternatives is considered less than significant.

4.4.6 - Greenhouse Gases and Impacts on Global Climate Change

Parts of the Earth's atmosphere act as an insulating blanket of just the right thickness, trapping sufficient solar energy to keep the global average temperature in a suitable range. The blanket is a collection of atmospheric gases called greenhouse gases (GHG) based on the idea that the gases also trap heat like the glass walls of a greenhouse. These gases—water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), ozone, chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)—act as effective global insulators, reflecting back to Earth visible light and infrared radiation. (For a discussion on each of the greenhouse gases and the regulatory environment surrounding them, please refer to Section 2 – Setting.) Human activities such as producing electricity and driving vehicles have elevated the concentration of these gases in the atmosphere. Many scientists believe that this, in turn, is causing the Earth's temperature to rise, although other scientists disagree. A warmer Earth may lead to changes in rainfall patterns; much smaller polar ice caps; a rise in sea level; and a wide range of impacts on plants, wildlife, and humans.

Project-Specific Impacts

An individual project cannot generate enough greenhouse gas emissions to influence global climate change significantly. The project participates in this potential impact by its incremental contribution combined with the cumulative increase of all other sources of greenhouse gases, which when taken together form global climate change impacts.

Cumulative Impacts

The following discussion reviews the project's potential generation of greenhouse gases and its incremental contribution to the cumulative effect of the greenhouse gases. A two-tiered approach is used—project inventory of greenhouse gas emissions and project compliance with the emission reduction strategies contained in the California Climate Action Team's Report to the Governor.

This EIR is one of the first in the State of California to include an analysis of greenhouse gas emissions. This is likely due to the inherent global and international nature of greenhouse gas emissions and to regulation of vehicle emissions and other point sources primarily at the federal level.

Greenhouse Gas Inventory

The emissions are estimated in tons per year, which are converted to teragrams of carbon dioxide equivalents (Tg CO_2 Eq.) using the formula: Tg CO_2 Eq. = (tons of gas) ÷ 1.12 (metric tons per ton) × (GWP) × (1,000,000). One Tg is equal to one million metric tons and one metric ton is equal to 2.24 tons. The global warming potential (GWP) for the gases assessed are located in Table 6.

Note that emissions models such as EMFAC and URBEMIS evaluate aggregate emissions and do not demonstrate, with respect to a global impact, how much of these emissions are "new" emissions specifically attributable to the proposed project in question. For most projects, the main contribution of greenhouse gas emissions is from motor vehicles, but how much of those emissions are new is uncertain. New projects do not create new drivers. Some mixed-use and transportation-oriented projects can actually reduce the number of vehicle miles traveled that a person drives; this reduction is not typically discussed in CEQA documents. Therefore, it is anticipated that the project will not substantially add to the global inventory of greenhouse gas emissions. Nevertheless, greenhouse gas emissions are estimated using procedures similar to those for criteria pollutants (see Appendix C).

Carbon Dioxide: The project will generate emissions of carbon dioxide primarily in the form of vehicle exhaust and in the consumption of natural gas for heating from onsite combustion. Carbon dioxide emissions from vehicles were calculated using URBEMIS2002 assumptions and EMFAC2007 emission factors. Carbon dioxide emissions from natural gas combustion were generated from guidance as presented in the Climate Leaders Greenhouse Inventory Protocol (EPA 2004a). The carbon dioxide emissions, shown in Table 24, indicate that, at buildout, the project will emit 1.98E-02 Tg CO_2 Eq.

Table 24: Project Carbon Dioxide Emissions

Emission Source	Carbon Dioxide Emissions
	2010
Vehicles (lbs/day)	106,725
Natural gas combustion (lbs/day)	12,725

Table 24 (Cont.): Project Carbon Dioxide Emissions

Emission Source	Carbon Dioxide Emissions
	2010
Total (metric tons per year)	19,779
Total (Tg CO_2 Eq.)	1.98E-02
Source: Michael Brandman Associates, 2007	

Methane: The project will generate some methane gas from vehicle emissions and natural gas combustion. Methane emissions from natural gas combustion were generated using guidance as presented in the Climate Leaders Greenhouse Inventory Protocol (EPA 2004a). Methane emissions from vehicles were estimated using EPA emission factors for on-highway vehicles (EPA 2004) and the same assumptions used to estimate criteria pollutants in URBEMIS2002. The emissions are shown in Table 25. As shown in the Table 25, in 2008, emissions would be 9.50E-05 Tg CO_2 Eq.

Table 25: Project Methane Emissions

Emission Source	Methane Emissions
	2010
Vehicles (lbs/day)	26.19
Natural Gas Combustion (lbs/day)	1.14
Total (tons/year)	4.99
Total (Tg CO_2 Eq.)	9.50E-05
Source: Michael Brandman Associates, 2007	

Nitrous Oxide: The project generates small amounts of nitrous oxide from vehicle emissions. Emissions from natural gas combustion were generated using guidance as presented in the Climate Leaders Greenhouse Inventory Protocol (EPA 2004a). Nitrous oxide from vehicles was estimated using EPA emission factors for on-highway vehicles (EPA 2004) and the same assumptions that were used to estimate criteria pollutants. The emissions are presented in Table 26. As shown in the Table 26, in 2008 emissions would be 6.90E-04 Tg CO_2 Eq.

Table 26: Project Nitrous Oxide Emissions

Emission Source	Nitrous Oxide Emissions
	2010
Vehicles (lbs/day)	13.56
Natural gas combustion (lbs/day)	2.28E-02
Total (tons/year)	2.48
Total (Tg CO_2 Eq.)	6.97E-04
Source: Michael Brandman Associates, 2007	

Water Vapor: The project does not contribute to this greenhouse gas because water vapor concentrations in the upper atmosphere are primarily due to climate feedbacks and not emissions from industrial and commercial activities.

Ozone is a greenhouse gas; however, unlike the other greenhouse gases, ozone in the troposphere is relatively short-lived and, therefore, is not global in nature. According to CARB, it is difficult to make an accurate determination of the contribution of ozone precursors (NO_x and VOC) to global warming (CARB 2004a). Therefore, project emissions of ozone precursors would not significantly contribute to global climate change.

Chlorofluorocarbons: CFCs have no natural source but were first synthesized in 1928. They were used for refrigerants, aerosol propellants, and cleaning solvents. Because of the discovery that they are able to destroy stratospheric ozone, a global effort to halt their production was undertaken and was extremely successful, so much so that levels of the major CFCs are now remaining level or declining. Because of the ban on chlorofluorocarbons, it is assumed that the project will not generate a significant amount of emissions of these greenhouse gases and is not considered any further in this analysis.

In addition, the San Ramon Municipal Code, Chapter III sets strict standards for chlorofluorocarbon-processed food packaging operations and repackaging prohibitions that will also help neutralize any potential increases that may occur.

Hydrofluorocarbons: The project may emit a small amount of HFC emissions from leakage and service of refrigeration and air conditioning equipment and from disposal at the end of the life of the equipment (EPA 2004b). However, the details regarding the refrigerant used and the capacity are unknown at this time.

Perfluorocarbons and sulfur hexafluoride are typically used in industrial applications, none of which would be used by the project. Therefore, it is not anticipated that the project would emit any of these greenhouse gases.

Inventory Summary: The primary greenhouse gas generated by the project would be carbon dioxide. At buildout, total unmitigated carbon dioxide equivalents would be 2.06E-02 Tg CO_2 Eq., which is 0.00418 percent of California’s 2004 emissions (492 Tg CO_2 Eq) and 0.0242 percent of the Bay Area’s 2002 emissions.

4.4.7 - Greenhouse Gas Mitigations

Global warming has been recognized as a viable threat to life on earth. The potential health effects from global climate change may be from temperature increases, climate-sensitive diseases, extreme events, and air quality. There may be direct temperature effects through increases in average temperature leading to more extreme heat waves and less extreme cold spells. Those living in warmer climates are likely to experience more stress and heat-related problems, including heat rash and heat stroke. In addition, climate-sensitive diseases may increase, such as those spread by mosquitoes and other disease-carrying insects. Those diseases include malaria, dengue fever, yellow fever, and encephalitis. Extreme events such as flooding and hurricanes can displace people and agriculture, which would have negative human health consequences including the spreading of disease and death. Global warming may also contribute to air quality problems from increased frequency of smog and particulate air pollution (EPA 2006a).

Often, mitigations for greenhouse gases are also beneficial to local criteria air pollution reductions. Many GHG mitigations increase energy efficiency, which would reduce criteria pollutants as well. Many of the mitigations mentioned above in Section 4.4 – Project Operations Impacts of this document will also help reduce GHGs. However, additional mitigations are proposed for the proposed projects to help serve the dual purpose of reducing criteria and GHG emissions

GHG-1 The project owner shall participate in and implement available Pacific Gas and Electricity (PG&E) energy-efficient rebate programs, including air conditioning, gas heating, refrigeration, and lighting programs.

GHG-2 The project owner shall implement innovative Energy-Efficient Technologies or measures exceeding Title 24 energy efficiency standards by 10 percent or more, OR Comply with EPA/DOE Energy Star Home energy standards.

GHG-3 The project owner shall install high albedo and emissive roofs or install EPA "Energy Star" approved roofing materials.

GHG-4 The project owner shall plant trees and shrubs that shed their leaves in winter nearer to these structures to maximize shade to the building during the summer and allow sunlight to strike the building during the winter months.

GHG-5 The project owner shall use recycled water pursuant to the San Ramon Valley Recycled Water Program for landscaping.

GHG-6 The project owner shall use recycled water pursuant to the San Ramon Valley Recycled Water Program for landscaping.

GHG-7 The project owner shall ensure that landscaping will use moisture sensors, rain shut-off devices, check valves, and a WaterSmart™ irrigation controller.

GHG-8 The project owner shall include shade trees near buildings to directly shield them from the sun's rays and reduce local air temperature and cooling energy demand.

GHG-9 The project owner shall include shade trees near HVAC equipment to directly shield them from the sun's rays and reduce energy demand.

GHG-10 The project owner shall ensure that all dock and delivery areas shall be posted with signs informing truck drivers of the California Air Resources Board (CARB) regulations including the following:

A. Truck drivers shall turn off engines when not in use.

B. All diesel delivery trucks servicing the project shall not idle more than five minutes per truck trip per day.

C. Restrict idling emissions by using auxiliary power units and electrification in the docking areas if provided by the operator.

GHG-11 The project owner shall ensure that at least 50 percent of installed trees and shrubs shall be low-ozone forming potential (Low-OFP) while still using drought-tolerant species as suggested by the East Bay Municipal Utility District (EBMUD). For a list of Low-OFP trees that are listed in EBMUD's "Plants and Landscapes for Summer-Dry Climates", see Appendix B.

Compliance with Strategies

Mitigation of global warming impacts is based on the project's consistency with the strategies proposed in California Environmental Protection Agency Climate Action Team's report (CAT 2006). If the project is consistent with those strategies that the Lead Agency deems are feasible, then a project could be deemed to have a less than significant impact concerning global climate change.

The CAT Report to Governor Schwarzenegger and the Legislature "proposes a path to achieve the Governor's targets that will build on voluntary actions of California businesses, local government and community actions, and State incentive and regulatory programs." (CAT 2006) The report introduces strategies to reduce California's emissions to the levels proposed in Executive Order S-3-05. This is the best information available at this time; it is unknown when and what will be published in the future.

Table 27 contains the CAT strategies that apply to the project. As shown in the table, the project complies with all feasible and applicable measures to bring California to the emission reduction targets.

Table 27: Project Compliance with Greenhouse Gas Emission Reduction Strategies

Agency	Greenhouse Gas Emission Reduction Strategy	Consistency Analysis
California Air Resources Board	Vehicle Climate Change Standards AB 1493 required the State to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of climate change emissions emitted by passenger vehicles and light-duty trucks. Regulations were adopted by the ARB in September 2004.	**Consistent**: The vehicles that access the project will comply with any vehicle standards that CARB proposes.
	Diesel Anti-Idling In July 2004, the CARB adopted a measure to limit diesel-fueled commercial motor vehicle idling.	**Consistent**: Mitigation AIR-2 includes provisions intended to prevent idling in loading dock areas.
	Hydrofluorocarbon Reduction (1) Ban retail sale of HFC in small cans; (2) require that only low GWP refrigerants be used in new vehicular systems; (3) adopt specifications for new commercial refrigeration; (4) add refrigerant leak-tightness to the pass criteria for vehicular inspection and maintenance programs; (5) enforce federal ban on releasing HFCs.	**Consistent**: This measure applies to consumer products. When CARB adopts regulations for these reduction measures, any products that the regulations apply to will comply with the measures.
	Transportation Refrigeration Units (TRUs), Off-Road Electrification, Port Electrification Strategies to reduce emissions from TRUs, increase off-road electrification, and increase use of shore-side/port electrification.	**Consistent**: The project may have TRUs visiting the project site. Mitigation AIR-2 requires that auxiliary power units be provided in loading areas to power TRUs and prevent idling.
	Heavy-Duty Vehicle Emission Reduction Measures Increased efficiency in the design of heavy-duty vehicles and an education program for the heavy-duty vehicle sector.	**Consistent**: These are CARB-enforced standards; vehicles that access the project that are required to comply with the standards will comply with the strategy.
	Achieve 50% Statewide Recycling Goal Achieving the State's 50 percent waste diversion mandate as established by the Integrated Waste Management Act of 1989 (AB 939, Sher, Chapter 1095, Statutes of 1989) will reduce climate change emissions associated with energy-intensive material extraction and production as well as methane emission from landfills. A diversion rate of 48% has been achieved on a statewide basis. Therefore, a 2% additional reduction is needed.	**Consistent**: Mitigation Measures US-4a and US-4b require the proposed project to implement recycling and waste diversion measures during the construction and operation phases, respectively.

Table 27 (Cont.): Ambient Air Quality Standards

Agency	Greenhouse Gas Emission Reduction Strategy	Consistency Analysis
Department of Forestry	Urban Forestry A new statewide goal of planting 5 million trees in urban areas by 2020 would be achieved through the expansion of local urban forestry programs.	**Consistent**: Mitigation AIR-9 ensures that trees will be both low emitters of ROG and efficient users of water.
Department of Water Resources	Water Use Efficiency Approximately 19 percent of all electricity, 30 percent of all natural gas, and 88 million gallons of diesel are used to convey, treat, distribute, and use water and wastewater. Increasing the efficiency of water transport and reducing water use would reduce greenhouse gas emissions.	**Consistent**: The proposed project would incorporate a variety of design features intended to promote sustainability through trip reduction and energy and water conservation. Water conservation measures are designed into the project; including: a recycled water system for landscape irrigation that eliminates the need to use potable water for outdoor watering; re-circulating hot water systems to reduce the need to heat water; tankless hot water heaters that reduce water consumption; green roofs that capture stormwater runoff during the rainy season and keep building interiors cool during warmer months; bioswales that promote percolation of stormwater runoff and reduce the need for pumping stormwater through a conveyance system; evapotranspiration-based water controllers that adjust outdoor irrigation in response to weather conditions; water budgets for landscape irrigation to monitor and regulate outdoor water usage; waterless urinals in non-residential buildings to reduce water usage.
California Energy Commission	Building Energy Efficiency Standards in Place and in Progress Public Resources Code 25402 authorizes the CEC to adopt and periodically update its building energy efficiency standards (that apply to newly constructed buildings and additions and alterations to existing buildings).	**Consistent**: The proposed project would incorporate a variety of design features intended to promote sustainability through trip reduction and energy and water conservation. Mitigation Measure US-5 requires implementation of the following energy conservation measures: use of glass windows to promote natural day lighting of interior areas to reduce need for lighting, occupancy sensors that automatically shut off lights when rooms are unoccupied, high-efficiency clothes washers and dishwashing machines, re-circulating hot water systems, and tankless water heaters.

Table 27 (Cont.): Ambient Air Quality Standards

Agency	Greenhouse Gas Emission Reduction Strategy	Consistency Analysis
cont.	Appliance Energy Efficiency Standards in Place and in Progress Public Resources Code 25402 authorizes the Energy Commission to adopt and periodically update its appliance energy efficiency standards (that apply to devices and equipment using energy that are sold or offered for sale in California).	**Consistent**: Mitigation Measure US-5 requires the use of occupancy sensors that automatically shut off lights when rooms are unoccupied, high-efficiency clothes washers and dishwashing machines, recirculating hot water systems, and tankless water heaters.
Building, Transportation, and Housing Agency	Smart Land Use and Intelligent Transportation Systems (ITS) Smart land use strategies encourage jobs/housing proximity, promote transit-oriented development, and encourage high-density residential/commercial development along transit corridors. ITS is the application of advanced technology systems and management strategies to improve operational efficiency of transportation systems and movement of people, goods and services. Governor Schwarzenegger is finalizing a comprehensive, 10-year strategic growth plan with the intent of developing ways to promote, through State investments, incentives and technical assistance, land use, and technology strategies that provide for a prosperous economy, social equity, and a quality environment. Smart land use, demand management, ITS, and value pricing are critical elements in this plan for improving mobility and transportation efficiency. Specific strategies include promoting jobs/housing proximity and transit-oriented development; encouraging high density residential/commercial development along transit/rail corridor; valuing and congestion pricing; implementing intelligent transportation systems, traveler information/traffic control, and incident management; accelerating the development of broadband infrastructure; and comprehensive, integrated, multimodal/intermodal transportation planning.	**Consistent**: The proposed project is an in-fill mixed-use project designed to be a pedestrian-oriented environment that is also readily accessible for bicycles and public transit. The project is located within walking distance of several major existing activity centers, including the Bishop Ranch Business Park, The Shop at Bishop Ranch, the Market Place, and Central Park. The proposed project is located next to the Iron Horse Trail and will have pedestrian/bike connections with the trail at several points. The project includes a Transit Center that would be served by County Connection bus service, including routes serving destinations such as the Dublin/ Pleasanton and Walnut Creek BART stations. Mitigation Measure TRANS-8 requires Sunset Development to provide bicycle parking near entrances to project buildings. All of these measures are consistent with smart land use and ITS strategies.

Table 27 (Cont.): Ambient Air Quality Standards

Agency	Greenhouse Gas Emission Reduction Strategy	Consistency Analysis
cont.	Measures to Improve Transportation Energy Efficiency Builds on current efforts to provide a framework for expanded and new initiatives including incentives, tools, and information that advance cleaner transportation and reduce climate change emissions.	**Consistent**: The proposed project promotes fuel conservation through design features, which promote pedestrian traffic, and programs that encourage employee carpooling and public transportation use.
State Consumer Services Agency	Green Buildings Initiative Green Building Executive Order, S-20-04 (CA 2004), sets a goal of reducing energy use in public and private buildings by 20 percent by the year 2015, compared with 2003 levels. The Executive Order and related action plan spell out specific actions State agencies are to take with State-owned and -leased buildings. The order and plan also discuss various strategies and incentives to encourage private building owners and operators to achieve the 20 percent target.	**Consistent**: Mitigation Measure AIR-9 requires the project to exceed the 2005 Title 24 standards. Mitigation Measure US-1a, US-1b, and US-1c require the project to implement several water conservation measures. Mitigation Measure US-5 requires the project to implement energy conservation measures.
Source: Michael Brandman Associates, 2007.		

4.5 - Cumulative Impacts

The BAAQMD has set the threshold for cumulative significance, as any proposed project that would individually have a significant air quality impact would also be considered to have a significant cumulative air quality impact. Additionally, for any project that does not individually have significant operational air quality impacts, the determination of significant cumulative impact should be based on an evaluation of the consistency of the project with the local general plan and of the general plan with the regional air quality plan.

Since the project and all the alternatives (except the No Project Alternative) have been shown to have a significant unavoidable impact even with the application of all feasible mitigation measures, the project and all its alternatives (except the No Project Alternative) with have significant but unavoidable cumulative impacts, and no further analysis is necessary.

SECTION 5: REFERENCES

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Appendix A: URBEMIS Output

URBEMIS 2002 For Windows 8.7.0

File Name: E:\URBEMIS\San Ramon City Center\CC Plaza CON.urb
Project Name: San Ramon City Center - Plaza - Construction
Project Location: San Francisco Bay Area
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

*** 2008 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	26.73	215.06	201.95	0.14	87.48	7.15	80.33
TOTALS (lbs/day, mitigated)	6.47	157.40	34.99	0.14	12.78	0.51	12.27

*** 2009 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	187.90	204.48	202.65	0.14	86.83	6.50	80.33
TOTALS (lbs/day, mitigated)	182.18	148.45	97.44	0.14	12.74	0.47	12.27

*** 2010 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	187.35	55.72	139.19	0.02	3.19	1.93	1.26
TOTALS (lbs/day, mitigated)	181.64	39.65	91.45	0.00	1.45	0.19	1.26

DETAIL REPORT
(Pounds/Day - Summer)

Construction Start Month and Year: November, 2008
Construction Duration: 24
Total Land Use Area to be Developed: 32.2 acres
Maximum Acreage Disturbed Per Day: 8 acres
Single Family Units: 487 Multi-Family Units: 0
Retail/Office/Institutional/Industrial Square Footage: 700700

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	2.65	-	2.65
Off-Road Diesel	1.11	6.43	9.42	-	0.18	0.18	0.00
On-Road Diesel	0.49	8.35	1.82	0.02	0.25	0.21	0.04
Worker Trips	0.02	0.03	0.36	0.00	0.00	0.00	0.00
Maximum lbs/day	1.62	14.81	11.60	0.02	3.08	0.39	2.69
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	80.00	-	80.00
Off-Road Diesel	22.51	144.14	185.50	-	5.41	5.41	0.00
On-Road Diesel	4.14	70.87	15.43	0.14	2.05	1.74	0.31
Worker Trips	0.08	0.05	1.02	0.00	0.02	0.00	0.02
Maximum lbs/day	26.73	215.06	201.95	0.14	87.48	7.15	80.33
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Bldg Const Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max lbs/day all phases	26.73	215.06	201.95	0.14	87.48	7.15	80.33

*** 2009***

Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	80.00	-	80.00
Off-Road Diesel	22.51	140.07	187.46	-	4.90	4.90	0.00
On-Road Diesel	3.81	64.37	14.25	0.14	1.91	1.60	0.31
Worker Trips	0.07	0.04	0.94	0.00	0.02	0.00	0.02
Maximum lbs/day	26.39	204.48	202.65	0.14	86.83	6.50	80.33
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	6.29	41.98	50.63	-	1.67	1.67	0.00
Bldg Const Worker Trips	2.92	1.82	38.62	0.01	0.67	0.04	0.63
Arch Coatings Off-Gas	173.32	-	-	-	-	-	-
Arch Coatings Worker Trips	2.92	1.82	38.62	0.01	0.67	0.04	0.63
Asphalt Off-Gas	0.48	-	-	-	-	-	-
Asphalt Off-Road Diesel	1.83	10.64	15.59	-	0.29	0.29	0.00
Asphalt On-Road Diesel	0.11	1.90	0.42	0.00	0.05	0.05	0.00
Asphalt Worker Trips	0.01	0.01	0.13	0.00	0.00	0.00	0.00
Maximum lbs/day	187.90	58.16	144.01	0.02	3.35	2.09	1.26
Max lbs/day all phases	187.90	204.48	202.65	0.14	86.83	6.50	80.33

*** 2010***

Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	6.29	40.09	52.01	-	1.52	1.52	0.00
Bldg Const Worker Trips	2.66	1.66	35.55	0.01	0.67	0.04	0.63
Arch Coatings Off-Gas	173.32	-	-	-	-	-	-
Arch Coatings Worker Trips	2.66	1.66	35.55	0.01	0.67	0.04	0.63
Asphalt Off-Gas	0.48	-	-	-	-	-	-
Asphalt Off-Road Diesel	1.83	10.64	15.59	-	0.29	0.29	0.00
Asphalt On-Road Diesel	0.10	1.67	0.38	0.00	0.04	0.04	0.00
Asphalt Worker Trips	0.01	0.01	0.12	0.00	0.00	0.00	0.00
Maximum lbs/day	187.35	55.72	139.19	0.02	3.19	1.93	1.26
Max lbs/day all phases	187.35	55.72	139.19	0.02	3.19	1.93	1.26

Phase 1 - Demolition Assumptions
Start Month/Year for Phase 1: Nov '08
Phase 1 Duration: 1.2 months
Building Volume Total (cubic feet): 5016160
Building Volume Daily (cubic feet): 6300
On-Road Truck Travel (VMT): 351
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Rubber Tired Loaders	165	0.465	8.0

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Dec '08
Phase 2 Duration: 2.4 months
On-Road Truck Travel (VMT): 2970
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
4	Crawler Tractors	143	0.575	8.0
1	Graders	174	0.575	8.0
2	Off Highway Trucks	417	0.490	8.0
2	Rubber Tired Loaders	165	0.465	8.0
1	Scrapers	313	0.660	8.0
2	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Feb '09
Phase 3 Duration: 20.4 months
Start Month/Year for SubPhase Building: Feb '09
SubPhase Building Duration: 20.4 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Cranes	190	0.430	8.0
2	Other Equipment	190	0.620	8.0

Start Month/Year for SubPhase Architectural Coatings: Sep '09
SubPhase Architectural Coatings Duration: 8 months
Start Month/Year for SubPhase Asphalt: Sep '09
SubPhase Asphalt Duration: 8 months
Acres to be Paved: 32.4
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Pavers	132	0.590	8.0
1	Rollers	114	0.430	8.0

CONSTRUCTION EMISSION ESTIMATES MITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	2.65	-	2.65
Off-Road Diesel	1.11	6.43	9.42	-	0.04	0.04	0.00
On-Road Diesel	0.49	8.35	1.82	0.02	0.08	0.04	0.04
Worker Trips	0.02	0.03	0.36	0.00	0.00	0.00	0.00
Maximum lbs/day	1.62	14.81	11.60	0.02	2.77	0.08	2.69
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	11.94	-	11.94
Off-Road Diesel	2.25	86.48	18.55	-	0.16	0.16	0.00
On-Road Diesel	4.14	70.87	15.43	0.14	0.66	0.35	0.31
Worker Trips	0.08	0.05	1.01	0.00	0.02	0.00	0.02
Maximum lbs/day	6.47	157.40	34.99	0.14	12.78	0.51	12.27
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Bldg Const Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max lbs/day all phases	6.47	157.40	34.99	0.14	12.78	0.51	12.27
*** 2009***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	11.94	-	11.94
Off-Road Diesel	2.25	84.04	18.75	-	0.15	0.15	0.00
On-Road Diesel	3.81	64.37	14.25	0.14	0.63	0.32	0.31
Worker Trips	0.07	0.04	0.93	0.00	0.02	0.00	0.02
Maximum lbs/day	6.13	148.45	33.92	0.14	12.74	0.47	12.27
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.63	25.19	5.06	-	0.05	0.05	0.00
Bldg Const Worker Trips	2.89	1.80	38.12	0.01	0.67	0.04	0.63
Arch Coatings Off-Gas	173.32	-	-	-	-	-	-
Arch Coatings Worker Trips	2.89	1.80	38.12	0.01	0.67	0.04	0.63
Asphalt Off-Gas	0.48	-	-	-	-	-	-
Asphalt Off-Road Diesel	1.83	10.64	15.59	-	0.06	0.06	0.00
Asphalt On-Road Diesel	0.11	1.90	0.42	0.00	0.01	0.01	0.00
Asphalt Worker Trips	0.01	0.01	0.13	0.00	0.00	0.00	0.00
Maximum lbs/day	182.18	41.32	97.44	0.00	1.46	0.20	1.26
Max lbs/day all phases	182.18	148.45	97.44	0.14	12.74	0.47	12.27

*** 2010***

Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.63	24.05	5.20	-	0.05	0.05	0.00
Bldg Const Worker Trips	2.63	1.64	35.09	0.01	0.67	0.04	0.63
Arch Coatings Off-Gas	173.32	-	-	-	-	-	-
Arch Coatings Worker Trips	2.63	1.64	35.09	0.01	0.67	0.04	0.63
Asphalt Off-Gas	0.48	-	-	-	-	-	-
Asphalt Off-Road Diesel	1.83	10.64	15.59	-	0.06	0.06	0.00
Asphalt On-Road Diesel	0.10	1.67	0.38	0.00	0.01	0.01	0.00
Asphalt Worker Trips	0.01	0.01	0.12	0.00	0.00	0.00	0.00
Maximum lbs/day	181.64	39.65	91.45	0.00	1.45	0.19	1.26
Max lbs/day all phases	181.64	39.65	91.45	0.00	1.45	0.19	1.26

Construction-Related Mitigation Measures

Phase 1: Off-Road Diesel Exhaust: Use diesel particulate filter
  Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
Phase 1: On-Road Diesel Exhaust: Use diesel particulate filter
  Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
Phase 1: Worker Trips: Use shuttle to retail establishments @lunch
  Percent Reduction(ROG 1.0% NOx 1.3% CO 1.3% SO2 1.3% PM10 1.3%)
Phase 2: Soil Disturbance: Apply soil stabilizers to inactive areas
  Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 30.0%)
Phase 2: Soil Disturbance: Replace ground cover in disturbed areas quickly
  Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 15.0%)
Phase 2: Soil Disturbance: Water exposed surfaces - 2x daily
  Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 34.0%)
Phase 2: Off-Road Diesel Exhaust: Use diesel particulate filter
  Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
Phase 2: Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation(EGR)
  Percent Reduction(ROG 90.0% NOx 40.0% CO 90.0% SO2 0.0% PM10 85.0%)
Phase 2: On-Road Diesel Exhaust: Use diesel particulate filter

Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
Phase 2: Stockpiles: Cover all stock piles with tarps
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 9.5%)
Phase 2: Unpaved Roads: Water all haul roads 2x daily
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 30.0%)
Phase 2: Unpaved Roads: Reduce speed on unpaved roads to < 15 mph
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 40.0%)
Phase 2: Worker Trips: Use shuttle to retail establishments @lunch
Percent Reduction(ROG 1.0% NOx 1.3% CO 1.3% SO2 1.3% PM10 1.3%)
Phase 3: Off-Road Diesel Exhaust: Use diesel particulate filter
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
Phase 3: Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation(EGR)
Percent Reduction(ROG 90.0% NOx 40.0% CO 90.0% SO2 0.0% PM10 85.0%)
Phase 3: Off-Road Diesel Exhaust: Use diesel particulate filter
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
Phase 3: On-Road Diesel Exhaust: Use diesel particulate filter
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
Phase 3: Worker Trips: Use shuttle to retail establishments @lunch
Percent Reduction(ROG 1.0% NOx 1.3% CO 1.3% SO2 1.3% PM10 1.3%)
Phase 3: Worker Trips: Use shuttle to retail establishments @lunch
Percent Reduction(ROG 1.0% NOx 1.3% CO 1.3% SO2 1.3% PM10 1.3%)
Phase 3: Worker Trips: Use shuttle to retail establishments @lunch
Percent Reduction(ROG 1.0% NOx 1.3% CO 1.3% SO2 1.3% PM10 1.3%)
Phase 3: Offgassing: High volume
Percent Reduction(ROG low pressure (HVLP) system% NOx 50.0% CO 0.0% SO2 0.0% PM10 0.0%)

Phase 1 - Demolition Assumptions
Start Month/Year for Phase 1: Nov '08
Phase 1 Duration: 1.2 months
Building Volume Total (cubic feet): 5016160
Building Volume Daily (cubic feet): 6300
On-Road Truck Travel (VMT): 351
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Rubber Tired Loaders	165	0.465	8.0

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Dec '08
Phase 2 Duration: 2.4 months
On-Road Truck Travel (VMT): 2970
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
4	Crawler Tractors	143	0.575	8.0
1	Graders	174	0.575	8.0
2	Off Highway Trucks	417	0.490	8.0
2	Rubber Tired Loaders	165	0.465	8.0
1	Scrapers	313	0.660	8.0
2	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Feb '09
Phase 3 Duration: 20.4 months
Start Month/Year for SubPhase Building: Feb '09
SubPhase Building Duration: 20.4 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Cranes	190	0.430	8.0
2	Other Equipment	190	0.620	8.0

Start Month/Year for SubPhase Architectural Coatings: Sep '09
SubPhase Architectural Coatings Duration: 8 months
Start Month/Year for SubPhase Asphalt: Sep '09
SubPhase Asphalt Duration: 8 months
Acres to be Paved: 32.4
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Pavers	132	0.590	8.0
1	Rollers	114	0.430	8.0

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing
have changed from the defaults 9.57/162.33 to 5.06/

Changes made to the default values for Construction

The user has overridden the Default Phase Lengths
Site Grading Miles/Round Trip changed from 20 to 30
Architectural Coatings: # ROG/ft2 (residential) changed from 0.0185 to 0.00602
Architectural Coatings: # ROG/ft2 (non-res) changed from 0.0185 to 0.0116
Phase 1 mitigation measure Off-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 1 mitigation measure On-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 1 mitigation measure Worker Trips: Use shuttle to retail establishments @lunch
has been changed from off to on.
Phase 2 mitigation measure Soil Disturbance: Apply soil stabilizers to inactive areas
has been changed from off to on.
Phase 2 mitigation measure Soil Disturbance: Replace ground cover in disturbed areas quickly
has been changed from off to on.
Phase 2 mitigation measure Soil Disturbance: Water exposed surfaces - 2x daily
has been changed from off to on.
Phase 2 mitigation measure Off-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 2 mitigation measure Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation(EGR)
has been changed from off to on.
Phase 2 mitigation measure On-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 2 mitigation measure Stockpiles: Cover all stock piles with tarps
has been changed from off to on.
Phase 2 mitigation measure Unpaved Roads: Water all haul roads 2x daily
has been changed from off to on.
Phase 2 mitigation measure Unpaved Roads: Reduce speed on unpaved roads to < 15 mph
has been changed from off to on.
Phase 2 mitigation measure Worker Trips: Use shuttle to retail establishments @lunch
has been changed from off to on.
Phase 3 mitigation measure Off-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 3 mitigation measure Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation(EGR)
has been changed from off to on.
Phase 3 mitigation measure Off-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 3 mitigation measure On-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 3 mitigation measure Worker Trips: Use shuttle to retail establishments @lunch
has been changed from off to on.
Phase 3 mitigation measure Worker Trips: Use shuttle to retail establishments @lunch
has been changed from off to on.
Phase 3 mitigation measure Worker Trips: Use shuttle to retail establishments @lunch
has been changed from off to on.
Phase 3 mitigation measure Offgassing: High volume
has been changed from off to on.

URBEMIS 2002 For Windows 8.7.0

File Name: E:\URBEMIS\San Ramon City Center\CC BR-1 CON.urb
Project Name: San Ramon City Center - BR-1A Phase 1 - Construction
Project Location: San Francisco Bay Area
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

*** 2008 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	11.47	94.10	83.72	0.09	35.47	3.26	32.21
TOTALS (lbs/day, mitigated)	3.59	71.37	19.16	0.09	5.27	0.28	4.99

*** 2009 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	101.26	18.85	34.80	0.00	0.98	0.72	0.26
TOTALS (lbs/day, mitigated)	99.48	13.42	20.53	0.00	0.32	0.06	0.26

DETAIL REPORT
(Pounds/Day - Summer)

Construction Start Month and Year: June, 2008
Construction Duration: 14
Total Land Use Area to be Developed: 12.7 acres
Maximum Acreage Disturbed Per Day: 3.2 acres
Single Family Units: 0 Multi-Family Units: 0
Retail/Office/Institutional/Industrial Square Footage: 276715

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	32.00	-	32.00
Off-Road Diesel	8.76	56.81	71.70	-	2.16	2.16	0.00
On-Road Diesel	2.61	37.17	9.74	0.09	1.30	1.10	0.20
Worker Trips	0.10	0.12	2.28	0.00	0.01	0.00	0.01
Maximum lbs/day	11.47	94.10	83.72	0.09	35.47	3.26	32.21
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	1.97	14.32	15.13	-	0.61	0.61	0.00
Bldg Const Worker Trips	0.65	0.40	8.47	0.00	0.14	0.01	0.13
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	2.62	14.72	23.59	0.00	0.75	0.62	0.13
Max lbs/day all phases	11.47	94.10	83.72	0.09	35.47	3.26	32.21
*** 2009***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	1.97	13.57	15.68	-	0.57	0.57	0.00
Bldg Const Worker Trips	0.59	0.37	7.81	0.00	0.14	0.01	0.13
Arch Coatings Off-Gas	97.27	-	-	-	-	-	-
Arch Coatings Worker Trips	0.53	0.25	6.41	0.00	0.14	0.01	0.13
Asphalt Off-Gas	0.19	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.72	4.15	6.08	-	0.11	0.11	0.00
Asphalt On-Road Diesel	0.04	0.62	0.17	0.00	0.02	0.02	0.00
Asphalt Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00
Maximum lbs/day	101.26	18.85	34.80	0.00	0.98	0.72	0.26
Max lbs/day all phases	101.26	18.85	34.80	0.00	0.98	0.72	0.26

Phase 1 - Demolition Assumptions: Phase Turned OFF

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Jun '08
Phase 2 Duration: 1.5 months
On-Road Truck Travel (VMT): 1872
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
2	Crawler Tractors	143	0.575	8.0
0	Off Highway Tractors	255	0.410	8.0
1	Off Highway Trucks	417	0.490	8.0
1	Rubber Tired Loaders	165	0.465	8.0
0	Scrapers	313	0.660	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Jul '08
Phase 3 Duration: 12.5 months
Start Month/Year for SubPhase Building: Jul '08
SubPhase Building Duration: 12.5 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Other Equipment	190	0.620	8.0

Start Month/Year for SubPhase Architectural Coatings: May '09
SubPhase Architectural Coatings Duration: 3 months
Start Month/Year for SubPhase Asphalt: May '09
SubPhase Asphalt Duration: 2 months
Acres to be Paved: 3.2
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
0	Pavers	132	0.590	8.0
0	Rollers	114	0.430	8.0

CONSTRUCTION EMISSION ESTIMATES MITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	4.78	-	4.78
Off-Road Diesel	0.88	34.09	7.17	-	0.06	0.06	0.00
On-Road Diesel	2.61	37.17	9.74	0.09	0.42	0.22	0.20
Worker Trips	0.10	0.12	2.25	0.00	0.01	0.00	0.01
Maximum lbs/day	3.59	71.37	19.16	0.09	5.27	0.28	4.99

Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.20	8.59	1.51	-	0.02	0.02	0.00
Bldg Const Worker Trips	0.64	0.39	8.36	0.00	0.14	0.01	0.13
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.84	8.99	9.87	0.00	0.16	0.03	0.13
Max lbs/day all phases	3.59	71.37	19.16	0.09	5.27	0.28	4.99

*** 2009***

Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.20	8.14	1.57	-	0.02	0.02	0.00
Bldg Const Worker Trips	0.58	0.37	7.71	0.00	0.14	0.01	0.13
Arch Coatings Off-Gas	97.27	-	-	-	-	-	-
Arch Coatings Worker Trips	0.52	0.25	6.33	0.00	0.14	0.01	0.13
Asphalt Off-Gas	0.19	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.72	4.15	6.08	-	0.02	0.02	0.00
Asphalt On-Road Diesel	0.04	0.62	0.17	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00
Maximum lbs/day	99.48	13.42	20.53	0.00	0.32	0.06	0.26
Max lbs/day all phases	99.48	13.42	20.53	0.00	0.32	0.06	0.26

Construction-Related Mitigation Measures

Phase 2: Soil Disturbance: Apply soil stabilizers to inactive areas
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 30.0%)
Phase 2: Soil Disturbance: Replace ground cover in disturbed areas quickly
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 15.0%)
Phase 2: Soil Disturbance: Water exposed surfaces - 2x daily
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 34.0%)
Phase 2: Off-Road Diesel Exhaust: Use diesel particulate filter
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
Phase 2: Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation(EGR)
Percent Reduction(ROG 90.0% NOx 40.0% CO 90.0% SO2 0.0% PM10 85.0%)
Phase 2: On-Road Diesel Exhaust: Use diesel particulate filter
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
Phase 2: Stockpiles: Cover all stock piles with tarps
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 9.5%)
Phase 2: Unpaved Roads: Water all haul roads 2x daily
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 30.0%)
Phase 2: Unpaved Roads: Reduce speed on unpaved roads to < 15 mph
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 40.0%)
Phase 2: Worker Trips: Use shuttle to retail establishments @lunch
Percent Reduction(ROG 1.0% NOx 1.3% CO 1.3% SO2 1.3% PM10 1.3%)
Phase 3: Off-Road Diesel Exhaust: Use diesel particulate filter
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
Phase 3: Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation(EGR)
Percent Reduction(ROG 90.0% NOx 40.0% CO 90.0% SO2 0.0% PM10 85.0%)

Phase 3: Off-Road Diesel Exhaust: Use diesel particulate filter
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
Phase 3: On-Road Diesel Exhaust: Use diesel particulate filter
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
Phase 3: Worker Trips: Use shuttle to retail establishments @lunch
Percent Reduction(ROG 1.0% NOx 1.3% CO 1.3% SO2 1.3% PM10 1.3%)
Phase 3: Worker Trips: Use shuttle to retail establishments @lunch
Percent Reduction(ROG 1.0% NOx 1.3% CO 1.3% SO2 1.3% PM10 1.3%)
Phase 3: Worker Trips: Use shuttle to retail establishments @lunch
Percent Reduction(ROG 1.0% NOx 1.3% CO 1.3% SO2 1.3% PM10 1.3%)
Phase 3: Offgassing: High volume
Percent Reduction(ROG low pressure (HVLP) system% NOx 50.0% CO 0.0% SO2 0.0% PM10 0.0%)
Phase 1 - Demolition Assumptions: Phase Turned OFF

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Jun '08
Phase 2 Duration: 1.5 months
On-Road Truck Travel (VMT): 1872
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
2	Crawler Tractors	143	0.575	8.0
0	Off Highway Tractors	255	0.410	8.0
1	Off Highway Trucks	417	0.490	8.0
1	Rubber Tired Loaders	165	0.465	8.0
0	Scrapers	313	0.660	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Jul '08
Phase 3 Duration: 12.5 months
Start Month/Year for SubPhase Building: Jul '08
SubPhase Building Duration: 12.5 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Other Equipment	190	0.620	8.0

Start Month/Year for SubPhase Architectural Coatings: May '09
SubPhase Architectural Coatings Duration: 3 months
Start Month/Year for SubPhase Asphalt: May '09
SubPhase Asphalt Duration: 2 months
Acres to be Paved: 3.2
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
0	Pavers	132	0.590	8.0
0	Rollers	114	0.430	8.0

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

The user has overridden the Default Phase Lengths
Site Grading Miles/Round Trip changed from 20 to 30
Architectural Coatings: # ROG/ft2 (residential) changed from 0.0185 to 0.0062
Architectural Coatings: # ROG/ft2 (non-res) changed from 0.0185 to 0.0116
Phase 2 mitigation measure Soil Disturbance: Apply soil stabilizers to inactive areas
has been changed from off to on.
Phase 2 mitigation measure Soil Disturbance: Replace ground cover in disturbed areas quickly
has been changed from off to on.
Phase 2 mitigation measure Soil Disturbance: Water exposed surfaces - 2x daily
has been changed from off to on.
Phase 2 mitigation measure Off-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 2 mitigation measure Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation(EGR)
has been changed from off to on.
Phase 2 mitigation measure On-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 2 mitigation measure Stockpiles: Cover all stock piles with tarps
has been changed from off to on.
Phase 2 mitigation measure Unpaved Roads: Water all haul roads 2x daily
has been changed from off to on.
Phase 2 mitigation measure Unpaved Roads: Reduce speed on unpaved roads to < 15 mph

has been changed from off to on.
Phase 2 mitigation measure Worker Trips: Use shuttle to retail establishments @lunch
has been changed from off to on.
Phase 3 mitigation measure Off-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 3 mitigation measure Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation(EGR)
has been changed from off to on.
Phase 3 mitigation measure Off-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 3 mitigation measure On-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 3 mitigation measure Worker Trips: Use shuttle to retail establishments @lunch
has been changed from off to on.
Phase 3 mitigation measure Worker Trips: Use shuttle to retail establishments @lunch
has been changed from off to on.
Phase 3 mitigation measure Worker Trips: Use shuttle to retail establishments @lunch
has been changed from off to on.
Phase 3 mitigation measure Offgassing: High volume
has been changed from off to on.

URBEMIS 2002 For Windows 8.7.0

File Name: E:\URBEMIS\San Ramon City Center\CC BR-2 CON.urb
Project Name: San Ramon City Center - BR-1A Phase 2 - Construction
Project Location: San Francisco Bay Area
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

*** 2009 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	11.26	88.95	83.70	0.09	35.19	2.98	32.21
TOTALS (lbs/day, mitigated)	3.38	66.92	18.31	0.09	5.25	0.26	4.99

*** 2010 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	101.15	18.00	34.29	0.00	0.92	0.66	0.26
TOTALS (lbs/day, mitigated)	99.37	12.86	19.56	0.00	0.32	0.06	0.26

DETAIL REPORT
(Pounds/Day - Summer)

Construction Start Month and Year: June, 2009
Construction Duration: 14
Total Land Use Area to be Developed: 12.7 acres
Maximum Acreage Disturbed Per Day: 3.2 acres
Single Family Units: 0 Multi-Family Units: 0
Retail/Office/Institutional/Industrial Square Footage: 276715

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2009***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	32.00	-	32.00
Off-Road Diesel	8.76	55.07	72.63	-	1.97	1.97	0.00
On-Road Diesel	2.41	33.77	8.99	0.09	1.21	1.01	0.20
Worker Trips	0.09	0.11	2.08	0.00	0.01	0.00	0.01
Maximum lbs/day	11.26	88.95	83.70	0.09	35.19	2.98	32.21
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	1.97	13.57	15.68	-	0.57	0.57	0.00
Bldg Const Worker Trips	0.59	0.37	7.81	0.00	0.14	0.01	0.13
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	2.56	13.94	23.49	0.00	0.71	0.58	0.13
Max lbs/day all phases	11.26	88.95	83.70	0.09	35.19	2.98	32.21
*** 2010***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	1.97	12.84	16.21	-	0.51	0.51	0.00
Bldg Const Worker Trips	0.54	0.34	7.19	0.00	0.14	0.01	0.13
Arch Coatings Off-Gas	97.27	-	-	-	-	-	-
Arch Coatings Worker Trips	0.48	0.23	5.90	0.00	0.14	0.01	0.13
Asphalt Off-Gas	0.19	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.72	4.15	6.08	-	0.11	0.11	0.00
Asphalt On-Road Diesel	0.04	0.55	0.15	0.00	0.02	0.02	0.00
Asphalt Worker Trips	0.00	0.00	0.05	0.00	0.00	0.00	0.00
Maximum lbs/day	101.15	18.00	34.29	0.00	0.92	0.66	0.26
Max lbs/day all phases	101.15	18.00	34.29	0.00	0.92	0.66	0.26

Phase 1 - Demolition Assumptions: Phase Turned OFF

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Jun '09
Phase 2 Duration: 1.5 months
On-Road Truck Travel (VMT): 1872
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
2	Crawler Tractors	143	0.575	8.0
0	Off Highway Tractors	255	0.410	8.0
1	Off Highway Trucks	417	0.490	8.0
1	Rubber Tired Loaders	165	0.465	8.0
0	Scrapers	313	0.660	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Jul '09
Phase 3 Duration: 12.5 months
Start Month/Year for SubPhase Building: Jul '09
SubPhase Building Duration: 12.5 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Other Equipment	190	0.620	8.0

Start Month/Year for SubPhase Architectural Coatings: May '10
SubPhase Architectural Coatings Duration: 3 months
Start Month/Year for SubPhase Asphalt: May '10
SubPhase Asphalt Duration: 2 months
Acres to be Paved: 3.2
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
0	Pavers	132	0.590	8.0
0	Rollers	114	0.430	8.0

CONSTRUCTION EMISSION ESTIMATES MITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2009***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	4.78	-	4.78
Off-Road Diesel	0.88	33.04	7.26	-	0.06	0.06	0.00
On-Road Diesel	2.41	33.77	8.99	0.09	0.40	0.20	0.20
Worker Trips	0.09	0.11	2.05	0.00	0.01	0.00	0.01
Maximum lbs/day	3.38	66.92	18.31	0.09	5.25	0.26	4.99

Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.20	8.14	1.57	-	0.02	0.02	0.00
Bldg Const Worker Trips	0.58	0.37	7.71	0.00	0.14	0.01	0.13
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.78	8.50	9.27	0.00	0.15	0.02	0.13
Max lbs/day all phases	3.38	66.92	18.31	0.09	5.25	0.26	4.99

*** 2010***

Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.20	7.70	1.62	-	0.02	0.02	0.00
Bldg Const Worker Trips	0.53	0.34	7.10	0.00	0.14	0.01	0.13
Arch Coatings Off-Gas	97.27	-	-	-	-	-	-
Arch Coatings Worker Trips	0.48	0.23	5.82	0.00	0.14	0.01	0.13
Asphalt Off-Gas	0.19	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.72	4.15	6.08	-	0.02	0.02	0.00
Asphalt On-Road Diesel	0.04	0.55	0.15	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.05	0.00	0.00	0.00	0.00
Maximum lbs/day	99.37	12.86	19.56	0.00	0.32	0.06	0.26
Max lbs/day all phases	99.37	12.86	19.56	0.00	0.32	0.06	0.26

Construction-Related Mitigation Measures

```
 Phase 2: Soil Disturbance: Apply soil stabilizers to inactive areas
   Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 30.0%)
 Phase 2: Soil Disturbance: Replace ground cover in disturbed areas quickly
   Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 15.0%)
 Phase 2: Soil Disturbance: Water exposed surfaces - 2x daily
   Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 34.0%)
 Phase 2: Off-Road Diesel Exhaust: Use diesel particulate filter
   Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
 Phase 2: Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation(EGR)
   Percent Reduction(ROG 90.0% NOx 40.0% CO 90.0% SO2 0.0% PM10 85.0%)
 Phase 2: On-Road Diesel Exhaust: Use diesel particulate filter
   Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
 Phase 2: Stockpiles: Cover all stock piles with tarps
   Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 9.5%)
 Phase 2: Unpaved Roads: Water all haul roads 2x daily
   Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 30.0%)
 Phase 2: Unpaved Roads: Reduce speed on unpaved roads to < 15 mph
   Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 40.0%)
 Phase 2: Worker Trips: Use shuttle to retail establishments @lunch
   Percent Reduction(ROG 1.0% NOx 1.3% CO 1.3% SO2 1.3% PM10 1.3%)
 Phase 3: Off-Road Diesel Exhaust: Use diesel particulate filter
   Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
 Phase 3: Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation(EGR)
   Percent Reduction(ROG 90.0% NOx 40.0% CO 90.0% SO2 0.0% PM10 85.0%)
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Phase 3: Off-Road Diesel Exhaust: Use diesel particulate filter
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
Phase 3: On-Road Diesel Exhaust: Use diesel particulate filter
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
Phase 3: Worker Trips: Use shuttle to retail establishments @lunch
Percent Reduction(ROG 1.0% NOx 1.3% CO 1.3% SO2 1.3% PM10 1.3%)
Phase 3: Worker Trips: Use shuttle to retail establishments @lunch
Percent Reduction(ROG 1.0% NOx 1.3% CO 1.3% SO2 1.3% PM10 1.3%)
Phase 3: Worker Trips: Use shuttle to retail establishments @lunch
Percent Reduction(ROG 1.0% NOx 1.3% CO 1.3% SO2 1.3% PM10 1.3%)
Phase 3: Offgassing: High volume
Percent Reduction(ROG low pressure (HVLP) system% NOx 50.0% CO 0.0% SO2 0.0% PM10 0.0%)
Phase 1 - Demolition Assumptions: Phase Turned OFF

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Jun '09
Phase 2 Duration: 1.5 months
On-Road Truck Travel (VMT): 1872
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
2	Crawler Tractors	143	0.575	8.0
0	Off Highway Tractors	255	0.410	8.0
1	Off Highway Trucks	417	0.490	8.0
1	Rubber Tired Loaders	165	0.465	8.0
0	Scrapers	313	0.660	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Jul '09
Phase 3 Duration: 12.5 months
Start Month/Year for SubPhase Building: Jul '09
SubPhase Building Duration: 12.5 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Other Equipment	190	0.620	8.0

Start Month/Year for SubPhase Architectural Coatings: May '10
SubPhase Architectural Coatings Duration: 3 months
Start Month/Year for SubPhase Asphalt: May '10
SubPhase Asphalt Duration: 2 months
Acres to be Paved: 3.2
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
0	Pavers	132	0.590	8.0
0	Rollers	114	0.430	8.0

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

The user has overridden the Default Phase Lengths
Site Grading Miles/Round Trip changed from 20 to 30
Architectural Coatings: # ROG/ft2 (residential) changed from 0.0185 to 0.0062
Architectural Coatings: # ROG/ft2 (non-res) changed from 0.0185 to 0.0116
Phase 2 mitigation measure Soil Disturbance: Apply soil stabilizers to inactive areas
has been changed from off to on.
Phase 2 mitigation measure Soil Disturbance: Replace ground cover in disturbed areas quickly
has been changed from off to on.
Phase 2 mitigation measure Soil Disturbance: Water exposed surfaces - 2x daily
has been changed from off to on.
Phase 2 mitigation measure Off-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 2 mitigation measure Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation(EGR)
has been changed from off to on.
Phase 2 mitigation measure On-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 2 mitigation measure Stockpiles: Cover all stock piles with tarps
has been changed from off to on.
Phase 2 mitigation measure Unpaved Roads: Water all haul roads 2x daily

has been changed from off to on.
Phase 2 mitigation measure Unpaved Roads: Reduce speed on unpaved roads to < 15 mph
has been changed from off to on.
Phase 2 mitigation measure Worker Trips: Use shuttle to retail establishments @lunch
has been changed from off to on.
Phase 3 mitigation measure Off-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 3 mitigation measure Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation(EGR)
has been changed from off to on.
Phase 3 mitigation measure Off-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 3 mitigation measure On-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 3 mitigation measure Worker Trips: Use shuttle to retail establishments @lunch
has been changed from off to on.
Phase 3 mitigation measure Worker Trips: Use shuttle to retail establishments @lunch
has been changed from off to on.
Phase 3 mitigation measure Worker Trips: Use shuttle to retail establishments @lunch
has been changed from off to on.
Phase 3 mitigation measure Offgassing: High volume
has been changed from off to on.

URBEMIS 2002 For Windows 8.7.0

File Name: E:\URBEMIS\San Ramon City Center\CC BR-3 CON.urb
Project Name: San Ramon City Center - BR-1A Phase 3 - Construction
Project Location: San Francisco Bay Area
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

*** 2010 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	11.03	83.15	83.64	0.09	34.89	2.68	32.21
TOTALS (lbs/day, mitigated)	3.15	61.80	17.45	0.09	5.22	0.23	4.99

*** 2011 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	101.15	18.00	34.29	0.00	0.92	0.66	0.26
TOTALS (lbs/day, mitigated)	99.37	12.86	19.56	0.00	0.32	0.06	0.26

DETAIL REPORT
(Pounds/Day - Summer)

Construction Start Month and Year: June, 2010
Construction Duration: 14
Total Land Use Area to be Developed: 12.7 acres
Maximum Acreage Disturbed Per Day: 3.2 acres
Single Family Units: 0 Multi-Family Units: 0
Retail/Office/Institutional/Industrial Square Footage: 276715

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2010***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	32.00	-	32.00
Off-Road Diesel	8.76	53.36	73.52	-	1.78	1.78	0.00
On-Road Diesel	2.19	29.69	8.22	0.09	1.10	0.90	0.20
Worker Trips	0.08	0.10	1.90	0.00	0.01	0.00	0.01
Maximum lbs/day	11.03	83.15	83.64	0.09	34.89	2.68	32.21
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	1.97	12.84	16.21	-	0.51	0.51	0.00
Bldg Const Worker Trips	0.54	0.34	7.19	0.00	0.14	0.01	0.13
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	2.51	13.17	23.40	0.00	0.65	0.52	0.13
Max lbs/day all phases	11.03	83.15	83.64	0.09	34.89	2.68	32.21
*** 2011***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 2 - Site Grading Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 3 - Building Construction

Bldg Const Off-Road Diesel	1.97	12.84	16.21	-	0.51	0.51	0.00
Bldg Const Worker Trips	0.54	0.34	7.19	0.00	0.14	0.01	0.13
Arch Coatings Off-Gas	97.27	-	-	-	-	-	-
Arch Coatings Worker Trips	0.48	0.23	5.90	0.00	0.14	0.01	0.13
Asphalt Off-Gas	0.19	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.72	4.15	6.08	-	0.11	0.11	0.00
Asphalt On-Road Diesel	0.04	0.55	0.15	0.00	0.02	0.02	0.00
Asphalt Worker Trips	0.00	0.00	0.05	0.00	0.00	0.00	0.00
Maximum lbs/day	101.15	18.00	34.29	0.00	0.92	0.66	0.26
Max lbs/day all phases	101.15	18.00	34.29	0.00	0.92	0.66	0.26

Phase 1 - Demolition Assumptions: Phase Turned OFF

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Jun '10
Phase 2 Duration: 1.5 months
On-Road Truck Travel (VMT): 1872
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
2	Crawler Tractors	143	0.575	8.0
0	Off Highway Tractors	255	0.410	8.0
1	Off Highway Trucks	417	0.490	8.0
1	Rubber Tired Loaders	165	0.465	8.0
0	Scrapers	313	0.660	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Jul '10
Phase 3 Duration: 12.5 months
Start Month/Year for SubPhase Building: Jul '10
SubPhase Building Duration: 12.5 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Other Equipment	190	0.620	8.0

Start Month/Year for SubPhase Architectural Coatings: Apr '11
SubPhase Architectural Coatings Duration: 3 months
Start Month/Year for SubPhase Asphalt: Apr '11
SubPhase Asphalt Duration: 2 months
Acres to be Paved: 3.2
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
0	Pavers	132	0.590	8.0
0	Rollers	114	0.430	8.0

CONSTRUCTION EMISSION ESTIMATES MITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2010***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	4.78	-	4.78
Off-Road Diesel	0.88	32.02	7.35	-	0.05	0.05	0.00
On-Road Diesel	2.19	29.69	8.22	0.09	0.38	0.18	0.20
Worker Trips	0.08	0.10	1.88	0.00	0.01	0.00	0.01
Maximum lbs/day	3.15	61.80	17.45	0.09	5.22	0.23	4.99

Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.20	7.70	1.62	-	0.02	0.02	0.00
Bldg Const Worker Trips	0.53	0.34	7.10	0.00	0.14	0.01	0.13
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.73	8.03	8.71	0.00	0.15	0.02	0.13
Max lbs/day all phases	3.15	61.80	17.45	0.09	5.22	0.23	4.99

*** 2011***

Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.20	7.70	1.62	-	0.02	0.02	0.00
Bldg Const Worker Trips	0.53	0.34	7.10	0.00	0.14	0.01	0.13
Arch Coatings Off-Gas	97.27	-	-	-	-	-	-
Arch Coatings Worker Trips	0.48	0.23	5.82	0.00	0.14	0.01	0.13
Asphalt Off-Gas	0.19	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.72	4.15	6.08	-	0.02	0.02	0.00
Asphalt On-Road Diesel	0.04	0.55	0.15	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.05	0.00	0.00	0.00	0.00
Maximum lbs/day	99.37	12.86	19.56	0.00	0.32	0.06	0.26
Max lbs/day all phases	99.37	12.86	19.56	0.00	0.32	0.06	0.26

Construction-Related Mitigation Measures

Phase 2: Soil Disturbance: Apply soil stabilizers to inactive areas
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 30.0%)
Phase 2: Soil Disturbance: Replace ground cover in disturbed areas quickly
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 15.0%)
Phase 2: Soil Disturbance: Water exposed surfaces - 2x daily
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 34.0%)
Phase 2: Off-Road Diesel Exhaust: Use diesel particulate filter
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
Phase 2: Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation(EGR)
Percent Reduction(ROG 90.0% NOx 40.0% CO 90.0% SO2 0.0% PM10 85.0%)
Phase 2: On-Road Diesel Exhaust: Use diesel particulate filter
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
Phase 2: Stockpiles: Cover all stock piles with tarps
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 9.5%)
Phase 2: Unpaved Roads: Water all haul roads 2x daily
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 30.0%)
Phase 2: Unpaved Roads: Reduce speed on unpaved roads to < 15 mph
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 40.0%)
Phase 2: Worker Trips: Use shuttle to retail establishments @lunch
Percent Reduction(ROG 1.0% NOx 1.3% CO 1.3% SO2 1.3% PM10 1.3%)
Phase 3: Off-Road Diesel Exhaust: Use diesel particulate filter
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
Phase 3: Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation(EGR)
Percent Reduction(ROG 90.0% NOx 40.0% CO 90.0% SO2 0.0% PM10 85.0%)

Phase 3: Off-Road Diesel Exhaust: Use diesel particulate filter
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
Phase 3: On-Road Diesel Exhaust: Use diesel particulate filter
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
Phase 3: Worker Trips: Use shuttle to retail establishments @lunch
Percent Reduction(ROG 1.0% NOx 1.3% CO 1.3% SO2 1.3% PM10 1.3%)
Phase 3: Worker Trips: Use shuttle to retail establishments @lunch
Percent Reduction(ROG 1.0% NOx 1.3% CO 1.3% SO2 1.3% PM10 1.3%)
Phase 3: Worker Trips: Use shuttle to retail establishments @lunch
Percent Reduction(ROG 1.0% NOx 1.3% CO 1.3% SO2 1.3% PM10 1.3%)
Phase 3: Offgassing: High volume
Percent Reduction(ROG low pressure (HVLP) system% NOx 50.0% CO 0.0% SO2 0.0% PM10 0.0%)
Phase 1 - Demolition Assumptions: Phase Turned OFF

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Jun '10
Phase 2 Duration: 1.5 months
On-Road Truck Travel (VMT): 1872
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
2	Crawler Tractors	143	0.575	8.0
0	Off Highway Tractors	255	0.410	8.0
1	Off Highway Trucks	417	0.490	8.0
1	Rubber Tired Loaders	165	0.465	8.0
0	Scrapers	313	0.660	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Jul '10
Phase 3 Duration: 12.5 months
Start Month/Year for SubPhase Building: Jul '10
SubPhase Building Duration: 12.5 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Other Equipment	190	0.620	8.0

Start Month/Year for SubPhase Architectural Coatings: Apr '11
SubPhase Architectural Coatings Duration: 3 months
Start Month/Year for SubPhase Asphalt: Apr '11
SubPhase Asphalt Duration: 2 months
Acres to be Paved: 3.2
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
0	Pavers	132	0.590	8.0
0	Rollers	114	0.430	8.0

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

The user has overridden the Default Phase Lengths
Site Grading Miles/Round Trip changed from 20 to 30
Architectural Coatings: # ROG/ft2 (residential) changed from 0.0185 to 0.0062
Architectural Coatings: # ROG/ft2 (non-res) changed from 0.0185 to 0.0116
Phase 2 mitigation measure Soil Disturbance: Apply soil stabilizers to inactive areas
has been changed from off to on.
Phase 2 mitigation measure Soil Disturbance: Replace ground cover in disturbed areas quickly
has been changed from off to on.
Phase 2 mitigation measure Soil Disturbance: Water exposed surfaces - 2x daily
has been changed from off to on.
Phase 2 mitigation measure Off-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 2 mitigation measure Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation(EGR)
has been changed from off to on.
Phase 2 mitigation measure On-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 2 mitigation measure Stockpiles: Cover all stock piles with tarps
has been changed from off to on.
Phase 2 mitigation measure Unpaved Roads: Water all haul roads 2x daily
has been changed from off to on.

Phase 2 mitigation measure Unpaved Roads: Reduce speed on unpaved roads to < 15 mph
has been changed from off to on.
Phase 2 mitigation measure Worker Trips: Use shuttle to retail establishments @lunch
has been changed from off to on.
Phase 3 mitigation measure Off-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 3 mitigation measure Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation(EGR)
has been changed from off to on.
Phase 3 mitigation measure Off-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 3 mitigation measure On-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 3 mitigation measure Worker Trips: Use shuttle to retail establishments @lunch
has been changed from off to on.
Phase 3 mitigation measure Worker Trips: Use shuttle to retail establishments @lunch
has been changed from off to on.
Phase 3 mitigation measure Worker Trips: Use shuttle to retail establishments @lunch
has been changed from off to on.
Phase 3 mitigation measure Offgassing: High volume
has been changed from off to on.

URBEMIS 2002 For Windows 8.7.0

File Name: E:\URBEMIS\San Ramon City Center\CC CH-T CON.urb
Project Name: San Ramon City Center - City Hall & Transit - Construction
Project Location: San Francisco Bay Area
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

*** 2009 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	3.25	26.80	23.65	0.03	14.03	0.97	13.06
TOTALS (lbs/day, mitigated)	1.00	20.16	5.42	0.03	2.08	0.08	2.00

*** 2010 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	30.65	7.15	13.71	0.00	0.36	0.26	0.10
TOTALS (lbs/day, mitigated)	29.94	5.09	7.81	0.00	0.12	0.02	0.10

DETAIL REPORT
(Pounds/Day - Summer)

Construction Start Month and Year: June, 2009
Construction Duration: 18
Total Land Use Area to be Developed: 5.1 acres
Maximum Acreage Disturbed Per Day: 1.3 acres
Single Family Units: 0 Multi-Family Units: 0
Retail/Office/Institutional/Industrial Square Footage: 110490

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2009***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	13.00	-	13.00
Off-Road Diesel	2.50	16.59	20.25	-	0.67	0.67	0.00
On-Road Diesel	0.72	10.17	2.71	0.03	0.36	0.30	0.06
Worker Trips	0.03	0.04	0.69	0.00	0.00	0.00	0.00
Maximum lbs/day	3.25	26.80	23.65	0.03	14.03	0.97	13.06
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.79	5.43	6.27	-	0.23	0.23	0.00
Bldg Const Worker Trips	0.24	0.15	3.12	0.00	0.05	0.00	0.05
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	1.02	5.57	9.39	0.00	0.28	0.23	0.05
Max lbs/day all phases	3.25	26.80	23.65	0.03	14.03	0.97	13.06
*** 2010***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.79	5.14	6.48	-	0.21	0.21	0.00
Bldg Const Worker Trips	0.21	0.13	2.87	0.00	0.05	0.00	0.05
Arch Coatings Off-Gas	29.13	-	-	-	-	-	-
Arch Coatings Worker Trips	0.19	0.09	2.36	0.00	0.05	0.00	0.05
Asphalt Off-Gas	0.05	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.29	1.69	2.47	-	0.05	0.05	0.00
Asphalt On-Road Diesel	0.01	0.15	0.04	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	30.65	7.15	13.71	0.00	0.36	0.26	0.10
Max lbs/day all phases	30.65	7.15	13.71	0.00	0.36	0.26	0.10

Phase 1 - Demolition Assumptions: Phase Turned OFF

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Jun '09
Phase 2 Duration: 2 months
On-Road Truck Travel (VMT): 564
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Crawler Tractors	143	0.575	8.0
0	Graders	174	0.575	8.0
0	Off Highway Tractors	255	0.410	8.0
0	Scrapers	313	0.660	8.0
0	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Aug '09
Phase 3 Duration: 16 months
Start Month/Year for SubPhase Building: Aug '09
SubPhase Building Duration: 16 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
0	Other Equipment	190	0.620	8.0

Start Month/Year for SubPhase Architectural Coatings: Jun '10
SubPhase Architectural Coatings Duration: 4 months
Start Month/Year for SubPhase Asphalt: Jun '10
SubPhase Asphalt Duration: 3 months
Acres to be Paved: 1.3
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
0	Pavers	132	0.590	8.0
0	Rollers	114	0.430	8.0

CONSTRUCTION EMISSION ESTIMATES MITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2009***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	1.94	-	1.94
Off-Road Diesel	0.25	9.95	2.03	-	0.02	0.02	0.00
On-Road Diesel	0.72	10.17	2.71	0.03	0.12	0.06	0.06
Worker Trips	0.03	0.04	0.68	0.00	0.00	0.00	0.00
Maximum lbs/day	1.00	20.16	5.42	0.03	2.08	0.08	2.00

Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.08	3.26	0.63	-	0.01	0.01	0.00
Bldg Const Worker Trips	0.24	0.15	3.08	0.00	0.05	0.00	0.05
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.31	3.40	3.70	0.00	0.06	0.01	0.05
Max lbs/day all phases	1.00	20.16	5.42	0.03	2.08	0.08	2.00

*** 2010***

Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.08	3.08	0.65	-	0.01	0.01	0.00
Bldg Const Worker Trips	0.21	0.13	2.83	0.00	0.05	0.00	0.05
Arch Coatings Off-Gas	29.13	-	-	-	-	-	-
Arch Coatings Worker Trips	0.19	0.09	2.33	0.00	0.05	0.00	0.05
Asphalt Off-Gas	0.05	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.29	1.69	2.47	-	0.01	0.01	0.00
Asphalt On-Road Diesel	0.01	0.15	0.04	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	29.94	5.09	7.81	0.00	0.12	0.02	0.10
Max lbs/day all phases	29.94	5.09	7.81	0.00	0.12	0.02	0.10

Construction-Related Mitigation Measures

Phase 2: Soil Disturbance: Apply soil stabilizers to inactive areas
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 30.0%)
Phase 2: Soil Disturbance: Replace ground cover in disturbed areas quickly
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 15.0%)
Phase 2: Soil Disturbance: Water exposed surfaces - 2x daily
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 34.0%)
Phase 2: Off-Road Diesel Exhaust: Use diesel particulate filter
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
Phase 2: Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation(EGR)
Percent Reduction(ROG 90.0% NOx 40.0% CO 90.0% SO2 0.0% PM10 85.0%)
Phase 2: On-Road Diesel Exhaust: Use diesel particulate filter
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
Phase 2: Stockpiles: Cover all stock piles with tarps
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 9.5%)
Phase 2: Unpaved Roads: Water all haul roads 2x daily
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 30.0%)
Phase 2: Unpaved Roads: Reduce speed on unpaved roads to < 15 mph
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 40.0%)
Phase 2: Worker Trips: Use shuttle to retail establishments @lunch
Percent Reduction(ROG 1.0% NOx 1.3% CO 1.3% SO2 1.3% PM10 1.3%)
Phase 3: Off-Road Diesel Exhaust: Use diesel particulate filter
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
Phase 3: Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation(EGR)
Percent Reduction(ROG 90.0% NOx 40.0% CO 90.0% SO2 0.0% PM10 85.0%)

Phase 3: Off-Road Diesel Exhaust: Use diesel particulate filter
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
Phase 3: On-Road Diesel Exhaust: Use diesel particulate filter
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
Phase 3: Worker Trips: Use shuttle to retail establishments @lunch
Percent Reduction(ROG 1.0% NOx 1.3% CO 1.3% SO2 1.3% PM10 1.3%)
Phase 3: Worker Trips: Use shuttle to retail establishments @lunch
Percent Reduction(ROG 1.0% NOx 1.3% CO 1.3% SO2 1.3% PM10 1.3%)
Phase 3: Worker Trips: Use shuttle to retail establishments @lunch
Percent Reduction(ROG 1.0% NOx 1.3% CO 1.3% SO2 1.3% PM10 1.3%)
Phase 3: Offgassing: High volume
Percent Reduction(ROG low pressure (HVLP) system% NOx 50% CO 0.0% SO2 0.0% PM10 0.0%)
Phase 1 - Demolition Assumptions: Phase Turned OFF

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Jun '09
Phase 2 Duration: 2 months
On-Road Truck Travel (VMT): 564
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Crawler Tractors	143	0.575	8.0
0	Graders	174	0.575	8.0
0	Off Highway Tractors	255	0.410	8.0
0	Scrapers	313	0.660	8.0
0	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Aug '09
Phase 3 Duration: 16 months
Start Month/Year for SubPhase Building: Aug '09
SubPhase Building Duration: 16 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
0	Other Equipment	190	0.620	8.0

Start Month/Year for SubPhase Architectural Coatings: Jun '10
SubPhase Architectural Coatings Duration: 4 months
Start Month/Year for SubPhase Asphalt: Jun '10
SubPhase Asphalt Duration: 3 months
Acres to be Paved: 1.3
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
0	Pavers	132	0.590	8.0
0	Rollers	114	0.430	8.0

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

The user has overridden the Default Phase Lengths
Site Grading Miles/Round Trip changed from 20 to 30
Architectural Coatings: # ROG/ft2 (residential) changed from 0.0185 to 0.0062
Architectural Coatings: # ROG/ft2 (non-res) changed from 0.0185 to 0.0116
Phase 2 mitigation measure Soil Disturbance: Apply soil stabilizers to inactive areas
has been changed from off to on.
Phase 2 mitigation measure Soil Disturbance: Replace ground cover in disturbed areas quickly
has been changed from off to on.
Phase 2 mitigation measure Soil Disturbance: Water exposed surfaces - 2x daily
has been changed from off to on.
Phase 2 mitigation measure Off-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 2 mitigation measure Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation(EGR)
has been changed from off to on.
Phase 2 mitigation measure On-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 2 mitigation measure Stockpiles: Cover all stock piles with tarps
has been changed from off to on.
Phase 2 mitigation measure Unpaved Roads: Water all haul roads 2x daily
has been changed from off to on.

Phase 2 mitigation measure Unpaved Roads: Reduce speed on unpaved roads to < 15 mph
has been changed from off to on.
Phase 2 mitigation measure Worker Trips: Use shuttle to retail establishments @lunch
has been changed from off to on.
Phase 3 mitigation measure Off-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 3 mitigation measure Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation(EGR)
has been changed from off to on.
Phase 3 mitigation measure Off-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 3 mitigation measure On-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 3 mitigation measure Worker Trips: Use shuttle to retail establishments @lunch
has been changed from off to on.
Phase 3 mitigation measure Worker Trips: Use shuttle to retail establishments @lunch
has been changed from off to on.
Phase 3 mitigation measure Worker Trips: Use shuttle to retail establishments @lunch
has been changed from off to on.
Phase 3 mitigation measure Offgassing: High volume
has been changed from off to on.

URBEMIS 2002 For Windows 8.7.0

File Name: E:\URBEMIS\San Ramon City Center\CC Ent CON.urb
Project Name: San Ramon City Center - Entitlement - Construction
Project Location: San Francisco Bay Area
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

*** 2008 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	10.52	67.66	87.88	0.00	40.59	2.58	38.01
TOTALS (lbs/day, mitigated)	1.15	40.65	11.71	0.00	6.77	0.09	6.68

*** 2009 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	120.11	22.41	41.35	0.00	1.16	0.86	0.30
TOTALS (lbs/day, mitigated)	117.99	15.95	24.35	0.00	0.37	0.07	0.30

DETAIL REPORT
(Pounds/Day - Summer)

Construction Start Month and Year: June, 2008
Construction Duration: 14
Total Land Use Area to be Developed: 15.1 acres
Maximum Acreage Disturbed Per Day: 3.8 acres
Single Family Units: 0 Multi-Family Units: 0
Retail/Office/Institutional/Industrial Square Footage: 328220

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	38.00	-	38.00
Off-Road Diesel	10.41	67.52	85.22	-	2.57	2.57	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.11	0.14	2.66	0.00	0.02	0.01	0.01
Maximum lbs/day	10.52	67.66	87.88	0.00	40.59	2.58	38.01
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	2.35	17.03	17.99	-	0.73	0.73	0.00
Bldg Const Worker Trips	0.77	0.48	10.04	0.00	0.16	0.01	0.15
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	3.12	17.50	28.03	0.00	0.89	0.74	0.15
Max lbs/day all phases	10.52	67.66	87.88	0.00	40.59	2.58	38.01
*** 2009***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	2.35	16.14	18.65	-	0.68	0.68	0.00
Bldg Const Worker Trips	0.70	0.44	9.26	0.00	0.16	0.01	0.15
Arch Coatings Off-Gas	115.37	-	-	-	-	-	-
Arch Coatings Worker Trips	0.63	0.30	7.61	0.00	0.16	0.01	0.15
Asphalt Off-Gas	0.23	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.85	4.93	7.22	-	0.14	0.14	0.00
Asphalt On-Road Diesel	0.05	0.74	0.20	0.00	0.02	0.02	0.00
Asphalt Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00
Maximum lbs/day	120.11	22.41	41.35	0.00	1.16	0.86	0.30
Max lbs/day all phases	120.11	22.41	41.35	0.00	1.16	0.86	0.30

Phase 1 - Demolition Assumptions: Phase Turned OFF

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Jun '08
Phase 2 Duration: 1.5 months
On-Road Truck Travel (VMT): 0
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
2	Crawler Tractors	143	0.575	8.0
0	Off Highway Tractors	255	0.410	8.0
1	Off Highway Trucks	417	0.490	8.0
1	Rubber Tired Loaders	165	0.465	8.0
0	Scrapers	313	0.660	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Jul '08
Phase 3 Duration: 12.5 months
Start Month/Year for SubPhase Building: Jul '08
SubPhase Building Duration: 12.5 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Other Equipment	190	0.620	8.0

Start Month/Year for SubPhase Architectural Coatings: May '09
SubPhase Architectural Coatings Duration: 3 months
Start Month/Year for SubPhase Asphalt: May '09
SubPhase Asphalt Duration: 2 months
Acres to be Paved: 3.8
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
0	Pavers	132	0.590	8.0
0	Rollers	114	0.430	8.0

CONSTRUCTION EMISSION ESTIMATES MITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	6.67	-	6.67
Off-Road Diesel	1.04	40.51	8.52	-	0.08	0.08	0.00

On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.11	0.14	2.63	0.00	0.02	0.01	0.01
Maximum lbs/day	1.15	40.65	11.15	0.00	6.77	0.09	6.68

Phase 3 - Building Construction

Bldg Const Off-Road Diesel	0.24	10.22	1.80	-	0.02	0.02	0.00
Bldg Const Worker Trips	0.76	0.47	9.91	0.00	0.16	0.01	0.15
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	1.00	10.69	11.71	0.00	0.18	0.03	0.15
Max lbs/day all phases	1.15	40.65	11.71	0.00	6.77	0.09	6.68

*** 2009***

Phase 1 - Demolition Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 2 - Site Grading Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 3 - Building Construction

Bldg Const Off-Road Diesel	0.24	9.68	1.87	-	0.02	0.02	0.00
Bldg Const Worker Trips	0.69	0.43	9.14	0.00	0.16	0.01	0.15
Arch Coatings Off-Gas	115.37	-	-	-	-	-	-
Arch Coatings Worker Trips	0.62	0.30	7.51	0.00	0.16	0.01	0.15
Asphalt Off-Gas	0.23	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.85	4.93	7.22	-	0.03	0.03	0.00
Asphalt On-Road Diesel	0.05	0.74	0.20	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00
Maximum lbs/day	117.99	15.95	24.35	0.00	0.37	0.07	0.30
Max lbs/day all phases	117.99	15.95	24.35	0.00	0.37	0.07	0.30

Construction-Related Mitigation Measures

Phase 2: Soil Disturbance: Apply soil stabilizers to inactive areas
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 30.0%)
Phase 2: Soil Disturbance: Water exposed surfaces - 2x daily
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 34.0%)
Phase 2: Off-Road Diesel Exhaust: Use diesel particulate filter
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
Phase 2: Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation(EGR)
Percent Reduction(ROG 90.0% NOx 40.0% CO 90.0% SO2 0.0% PM10 85.0%)
Phase 2: On-Road Diesel Exhaust: Use diesel particulate filter
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
Phase 2: Stockpiles: Cover all stock piles with tarps
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 9.5%)
Phase 2: Unpaved Roads: Water all haul roads 2x daily
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 30.0%)
Phase 2: Unpaved Roads: Reduce speed on unpaved roads to < 15 mph
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 40.0%)
Phase 2: Worker Trips: Use shuttle to retail establishments @lunch
Percent Reduction(ROG 1.0% NOx 1.3% CO 1.3% SO2 1.3% PM10 1.3%)
Phase 3: Off-Road Diesel Exhaust: Use diesel particulate filter
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
Phase 3: Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation(EGR)

Percent Reduction(ROG 90.0% NOx 40.0% CO 90.0% SO2 0.0% PM10 85.0%)
Phase 3: Off-Road Diesel Exhaust: Use diesel particulate filter
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
Phase 3: On-Road Diesel Exhaust: Use diesel particulate filter
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
Phase 3: Worker Trips: Use shuttle to retail establishments @lunch
Percent Reduction(ROG 1.0% NOx 1.3% CO 1.3% SO2 1.3% PM10 1.3%)
Phase 3: Worker Trips: Use shuttle to retail establishments @lunch
Percent Reduction(ROG 1.0% NOx 1.3% CO 1.3% SO2 1.3% PM10 1.3%)
Phase 3: Worker Trips: Use shuttle to retail establishments @lunch
Percent Reduction(ROG 1.0% NOx 1.3% CO 1.3% SO2 1.3% PM10 1.3%)
Phase 3: Offgassing: High volume
Percent Reduction(ROG low pressure (HVLP) system% NOx 50.0% CO 0.0% SO2 0.0% PM10 0.0%)
Phase 1 - Demolition Assumptions: Phase Turned OFF

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Jun '08
Phase 2 Duration: 1.5 months
On-Road Truck Travel (VMT): 0
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
2	Crawler Tractors	143	0.575	8.0
0	Off Highway Tractors	255	0.410	8.0
1	Off Highway Trucks	417	0.490	8.0
1	Rubber Tired Loaders	165	0.465	8.0
0	Scrapers	313	0.660	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Jul '08
Phase 3 Duration: 12.5 months
Start Month/Year for SubPhase Building: Jul '08
SubPhase Building Duration: 12.5 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Other Equipment	190	0.620	8.0

Start Month/Year for SubPhase Architectural Coatings: May '09
SubPhase Architectural Coatings Duration: 3 months
Start Month/Year for SubPhase Asphalt: May '09
SubPhase Asphalt Duration: 2 months
Acres to be Paved: 3.8
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
0	Pavers	132	0.590	8.0
0	Rollers	114	0.430	8.0

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

The user has overridden the Default Phase Lengths
Architectural Coatings: # ROG/ft2 (residential) changed from 0.0185 to 0.0062
Architectural Coatings: # ROG/ft2 (non-res) changed from 0.0185 to 0.0116
Phase 2 mitigation measure Soil Disturbance: Apply soil stabilizers to inactive areas
has been changed from off to on.
Phase 2 mitigation measure Soil Disturbance: Water exposed surfaces - 2x daily
has been changed from off to on.
Phase 2 mitigation measure Off-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 2 mitigation measure Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation(EGR)
has been changed from off to on.
Phase 2 mitigation measure On-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 2 mitigation measure Stockpiles: Cover all stock piles with tarps
has been changed from off to on.
Phase 2 mitigation measure Unpaved Roads: Water all haul roads 2x daily
has been changed from off to on.

Phase 2 mitigation measure Unpaved Roads: Reduce speed on unpaved roads to < 15 mph
has been changed from off to on.
Phase 2 mitigation measure Worker Trips: Use shuttle to retail establishments @lunch
has been changed from off to on.
Phase 3 mitigation measure Off-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 3 mitigation measure Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation(EGR)
has been changed from off to on.
Phase 3 mitigation measure Off-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 3 mitigation measure On-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 3 mitigation measure Worker Trips: Use shuttle to retail establishments @lunch
has been changed from off to on.
Phase 3 mitigation measure Worker Trips: Use shuttle to retail establishments @lunch
has been changed from off to on.
Phase 3 mitigation measure Worker Trips: Use shuttle to retail establishments @lunch
has been changed from off to on.
Phase 3 mitigation measure Offgassing: High volume
has been changed from off to on.

URBEMIS 2002 For Windows 8.7.0

File Name: E:\URBEMIS\San Ramon City Center\CC FR 2010 OP-U.urb
Project Name: San Ramon City Center Project 2010 - Unmitigated Operational
Project Location: San Francisco Bay Area
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	46.66	20.34	32.95	0.10	0.09

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	255.71	301.43	3,068.97	2.41	20.99

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	302.36	321.77	3,101.91	2.51	21.08

DETAIL REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	1.48	20.04	14.31	0	0.04
Hearth - No summer emissions					
Landscaping	2.39	0.30	18.64	0.10	0.06
Consumer Prdcts	23.83	-	-	-	-
Architectural Coatings	18.96	-	-	-	-
TOTALS(lbs/day,unmitigated)	46.66	20.34	32.95	0.10	0.09

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Condo	22.59	22.11	233.54	0.18	1.58
Hotel	7.85	7.70	77.44	0.06	0.53
Cinema	1.89	2.35	23.68	0.02	0.16
Regnl shop. center	125.48	151.88	1,521.40	1.19	10.38
Office park	63.65	74.58	779.47	0.62	5.38
Library	8.12	10.01	101.35	0.08	0.69
City Hall	26.14	32.81	332.08	0.26	2.27
TOTAL EMISSIONS (lbs/day)	255.71	301.43	3,068.97	2.41	20.99

Does not include correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2010 Temperature (F): 85 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Condo	0.00	5.06 trips/dwelling unit	487.00	2,464.22
Hotel		6.74 trips/rooms	169.00	1,139.06
Cinema		58.06 trips/screen	6.00	348.36
Regnl shop. center		35.02 trips/1000 sq. ft.	663.34	23,230.17
Office park		11.02 trips/1000 sq. ft.	681.77	7,513.11
Library		39.75 trips/1000 sq. ft.	35.34	1,404.77
City Hall		61.25 trips/1000 sq. ft.	75.15	4,602.94

Sum of Total Trips 40,702.61
Total Vehicle Miles Traveled 241,547.71

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.70	1.10	98.70	0.20
Light Truck < 3,750 lbs	15.20	2.00	96.00	2.00
Light Truck 3,751- 5,750	16.20	1.20	98.10	0.70
Med Truck 5,751- 8,500	7.30	1.40	95.90	2.70
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.60	68.80	31.20	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.40	7.10	85.70	7.20

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.8	4.6	6.1	11.8	5.0	5.0
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	27.3	21.2	51.5			
% of Trips - Commercial (by land use)						
Hotel				5.0	2.5	92.5
Cinema				5.0	2.5	92.5
Regnl shop. center				2.0	1.0	97.0
Office park				48.0	24.0	28.0
Library				10.0	5.0	85.0
City Hall				10.0	5.0	85.0

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing
have changed from the defaults 9.57/162.33 to 5.06/

Changes made to the default values for Area

The wood stove percentage changed from 35 to 0.
The wood fireplace percentage changed from 10 to 0.
The natural gas fireplace percentage changed from 55 to 100.
The landscape year changed from 2005 to 2010.
The residential Arch. Coatings ROG emission factor changed from 0.0185 to 0.00602.
The nonresidential Arch. Coatings ROG emission factor changed from 0.0185 to 0.0116.

Changes made to the default values for Operations

The road dust option switch changed from on to off.
The pass by trips option switch changed from on to off.
The operational emission year changed from 2005 to 2010.

URBEMIS 2002 For Windows 8.7.0

File Name: E:\URBEMIS\San Ramon City Center\CC FR 2010 OP-M.urb
Project Name: San Ramon City Center - Project 2010 - Mitigated Operational
Project Location: San Francisco Bay Area
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	46.66	20.34	32.95	0.10	0.09
TOTALS (lbs/day, mitigated)	46.36	16.33	30.08	0.10	0.09

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	195.13	222.84	2,268.00	1.78	271.47
TOTALS (lbs/day, mitigated)	183.92	208.29	2,119.29	1.67	253.71

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	241.79	243.18	2,300.94	1.88	271.57
TOTALS (lbs/day, mitigated)	230.28	224.62	2,149.37	1.76	253.79

DETAIL REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	1.48	20.04	14.31	0	0.04
Hearth - No summer emissions					
Landscaping	2.39	0.30	18.64	0.10	0.06
Consumer Prdcts	23.83	-	-	-	-
Architectural Coatings	18.96	-	-	-	-
TOTALS(lbs/day,unmitigated)	46.66	20.34	32.95	0.10	0.09

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Mitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	1.19	16.03	11.44	0	0.03
Hearth - No summer emissions					
Landscaping	2.39	0.30	18.64	0.10	0.06
Consumer Prdcts	23.83	-	-	-	-
Architectural Coatings	18.96	-	-	-	-
TOTALS (lbs/day, mitigated)	46.36	16.33	30.08	0.10	0.09

Area Source Mitigation Measures

Residential Increase Efficiency Beyond Title 24
Percent Reduction: 20
Commercial Increase Efficiency Beyond Title 24
Percent Reduction: 20
Industrial Increase Efficiency Beyond Title 24
Percent Reduction: 20

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Condo	16.03	13.68	144.46	0.11	17.01
Hotel	5.56	4.75	47.80	0.04	5.71
Cinema	1.89	2.35	23.68	0.02	2.83
Regnl shop. center	91.18	107.77	1,079.58	0.84	128.73
Office park	48.74	54.75	572.22	0.46	69.29
Library	8.12	10.01	101.35	0.08	12.13
City Hall	23.61	29.53	298.90	0.23	35.78
TOTAL EMISSIONS (lbs/day)	195.13	222.84	2,268.00	1.78	271.47

Does not include correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2010 Temperature (F): 85 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Condo	0.00	3.13 trips/dwelling unit	487.00	1,524.31
Hotel		4.16 trips/rooms	169.00	703.04
Cinema		58.06 trips/screen	6.00	348.36
Regnl shop. center		24.85 trips/1000 sq. ft.	663.34	16,484.00
Office park		8.09 trips/1000 sq. ft.	681.77	5,515.52
Library		39.75 trips/1000 sq. ft.	35.34	1,404.77
City Hall		55.13 trips/1000 sq. ft.	75.15	4,143.02

Sum of Total Trips 30,123.01
Total Vehicle Miles Traveled 178,553.50

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.70	1.10	98.70	0.20
Light Truck < 3,750 lbs	15.20	2.00	96.00	2.00
Light Truck 3,751- 5,750	16.20	1.20	98.10	0.70
Med Truck 5,751- 8,500	7.30	1.40	95.90	2.70
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.60	68.80	31.20	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.40	7.10	85.70	7.20

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.8	4.6	6.1	11.8	5.0	5.0
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	27.3	21.2	51.5			
% of Trips - Commercial (by land use)						
Hotel				5.0	2.5	92.5
Cinema				5.0	2.5	92.5
Regnl shop. center				2.0	1.0	97.0
Office park				48.0	24.0	28.0
Library				10.0	5.0	85.0
City Hall				10.0	5.0	85.0

MITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Condo	14.15	11.25	118.86	0.09	13.99
Hotel	5.35	4.48	45.03	0.04	5.38
Cinema	1.79	2.22	22.31	0.02	2.66
Regnl shop. center	86.32	101.52	1,017.00	0.79	121.27
Office park	46.35	51.57	539.05	0.43	65.27

Library	7.67	9.43	95.47	0.07	11.43
City Hall	22.29	27.82	281.57	0.22	33.70
TOTAL EMISSIONS (lbs/day)	183.92	208.29	2,119.29	1.67	253.71
PERCENTAGE REDUCTION %	6	7	7	7	7

Does not include correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2010 Temperature (F): 85   Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Condo	0.00	2.58 trips/dwelling unit	487.00	1,254.14
Hotel		3.92 trips/rooms	169.00	662.28
Cinema		54.69 trips/screen	6.00	328.17
Regnl shop. center		23.41 trips/1000 sq. ft.	663.34	15,528.42
Office park		7.62 trips/1000 sq. ft.	681.77	5,195.78
Library		37.45 trips/1000 sq. ft.	35.34	1,323.33
City Hall		51.93 trips/1000 sq. ft.	75.15	3,902.85

Sum of Total Trips 28,194.97
Total Vehicle Miles Traveled 166,868.60

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.70	1.10	98.70	0.20
Light Truck < 3,750 lbs	15.20	2.00	96.00	2.00
Light Truck 3,751- 5,750	16.20	1.20	98.10	0.70
Med Truck 5,751- 8,500	7.30	1.40	95.90	2.70
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.60	68.80	31.20	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.40	7.10	85.70	7.20

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.8	4.6	6.1	11.8	5.0	5.0
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	27.3	21.2	51.5			

% of Trips - Commercial (by land use)	Commute	Non-Work	Customer
Hotel	5.0	2.5	92.5
Cinema	5.0	2.5	92.5
Regnl shop. center	2.0	1.0	97.0
Office park	48.0	24.0	28.0
Library	10.0	5.0	85.0
City Hall	10.0	5.0	85.0

MITIGATION OPTIONS SELECTED

Residential Mitigation Measures
===============================

Residential Local-Serving Retail Mitigation

Percent Reduction in Trips is 2% (calculated as a % of 9.57 trips/day)
Note that the above percent is applied to a baseline of 9.57 and that product is subtracted from the Unmitigated Trips
Inputs Selected:
The Presence of Local-Serving Retail checkbox was selected.

Residential Transit Service Mitigation

Percent Reduction in Trips is 0.57% (calculated as a % of 9.57 trips/day)
Note that the above percent is applied to a baseline of 9.57 and that product is subtracted from the Unmitigated Trips
Inputs Selected:
The Number of Daily Weekday Buses Stopping Within 1/4 Mile of Site is 50
The Number of Daily Rail or Bus Rapid Transit Stops Within 1/2 Mile of Site is 0
The Number of Dedicated Daily Shuttle Trips is 0

Residential Pedestrian/Bicycle Friendliness Mitigation

Percent Reduction in Trips is 3.23% (calculated as a % of 9.57 trips/day)
Note that the above percent is applied to a baseline of 9.57 and that product is subtracted from the Unmitigated Trips
Inputs Selected:
The Number of Intersections per Square Mile is 100
The Percent of Streets with Sidewalks on One Side is 50%
The Percent of Streets with Sidewalks on Both Sides is 50%
The Percent of Arterials/Collectors with Bike Lanes or where Suitable,
Direct Parallel Routes Exist is 25%

Non-Residential Mitigation Measures
===================================

Non-Residential Local-Serving Retail Mitigation

Percent Reduction in Trips is 2%
Inputs Selected:
The Presence of Local-Serving Retail checkbox was selected.

Non-Residential Transit Service Mitigation

Percent Reduction in Trips is 0.57%
Inputs Selected:
The Number of Daily Weekday Buses Stopping Within 1/4 Mile of Site is 50
The Number of Daily Rail or Bus Rapid Transit Stops Within 1/2 Mile of Site is 0
The Number of Dedicated Daily Shuttle Trips is 0

Non-Residential Pedestrian/Bicycle Friendliness Mitigation

Percent Reduction in Trips is 3.23%
Inputs Selected:
The Number of Intersections per Square Mile is 100
The Percent of Streets with Sidewalks on One Side is 50%
The Percent of Streets with Sidewalks on Both Sides is 50%
The Percent of Arterials/Collectors with Bike Lanes or where Suitable,
Direct Parallel Routes Exist is 25%

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing
have changed from the defaults 9.57/162.33 to 3.13/

Changes made to the default values for Area

The area souce mitigation measure option switch changed from off to on.
The wood stove percentage changed from 35 to 0.
The wood fireplace percentage changed from 10 to 0.
The natural gas fireplace percentage changed from 55 to 100.
The landscape year changed from 2005 to 2010.
The residential Arch. Coatings ROG emission factor changed from 0.0185 to 0.00602.
The nonresidential Arch. Coatings ROG emission factor changed from 0.0185 to 0.0116.
Mitigation measure Residential Increase Efficiency Beyond Title 24
has been changed from off to on.
Mitigation measure Commercial Increase Efficiency Beyond Title 24
has been changed from off to on.
Mitigation measure Industrial Increase Efficiency Beyond Title 24
has been changed from off to on.

Changes made to the default values for Operations

The pass by trips option switch changed from on to off.
The mitigation option switch changed from off to on.
The operational emission year changed from 2005 to 2010.
The Res and Non-Res Local-Serving Retail Mitigation changed from off to on.
The Res and Non-Res Transit Service Mitigation changed from off to on.
The Res and Non-Res Ped/Bike Mitigation changed from off to on.

URBEMIS 2002 For Windows 8.7.0

File Name: E:\URBEMIS\San Ramon City Center\CC Opt 1 2010 OP-U.urb
Project Name: San Ramon City Center Option 1 2010 - Unmitigated Operational
Project Location: San Francisco Bay Area
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	7.62	5.31	6.33	0.00	0.01

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	97.90	117.39	1,212.90	0.96	146.26

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	105.52	122.70	1,219.23	0.96	146.28

DETAIL REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	0.38	5.28	4.44	0	0.01
Hearth - No summer emissions					
Landscaping	0.27	0.03	1.89	0.00	0.00
Consumer Prdcts	0.00	-	-	-	-
Architectural Coatings	6.96	-	-	-	-
TOTALS(lbs/day,unmitigated)	7.62	5.31	6.33	0.00	0.01

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Office park	63.65	74.58	779.47	0.62	94.38
Library	8.12	10.01	101.35	0.08	12.13
City Hall	26.14	32.81	332.08	0.26	39.75
TOTAL EMISSIONS (lbs/day)	97.90	117.39	1,212.90	0.96	146.26

Does not include correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2010 Temperature (F): 85 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Office park		11.02 trips/1000 sq. ft.	681.77	7,513.11
Library		39.75 trips/1000 sq. ft.	35.34	1,404.77
City Hall		61.25 trips/1000 sq. ft.	75.15	4,602.94

Sum of Total Trips 13,520.81
Total Vehicle Miles Traveled 96,212.05

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.70	1.10	98.70	0.20
Light Truck < 3,750 lbs	15.20	2.00	96.00	2.00
Light Truck 3,751- 5,750	16.20	1.20	98.10	0.70
Med Truck 5,751- 8,500	7.30	1.40	95.90	2.70
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.60	68.80	31.20	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.40	7.10	85.70	7.20

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.8	4.6	6.1	11.8	5.0	5.0
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	27.3	21.2	51.5			
% of Trips - Commercial (by land use)						
Office park				48.0	24.0	28.0
Library				10.0	5.0	85.0
City Hall				10.0	5.0	85.0

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Area

The wood stove percentage changed from 35 to 0.
The wood fireplace percentage changed from 10 to 0.
The natural gas fireplace percentage changed from 55 to 100.
The landscape year changed from 2005 to 2010.
The residential Arch. Coatings ROG emission factor changed from 0.0185 to 0.00602.
The nonresidential Arch. Coatings ROG emission factor changed from 0.0185 to 0.0116.

Changes made to the default values for Operations

The pass by trips option switch changed from on to off.
The operational emission year changed from 2005 to 2010.

URBEMIS 2002 For Windows 8.7.0

File Name: E:\URBEMIS\San Ramon City Center\CC Opt 1 2010 OP-M.urb
Project Name: San Ramon City Center Option 1 2010 - Mitigated Operational
Project Location: San Francisco Bay Area
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	7.62	5.31	6.33	0.00	0.01
TOTALS (lbs/day, mitigated)	7.54	4.25	5.44	0.00	0.01

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	80.47	94.29	972.47	0.77	117.20
TOTALS (lbs/day, mitigated)	76.31	88.82	916.10	0.73	110.40

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	88.08	99.60	978.80	0.77	117.21
TOTALS (lbs/day, mitigated)	83.85	93.08	921.54	0.73	110.42

DETAIL REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	0.38	5.28	4.44	0	0.01
Hearth - No summer emissions					
Landscaping	0.27	0.03	1.89	0.00	0.00
Consumer Prdcts	0.00	-	-	-	-
Architectural Coatings	6.96	-	-	-	-
TOTALS(lbs/day,unmitigated)	7.62	5.31	6.33	0.00	0.01

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Mitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	0.31	4.23	3.55	0	0.01
Hearth - No summer emissions					
Landscaping	0.27	0.03	1.89	0.00	0.00
Consumer Prdcts	0.00	-	-	-	-
Architectural Coatings	6.96	-	-	-	-
TOTALS (lbs/day, mitigated)	7.54	4.25	5.44	0.00	0.01

Area Source Mitigation Measures

Residential Increase Efficiency Beyond Title 24
Percent Reduction: 20
Commercial Increase Efficiency Beyond Title 24
Percent Reduction: 20
Industrial Increase Efficiency Beyond Title 24
Percent Reduction: 20

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Office park	48.74	54.75	572.22	0.46	69.29
Library	8.12	10.01	101.35	0.08	12.13
City Hall	23.61	29.53	298.90	0.23	35.78
TOTAL EMISSIONS (lbs/day)	80.47	94.29	972.47	0.77	117.20

Does not include correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2010 Temperature (F): 85   Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Office park		8.09 trips/1000 sq. ft.	681.77	5,515.52
Library		39.75 trips/1000 sq. ft.	35.34	1,404.77
City Hall		55.13 trips/1000 sq. ft.	75.15	4,143.02
		Sum of Total Trips		11,063.30
		Total Vehicle Miles Traveled		77,091.67

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.70	1.10	98.70	0.20
Light Truck < 3,750 lbs	15.20	2.00	96.00	2.00
Light Truck 3,751- 5,750	16.20	1.20	98.10	0.70
Med Truck 5,751- 8,500	7.30	1.40	95.90	2.70
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.60	68.80	31.20	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.40	7.10	85.70	7.20

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.8	4.6	6.1	11.8	5.0	5.0
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	27.3	21.2	51.5			
% of Trips - Commercial (by land use)						
Office park				48.0	24.0	28.0
Library				10.0	5.0	85.0
City Hall				10.0	5.0	85.0

MITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Office park	46.35	51.57	539.05	0.43	65.27
Library	7.67	9.43	95.47	0.07	11.43
City Hall	22.29	27.82	281.57	0.22	33.70
TOTAL EMISSIONS (lbs/day)	76.31	88.82	916.10	0.73	110.40
PERCENTAGE REDUCTION %	5	6	6	6	6

Does not include correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2010 Temperature (F): 85   Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Office park		7.62 trips/1000 sq. ft.	681.77	5,195.78
Library		37.45 trips/1000 sq. ft.	35.34	1,323.33
City Hall		51.93 trips/1000 sq. ft.	75.15	3,902.85

Sum of Total Trips 10,421.96
Total Vehicle Miles Traveled 72,622.66

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.70	1.10	98.70	0.20
Light Truck < 3,750 lbs	15.20	2.00	96.00	2.00
Light Truck 3,751- 5,750	16.20	1.20	98.10	0.70
Med Truck 5,751- 8,500	7.30	1.40	95.90	2.70
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.60	68.80	31.20	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.40	7.10	85.70	7.20

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.8	4.6	6.1	11.8	5.0	5.0
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	27.3	21.2	51.5			
% of Trips - Commercial (by land use)						
Office park				48.0	24.0	28.0
Library				10.0	5.0	85.0
City Hall				10.0	5.0	85.0

MITIGATION OPTIONS SELECTED

Non-Residential Mitigation Measures
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Non-Residential Local-Serving Retail Mitigation

Percent Reduction in Trips is 2%
Inputs Selected:
The Presence of Local-Serving Retail checkbox was selected.

Non-Residential Transit Service Mitigation

Percent Reduction in Trips is 0.57%
Inputs Selected:
The Number of Daily Weekday Buses Stopping Within 1/4 Mile of Site is 50
The Number of Daily Rail or Bus Rapid Transit Stops Within 1/2 Mile of Site is 0
The Number of Dedicated Daily Shuttle Trips is 0

Non-Residential Pedestrian/Bicycle Friendliness Mitigation

Percent Reduction in Trips is 3.23%
Inputs Selected:
The Number of Intersections per Square Mile is 100

The Percent of Streets with Sidewalks on One Side is 50%
The Percent of Streets with Sidewalks on Both Sides is 50%
The Percent of Arterials/Collectors with Bike Lanes or where Suitable,
Direct Parallel Routes Exist is 25%

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Area

The area souce mitigation measure option switch changed from off to on.
The wood stove percentage changed from 35 to 0.
The wood fireplace percentage changed from 10 to 0.
The natural gas fireplace percentage changed from 55 to 100.
The landscape year changed from 2005 to 2010.
The residential Arch. Coatings ROG emission factor changed from 0.0185 to 0.00602.
The nonresidential Arch. Coatings ROG emission factor changed from 0.0185 to 0.0116.
Mitigation measure Residential Increase Efficiency Beyond Title 24
has been changed from off to on.
Mitigation measure Commercial Increase Efficiency Beyond Title 24
has been changed from off to on.
Mitigation measure Industrial Increase Efficiency Beyond Title 24
has been changed from off to on.

Changes made to the default values for Operations

The pass by trips option switch changed from on to off.
The mitigation option switch changed from off to on.
The operational emission year changed from 2005 to 2010.
The Res and Non-Res Local-Serving Retail Mitigation changed from off to on.
The Res and Non-Res Transit Service Mitigation changed from off to on.
The Res and Non-Res Ped/Bike Mitigation changed from off to on.

URBEMIS 2002 For Windows 8.7.0

File Name: E:\URBEMIS\San Ramon City Center\CC Opt 2 2010 OP-U.urb
Project Name: San Ramon City Center Option 2 2010 - Unitigated Operational
Project Location: San Francisco Bay Area
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	39.04	15.03	26.62	0.10	0.08

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	157.80	184.04	1,856.07	1.45	220.99

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	196.84	199.07	1,882.69	1.55	221.07

DETAIL REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	1.10	14.76	9.87	0	0.03
Hearth - No summer emissions					
Landscaping	2.12	0.27	16.75	0.10	0.05
Consumer Prdcts	23.83	-	-	-	-
Architectural Coatings	12.00	-	-	-	-
TOTALS(lbs/day,unmitigated)	39.04	15.03	26.62	0.10	0.08

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Condo	22.59	22.11	233.54	0.18	27.50
Hotel	7.85	7.70	77.44	0.06	9.25
Cinema	1.89	2.35	23.68	0.02	2.83
Regnl shop. center	125.48	151.88	1,521.40	1.19	181.41
TOTAL EMISSIONS (lbs/day)	157.80	184.04	1,856.07	1.45	220.99

Does not include correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2010 Temperature (F): 85 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Condo	0.00	5.06 trips/dwelling unit	487.00	2,464.22
Hotel		6.74 trips/rooms	169.00	1,139.06
Cinema		58.06 trips/screen	6.00	348.36
Regnl shop. center		35.02 trips/1000 sq. ft.	663.34	23,230.17

Sum of Total Trips 27,181.81
Total Vehicle Miles Traveled 145,335.65

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.70	1.10	98.70	0.20
Light Truck < 3,750 lbs	15.20	2.00	96.00	2.00
Light Truck 3,751- 5,750	16.20	1.20	98.10	0.70
Med Truck 5,751- 8,500	7.30	1.40	95.90	2.70
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.60	68.80	31.20	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.40	7.10	85.70	7.20

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.8	4.6	6.1	11.8	5.0	5.0
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	27.3	21.2	51.5			
% of Trips - Commercial (by land use)						
Hotel				5.0	2.5	92.5
Cinema				5.0	2.5	92.5
Regnl shop. center				2.0	1.0	97.0

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing
have changed from the defaults 9.57/162.33 to 5.06/

Changes made to the default values for Area

The wood stove percentage changed from 35 to 0.
The wood fireplace percentage changed from 10 to 0.
The natural gas fireplace percentage changed from 55 to 100.
The landscape year changed from 2005 to 2010.
The residential Arch. Coatings ROG emission factor changed from 0.0185 to 0.00602.
The nonresidential Arch. Coatings ROG emission factor changed from 0.0185 to 0.0116.

Changes made to the default values for Operations

The pass by trips option switch changed from on to off.
The operational emission year changed from 2005 to 2010.

URBEMIS 2002 For Windows 8.7.0

File Name: E:\URBEMIS\San Ramon City Center\CC Opt 2 2010 OP-M.urb
Project Name: San Ramon City Center Option 2 2010 - Mitigated Operational
Project Location: San Francisco Bay Area
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	39.04	15.03	26.62	0.10	0.08
TOTALS (lbs/day, mitigated)	38.82	12.08	24.64	0.10	0.07

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	114.67	128.55	1,295.52	1.01	154.27
TOTALS (lbs/day, mitigated)	107.61	119.47	1,203.19	0.94	143.30

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	153.71	143.58	1,322.14	1.11	154.35
TOTALS (lbs/day, mitigated)	146.43	131.55	1,227.83	1.04	143.38

DETAIL REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	1.10	14.76	9.87	0	0.03
Hearth - No summer emissions					
Landscaping	2.12	0.27	16.75	0.10	0.05
Consumer Prdcts	23.83	-	-	-	-
Architectural Coatings	12.00	-	-	-	-
TOTALS(lbs/day,unmitigated)	39.04	15.03	26.62	0.10	0.08

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Mitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	0.88	11.81	7.90	0	0.02
Hearth - No summer emissions					
Landscaping	2.12	0.27	16.75	0.10	0.05
Consumer Prdcts	23.83	-	-	-	-
Architectural Coatings	12.00	-	-	-	-
TOTALS (lbs/day, mitigated)	38.82	12.08	24.64	0.10	0.07

Area Source Mitigation Measures

Residential Increase Efficiency Beyond Title 24
Percent Reduction: 20
Commercial Increase Efficiency Beyond Title 24
Percent Reduction: 20
Industrial Increase Efficiency Beyond Title 24
Percent Reduction: 20

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Condo	16.03	13.68	144.46	0.11	17.01
Hotel	5.56	4.75	47.80	0.04	5.71
Cinema	1.89	2.35	23.68	0.02	2.83
Regnl shop. center	91.18	107.77	1,079.58	0.84	128.73
TOTAL EMISSIONS (lbs/day)	114.67	128.55	1,295.52	1.01	154.27

Does not include correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2010 Temperature (F): 85   Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Condo	0.00	3.13 trips/dwelling unit	487.00	1,524.31
Hotel		4.16 trips/rooms	169.00	703.04
Cinema		58.06 trips/screen	6.00	348.36
Regnl shop. center		24.85 trips/1000 sq. ft.	663.34	16,484.00
		Sum of Total Trips		19,059.71
		Total Vehicle Miles Traveled		101,461.83

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.70	1.10	98.70	0.20
Light Truck < 3,750 lbs	15.20	2.00	96.00	2.00
Light Truck 3,751- 5,750	16.20	1.20	98.10	0.70
Med Truck 5,751- 8,500	7.30	1.40	95.90	2.70
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.60	68.80	31.20	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.40	7.10	85.70	7.20

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.8	4.6	6.1	11.8	5.0	5.0
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	27.3	21.2	51.5			
% of Trips - Commercial (by land use)						
Hotel				5.0	2.5	92.5
Cinema				5.0	2.5	92.5
Regnl shop. center				2.0	1.0	97.0

MITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Condo	14.15	11.25	118.86	0.09	13.99
Hotel	5.35	4.48	45.03	0.04	5.38
Cinema	1.79	2.22	22.31	0.02	2.66
Regnl shop. center	86.32	101.52	1,017.00	0.79	121.27
TOTAL EMISSIONS (lbs/day)	107.61	119.47	1,203.19	0.94	143.30
PERCENTAGE REDUCTION %	6	7	7	7	7

Does not include correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2010 Temperature (F): 85   Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Condo	0.00	2.58 trips/dwelling unit	487.00	1,254.14
Hotel		3.92 trips/rooms	169.00	662.28
Cinema		54.69 trips/screen	6.00	328.17
Regnl shop. center		23.41 trips/1000 sq. ft.	663.34	15,528.42

Sum of Total Trips 17,773.01
Total Vehicle Miles Traveled 94,245.94

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.70	1.10	98.70	0.20
Light Truck < 3,750 lbs	15.20	2.00	96.00	2.00
Light Truck 3,751- 5,750	16.20	1.20	98.10	0.70
Med Truck 5,751- 8,500	7.30	1.40	95.90	2.70
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.60	68.80	31.20	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.40	7.10	85.70	7.20

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.8	4.6	6.1	11.8	5.0	5.0
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	27.3	21.2	51.5			
% of Trips - Commercial (by land use)						
Hotel				5.0	2.5	92.5
Cinema				5.0	2.5	92.5
Regnl shop. center				2.0	1.0	97.0

MITIGATION OPTIONS SELECTED

Residential Mitigation Measures
===============================

Residential Local-Serving Retail Mitigation

Percent Reduction in Trips is 2% (calculated as a % of 9.57 trips/day)
Note that the above percent is applied to a baseline of 9.57 and that product is subtracted from the Unmitigated Trips
Inputs Selected:
The Presence of Local-Serving Retail checkbox was selected.

Residential Transit Service Mitigation

Percent Reduction in Trips is 0.57% (calculated as a % of 9.57 trips/day)
Note that the above percent is applied to a baseline of 9.57 and that product is subtracted from the Unmitigated Trips
Inputs Selected:
The Number of Daily Weekday Buses Stopping Within 1/4 Mile of Site is 50

The Number of Daily Rail or Bus Rapid Transit Stops Within 1/2 Mile of Site is 0
The Number of Dedicated Daily Shuttle Trips is 0

Residential Pedestrian/Bicycle Friendliness Mitigation

Percent Reduction in Trips is 3.23% (calculated as a % of 9.57 trips/day)
Note that the above percent is applied to a baseline of 9.57 and that product is subtracted from the Unmitigated Trips
Inputs Selected:
The Number of Intersections per Square Mile is 100
The Percent of Streets with Sidewalks on One Side is 50%
The Percent of Streets with Sidewalks on Both Sides is 50%
The Percent of Arterials/Collectors with Bike Lanes or where Suitable,
Direct Parallel Routes Exist is 25%

Non-Residential Mitigation Measures
===================================

Non-Residential Local-Serving Retail Mitigation

Percent Reduction in Trips is 2%
Inputs Selected:
The Presence of Local-Serving Retail checkbox was selected.

Non-Residential Transit Service Mitigation

Percent Reduction in Trips is 0.57%
Inputs Selected:
The Number of Daily Weekday Buses Stopping Within 1/4 Mile of Site is 50
The Number of Daily Rail or Bus Rapid Transit Stops Within 1/2 Mile of Site is 0
The Number of Dedicated Daily Shuttle Trips is 0

Non-Residential Pedestrian/Bicycle Friendliness Mitigation

Percent Reduction in Trips is 3.23%
Inputs Selected:
The Number of Intersections per Square Mile is 100
The Percent of Streets with Sidewalks on One Side is 50%
The Percent of Streets with Sidewalks on Both Sides is 50%
The Percent of Arterials/Collectors with Bike Lanes or where Suitable,
Direct Parallel Routes Exist is 25%

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing
have changed from the defaults 9.57/162.33 to 3.13/

Changes made to the default values for Area

The area souce mitigation measure option switch changed from off to on.
The wood stove percentage changed from 35 to 0.
The wood fireplace percentage changed from 10 to 0.
The natural gas fireplace percentage changed from 55 to 100.
The landscape year changed from 2005 to 2010.
The residential Arch. Coatings ROG emission factor changed from 0.0185 to 0.00602.
The nonresidential Arch. Coatings ROG emission factor changed from 0.0185 to 0.0116.
Mitigation measure Residential Increase Efficiency Beyond Title 24
has been changed from off to on.
Mitigation measure Commercial Increase Efficiency Beyond Title 24
has been changed from off to on.
Mitigation measure Industrial Increase Efficiency Beyond Title 24
has been changed from off to on.

Changes made to the default values for Operations

The pass by trips option switch changed from on to off.
The mitigation option switch changed from off to on.
The operational emission year changed from 2005 to 2010.

The Res and Non-Res Local-Serving Retail Mitigation changed from off to on.
The Res and Non-Res Transit Service Mitigation changed from off to on.
The Res and Non-Res Ped/Bike Mitigation changed from off to on.

URBEMIS 2002 For Windows 8.7.0

File Name: E:\URBEMIS\San Ramon City Center\Entitlement 2010 OP-U.urb
Project Name: Entitlements 2010- Unmitigated Operational
Project Location: San Francisco Bay Area
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	3.13	2.20	2.47	0.00	0.01

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	32.23	38.02	397.36	0.32	48.11

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	35.36	40.22	399.83	0.32	48.12

DETAIL REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	0.16	2.19	1.84	0	0.00
Hearth - No summer emissions					
Landscaping	0.09	0.01	0.63	0.00	0.00
Consumer Prdcts	0.00	-	-	-	-
Architectural Coatings	2.88	-	-	-	-
TOTALS(lbs/day,unmitigated)	3.13	2.20	2.47	0.00	0.01

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Existing Office	32.23	38.02	397.36	0.32	48.11
TOTAL EMISSIONS (lbs/day)	32.23	38.02	397.36	0.32	48.11

Does not include correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2010 Temperature (F): 85 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Existing Office		11.67 trips/1000 sq. ft.	328.20	3,830.09

Sum of Total Trips 3,830.09
Total Vehicle Miles Traveled 31,651.90

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.70	1.10	98.70	0.20
Light Truck < 3,750 lbs	15.20	2.00	96.00	2.00
Light Truck 3,751- 5,750	16.20	1.20	98.10	0.70
Med Truck 5,751- 8,500	7.30	1.40	95.90	2.70
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.60	68.80	31.20	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.40	7.10	85.70	7.20

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.8	4.6	6.1	11.8	5.0	5.0
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	27.3	21.2	51.5			
% of Trips - Commercial (by land use)						
Existing Office				48.0	24.0	28.0

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Area

The wood stove percentage changed from 35 to 0.
The wood fireplace percentage changed from 10 to 0.
The natural gas fireplace percentage changed from 55 to 100.
The landscape year changed from 2005 to 2010.
The residential Arch. Coatings ROG emission factor changed from 0.0185 to 0.00602.
The nonresidential Arch. Coatings ROG emission factor changed from 0.0185 to 0.0116.

Changes made to the default values for Operations

The pass by trips option switch changed from on to off.
The operational emission year changed from 2005 to 2010.

URBEMIS 2002 For Windows 8.7.0

File Name: E:\URBEMIS\San Ramon City Center\Entitlement 2010 OP-M.urb
Project Name: Entitlements 2010- Mitigated Operational
Project Location: San Francisco Bay Area
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	3.13	2.20	2.47	0.00	0.01

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	27.36	31.54	329.60	0.26	39.91

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	30.49	33.73	332.07	0.26	39.92

DETAIL REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	0.16	2.19	1.84	0	0.00
Hearth - No summer emissions					
Landscaping	0.09	0.01	0.63	0.00	0.00
Consumer Prdcts	0.00	-	-	-	-
Architectural Coatings	2.88	-	-	-	-
TOTALS(lbs/day,unmitigated)	3.13	2.20	2.47	0.00	0.01

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Existing Office	27.36	31.54	329.60	0.26	39.91
TOTAL EMISSIONS (lbs/day)	27.36	31.54	329.60	0.26	39.91

Does not include correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2010 Temperature (F): 85 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Existing Office		9.68 trips/1000 sq. ft.	328.20	3,176.98

Sum of Total Trips 3,176.98
Total Vehicle Miles Traveled 26,254.53

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.70	1.10	98.70	0.20
Light Truck < 3,750 lbs	15.20	2.00	96.00	2.00
Light Truck 3,751- 5,750	16.20	1.20	98.10	0.70
Med Truck 5,751- 8,500	7.30	1.40	95.90	2.70
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.60	68.80	31.20	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.40	7.10	85.70	7.20

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.8	4.6	6.1	11.8	5.0	5.0
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	27.3	21.2	51.5			
% of Trips - Commercial (by land use)						
Existing Office				48.0	24.0	28.0

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Area

The wood stove percentage changed from 35 to 0.
The wood fireplace percentage changed from 10 to 0.
The natural gas fireplace percentage changed from 55 to 100.
The landscape year changed from 2005 to 2010.
The residential Arch. Coatings ROG emission factor changed from 0.0185 to 0.00602.
The nonresidential Arch. Coatings ROG emission factor changed from 0.0185 to 0.0116.

Changes made to the default values for Operations

The pass by trips option switch changed from on to off.
The operational emission year changed from 2005 to 2010.

URBEMIS 2002 For Windows 8.7.0

File Name: E:\URBEMIS\San Ramon City Center\Existing 2007 OP-U.urb
Project Name: San Ramon City Center Existing 2007 - Unmitigated Operational
Project Location: San Francisco Bay Area
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	1.92	1.30	1.81	0.00	0.00

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	22.18	25.91	268.40	0.17	25.47

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	24.10	27.21	270.21	0.17	25.47

DETAIL REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	0.09	1.30	1.09	0	0.00
Hearth - No summer emissions					
Landscaping	0.11	0.00	0.72	0.00	0.00
Consumer Prdcts	0.00	-	-	-	-
Architectural Coatings	1.71	-	-	-	-
TOTALS(lbs/day,unmitigated)	1.92	1.30	1.81	0.00	0.00

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Existing Office	22.18	25.91	268.40	0.17	25.47
TOTAL EMISSIONS (lbs/day)	22.18	25.91	268.40	0.17	25.47

Does not include correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2007 Temperature (F): 85 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Existing Office		10.40 trips/1000 sq. ft.	194.60	2,023.84

Sum of Total Trips 2,023.84
Total Vehicle Miles Traveled 16,725.01

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	55.20	1.80	97.80	0.40
Light Truck < 3,750 lbs	15.10	3.30	94.00	2.70
Light Truck 3,751- 5,750	16.10	1.90	96.90	1.20
Med Truck 5,751- 8,500	7.10	1.40	95.80	2.80
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.40	0.00	50.00	50.00
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.10	0.00	0.00	100.00
Motorcycle	1.70	82.40	17.60	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.20	8.30	83.30	8.40

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.8	4.6	6.1	11.8	5.0	5.0
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	27.3	21.2	51.5			
% of Trips - Commercial (by land use)						
Existing Office				48.0	24.0	28.0

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Area

The wood stove percentage changed from 35 to 0.
The wood fireplace percentage changed from 10 to 0.
The natural gas fireplace percentage changed from 55 to 100.
The landscape year changed from 2005 to 2007.
The residential Arch. Coatings ROG emission factor changed from 0.0185 to 0.00602.
The nonresidential Arch. Coatings ROG emission factor changed from 0.0185 to 0.0116.

Changes made to the default values for Operations

The pass by trips option switch changed from on to off.
The operational emission year changed from 2005 to 2007.

Appendix B: Low-OFP Trees Listed in EBMUD's "Plants and Landscapes for Summer-Dry Climates"

Ozone Forming Potential (OFP) of EBMUD Recommended Trees

Ozone Forming Potential (OFP) Level is the biogenic volatile organic compounds emissions as represented by isoprene and monoterpene, which are considered precursors to ozone formation. A combination of sources were used to develop this list and categorize these species of trees listed in the "Plants and Landscapes for Summer-Dry Climates" (EBMUD 2004) for Climate Zone 14. Sources of information are listed below.

Trees with Low OFP

Names		
Genus	**Species**	**Common**
Arbutus	*manzanita 'dr. hurd'*	Dr. Hurd manzanita
Arbutus	*menziesii*	madrone
Arbutus	*unedo*	strawberry madrone
Calocedrus	*decurrens*	incense-cedar
Cedrus	*atlantica*	atlas cedar
Cedrus	*deodara*	deodar cedar
Celtis	*occidentalis*	common hackberry
Celtis	*sinensis*	Chinese hackberry
Cercis	*occidentalis*	western redbud
Cercocarpus	*betuloides*	mountain mahogany
Cercocarpus	*ledifolius*	curly-leaf mountain mahogany
Chamaecyparis	*lawsoniana*	Port Orford cedar
Cinnamomum	*camphora*	camphor tree
Cupressocyparis	*leylandii*	cupressocyparis
Cupressus	*glabra*	smooth Arizona cypress
Cupressus	*macnabiana*	MacNab cypress
Cupressus	*sempervirens*	Italian cypress
Eriobotrya	*deflexa*	bronze loquat
Fraxinus	*uhdei*	evergreen ash
Fraxinus	*velutina*	Arizona ash
Fraxinus	*velutina coriacea*	Montebello ash

Trees with Low OFP *(cont)*

Names		
Genus	**Species**	**Common**
Fraxinus	*velutina 'modesto'*	Modesto ash
Heteromeles	*arbutifolia*	toyon
Jacaranda	*mimosifolia*	jacaranda
Juniperus	*californica*	California juniper
Juniperus	*occidentalis*	western juniper
Lagerstroemia	*indica*	crape myrtle
Laurus	*nobilis*	sweet bay
Lynothamnus	*floribundis*	Catalina ironwood
Nerium	*oleander*	oleander
Olea	*europaea*	fruiting olive
Osmanthus	*fragrans*	sweet olive
Pinus	*sabiniana*	foorhill (gray) pine
Pittosporum	*tobira*	tobira
Pittosporum	*undulatum*	Victorian box
Podocarpus	*macrophyllus*	yew pine
Prunus	*caroliniana*	Carolina laurel cherry
Prunus	*ilicifolia*	hollyleaf cherry
Prunus	*lusitanica*	Portugal laurel
Prunus	*lyonii*	Catalina cherry
Prunus	*subcordata*	Sierra plum
Pyrus	*calleryana 'aristocrat'*	aristocrat flowering pear
Pyrus	*calleryana 'bradford'*	Bradford pear
Rhus	*glabra*	smooth sumac
Rhus	*lancea*	African sumac
Sambucus	*mexicana*	Mexican or hairy blue elderberry
Ulmus	*parvifolia*	Chinese elm

Trees with Medium OFP

Names		
Genus	**Species**	**Common**
Acacia	*smallii*	acacia
Chilopsis	*linearis*	desert willow
Eriobotrya	*japonica*	loquat
Ginko	*bilboa*	maidenhair tree
Grevillea	*robusta*	silk oak
Pinus	*attenuata*	knobcone pine
Pinus	*canariensis*	Canary Island pine
Pinus	*coulteri*	Coulter pine
Pinus	*edulis*	pinyon pine
Pinus	*halepensis*	Aleppo pine
Pistacia	*chinensis*	Chinese pistache
Schinus	*molle*	California (Peruvian) pepper tree
Sequoia	*sempervirens*	coastal redwood
Styphnolobium	*japonicum*	Japanese pagoda tree
Xylosma	*congestum*	xylosma

Trees with High OFP

Names		
Genus	**Species**	**Common**
Albizia	*julibrissin*	silk tree
Casuarina	*littoralis*	black she-oak
Casuarina	*stricta*	mountain she-oak
Eucalyptus	*cinerea*	silver dollar gum
Eucalyptus	*gunnii*	cider gum
Eucalyptus	*leucoxylon*	white ironbark
Eucalyptus	*nicholii*	willowleaf peppermint
Eucalyptus	*sideroxylon*	red ironbark

Trees with High OFP *(cont)*

Names		
Genus	**Species**	**Common**
Feijoa	*sellowiana*	pineapple guava
Koelreuteria	*paniculata*	goldenrain tree
Lophostemon	*confertus*	Brisbane box
Melaleuca	*linariifolia*	flaxleaf paperbark
Melaleuca	*quinquenervia*	cajeput tree
Metrosideros	*excelsus*	New Zealand Christmas Tree
Myrica	*californica*	Pacific wax myrtle
Platanus	*acerifolia*	London plane tree
Platanus	*racemosa*	California sycamore

Trees with Very High or Ultra High OFP

Names		
Genus	**Species**	**Common**
Ligustrum	*lucidum*	glossy privet
Nyssa	*sylvatica*	sour gum
Quercus	*agrifolia*	coast live oak
Quercus	*chrysolepsis*	canyon live oak
Quercus	*douglasii*	blue oak
Quercus	*garryanna*	Oregon white (Garry) oak
Quercus	*kelloggii*	California black oak
Quercus	*lobata*	valley oak

Trees with Unknown OFP

Names		
Genus	**Species**	**Common**
Acacia	*baileyana*	Bailey acacia
Acacia	*cultriformis*	knife acacia
Acacia	*glaucoptera*	clay wattle
Acacia	*pravissima*	ovens wattle
Acacia	*redolens*	prostrate acacia
Acacia	*stenophylla*	shoestring acacia
Aesculus	*californica*	buckeye
Brachyhiton	*populneus*	bottle tree
Celtis	*australis*	European hackberry
Cercis	*silaquastrum*	Judas tree
Cotinus	*coggygria*	smoke tree
Crataegus	*crus-galli*	cockspur thorn
Crataegus	*phaenopyrum*	Washington hawthorn
Cupressus	*arizonica*	Arizona cypress
Fraxinus	*angustifolia*	Raywood ash
Fraxinus	*dipetala*	California ash
Leptospermum	*laevigatum*	Australian tea tree
Leptospermum	*rotundifolium*	tea tree
Leptospermum	*scoparium*	New Zealand tree
Leucadendron	*argenteum*	silver tree
Luma	*apiculata*	Chilean myrtle
Melaleuca	*decussata*	lilac melaleuca
Melaleuca	*styphelioides*	prickly melaleuca
Photinia	*serratifolia*	Chinese photinia
Pinus	*eldarica*	Afghan (Mondell) pine
Pinus	*mugo mugo*	mugho pine
Pittosporum	*crassifolium*	seaside pittosporum

Trees with Unknown OFP *(cont)*

Names		
Genus	**Species**	**Common**
Pittosporum	*eugenioides*	pittosporum
Pittosporum	*phillyraeoides*	willow pittosporum
Pittosporum	*tenuifolium*	Tarata pittosporum
Prunus	*cerasifera 'atropurpurea'*	purple leaf plum
x Chitalpa	*tashkentensis*	chitalpa

Sources

SelecTree = *Urban Forest Ecosystems Institute (http://www.ufei.org/)*

iTree = *USDA Forest Service Research, State and Private Forestry, and other cooperators (www.itreetools.org).*

Data Compiled by Michael Brandman Associates 2007

Appendix C: Biological Resources Assessment

Biological Resources Study
San Ramon City Center Project
City of San Ramon, Contra Costa County, California

Diablo, California, USGS 7.5-minute Topographic Quadrangle Map
Township 2 South, Range 1 West, Section 15
APN number(s) 213-133-063, -086 and 213-120-009, -013

Prepared for:

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Michael Brandman Associates

Report Date: June 1, 2007

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LIST OF EXHIBITS

SECTION 1: SUMMARY

A biological resources study was conducted to document the existing biological conditions within the San Ramon City Center Project, hereafter referred to as the project site or site, located in the City of San Ramon, Contra Costa County, California. Totaling approximately 39.09 acres, the proposed project includes a city center with a mixed use development.

The project site contains suitable nesting habitat for ground-nesting avian species protected by the Migratory Bird Treaty Act and California Fish and Game Code Section (§) 3503. A pre-construction nesting bird survey will be required prior to any vegetation removal or ground disturbance during the nesting season. A focused burrowing owl survey will also be required prior to any ground-disturbing activities.

No potentially jurisdictional drainage features or wetlands were observed onsite during the survey; therefore, a formal jurisdictional delineation will not be required.

The project site is not located within a significant wildlife movement corridor. The project site is not located within any federally designated critical habitat.

SECTION 2: INTRODUCTION

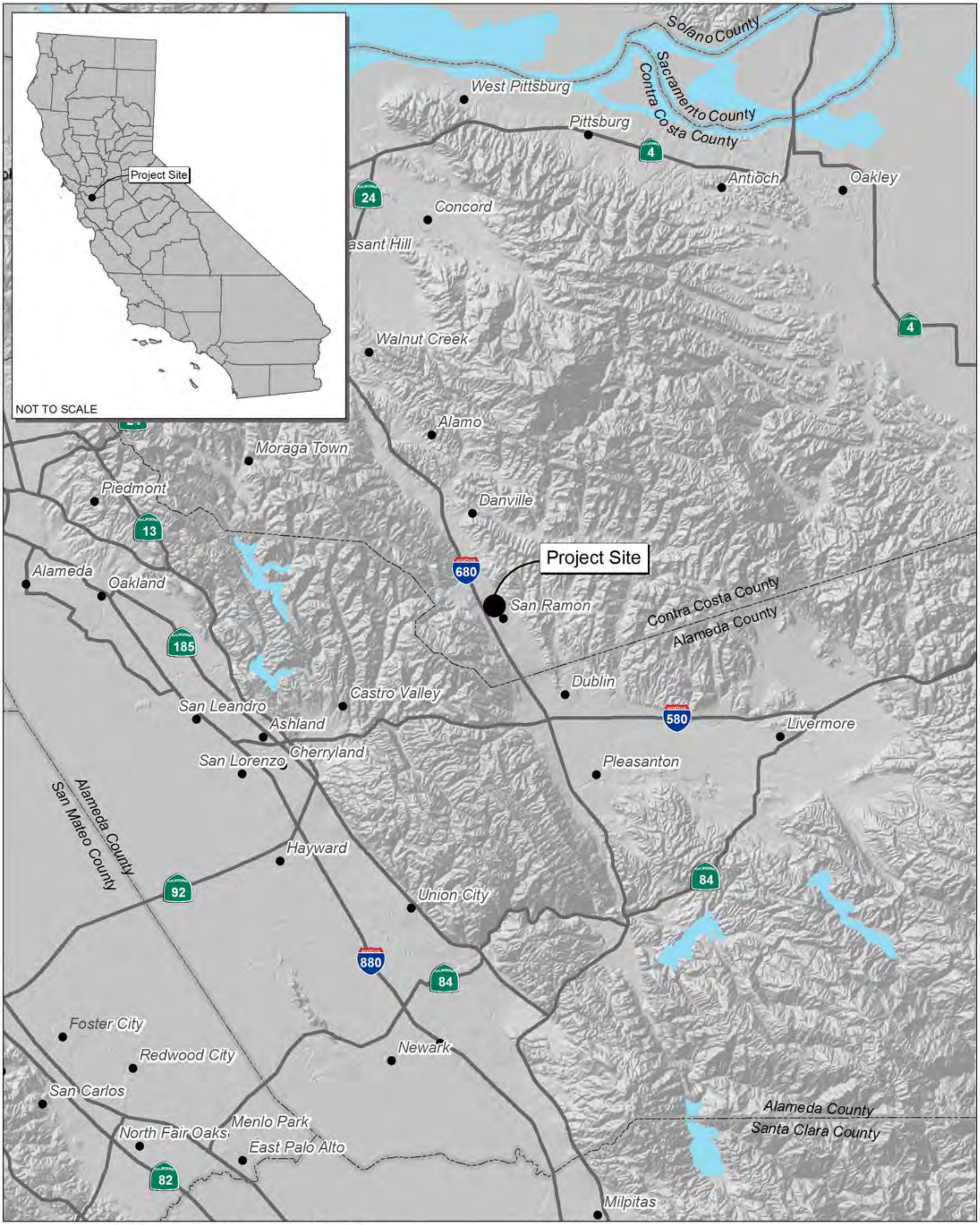
At the request of the City of San Ramon, Michael Brandman Associate (MBA) conducted a biological resources study to document the existing conditions within the 39.09-acre San Ramon City Center Project, located in the City of San Ramon, Contra Costa County, California. For the purposes of this report the surveyed area includes the roads surrounding the existing parcels. The total surveyed area is approximately 48.6 acres. This report provides a detailed description of existing conditions. The information contained herein is intended to provide a baseline for which subsequent evaluations can be made of potential biological resource impacts associated with future projects, based upon the environmental policies and regulations discussed in Appendix D, including the Clean Water Act (CWA), the Federal Endangered Species Act (ESA), the California Endangered Species Act (CESA), and California Environmental Quality Act (CEQA). An approved project site plan was not completed prior to the preparation of this document, and, therefore, it does not include a project-specific impact analysis.

2.1 - Project Site Location

The project site is located north of Interstate 580, south of State Route (SR-) 4, and east of Interstate (I-) 680 (Exhibit 1). It can be found on the Diablo, California, United States Geological Survey (USGS) 7.5-minute topographic quadrangle map, with the San Ramon (Norris) Land Grant portion of Township 2 South, Range 1 West (Exhibit 2). The site is specifically located north of Chevrontexaco Way, south of Bishop Drive, east of Sunset Drive and west of the Iron Horse Trail (Exhibit 3). The project site consists of Assessor's Parcel Numbers (APNs) 213-133-063, 213-133-086, 213-120-009, and 213-120-013.

2.2 - Project Description

The City of San Ramon and Sunset Development Company is proposing to develop approximately 2,168,000 square feet of mixed-use development as part of the San Ramon City Center Project. The project will include a new transit-oriented development within the existing Bishop Ranch Business Park. The major components of the mixed-use development include residential units; a lifestyle retail center including arts, cinema, restaurants, a premium "boutique" hotel, three Bishop Ranch Class A office buildings; a new City Hall with Council Chamber; a City Library; and a transit hub.



Source: Census 2000 Data, The CaSIL, MBA GIS 2007.

Michael Brandman Associates

Exhibit 1
Regional Location Map

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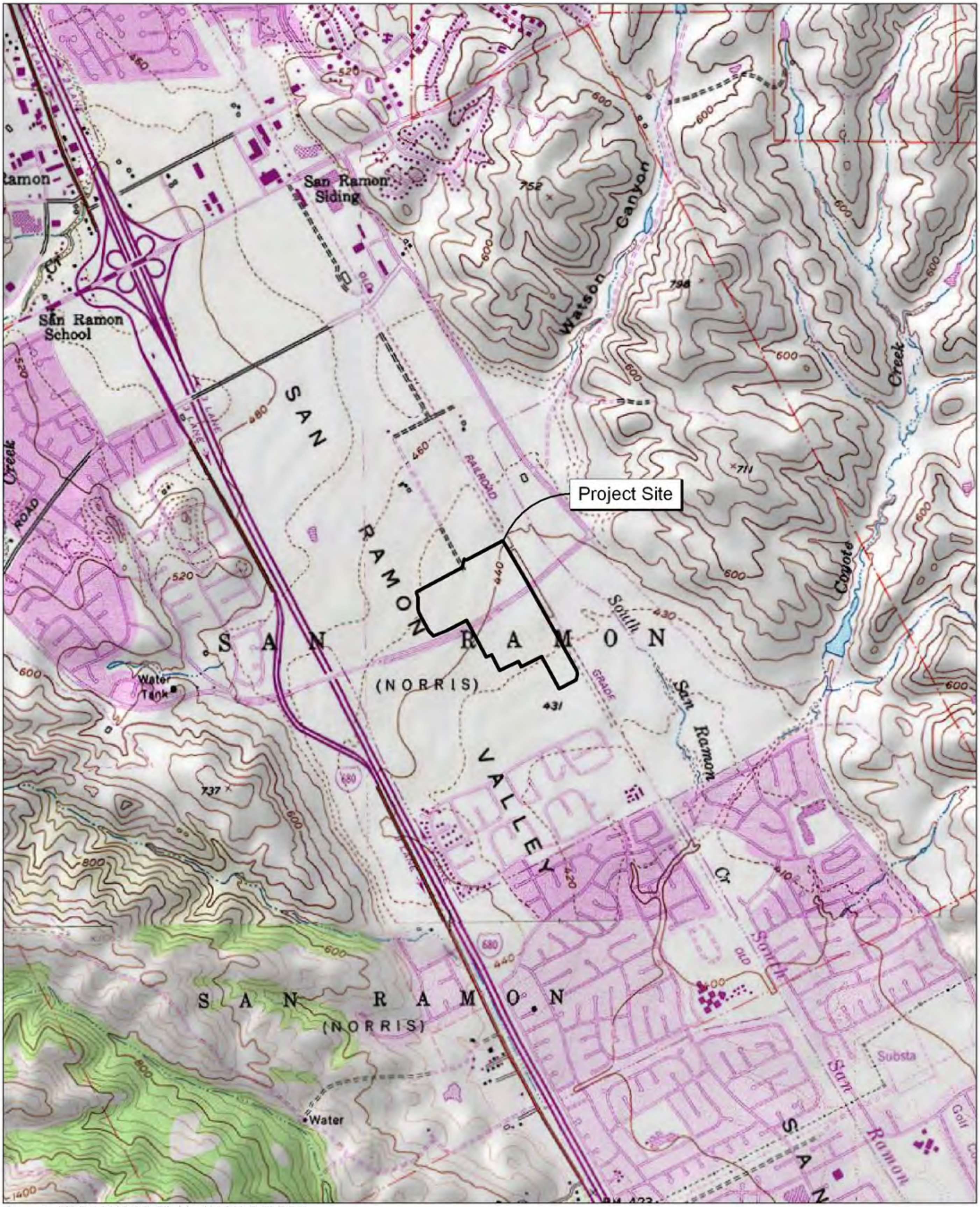
CITY OF SAN RAMON • SAN RAMON CITY CENTER PROJECT
BIOLOGICAL RESOURCES STUDY



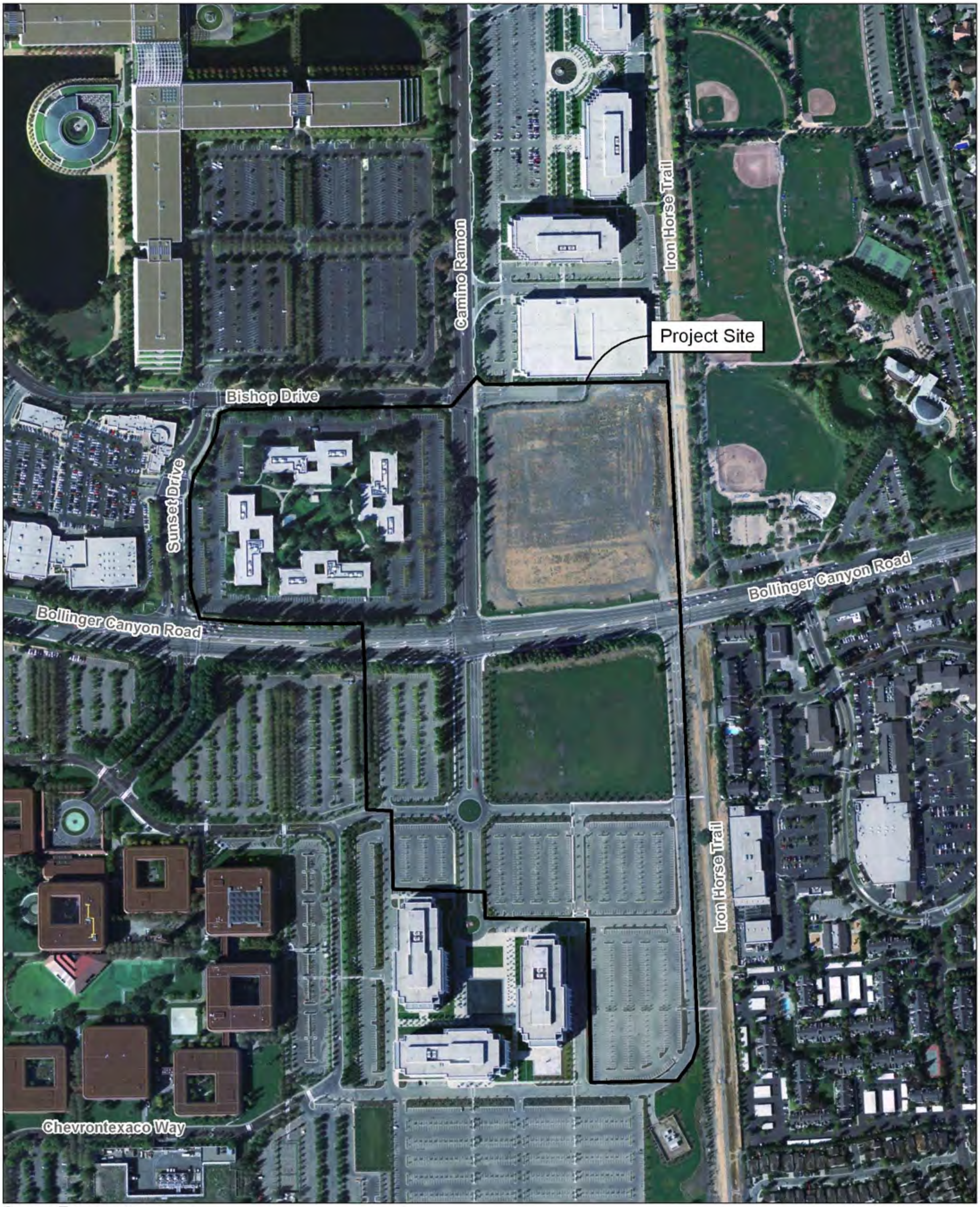
Source: TOPO! USGS Diablo (1980) 7.5' DRG.

Exhibit 2
Local Vicinity Map
Topographic Base

Michael Brandman Associates

NORTH

2,000 1,000 0 2,000 Feet



Source: Terraserver.

Exhibit 3
Local Vicinity Map
Aerial Base

Michael Brandman Associates

NORTH

450 225 0 450 Feet

SECTION 3: METHODOLOGY

Analysis of the biological resources associated with the project site began with a thorough review of relevant literature followed by a reconnaissance-level field survey. The primary objective of the survey is to document existing site conditions and determine the potential presence of sensitive biological resources.

For the purpose of this report, sensitive species refers to all species formally listed as threatened and/or endangered under the ESA and CESA, California Species of Special Concern, designated as Fully Protected by CDFG; given a status of 1A, 1B, or 2 by the California Native Plant Society (CNPS); or designated as sensitive by City, County, or other regional planning documents. Federal and State listed threatened and/or endangered species are legally protected under the ESA. The remaining species mentioned above have no direct legal protection but require a significance analysis under CEQA guidelines.

3.1 - Literature Review

The literature review provides a baseline from which to evaluate the biological resources potentially occurring on the project site as well as the surrounding area.

3.1.1 - Existing Environmental Documentation

As part of the literature review, MBA examined existing environmental documentation for the project site and local vicinity. This documentation included biological studies for the area, literature pertaining to habitat requirements of special status species potentially occurring in the vicinity of the site, as well as federal register listings, protocols, and species data provided by the USFWS and CDFG. These and other documents are listed in Section 7 of this study.

3.1.2 - Topographic Maps and Aerial Photographs

MBA reviewed current USGS 7.5-minute topographic quadrangle maps and aerial photographs as a preliminary analysis of the existing conditions within the project site and immediate vicinity. Information obtained from the review of the topographic maps included elevation range, general watershed information, and potential drainage feature locations. Aerial photographs provide an aerial perspective of the most current site conditions about on- and offsite land-use, plant community locations, and potential locations of wildlife movement corridors.

3.1.3 - Soil Surveys

Many sensitive plant species have a limited distribution based exclusively on soil type. The United States Department of Agriculture (USDA) has published soil surveys that describe the soil series within a particular area. A soil series is a group of soils with similar profiles. These profiles include major horizons with similar thickness, arrangement, and other important characteristics. These series are further subdivided into soil mapping units, which provide specific information about soil characteristics. Pertinent USDA soil survey maps were reviewed to determine the existing soil mapping units within the project site and to establish if soil conditions onsite are suitable for any sensitive plant species.

3.1.4 - Sensitive Species Database Search

MBA compiled a list of threatened, endangered, and otherwise sensitive species previously recorded to occur near the project site. The list was based on a search of the CDFG's California Natural Diversity Database (CNDDB), a sensitive species and plant community account database and the CNPS's Electronic Inventory of Rare and Endangered Vascular Plants of California database for the USGS 7.5-minute topographic quadrangle maps containing the project site and immediate vicinity.

The CNDDB GIS database along with ArcGIS software was used to determine the distance between known recorded occurrences of sensitive species and the project site.

3.2 - Reconnaissance-Level Field Survey

MBA biologist Eric Guzman conducted the reconnaissance-level field survey on April 19, 2007. Special attention was paid to sensitive habitats or those areas potentially supporting sensitive floral and faunal species.

The reconnaissance-level survey was conducted on foot during daylight hours. The object of the survey was not to extensively search for every species occurring within the project site, but to ascertain general site conditions and identify potentially suitable habitat areas for various sensitive plant and wildlife species.

3.2.1 - Plant Community Mapping

Plant communities were mapped using 7.5-minute USGS topographic base maps and recent aerial photography. Sensitive or unusual biological resources identified during the literature review were ground-truthed during the reconnaissance-level survey for mapping accuracy. The plant communities within the project site were classified according to Holland's *Preliminary Descriptions of the Terrestrial Natural Communities of California* (1986 and 1996 update) and cross-referenced with CDFG's List of Terrestrial Natural Communities (2003). Modifications were made by MBA's biologists where appropriate. Acreages for each plant community are included as part of the discussion's heading as well as in the discussion.

3.2.2 - Plant Species

Common plant species observed during the reconnaissance-level survey were identified by visual characteristics and morphology in the field and recorded in a field notebook. Uncommon and less familiar plants were identified offsite using taxonomical guides. A list of all species observed on the project site was compiled from the survey data (Appendix A). Taxonomic nomenclature used in this study follows Hickman (1993). Common plant names, when not available from Hickman (1993), were taken from other regionally specific references. In this report, scientific names are provided immediately following common names of plant species for the first reference only.

3.2.3 - Wildlife Species

Wildlife species detected during the reconnaissance-level survey by sight, calls, tracks, scat, or other signs were recorded in a field notebook. Notations were made regarding suitable habitat for those sensitive species determined to potentially occur within the project site. Appropriate field guides were used to assist with species identification during surveys. Common names of wildlife species are standard; however, scientific names are provided immediately following common names for the first reference only. Appendix A lists all wildlife species observed or detected on the site during the survey.

3.2.4 - Jurisdictional Waters and Wetlands

Prior to conducting the site visit, MBA's biologists reviewed USGS topographic maps and aerial photography to identify any potential natural drainage features and water bodies. In general, all surface drainage features indicated as blue-line streams on USGS maps and linear patches of vegetation expected to exhibit evidence of flows are considered potentially subject to State and federal regulatory authority as "waters of the US and/or state." The assessment was not intended as a formal delineation of waters of the U.S. or State but, rather, to identify areas that may require a formal delineation.

3.2.5 - Wildlife Movement Corridors

Wildlife movement corridors link areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of open space areas by urbanization creates isolated "islands" of wildlife habitat, separating different populations of a single species. Corridors effectively act as links between these populations.

The project site was evaluated for evidence of a wildlife movement corridor. However, the scope of the biological resources study did not include a formal wildlife movement corridor study utilizing track plates, camera stations, scent stations, or snares. The focus of this study was to determine if the alteration of current land use on the site would have significant impacts on the regional movement of wildlife. These conclusions are based on the information compiled from the literature review, including aerial photographs, USGS topographic maps, and resource maps for the vicinity; the field survey: and knowledge of desired topography and resource requirements for wildlife potentially utilizing the project site and vicinity.

3.3 - Problems and Limitations

The reconnaissance-level survey was conducted in mid-spring during a year with minimal rainfall. This lack of available moisture can have substantial affects on the density and diversity of plant and wildlife species observed onsite. Because of the dry conditions in the region, plant and wildlife abundance is considered less than average for this time of year.

Many amphibians, reptiles, and mammals are secretive by nature and some are nocturnally active, making diurnal observations problematic. Observations of diagnostic sign may provide evidence of occurrence of these species. Otherwise, conclusions about potential occurrence are based on consideration of habitat suitability factors.

SECTION 4: EXISTING CONDITIONS

The reconnaissance-level field survey was conducted on April 19, 2007, between 0900 and 1200. Weather conditions during the field survey included a temperature of 49 degrees Fahrenheit, with sunny, clear skies and an average wind speed of 3.5 miles per hour. There had been no rain in the region for at least four days.

4.1 - Environmental Setting

The project site is located within a previous development area known as the Bishop Ranch Business Park. The majority of the project site is developed and consists of office-buildings and parking lots. There are two undeveloped areas within the proposed project site.

Adjacent land use consists of office buildings and parking lots to the north; parking lots and residential development to the south; a sports complex, a dry creek bed, and residential development to the east; and a shopping center and business complexes to the west.

Overall, the project site is considered developed if it contains a few areas that are heavily disturbed. The project site contains a building complex, paved parking lots, and a few open fields. Ornamental landscaping occurs throughout the developed portions of the project site.

4.1.1 - Topographic Features

Topographically, the project site is located on a relatively flat plain in the San Ramon Valley. The project site has a gradual slope from north to south with an elevation of approximately 440 feet above sea level.

4.1.2 - Soils

Based on the Contra Costa County, soils survey (USDA 1979), the project site contains four distinct soil mapping units: Botella Clay Loam, Clear Lake Clay, Conejo Clay Loam, and Pescadero Clay Loam (Exhibit 4).

Source: Terraserver and USDA Soils (NRCS).

Michael Brandman Associates

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Exhibit 4
USDA Soils Map

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4.2 - Plant Communities

The plant communities that occur within the project site include non-native grassland and urban/developed (Exhibit 5). Table 1 below provides a summary of the plant community acreages. Representative photos of the communities can be found in Appendix B.

4.2.1 - Non-Native Grassland (18.2 Acres)

Non-native grassland, a prevalent community throughout California, is characterized by a dense to sparse cover of non-native, annual grasses often associated with numerous weedy species as well as native annual forbs (wildflowers), especially in years of plentiful rain. Seed germination occurs with the onset of winter rains. Some plant growth occurs in winter, but most growth and flowering occurs in the spring. Plants then die in the summer and persist as seeds in the uppermost layers of soil until the next rainy season. Dominant plant genera typically found within non-native grasslands include bromes (*Bromus* spp.), wild oats (*Avena* spp.), fescues (*Vulpia* spp.), and barleys (*Hordeum* spp.).

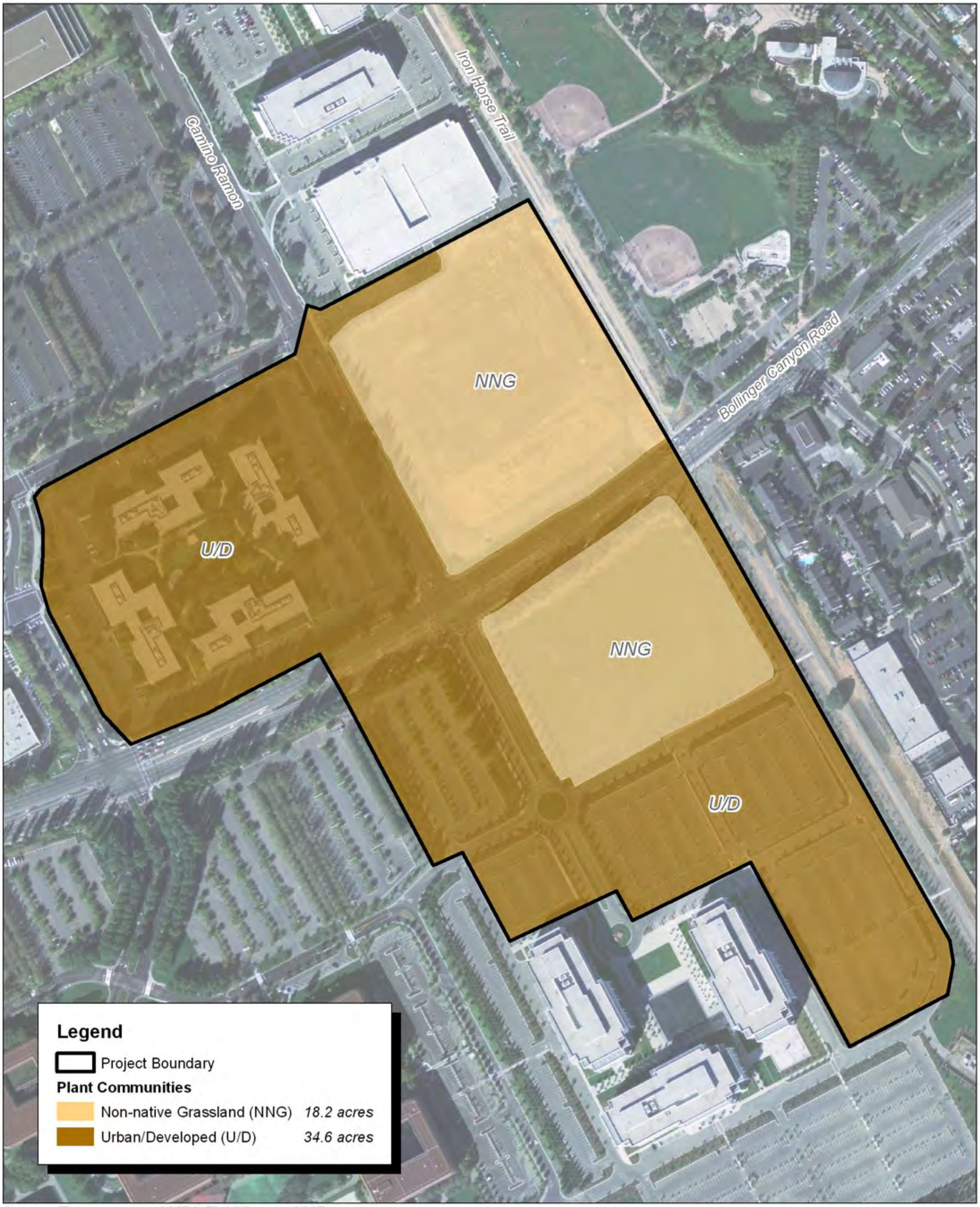
The non-native grasslands occur in the eastern portion of the project site, north and south of Bollinger Canyon Road. Highly utilized paved roads surround both grassland areas. The northern portion of the non-native grasslands is a well irrigated, maintained lawn and is dominated by weedy species such as hare barley (*Hordeum murinum*), wild oats (*Avena fatua*), red-stem filaree (*Erodium cicutarium*), and bristly ox-tongue (*Picris echioides*). A few trees are spread out sporadically around the perimeter of the northern non-native grassland along the north, south, and west sides of the grassland area. Tree species observed onsite include coast live oak (*Quercus agrifolia*) and redwoods (*Sequoia sempervirens*).

The southern section of the non-native grasslands consists of a well-irrigated and maintained grassland containing such species as soft brome (*Bromus hordeaceus*), vetch (*Vicia disperma*), and ox-eye daisy (*Leucanthemum vulgare*). There are several ornamental shrubs and trees located around the perimeter of the southern non-native grasslands, including redwoods (*Sequoia sempervirens*) and Fremont cottonwoods (*Populus fremontii*). Paved parking lots lie to the south and west of the southern non-native grassland.

4.2.2 - Urban/Developed (30.4 Acres)

Although not considered a natural plant community, this habitat often includes a mixture of ornamental vegetation associated with existing structures, roads, residential and commercial buildings, and parking lots. Vegetation within this community typically include lawns, golf courses, road shoulders, and airports and park facilities surrounded by or located near residential/commercial development. Many secondary dirt access roads also are included in this category.

The urban/developed area occurs on the northwestern portion of the project site, consisting of several commercial buildings. There are also paved parking lots located in the southeastern and central portions of the project site. Vegetation within the urban/developed area includes ornamental trees such as redwood (*Sequoia sempervirens)* and cottonwoods (*Populus freemontii.*).



Source: Terraserver and MBA Field Survey 2007.

Michael Brandman Associates

NORTH

350 175 0 350 Feet

Exhibit 5
Plant Communities Map

4.3 - Wildlife

The plant communities discussed above provide habitat for a number of local wildlife species. The following are brief discussions of wildlife species observed within the project site during the field survey, separated into taxonomic groups. Each discussion contains representative examples of a particular taxonomic group either observed onsite or expected to occur. A complete list of wildlife species observed within the site during the field survey is presented in Appendix A.

4.3.1 - Invertebrates

The project site contains non-native grasslands that provide suitable habitat for a variety of invertebrate species. No invertebrate species were observed within the project site during the field survey. Common species expected to occur within the site include painted lady (*Vanessa cardui*), harvester ant (*Pogonomyrmex* sp.), and stink beetle (*Eleodes* sp.).

4.3.2 - Fishes

The project site does not contain any aquatic habitat types that could provide habitat for any fish species. No fishes are expected to occur within the site.

4.3.3 - Amphibians

The project site does not contain any suitable habitat for amphibian species. No amphibian species are expected to occur within the site. Some amphibians are known to forage in upland areas. The closest potential amphibian habitat is San Ramon Creek just east of the project site, which is currently dry. This feature does not currently provide habitat for amphibian species. The closest suitable habitat is Coyote Creek, approximately 1 mile east of the project site.

4.3.4 - Reptiles

The project site contains non-native grasslands that provide suitable habitat for reptile species such as western fence lizard (*Sceloporus occidentalis*) and side-blotched lizard (*Uta stansburiana*), which commonly occur in disturbed habitats. No reptile species were observed onsite.

4.3.5 - Birds

The project site contains non-native grasslands and ornamental trees that provide suitable foraging and nesting habitat for several avian species, such as year-round residents, seasonal residents, and migrating songbirds. Species observed during the survey within these communities include rock dove (*Columba livia*), morning dove *(Zenaida macroura)*, common raven *(Corvus corax)* and Canada goose (*Branta canadensis)*.

Some of the habitat within the project site provides potential foraging opportunities for raptors. There were several potential perching locations within the project site. There was no evidence of nesting raptors within the site and, because of the proximity to existing commercial development, it is not likely that any raptors will nest onsite. Additionally, there were no raptors observed during the survey.

4.3.6 - Mammals

The non-native grasslands onsite provide suitable habitat for mammal species that are better adapted to frequent human disturbance, such as deer mouse (*Peromyscus maniculatus*) and pocket gopher (*Thomomys bottae*). California ground squirrel (*Spermophilus beecheyi*) was the only mammal species observed onsite. A few deer mouse-sized burrows were observed onsite.

SECTION 5: SENSITIVE BIOLOGICAL RESOURCES

Based on the results of the literature review and reconnaissance-level field survey, MBA documented existing site conditions and determined if sensitive biological resources occur or potentially occur within the project site.

5.1 - Sensitive Plant Communities

Plant communities are considered sensitive biological resources based on federal, State, or local laws regulating their development, limited distributions, and habitat requirements of sensitive plants or wildlife species that occur within them.

The project site contains urban/developed and non-native grasslands, which are not considered sensitive plant communities by any regulatory agency. No sensitive plant communities were observed onsite.

5.2 - Sensitive Plant Species

The Sensitive Plant Species table (Table 1) identifies the federal and State listed threatened, endangered plant species, and CNPS sensitive species that have a high, moderate, or low potential to occur within the project site. The table also includes the species' status and required habitat. All sensitive plant species that have been determined not likely to occur onsite, primarily based on the absence of suitable habitat and a recorded occurrence in the vicinity of the site, have been excluded from further analysis within this study.

Based on MBA's literature review, 16 sensitive plant species have been previously recorded within 7 miles of the site. No sensitive plant species were observed during the reconnaissance-level survey. Because of the disturbed nature of the site and lack of suitable habitat, the project site does not provide suitable habitat for 15 of these sensitive plant species. Therefore, these species have been excluded from further analysis within this study.

5.2.1 - Threatened or Endangered Species

No threatened or endangered wildlife species were found to have a high, moderate, or low potential to occur onsite.

5.2.2 - California Native Plant Society List Species

No CNPS listed plants were found to have a high or moderate potential to occur onsite. Of the CNPS listed plants that have a low potential to occur onsite, one was a 1B plant.

Mt Diablo Buckwheat

Mt Diablo Buckwheat (*Eriogonum truncatum*) is a CNPS listed 1B plant species. This plant can be found in bare sandy to clayey soil between non-native grassland and chaparral. The Mt. Diablo buckwheat was known to occur within the vicinity of Mt. Diablo and marsh creek in Contra Costa County and in the City of Suisun in Solano County.

The non-native grassland onsite provides marginally suitable habitat for the Mt Diablo buckwheat. Because of the highly disturbed nature of the site and the proximity to adjacent urban development, the Mt. Diablo buckwheat had a low potential to occur onsite.

5.3 - Sensitive Wildlife Species

The Sensitive Wildlife Species table (Table 1) identifies the federal and State listed threatened, endangered wildlife species, and species of special concern that have a high, moderate, or low potential to occur within the project site. The table also includes the species' status and required habitat.

Based on MBA's literature review, 16 sensitive wildlife species have been previously recorded within the vicinity of the site. No sensitive wildlife species were observed during the reconnaissance-level survey. The project site contains marginally suitable habitat for burrowing owl (*Athene cunicularia*)

A discussion of each sensitive wildlife species recognized by the CNDDB and MBA as potentially present on the site is presented in Table 1. All sensitive wildlife species that have been determined not likely to occur onsite, primarily based on the absence of suitable habitat and a recorded occurrence on the project site, have been excluded from further analysis within this study.

5.3.1 - Threatened or Endangered Species

No threatened or endangered wildlife species were found to have a high, moderate, or low potential to occur onsite.

San Joaquin Kit Fox

Largely due to widespread habitat loss, the San Joaquin kit fox (*Vulpes macrotis mutica*) is federally listed as endangered and State listed as threatened. The kit fox is often found in grasslands, open shrubs, and scrub habitats. The San Joaquin kit fox is a small, grayish fox about 2.5 feet in length and weighing up to 5.5 pounds. The kit fox occurs from the San Joaquin Valley, north to Contra Costa and Alameda counties. The prey of the San Joaquin kit fox includes rodents, rabbits, and lizards.

The closest occurrence of the San Joaquin kit fox to the project site is over 1.5 miles away. No suitable denning habitat occurs within the project site. The non-native grasslands onsite may provide minimal foraging habitat. However, because of the development within the vicinity of the project site and the highly disturbed nature of the site and surrounding areas, it is unlikely that the San Joaquin kit fox will occur within the project site.

Alameda Whipsnake

Alameda whipsnake (*Masticophis lateralis euryxanthus*) is federally and State listed as threatened. Alameda whipsnakes are typically found in chaparral—northern coastal sage scrub and coastal sage habitats. Rock outcrops are important features to the Alameda whipsnake that provide retreat opportunities. The western fence lizard (*Sceloporus occidentalis*) appear to be the most important prey item of whipsnake's diet; other prey taken include skunks, frogs, snakes, and birds. Grassland habitats are also used by male whipsnakes, most extensively during the mating season in spring. Female whipsnakes use grassland areas most extensively after mating, possibly in their search for suitable egg-laying sites.

Although the project site does fall within a recorded occurrence of the Alameda whipsnake, the urban/developed habitat and the non-native grasslands onsite does not currently provide suitable foraging or breeding habitat for the this species. Therefore, the Alameda whipsnake is not likely to occur within the project site.

California Tiger Salamander

California tiger salamander (*Ambystoma californiense*) is federally listed as threatened and is listed by CDFG as a species of concern. The California tiger salamander usually breeds between December and February in vernal pools and other seasonal ponds within the grassland habitats of California. Eggs are laid on pool bottoms, larvae hatch within approximately 3 weeks, and larvae develop into adults within 10 to 12 weeks. Adult California tiger salamanders spend a majority of time aestivating in subterranean refugia. Rodent burrows in grasslands onsite also provide aestivation habitat for the California tiger salamander.

The closest recorded occurrence within the vicinity of the project site is over 3.5 miles to the east. The urban/developed habitat and the non-native grasslands onsite do not provide any suitable foraging, breeding, or aestivation sites for this species; therefore, California tiger salamander is not likely to occur within the project site.

California Red-Legged Frog

The California red-legged frog *(Rana aurora draytonii*) is a federally threatened species that typically occurs in lowlands and foothills in or near permanent sources of deep water with dense, shrubby, or emergent riparian vegetation. California red-legged frogs have been discovered in areas completely denuded of vegetation and sometimes use upland areas for foraging (CDFG 2006).

The closest occurrence is approximately 2 miles northwest of the project site. The urban/developed habitat and the non-native grasslands onsite do not provide any suitable foraging, breeding, or aestivation sites for the California red-legged frog; therefore, this species is not likely to occur within the project site.

5.3.2 - California Species of Special Concern

Of the sensitive plant species that have a high or moderate potential to occur on the project site, one is a California Species of Special Concern.

Burrowing Owl

Typical habitat associated with burrowing owls includes short-grass prairies, grasslands, lowland scrub, agricultural lands (particularly rangelands), prairies, coastal dunes, desert floors, and some artificial, open areas as a year-round resident. The primary requirement for suitable burrowing owl foraging habitat appears to be low vegetation cover that allows visibility and access to prey.

Kleinfelder, Inc. conducted a non-protocol survey for burrowing owl on May 2, 2007 (Appendix D). The area surveyed included 12 acres of the non-native grassland habitat onsite. No owls or signs of owls were observed during this survey.

Typically, burrowing owls require approximately 6.5 acres to support a pair of nesting owls. The project site contains non-native grasslands and California ground squirrel burrows that provide marginally suitable habitat for burrowing owl. The NNG associated with the project site is considered isolated from adjacent habitat, however there has been a recently recorded occurrence in 2004 within the boundaries of the project site Therefore, burrowing owl has a moderate potential to occur onsite.

Of the sensitive plant species that have a low potential to occur on the project site, one is a California Species of Special Concern.

Prairie Falcon

Prairie falcon (*Falco mexicanus*) is a California species of special concern. Prairie falcons are found throughout the western United States within open grasslands and shrub-steppe deserts. Ground squirrels are the mainstay of the prairie falcons' diet; other sources of food include reptiles and insects. Horned larks and western meadowlarks are important prey items in winter. Prairie falcons nest primarily on cliff ledges, crevices, or cavities. These raptors do not build a nest structure; instead, they scrape loose debris to form a small depression to hold eggs within the nest site.

An occurrence of prairie falcon has been recorded within the boundaries of the project site. The project site does not contain any suitable nesting habitat. The non-native grasslands and the presence of California ground squirrels provide marginally suitable foraging habitat. However, because of the highly disturbed nature of the site and the surrounding areas, the prairie falcon has a low potential to occur onsite.

Table 1: Sensitive Plant Species

Species		Status			Preferred Habitat	Blooming Period	Potential to Occur/ Known Occurrence/ Suitable Habitat
Scientific Name	Common Name	ESA	CESA	CNPS			
Herbaceous Annuals							
Eriogonum truncatum	Mt. Diablo Buckwheat	—	—	1B	Chaparral, coastal scrub, valley and foothill grassland. Dry, exposed clay or sandy substrates. 100-600m.	April–September	**Low Potential to Occur.** Documented occurrence within 2.5 miles of site. Marginally suitable habitat.

ESA
FE Federally listed endangered
FT Federally listed threatened
FPE Federally proposed endangered
FPT Federally proposed threatened
FC Federal candidate

CESA
SE State listed endangered
ST State listed threatened
SR State listed rare

CNPS
1A Presumed extinct in California.
1B Rare, threatened, or endangered in California and elsewhere.
2 Rare, threatened, or endangered in California, but more common elsewhere.

Species Present - The species was observed on the project site at the time of the survey or during a previous biological survey.
High Potential to Occur - There is both suitable habitat associated with the species and a historical record of the species on or in the immediate vicinity of the project site, within 3 miles.
Moderate Potential to Occur - The diagnostic habitats associated with the species occur on or in the immediate vicinity of the project site, but there is not a recorded occurrence of the species within the immediate vicinity, within 3 miles. Some species that contain extremely limited distributions may be considered moderate, even if there is a recorded occurrence in the immediate vicinity.
Low Potential to Occur - There is a historical record of the species in the vicinity of the project site and potentially suitable habitat onsite, but existing conditions, such as density of cover, prevalence of non-native species, evidence of disturbance, limited habitat area, isolation, substantially reduce the possibility that the species may occur. The site is above or below the recognized elevation limits for this species.

Table 2: Sensitive Wildlife Species

Species		Status			Preferred Habitat	Potential to Occur/ Known Occurrence/ Suitable Habitat
Scientific Name	Common Name	ESA	CESA	Other		
Birds						
Athene cunicularia	Burrowing owl	—	—	CDFG: CSC	Burrow sites. open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably the California ground squirrel.	**Moderate Potential to Occur** Documented occurrence onsite. Marginally suitable habitat highly disturbed. CA ground squirrel burrows were observed onsite.
Falco Mexicanus	Prairie falcon	—	—	CDFG: CSC	Inhabits dry, open terrain, either level or hilly. Breeding sites located on cliffs. Forages far afield, even to marshlands and ocean shores.	**Low Potential to Occur** Documented occurrence onsite. Marginally suitable foraging habitat present onsite. No suitable nesting habitat

ESA
FE Federally listed endangered
FT Federally listed threatened
FPE Federally proposed endangered
FPT Federally proposed threatened
FC Federal candidate

CESA
SE State listed endangered
ST State listed threatened

Other
CDFG:CSC California Species of Concern
CDFG:FP Fully Protected Species
CDFG:P Protected Species

Species Present - The species was observed on the project site at the time of the survey or during a previous biological survey.
High Potential to Occur - There is both suitable habitat associated with the species and a historical record of the species on or in the immediate vicinity of the project site, within 3 miles.
Moderate Potential to Occur - The diagnostic habitats associated with the species occur on or in the immediate vicinity of the project site, but there is not a recorded occurrence of the species within the immediate vicinity, within 3 miles. Some species that contain extremely limited distributions may be considered moderate, even if there is a recorded occurrence in the immediate vicinity.
Low Potential to Occur - There is a historical record of the species in the vicinity of the project site and potentially suitable habitat onsite, but existing conditions, such as density of cover, prevalence of non-native species, evidence of disturbance, limited habitat area, isolation, substantially reduce the possibility that the species may occur. The site is above or below the recognized elevation limits for this species.

5.4 - Nesting Birds

The project site contains a variety of habitats that provide suitable nesting habitat for a number of different avian species. The urban/developed areas onsite contain trees that could provide nesting habitat for tree-dwelling avian species such as northern mockingbird (*Mimus polyglottos*) and western scrub-jay (*Aphelocoma californica*). The non-native grasslands contain suitable nesting habitat for ground-nesting species such as western meadowlark (*Sturnella neglecta*) and burrowing owl.

5.5 - Wildlife Movement Corridors

The project site is surrounded by residential development, office complexes, shopping centers, and parking lots. Interstate 680 lies to the east of the project site. The surrounding development to the north, south, east, and west currently prohibit any wildlife movement in the area. In addition, the project site does not occur within a narrow corridor that links large areas of undeveloped open space. Therefore, the site is not located within a significant wildlife movement corridor. Common wildlife species such as coyotes can be expected to travel though the site and neighboring developed areas, but the site does not provide a narrow connectivity between large areas of open space on a local or regional scale.

5.6 - Jurisdictional Waters and Wetlands

There are no potentially jurisdictional waters or wetlands found within the project site. Therefore, a formal jurisdictional delineation will not be required.

SECTION 6: RECOMMENDATIONS

This report was prepared to document the existing conditions within the project site and to provide a baseline to further analyze a proposed project under CEQA guidelines. Once the locations of all permanent and temporary impacts associated with the project design have been determined, a Biological Resources Impact Analysis can be completed. The recommendations below are necessary to prepare that report.

6.1 - Sensitive Plant Communities

No sensitive plant community occurs within the project site; therefore, no further action concerning sensitive plant communities is required.

6.2 - Sensitive Plant Species

Focused surveys are typically recommended for sensitive plant species that are federally or State listed as endangered or threatened and have moderate to high potential to occur on the project site. The site currently contains no suitable habitat for any sensitive plant species; therefore, no focused surveys will be required for sensitive plants.

6.3 - Sensitive Wildlife Species

Focused surveys are typically recommended for sensitive wildlife species that are federally or State-listed as endangered or threatened and have moderate to high potential to occur on the project site. The site contains suitable habitat for one sensitive wildlife species, which is not federally or State listed as threatened or endangered.

6.3.1 - California Species of Concern

The project site contains marginally suitable habitat for burrowing owl, a California species of concern that is legally protected by the MBTA and CFG Code. Despite the negative findings of the May 2007 survey conducted by Kleinfelder, Inc., there has been a recent documented occurrence of burrowing owl within the project site. Therefore, before any ground-disturbing activities on the project site begin, a qualified biologist should conduct a focused protocol survey to determine the presence or absence of this species onsite. The survey will be conducted according to the standard protocol established by CDFG and the Burrowing Owl Consortium (BOC). If burrowing owls are determined to be present on the site, mitigation for potential impacts to owls should follow the guidelines outlined by the BOC, including passive relocation.

6.4 - Nesting Birds

The project site contains suitable nesting habitat for several tree- and ground-dwelling avian species. Therefore, pursuant to the MBTA and CFG Code, removal of any grasslands or any other potential nesting habitat should be conducted outside the avian nesting season. The nesting season generally extends from early February through August, but it can vary slightly from year to year based upon seasonal weather conditions.

If suitable nesting habitat must be removed during the nesting season, a qualified biologist should conduct a nesting bird survey to identify any nesting activity. If any active nests are observed, a qualified biological monitor will be required during any construction activity that may potentially causes a nest failure, including soil disturbance and tree removal. Construction activity may occur within the vicinity of an active nest at the discretion of the biological monitor. Monitoring should be conducted until the nestlings have fledged.

If construction activity must proceed during the nesting season and an active nest requires removal, an MBTA Special Purpose Permit from USFWS will be needed prior to nest removal or disturbance.

6.5 - Wildlife Movement Corridors

The project site does not provide a corridor for regional wildlife movement. Therefore, no additional action is required for potential impacts to wildlife movement corridors.

6.6 - Jurisdictional Waters and Wetlands

Based upon MBA's findings for the proposed project site, there are no drainage features that fall under the jurisdiction of the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and/or CDFG. Therefore, no further action is required for impacts to jurisdictional drainage features.

SECTION 7: CERTIFICATION

I herby certify that the statements furnished above and in the attached exhibits present data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Date: June 1, 2007 Signed:

Eric Guzman
Michael Brandman Associates

SECTION 8: REFERENCES

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SECTION 9: PROJECT RESPONSIBILITY

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All staff responsible for report preparation and fieldwork are MBA employees and can be contacted at 559.497.0310.

Appendix A: Floral and Faunal Compendia

FLORAL COMPENDIUM

Asteraceae	**Sunflower Family**
Cirsium ochrocentrum	yellowspine thistle
Leucanthemum vulgare	ox-eye daisy
* *Picris echioides*	bristly ox-tongue
Brassicaceae	**Mustard Family**
Raphanus sativus	wild radish
Fabaceae	**Legume Family**
* *Melilotus indica*	sourclover
* *Vicia disperma*	vetch
Fagaceae	**Oak Family**
Quercus agrifolia	coast live oak
Geraniaceae	**Geranium Family**
* *Erodium cicutarium*	red stem filaree
Geraniaceae	**Geranium Family**
* *Erodium cicutarium*	red stem filaree
Hamamelidaceae	**Witch hazel Family**
* *Liquidambar orientalis*	Oriental sweet gum
Papaveraceae	**Poppy Family**
Eschscholzia californica	California poppy
Pinaceae	**Pine Family**
Erodium cicutarium	red stem filaree
Poaceae	**Grass Family**
* *Avena fatua*	wild oat
* *Hordeum murinum*	hare barley
* *Bromus hordeaceus*	soft brome
Salicaceae	**Willow Family**
Populus fremontii	Fremont cottonwood
Taxodiaceae	**Bald Cypress Family**
Sequoia sempervirens	redwood

* Indicates Non-Native Species

FAUNAL COMPENDIUM

Birds

Anatidae — **Swans and Geese**
Branta canadensis — Canada goose

Columbidae — **Pigeons and Doves**
Zenaida macroura — mourning dove

Corvidae — **Jays and Crows**
Corvus corax — common raven

Sturnidae — **Starlings**
Sturnus vulgaris — European starling

Mammals

Sciuridae — **Squirrels**
Spermophilus beecheyi — California ground squirrel

Appendix B: Site Photographs

Photograph 1: Looking northwest at the maintained lawn from the southeast corner of northern non-native grassland

Photograph 2: Looking north at the maintained grassland from the southwest corner of southern non-native grassland

Source: Michael Brandman Associates, 2007.

Michael Brandman Associates

Appendix B
Site Photographs 1 & 2

Photograph 3: Looking south from southern end of the southern non-native grassland at landscape vegetation associated with the parking areas

Source: Michael Brandman Associates, 2007.

Michael Brandman Associates

Appendix B
Site Photograph 3

Appendix C: California Natural Diversity Database Search Results

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1	Accipiter striatus sharp-shinned hawk	ABNKC12020			G5	S3	SC
2	Agelaius tricolor tricolored blackbird	ABPBXB0020			G2G3	S2	SC
3	Ambystoma californiense California tiger salamander	AAAAA01180	Threatened		G2G3	S2S3	SC
4	Amsinckia grandiflora large-flowered fiddleneck	PDBOR01050	Endangered	Endangered	G1	S1.1	1B.1
5	Amsinckia lunaris bent-flowered fiddleneck	PDBOR01070			G2	S2.2	1B.2
6	Andrena blennospermatis A vernal pool andrenid bee	IIHYM35030			G2	S2	
7	Anniella pulchra pulchra silvery legless lizard	ARACC01012			G3G4T3T4Q	S3	SC
8	Anomobryum julaceum slender silver-moss	NBMUS80010			G4	S1.3	2.2
9	Antrozous pallidus pallid bat	AMACC10010			G5	S3	SC
10	Aquila chrysaetos golden eagle	ABNKC22010			G5	S3	SC
11	Arctostaphylos auriculata Mt. Diablo manzanita	PDERI04040			G2	S2.2	1B.3
12	Arctostaphylos manzanita ssp. laevigata Contra Costa manzanita	PDERI04273			G5T2	S2	1B.2
13	Ardea herodias great blue heron	ABNGA04010			G5	S4	
14	Astragalus tener var. tener alkali milk-vetch	PDFAB0F8R1			G1T1	S1.1	1B.2
15	Athene cunicularia burrowing owl	ABNSB10010			G4	S2	SC
16	Atriplex cordulata heartscale	PDCHE040B0			G2?	S2.2?	1B.2
17	Atriplex depressa brittlescale	PDCHE042L0			G2Q	S2.2	1B.2
18	Atriplex joaquiniana San Joaquin spearscale	PDCHE041F3			G2	S2.1	1B.2
19	Balsamorhiza macrolepis var. macrolepis big-scale balsamroot	PDAST11061			G3G4T2	S2.2	1B.2
20	Blepharizonia plumosa big tarplant	PDAST1C011			G1	S1.1	1B.1
21	Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened		G3	S2S3	
22	Buteo regalis ferruginous hawk	ABNKC19120			G4	S3S4	SC
23	California macrophyllum round-leaved filaree	PDGER01070			G3	S3.1	1B.1

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
24	Callophrys mossii bayensis San Bruno elfin butterfly	IILEPE2202	Endangered		G4T1	S1	
25	Calochortus pulchellus Mt. Diablo fairy-lantern	PMLIL0D160			G2	S2.1	1B.2
26	Calystegia atriplicifolia ssp. buttensis Butte County morning-glory	PDCON04012			G5T3	S3.2	1B.2
27	Campanula exigua chaparral harebell	PDCAM020A0			G2	S2.2	1B.2
28	Centromadia parryi ssp. congdonii Congdon's tarplant	PDAST4R0P1			G4T3	S3.2	1B.2
29	Circus cyaneus northern harrier	ABNKC11010			G5	S3	SC
30	Cordylanthus nidularius Mt. Diablo bird's-beak	PDSCR0J0F0		Rare	G1	S1.2	1B.1
31	Cordylanthus palmatus palmate-bracted bird's-beak	PDSCR0J0J0	Endangered	Endangered	G1	S1.1	1B.1
32	Corynorhinus townsendii Townsend's big-eared bat	AMACC08010			G4T3T4	S2S3	SC
33	Cryptantha hooveri Hoover's cryptantha	PDBOR0A190			GH	SH	1A
34	Delphinium californicum ssp. interius Hospital Canyon larkspur	PDRAN0B0A2			G3T2?	S2?	1B.2
35	Dendroica petechia brewsteri yellow warbler	ABPBX03018			G5T3?	S2	SC
36	Didymodon norrisii Norris' beard-moss	NBMUS2C0H0			G2G3	S2.2	2.2
37	Dipodomys heermanni berkeleyensis Berkeley kangaroo rat	AMAFD03061			G3G4T1	S1	
38	Efferia antiochi Antioch efferian robberfly	IIDIP07010			G1G3	S1S3	
39	Elanus leucurus white-tailed kite	ABNKC06010			G5	S3	
40	Emys (=Clemmys) marmorata western pond turtle	ARAAD02030			G3G4	S3	SC
41	Eremophila alpestris actia California horned lark	ABPAT02011			G5T3	S3	SC
42	Eriastrum brandegeeae Brandegee's eriastrum	PDPLM03020			G3	S3.2	1B.2
43	Eriogonum truncatum Mt. Diablo buckwheat	PDPGN085Z0			G1	S1.1	1B.1
44	Eschscholzia rhombipetala diamond-petaled California poppy	PDPAP0A0D0			G1	S1.1	1B.1
45	Eumops perotis californicus western mastiff bat	AMACD02011			G5T4	S3?	SC
46	Falco mexicanus prairie falcon	ABNKD06090			G5	S3	SC

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
47	Fritillaria liliacea fragrant fritillary	PMLIL0V0C0			G2	S2.2	1B.2
48	Helianthella castanea Diablo helianthella	PDAST4M020			G3	S3.2	1B.2
49	Helminthoglypta nickliniana bridgesi Bridges' coast range shoulderband (snail)	IMGASC2362			G2T1	S1	
50	Hesperolinon breweri Brewer's western flax	PDLIN01030			G2	S2.2	1B.2
51	Holocarpha macradenia Santa Cruz tarplant	PDAST4X020	Threatened	Endangered	G1	S1.1	1B.1
52	Juglans hindsii Northern California black walnut	PDJUG02040			G1	S1.1	1B.1
53	Lasthenia conjugens Contra Costa goldfields	PDAST5L040	Endangered		G1	S1.1	1B.1
54	Lepidurus packardi vernal pool tadpole shrimp	ICBRA10010	Endangered		G3	S2S3	
55	Linderiella occidentalis California linderiella	ICBRA06010			G3	S2S3	
56	Lytta molesta molestan blister beetle	IICOL4C030			G2	S2	
57	Madia radiata showy madia	PDAST650E0			G2	S2.1	1B.1
58	Malacothamnus hallii Hall's bush mallow	PDMAL0Q0F0			G1Q	S1.2	1B.2
59	Masticophis lateralis euryxanthus Alameda whipsnake	ARADB21031	Threatened	Threatened	G4T2	S2	
60	Metapogon hurdi Hurd's metapogon robberfly	IIDIP08010			G1G3	S1S3	
61	Microcina lumi Lum's micro-blind harvestman	ILARA47050			G1	S1	
62	Monardella villosa ssp. globosa robust monardella	PDLAM180P7			G5T2	S2.2	1B.2
63	Myotis yumanensis Yuma myotis	AMACC01020			G5	S4?	
64	Perognathus inornatus inornatus San Joaquin pocket mouse	AMAFD01061			G4T2T3	S2S3	
65	Phacelia phacelioides Mt. Diablo phacelia	PDHYD0C3Q0			G1	S1.2	1B.2
66	Phrynosoma coronatum (frontale population) Coast (California) horned lizard	ARACF12022			G4G5	S3S4	SC
67	Plagiobothrys glaber hairless popcorn-flower	PDBOR0V0B0			GH	SH	1A
68	Rana aurora draytonii California red-legged frog	AAABH01022	Threatened		G4T2T3	S2S3	SC
69	Sanicula saxatilis rock sanicle	PDAPI1Z0H0		Rare	G2	S2.2	1B.2

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
70	Senecio aphanactis rayless ragwort	PDAST8H060			G3?	S1.2	2.2
71	Serpentine Bunchgrass	CTT42130CA			G2	S2.2	
72	Streptanthus albidus ssp. peramoenus most beautiful jewel-flower	PDBRA2G012			G2T2	S2.2	1B.2
73	Streptanthus hispidus Mt. Diablo jewel-flower	PDBRA2G0M0			G1	S1.2	1B.3
74	Sycamore Alluvial Woodland	CTT62100CA			G1	S1.1	
75	Taxidea taxus American badger	AMAJF04010			G5	S4	SC
76	Trifolium depauperatum var. hydrophilum saline clover	PDFAB400R5			G5T2?	S2.2?	1B.2
77	Triquetrella californica coastal triquetrella	NBMUS7S010			G1	S1.2	1B.2
78	Tropidocarpum capparideum caper-fruited tropidocarpum	PDBRA2R010			G1	S1.1	1B.1
79	Valley Needlegrass Grassland	CTT42110CA			G1	S3.1	
80	Valley Sink Scrub	CTT36210CA			G1	S1.1	
81	Viburnum ellipticum oval-leaved viburnum	PDCPR07080			G5	S2.3	2.3
82	Vulpes macrotis mutica San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2T3	S2S3	

Appendix D: May 2007 Burrowing Owl Letter

KLEINFELDER
An employee owned company

May 18, 2007
File No. 83401

Mr. Michael Fanelli
City of San Ramon
Recreation-Facilities Coordinator
3180 Crow Canyon Place, Suite 140
P.O. Box 5148
San Ramon, California 94583

Via Facsimile (925) 830-5162

SUBJECT: **Letter of Findings for a Focused Breeding Season Burrowing Owl Survey, City of San Ramon Civic Center Site, Bollinger Canyon Road and Camino Ramon, City of San Ramon, Contra Costa County, California**

Dear Mr. Fanelli,

This letter documents Kleinfelder's findings for a focused burrowing owl (*Athene cunicularia hypugaea* [BUOW]) survey conducted on May 2, 2007 at the City of San Ramon's (City) Civic Center Site, Contra Costa County, California. The purpose of this pre-disturbance survey was intended to addresses the potential presence of the BUOW at the subject property during the species breeding season (April 15-July 15), a California Department of Fish and Game (CDFG) requirement for establishing presence/absence for the species. BUOW are listed by the CDFG as a California Special Concern species and their nesting burrows are considered a protected resource.

The (future) City Center site consists of an approximately 12-acre, City-owned vacant parcel used for Special Event parking, located at Bollinger Canyon Road and Camino Ramon. Vegetation within the site had been recently mowed and was approximately one-half foot-tall and supported scattered ruderal (weedy) species such as: non-native annual grasses (*Lolium* sp.), wild oats (*Avena fatua*), field bindweed (*Convolvulus arvesis*), Russian thistle (*Salsola tragus*), farmer's foxtail (*Hordeum murinum*), and black mustard (*Brassica nigra*).

A qualified Kleinfelder biologist conducted a single (non-protocol) focused BUOW survey at the subject site between the hours of 15:00 and 20:00 on May 2, 2007. The entire site was inspected by walking meandering transects spaced approximately 40-feet apart, and was visually inspected using 8x42-power hand-held binoculars to identify potential BUOW's present. California ground squirrel (*Spermophilus beecheyi*) burrows on-site were inspected for evidence of BUOW presence, such as pellets, whitewash or feathers. Areas of suitable habitat were also searched on adjacent accessible undeveloped lands within a 200-foot radius of the site boundary, where possible.

No BUOW's or their sign were observed during the subject survey, either on-site or on adjacent lands. Subsequently, BUOW are presumed to be absent from the site during the 2007 breeding season. No further surveys are warranted at this time to establish the species absence prior to the sites utilization for City-sponsored special-events parking.

Should you have any questions concerning the results presented within this letter, please feel free to contact Bill Goggin at (831) 755-7900.

Sincerely,

KLEINFELDER, INC.

Bill Goggin
Project Biologist/Wildlife Biologist

for: Nathan Stoopes.
Location Manager

KLEINFELDER 365 Victor Street, Suite L, Salinas, CA 93907 (831) 755-7900 (831) 755-7909 fax

Appendix E: Regulatory Framework

REGULATORY FRAMEWORK

SENSITIVE PLANT AND WILDLIFE SPECIES

Sensitive species are native species that have been accorded special legal or management protection because of concern for their continued existence. There are several categories of protection at both federal and state levels, depending on the magnitude of threat to continued existence and existing knowledge of population levels.

Federal Endangered Species Act

The United States Fish and Wildlife Service (USFWS) administers the Federal Endangered Species Act (ESA). The ESA provides a process for listing species as either threatened or endangered, and methods of protecting listed species. The ESA defines as "endangered" any plant or animal species that is in danger of extinction throughout all or a significant portion of its known geographic range. A "threatened" species is a species that is likely to become endangered. A "proposed" species is one that has been officially proposed by the USFWS for addition to the federal threatened and endangered species list.

Per § 9 of the ESA, "take" of threatened or endangered species is prohibited. The term "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in such conduct. Take can include disturbance to habitats used by a threatened or endangered species during any portion of its life history. The presence of any federally threatened or endangered species in a project area generally imposes severe constraints on development, particularly if development would result in "take" of the species or its habitat. Under the regulations of the ESA, the USFWS may authorize "take" when it is incidental to, but not the purpose of, an otherwise lawful act.

California Endangered Species Act

The California Department of Fish and Game (CDFG) administers the California Endangered Species Act (CESA). The State of California considers an "endangered" species one whose prospects of survival and reproduction are in immediate jeopardy. A "threatened" species is one present in such small numbers throughout its range that it is likely to become an endangered species in the near future in the absence of special protection or management. A "rare" species is one present in such small numbers throughout its portion of its known geographic range that it may become endangered if its present environment worsens. The rare species designation applies to California native plants. State threatened and endangered species are fully protected against take, as defined above. The term "species of special concern" is an informal designation used by CDFG for some declining wildlife species that are not state candidates for listing. This designation does not provide legal protection, but signifies that these species are recognized as sensitive by CDFG.

California Native Plant Society

The California Native Plant Society (CNPS) is a California resource conservation organization that has developed and inventory of California's sensitive plant species. This inventory summarizes information on the distribution, rarity, and endangerment of California's vascular plants. The inventory is divided into four lists based on the rarity of the species. In addition, the CNPS provides an inventory of plant communities that are considered sensitive by the state and federal resource agencies, academic institutions, and various conservation groups. Determination of the level of sensitivity is based on the number and size of remaining occurrences as well as recognized threats.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) protects all common wild birds found in the United States (U.S.) except the house sparrow, starling, feral pigeon, and resident game birds such as pheasant, grouse, quail, and wild turkey. Resident game birds are managed separately by each state. The MBTA makes it unlawful for anyone to kill, capture, collect, possess, buy, sell, trade, ship, import, or export any migratory bird including feathers, parts, nests, or eggs.

California Fish and Game Code - § 3503 and § 3511

The CDFG administers the California Fish and Game Code (CFG Code). There are particular sections of the CFG Code that are applicable to natural resource management. For example, § 3503 of the CFG Code states it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird that is protected under the MBTA. CFG Code § 3503.5 further protects all birds in the orders Falconiformes and Strigiformes, birds of prey such as hawks and owls, and their eggs and nests from any form of take. CFG Code § 3511 lists fully protected bird species where the CDFG is unable to authorize the issuance of permits or licenses to take these species.

JURISDICTIONAL WATERS AND WETLANDS

Impacts to natural drainage features and wetland areas are regulated by the United States Army Corp of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and CDFG based upon the policies and regulations discussed below.

United States Army Corp of Engineers Regulations

Federal Clean Water Act - § 404

The USACE administers § 404 of the federal Clean Water Act (CWA). This section regulates the discharge of dredge and fill material into waters of the U.S. USACE has established a series of nationwide permits that authorize certain activities in waters of the U.S., if a proposed activity can demonstrate compliance with standard conditions. Normally, USACE requires an individual permit for an activity that will affect an area equal to or in excess of 0.5 acre of waters of the U.S. Projects that result in impacts to less than 0.5 acre can normally be conducted pursuant to one of the nationwide permits, if consistent with the standard permit conditions. USACE also has discretionary authority to require an Environmental Impact Statement for projects that result in impacts to an area between 0.1 and 0.5 acre. Use of any nationwide permit is contingent on the activities having no impacts to endangered species.

Waters of the United States

Waters of the U.S., as defined in the Code of Federal Regulations (CFR) § 328.3, include all waters or tributaries to waters such as lakes, rivers, intermittent and perennial streams, mudflats, sand-flats, natural ponds, wetlands, wet meadows, and other aquatic habitats. Frequently, waters of the U.S., with at least intermittently flowing water or tidal influences, are demarcated by an ordinary high water mark (OHWM). The OHWM is defined in CFR § 328.3(e) as the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas. In this region, the OHWM is typically indicated by the presence of an incised streambed with defined bank shelving.

In June 2001 the USACE South Pacific Division has issued *Guidelines for Jurisdictional Delineations for Waters of the United States in the Arid Southwest*. The purpose of this document was to provide background information concerning physical characteristics of dryland drainage systems. These guidelines were reviewed and used to identify jurisdictional drainage features within the Project Site.

Wetlands

According to the USACE Wetlands Delineation Manual, Technical Report, three criteria must be satisfied to classify an area as a jurisdictional wetland:

A predominance of plant life that is adapted to life in wet conditions (hydrophytic vegetation)

Soils that saturate, flood, or pond long enough during the growing season to develop anaerobic conditions in the upper part (hydric soils)

Permanent or periodic inundation or soils saturation, at least seasonally (wetland hydrology)

Wetland vegetation is characterized by vegetation in which more than 50 percent of the composition of dominant plant species are obligate wetland, facultative wetland, and/or facultative species that occur in wetlands. As a result of the 2001 Solid Waste Agency of North Cook County (SWANCC) case, a wetland must show connectivity to a stream course in order for such a feature to be considered jurisdictional. Although wetland criteria was used to identify if areas were considered wetlands, the exact limits of jurisdiction were not measured based on the standard wetland delineation protocol as described in the 1987 USACE manual.

United States Army Corp of Engineers Regulated Activities

The USACE regulates the discharge of dredged or fill material including, but not limited to, grading, placing of rip-rap for erosion control, pouring concrete, laying sod, and stockpiling excavated material. Activities that generally do not involve a regulated discharge, if performed specifically in a manner to avoid discharges, include driving pilings, drainage channel maintenance, temporary mining and farm/forest roads, and excavating without stockpiling.

Regional Water Quality Control Board Regulations

Clean Water Act - § 401

In connection with notification to the USACE under Section 404 of the Clean Water Act (CWA), pursuant to 33 CFR Part 330, a written request for Section 401 water quality certification must be submitted to the RWQCB to ensure that no degradation of water quality will result from the proposed project. Subject to CWA section 401(a)(1), the Army Corps of Engineers cannot issue a section 404 dredge/fill permit until such time as a CWA section 401 Water Quality Certification (WQC) has been approved by the applicable RWQCB.

In order to meet the requirements of the RWQCB for issuance of a 401-water quality certification, the project proponent must provide assurances that the project will not adversely affect the water quality of receiving water bodies. A written request for 401 water quality certification will be prepared and submitted to the RWQCB for review. The request will include a detailed project description, a description of proposed impacts, identification and discussion of beneficial uses of affected receiving waters (as described within the appropriate Basin Plan), a water quality plan identifying project-specific Best Management practices (BMPs), discussion of other approvals and certifications being obtained, a conceptual restoration plan, and a completed notification form.

<u>CEQA COMPLIANCE</u>: Pursuant to Title 23, Section 3856(f) of the California Code of Regulations (CCR), the Regional Water Quality Control Board (RWQCB) may not issue a Clean Water Act (Section 401) Water Quality Certification (WQC) for a project before being provided with (and having had ample time to review) a copy of the final CEQA documentation prepared for the project. Upon formal request for certification, water quality certification should be forthcoming within 90-120 days of completion of the CEQA process.

<u>FEE STRUCTURE</u>: Subject to California Code of Regulations (CCR), Title 23, §3833, a section 401 application must be accompanied by an initial deposit of not less than $500.00. If the initial deposit does not cover the agency's application review costs, the RWQCB may require an additional (one-time) amount using the calculus set forth in section 2200(e), Title 23, of the California Code of Regulations.

Porter-Cologne Water Quality Act

Section 13260(a) of the California Water Code ("Water Code", or "Porter Cologne") requires that any person discharging waste or proposing to discharge waste within any region, other than to a community sewer system, which could affect the quality of the waters of the State, file a report of waste discharge (ROWD). The discharge of dredged or fill material may constitute a discharge of waste that could affect the quality of waters of the State (Defined in Water Code §13050(e)).

Typically, the State of California relies upon its authority under section 401 of the Federal Clean Water Act (CWA (33 U.S.C. §1341) to regulate discharges of dredged or fill material to California waters that are also within the jurisdiction of the United States Army Corps of Engineers (USACE). Given the water quality certification (WQC) process employed under section 401, waste discharge requirements under Porter Cologne are typically waived for those projects requiring a water quality certification. In 2001 the U.S. Supreme decision in *Sold Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* , 531 U.S. 159 (2001) ("*SWANCC*") invalidated the Army Corp's use of the "Migratory Bird Rule" to establish federal jurisdiction over isolated waters. Since 2001, the State of California has reasserted its authority under state law to assert jurisdiction over isolated waters for water quality purposes by requiring a ROWD.

REGULATION OF ISOLATED WATERS

Dredging, filling, or excavation of "isolated" waters constitutes a discharge of waste to waters of the State, and prospective dischargers are required to submit a report of waste discharge to the RWQCB and comply with other requirements of the State Porter Cologne Water Quality Act (Water Code).

<u>SCOPE OF REGULATION</u>: With respect to isolated waters, discharges and/or dredging of wetlands, active channels, or beds of water bodies are regulated. Discharges to riparian or areas in proximity to a waterbody are regulated when such activity will directly or indirectly result a change to water quality. Such changes may include discharge of stormwater pollutants and runoff; change in the nature of vegetation that could affect water quality (e.g., affecting pollutant removal, stream shading or bank stability), or change to the hydrological or geomorphic characteristics of the waterbody.

<u>APPLICATION OF REGULATION</u>: Whenever the USACE issues a jurisdictional disclaimer (Concurs with a finding of no federal jurisdiction), the respective RWQCB is notified of the disclaimer. Typically, the RWQCB will issue a letter notifying the project proponent that a ROWD must be filed. A ROWD must be submitted in one of two forms, depending on the anticipated impacts.

(GENERAL WASTE DISCHARGE REQUIRMENT (GWDR): The GWDR program is substantively set forth in SWRCB Water Quality Order No. 2004-0004-DWQ. GWDRs are generally prescribed for a category of discharges (either temporary or permanent) involving earth, rock, or similar solid materials if the discharge will not be greater than 0.2 acres and 400 linear feet (for fill or excavation) or 50 cubic yards (for dredging). The type of projects that may be covered under these General WDRs include land development, detention basins, disposal of dredged material, bank stabilization, revetment, channelization, and other similar projects. GWDRs do not apply to discharges that adversely impact, directly or through habitat modification, any plants or animals identified as candidate, sensitive, or special status species in local or regional plans, or by the CDFG (Including NCCPs), or USFWS (Including HCPs). Similarly, GWDRs do not apply to discharges impacting significant historical, archaeological, or paleontological resources.

REQUIREMENTS: The GWDR typically requires submittal of the following items: (1) A Notice of Intent (NOI), (2) Any CEQA documents that have been prepared for the project, (3) A fee pursuant to Title 23, section 2200 of the CCR, (4) A Mitigation Plan demonstrating that the discharger will sequentially avoid, minimize, and compensate for the adverse impacts to the affected water bodies, and beneficial uses (as set forth in the applicable Basin Plan), (5) Any other relevant information requested by the SWRCB or RWQCB. A copy of the application must be submitted to both the applicable RWQCB and to the SWANC-ROWD, Water Quality Certification Unit in Sacramento.

TIMING: Pursuant to the requirements of the California Permit Streamlining Act, RWQCB has 30 days to deem the application complete. Upon receipt of a complete submittal, the RWQCB has 45 days in which to issue a Notice of Applicability (NOA) (authorizing the activity) or a Notice of Exclusion (NOE) (denying authorization. The discharge activity is operationally authorized if no NOE is issued within the 45-day evaluation period, provided that the proposed activity is not a prohibited activity.

INDIVIDUAL WASTE DISCHARGE REQUIRMENTS (IWDR): Projects not qualifying for the GWDRs will need to satisfy individual waste discharge requirements, typically requiring submittal of 401 Water Quality Certification forms and supporting documentation as set forth by the respective RWQCB. Such submittals are subject to fees as set forth in California Code of Regulations Title 23 Section 2200(a)(2). Pursuant to the Water Code the project proponent is required to file with the appropriate Regional Water Quality Control Board (RWQCB) a Report of Waste Discharge describing the proposed discharge at least 140 days before it occurs (Water Code §§ 13260, 13264).

California Department of Fish and Game Regulations

California Fish and Game Code - § 1602

In the public interest of protection and conservation of fish and wildlife resources of the state (§1600), Fish and Game Code section 1602 requires any person, state or local governmental agency, or public utility to notify the California Department of Fish and Game (CDFG) before beginning any activity that will do one or more of the following: 1) substantially obstruct or divert the natural flow of a river, stream, or lake; 2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or 3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake. Fish and Game Code section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the state. In the interest of protecting biological resources associated with riparian communities, CDFG jurisdiction is commonly extended to the outer drip-line of associated riparian vegetation.

A Section 1602 Streambed Alteration Notification will be prepared and submitted to the CDFG for review. The request will include a detailed project description, a description of proposed impacts, a conceptual mitigation plan, and completed notification forms. Typically, CDFG will be able to complete the agreement within 60-90 days of the completion of the CEQA process.

CEQA COMPLIANCE: It should be noted that CDFG must also comply with the California Environmental Quality Act (CEQA) (Pub. Resources Code, §21000, et seq.) before it may issue a final Lake or Streambed Alteration Agreement. Issuance of a final Lake or Streambed Alteration Agreement occurs after the Department receives a draft Lake or Streambed Alteration Agreement from the applicant and the Department signs it. In many instances, the Department will receive a signed draft Lake or Streambed Alteration Agreement from an applicant before the lead agency has fully complied with CEQA. In those instances, the Department must wait for the lead agency to fully comply with CEQA before it may sign the draft Lake or Streambed Alteration Agreement, thereby making it final.

FEE STRUCTURE: Pursuant to California Code of Regulations (CCR), Title 14 §699.3, CDFG assesses a fee to cover the cost of reviewing §1602 applications. The fee calculus is based on the sum cost of the proposed activities within the streambed or riparian community.

Appendix D: Geotechnical Investigation Report

Preliminary Geotechnical Investigation Report
San Ramon City Center Project
Bishop Ranch
San Ramon, California

Prepared for

Sunset Development Company
One Annabel Lane
PO Box 640
San Ramon, California 94583

MACTEC Project No. 4096075707-05

Wayne Miller

Wayne Miller, PE
Senior Geologist

By DWQ with permission

Donald W. Quigley

Donald W. Quigley, Ph.D., G.E.
Senior Principal Engineer

July 24, 2007, Revised Final

MACTEC

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Preliminary Geotechnical Investigation Report
San Ramon City Center Project
Bishop Ranch
San Ramon, California

MACTEC Project No. 4096075707-05

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1.0 INTRODUCTION AND PROJECT OBJECTIVES

1.1. Introduction

Pursuant to a request by Sunset Development Company (Sunset), MACTEC Engineering and Consulting, Inc. (MACTEC) performed a Preliminary Geotechnical Investigation for the proposed San Ramon City Center development in the Bishop Ranch area of San Ramon, California (see Site Location and Vicinity Map, Plate 1-1). Our services were provided in general accordance with MACTEC's Revised Proposal for Preliminary Geotechnical Investigation (PROP06BAYA.125, dated January 24, 2007). Our services were authorized, on January 26, 2007, by Mr. Peter Oswald of Sunset.

MACTEC evaluated subsurface soil and groundwater conditions at the project site through review of previous geotechnical reports. The existing documents contained the results of field explorations, laboratory testing, engineering analyses, and design recommendations for previous development projects at or near the project site. From these documents, we developed geotechnical conclusions and preliminary recommendations for planning and of the proposed development.

The sections which follow in this report present our project understanding, objectives, completed scope of services, findings and conclusions, and preliminary geotechnical recommendations. This report does not address environmental issues related to hazardous wastes at the site. However, we do understand that the report will be used as part of the environmental impact assessment for the project.

1.2. Project Understanding

Project information has been obtained from Messrs. Oswald, Senior Vice President, Director-Government Affairs, with Sunset, and Mr. Gabe Ciccone, Vice President - Construction for Sunset; Mr. Jason Brandman of Michael Brandman Associates (MBA); and Ms. Kristen Salinas of RBF Consulting (RBF). Based upon the information provided, we understand that the City Center Project will be a multi-use development, as shown on the Site Plans, Plates 1-2 and 1-3, and will include the following:

Parcel Designation	Planned Use	Building Details
Bishop Ranch 1A	Class A Office	700,000 square foot (sf); 7-story steel frame
Bishop Ranch 2 and 3A	Residential	403 condominium units; 8-story steel frame
Bishop Ranch 3A	Hotel	200 rooms
Bishop Ranch 2 and 3A	Retail	600,000 sf
Bishop Ranch 1B	City Hall	100,000 sf
Bishop Ranch 1B	Parking	300 spaces; 3-level garage
Bishop Ranch 1	Parking	Two, 3- to 4-level concrete garages

1.3. Objectives and Completed Scope of Services

The purpose of our preliminary geotechnical investigation was to evaluate the anticipated subsurface conditions in the various project parcels and to identify geotechnical issues that should be considered during project planning, design and construction. In completion of the objectives, we performed the following tasks:

- Reviewed field and laboratory data from previous reports so that the subsurface conditions and geotechnical issues for the project could be determined. Reviewed surface conditions and areas of existing pavements and hardscaping using existing aerial photography provided by outside vendors.

- Reviewed preliminary documents for the development to understand the types of construction being considered.

- Interpreted geology, seismicity, and geotechnical conditions of the site. Evaluated the potential for geologic hazards at the site.

- Developed preliminary geotechnical recommendations for project planning and preliminary design.

- Prepared this Preliminary Geotechnical Investigation Report, summarizing our findings, presenting geologic hazard mitigation options, and preliminary earthwork and foundation design criteria. Recommendations for future geotechnical investigations during project design are also presented.

2.0 DATA REVIEWED

We reviewed previous geotechnical reports for the project site and vicinity, several of which were prepared by MACTEC (when known as Harding Lawson Associates, HLA). The reports reviewed included the following:

HLA, 1982. *Soil Investigation, Bollinger Business Center, Bishop Ranch, San Ramon, California*; prepared for Sunset Development Company; HLA Project 8294,009.03; dated April 6, 1982.

HLA, 1986. *Geotechnical Investigation, Bishop Ranch 1 Development, Bishop Ranch Business Park, San Ramon, California*; prepared for Sunset Development Company; HLA Project 8294,019.03; dated October 6, 1986.

HLA, 1986. *Geotechnical Investigation, Bishop Ranch 1 Development, Bishop Ranch Business Park, San Ramon, California*; prepared for Sunset Development Company; HLA Project 8294,019.03; dated October 6, 1986.

HLA, 2000. *Geotechnical Investigation, Bishop Ranch 1 Development, San Ramon, California*; prepared for Sunset Development Company; HLA Project 50044.1; dated May 15, 2000.

ENGEO, 2001. *Preliminary Geotechnical Exploration, San Ramon City Center, San Ramon, California*; prepared for City of San Ramon, California; ENGEO Project 5172.001.01; dated March 29, 2001.

Kleinfelder, 2005. *Geotechnical Investigation at Chevron/Texaco Campus Lots 16, 20 and 21 of the Bishop Ranch Business Park, San Ramon, California*; prepared for Watry Design; Kleinfelder Project 53512/Geo; dated June 9, 2005.

Other reviewed literature included California Geological Survey (CGS, formerly known as the California Division of Mines and Geology [CDMG]) documents and webpages, and California Building Code documents.

We reviewed the following project information:

Ground Floor Plan, San Ramon City Center, San Ramon, California, prepared by Sunset Development Company, dated January 25, 2007.

Conceptual Lower Level Plan (-10), San Ramon City Center, San Ramon, California, prepared by Sunset Development Company, dated January 26, 2007.

3.0 SITE AND SUBSURFACE CONDITIONS

3.1. General Site Description

The following section summarizes the current site surface conditions. The site location and parcel limits are shown on the Site Location and Vicinity Map (Plate 1-1), and on the Site Plans (Plates 1-2 and 1-3).

Parcel 1 includes an at-grade, asphalt-paved parking area, with minimal landscape areas. The parcel is bounded on the (nominal) north side by the by open space of Parcel 1A. The Bishop Ranch One East access roadway bounds the east and south sides of Parcel 1. The Bishop Ranch One access roadway bounds the west side. Multi-story office structures are located on the adjacent land to the west.

Parcel 1A includes a vacant, relatively flat-lying open space. Ground cover includes uncultivated, annual and perennial vegetation, with some shrubbery. Trees generally parallel the parcel bounds. Bollinger Canyon Road bounds the north side of Parcel 1A. The Bishop Ranch One East access roadway bounds the east edge. Parcel 1 is located to the south. The Bishop Ranch One access roadway bounds the west edge.

Parcel 1B includes an at-grade, asphalt-paved parking area, with minimal landscape areas. Trees generally parallel the parcel bounds. Bollinger Canyon Road bounds the north edge. The Bishop Ranch One access roadway bounds the east edge. At-grade, asphalt-paved parking areas are located immediately south and west of Parcel 1B.

Parcel 2 includes four, multi-story structures, with an interior, turf-courtyard landscaped area. The parcel perimeter includes generally flat-lying, at-grade, asphalt-paved parking areas, with landscape islands. The parcel is bounded on the north by Bishop Drive, on the east by Camino Ramon, on the south by Bollinger Canyon Road, and on the west by Sunset Drive. Multi-story structures are located west of Sunset Drive.

Parcel 3A includes a vacant, relatively flat-lying open space. Ground cover includes uncultivated, annual and perennial vegetation, with some shrubbery. Trees generally parallel the parcel bounds. A shallow drainage ditch is near portions of the perimeter. The parcel is bound on the south by Bollinger Canyon Road, on the west north by Camino Ramon, on the east by the Iron horse Trail, and on the north by a multi-story parking structure.

3.2. Geologic Setting

The site is located within the San Ramon Valley, a portion of the California Coastal Ranges geomorphic province (*California Geomorphic Provinces, Note 36, California Geological Survey*, revised *December 2002*). In general, the geologic structure and topography are characteristic of the San Francisco Bay Area. This region is generally defined by northwest-trending ridges and valleys that generally parallel the geologic structures, including the major fault systems. The San Ramon Valley fill includes quaternary-aged alluvium up to approximately 300 feet in thickness. The valley is drained by both North and South San Ramon Creeks that are actively cutting into the alluvial surface soils. Tertiary-aged sedimentary rocks comprise surrounding slopes and underlying valley geology.

3.3. Subsurface Conditions

The subsurface conditions at the site are presented graphically on Cross-Sections (Plates 3-1 through 3-4), which summarize boring and cone penetration test (CPT) data from previous geotechnical investigations at and near the site. Copies of boring and CPT logs from the previous reports are given in Appendix A. Copies of laboratory test data from the previous reports are included in Appendix B.

The subsurface conditions in the project area are interpreted to be relatively uniform. Expansive clay soils blanket most of the site and extend to at least 5 feet below the ground surface, and to as much as 10 feet in some locations. The ENGEO (*2001*) report indicated that fill soil had been placed within areas of the current Parcels 1A and 3A. The fill soil was reported to have been excavated from nearby parcels during construction activities. Detailed vertical and lateral extent of the fill soil, its composition and placement condition, could not be ascertained form the available data.

The stiff-to-hard, expansive clay surface soils overlie moderately compressible silts and clays to depths extending to about 30 feet to 40 feet below grade. Deeper soils are relatively strong alluvial sands, silts, and clays to the depths explored (about 75 feet maximum).

Groundwater has been encountered as shallow as 7 feet below the site grade during previous exploration, but has varied to as deep as 20 feet in some locations during drilling.

4.0 GEOLOGIC HAZARDS

The following sections provide our interpretation of potential geologic hazards that may be encountered at the site. The geologic hazards at the site are primarily earthquake related. The site is in an area of high seismicity, as is all of the San Francisco Bay Area, with a significant potential for strong ground shaking during an earthquake. In addition to the primary ground shaking seismic concern, secondary concerns include liquefaction phenomenon and densification conditions. However, damage to structures as a result of actual fault movement is considered unlikely as no faults are known to traverse the site.

Although the site could be subjected to strong ground shaking in the event of an earthquake, it is our opinion that the effects of ground shaking can be mitigated by proper engineering design and construction in conformance with current building codes and good engineering practices.

4.1. Faulting

The numerous faults in Northern California include active, potentially active, and inactive faults. The criteria for these major groups are based on criteria developed by the California Geological Survey (previously the California Division of Mines and Geology) for the Alquist-Priolo Earthquake Fault Zoning Program (*Hart, 1999*). By definition, an active fault is one that has had surface displacement within Holocene time (about the last 11,000 years). A potentially active fault is a fault that has demonstrated surface displacement of Quaternary age deposits (last 1.6 million years). Inactive faults have not moved in the last 1.6 million years.

The site is not within a currently-established Alquist-Priolo Earthquake Fault Zone for surface rupture hazards. The nearest active faults are the Calalveras fault, located about 0.6 miles to the west, and the Concord-Green Valley fault, located about 8 miles northeast.

Based on the available geologic data, active or potentially active faults with the potential for surface fault rupture are not known to be located directly beneath or projecting toward the site. Therefore, the potential for surface rupture due to fault plane displacement propagating to the surface at the site during the design life of the project is considered low.

4.2. Seismicity

The most significant geologic hazard affecting the site is strong ground shaking resulting from earthquakes on active faults near the site. The following table lists significant seismic sources and their characteristics.

Fault	Distance from Site (kilometers)	Direction from Site	Slip Rate (mm/yr)	Maximum Moment Magnitude
Calaveras	1	WSW	6	6.8
Concord – Green Valley	14	N	6	6.9
Hayward	15	WSW	9	7.1
Greenville	16	NE	2	6.9
Great Valley	27	ENE	1.5	6.7
San Andreas	44	WSW	24	7.9

Fault	Distance from Site (kilometers)	Direction from Site	Slip Rate (mm/yr)	Maximum Moment Magnitude
Monte Vista - Shannon	45	SW	0.4	6.5
Rodgers Creek	49	NW	9	7.0
San Gregorio	54	WSW	5	7.3
West Napa	67	NNW	1	6.5
Sargent	72	S	3	6.8
Ortigalita	80	SE	1	6.9
Point Reyes	95	WNW	0.3	6.8

Based on a review of the local soil and geologic conditions, seismic design criteria in accordance with Chapter 16A of the California Building Code (*CBC, 2001*) are interpreted as follows:

Categorization/Coefficient	Design Value
Nearest recognized seismic source	Calaveras Fault
Distance to fault	1 km
Maximum Moment Magnitude	6.8
Slip Rate (mm/year):	6
Soil Profile Type (Table 16A-J)	S_D
Seismic Zone (Figure 16A-2)	4
Seismic Zone Factor, Z (Table 16A-I)	0.4
Seismic Source (fault) Type (Table 16A-U)	B
Near Source Factor, N_a (Table 16A-S)	1.3
Near Source Factor, N_v (Table 16A-T)	1.6
Seismic Coefficient, C_a (Table 16A-Q)	0.572
Seismic Coefficient, C_v (Table 16A-R)	1.024

Peak Ground Accelerations at the site are estimated to be as follows:

Probability of Occurrence	Peak Ground Acceleration
5% in 50 years	0.78g
10% in 50 years	0.62g

4.3. Liquefaction and Densification

Soil liquefaction is a phenomenon in which saturated (submerged) cohesionless soils are subjected to a temporary loss of strength as a result of the build up of excess pore water pressure during cyclic shaking induced by earthquakes. In the process, the soil acquires a mobility that can result in horizontal and vertical movements. The effect of liquefaction on settlement of structures can be significant. Liquefaction potential is greatest where the ground water level is shallow, and submerged loose, uniformly-graded, clean, fine sands occur within a depth of about 15 meters (50 feet) or less below the ground.

The reviewed reports indicated some saturated sand layers and lenses are present below the site. The reports indicate the sand units are relatively thin, discontinuous, and contain appreciable concentrations of fine-grain material components. It is our interpretation that liquefaction potential at the sites is limited and that settlement caused by liquefaction would be relatively small.

Densification of unsaturated sandy soils subjected to earthquake loading can cause settlement at the ground surface. However, because most sand layers below the site contain appreciable fine-grained component percentages, tend to be relatively dense, and appear to be interbedded with fine grained layers, it is our interpretation that settlement caused by soil densification would be relatively small.

5.0 CONCLUSIONS AND PRELIMINARY RECOMMENDATIONS

5.1. General

From a geotechnical engineering standpoint, it is our opinion that the site is suitable for development as described in our project understanding. Prior building construction in the Bishop Ranch area has utilized foundation systems ranging from spread footings to driven concrete piles, depending on structural loads and building tolerances for settlements.

The following site conditions should be considered during project planning.

- The surficial silty clay soils exhibit moderate expansion potential. The soil is anticipated to shrink and swell with fluctuations in moisture content. To assist in mitigating potential expansion/shrinkage associated with moisture content variation, it is our opinion that soil moisture conditioning and select (non-expansive) fill blankets should be integrated into design and construction. Alternatively, expansive soils could be stabilized by lime treatment, which would reduce the quantity of select fill needed to be imported for the development.

- Some project areas (in particular Parcels 1A and 3A) may have received soil imported from nearby parcels undergoing development. These stockpiled material should be categorized, geotechnically, as an undocumented fill. The vertical and lateral extents, in-place relative density, and engineering characteristics are not known. It is our opinion that such soil, where identified, could need to be removed and recompacted or disposed offsite.

- The silts and clays underlying the upper surface soils are relatively compressible under moderate to heavy structural loads. Some building structural loads, if supported by shallow spread footings, could settle excessively. Building settlements can be reduced by using pile foundations that extend into the stronger alluvial soils below depths of 30 to 40 feet below the ground surface. Based on the documents reviewed, we note that existing structures generally exceeding three stories in height have been founded on driven pre-cast concrete piles.

- Groundwater levels could lie within 10 feet of the ground surface and could affect the design and construction of basements.

The following paragraphs of this report section present preliminary geotechnical recommendations for planning of the development.

5.2. Earthwork and Excavation

5.2.1. Building Site Preparation and Grading

In areas to be graded, the ground surface should be stripped of vegetation, soils containing organic matter, and other deleterious material (i.e., demolition debris, etc.). Existing footings, slabs, and utilities should be removed from the planned building areas. Existing soil should be removed from planned structure footprints to a depth of at least 18 inches below the base of interior slab-on-grade floors. Excavation limits should extend a minimum of 5 feet horizontally beyond each structure footprint.

Subgrade soils exposed by stripping, demolition fill removal, and excavations should be scarified to a minimum depth of 8 inches, moisture conditioned to 2 to 4 percent over Optimum Moisture Content (for clay soils), and compacted to at least 90 percent Relative Compaction[1].

Loose and/or soft soils exposed at the excavation bases should be completely removed and replaced with compacted (engineered) fill. Following subgrade preparation, the ground surface should be kept moist to avoid excessive moisture loss.

Engineered (non-expansive) fill material, placed to achieve final site grades or to underlay concrete slabs-on-grade and asphalt pavements, should have the following characteristics:

- Be predominantly granular;
- Be free of organic material and inorganic debris;
- Contain less than 20 percent fines (material passing the Number 200 sieve);
- Have a Liquid Limit of less than 40;
- Have a Plasticity Index of less than 15, and;
- Contain no rocks or clods larger than 4 inches in greatest dimension.

In our opinion, the on-site surficial clay soils will not be acceptable for reuse as engineered fill below slab areas or structures, unless treated with lime. Existing fill soils should be tested to determine their in-situ compaction (if desired to be left in place) and suitability for excavation and reuse as engineered fill. Excavated onsite soils soil could be used in landscape areas or other areas where their expansive potential will not be detrimental.

If imported soil is used as engineered fill, the import material should conform to the above requirements. Fill material samples should be submitted to the geotechnical engineer prior to use for testing to establish that the proposed material meets the above criteria. Crushed concrete from demolition activities could also be reused as engineered fill, provided it meets the criteria listed above.

Engineered fill should be placed in thin layers not exceeding 8 inches in uncompacted thickness, moisture conditioned to near optimum moisture content, and compacted to at least 90 percent relative compaction.

We recommend that exterior concrete flatwork and sidewalks be underlain by at least 12 inches of nonexpansive fill to minimize shrink/swell movement associated with expansive clay subgrades. Excavation limits should extend a minimum of 3 feet horizontally beyond the flatwork limits. Fill material, conforming to the above criteria, should be moisture conditioned to near Optimum Moisture Content, and compacted to at least 90 percent Relative Compaction. Alternatively, exterior concrete flatwork and sidewalks can be placed over a 4-inch-thick base course layer overlying properly moisture conditioned and compacted subgrade soils. However, more maintenance may be required because of the possible shrink/swell movements of the clay subgrade associated with this option.

We recommend that permanent cut and fill slopes be graded at inclinations of 2:1 (H:V) or flatter.

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[1] Relative Compaction refers to the in-place dry density of soil expressed as a percentage of the maximum dry density of the same material, as determined by the ASTM D1557 laboratory compaction procedure. Optimum Moisture Content is the water content that corresponds to the maximum dry density.

It is significant to note that the clay soils at the site will be difficult to work during wet weather, particularly during the winter rainy season. The preferred approach to grading is typically to conduct earthwork during dry, warm weather when the clay soils are generally dry and firm.

5.2.2. Temporary Excavations

Temporary excavations must comply with current requirements of Cal-OSHA. Additionally, all cuts deeper than five feet should be sloped or shored. It is our opinion that temporary excavations can be sloped at 1(H):1(V) or flatter; however, it is the responsibility of the contractor to maintain safe and stable slopes or design and provide shoring during construction.

Excavations deeper than seven feet below the ground surface could encounter groundwater. Although groundwater inflows might not be large, because of the generally fine-grained nature of the site soils, the groundwater should be removed from the excavations to prevent softening of the excavation base to and to enable proper compaction of the subgrade and subsequent fill layers.

5.2.3. Utility Trench Backfills

We recommend that utility conduit and pipe bedding material consist of sand with less than 10 percent fines. The bedding should extend from the bottom of the trench to 1 foot above the top of the pipe. Sand bedding should be placed in a trench free of standing water and mechanically compacted to at least 90 percent relative compaction.

Trench backfill above the pipe bedding should meet the criteria for engineered fill, as described above, in areas where settlement of the trench backfill would be a concern. In landscape areas, onsite soils could be used as backfill, but some long-term settlement should be anticipated. Trench backfill should be placed in uniform layers not exceeding 8 inches in loose thickness, moisture-conditioned to near-optimum moisture content (2 to 4 percent above Optimum for clay soils), and then compacted to at least 90 percent Relative Compaction. Jetting or water flooding should not be permitted for any backfill compaction.

5.3. Foundations

5.3.1. Driven Piles

Because of the relatively compressible nature of the clays and silts, to depths of 30 to 40 feet, preliminary planning should be based on the use of pile foundations to provide adequate foundation support and to control building settlements within tolerable ranges.

Based on past experience at Bishop Ranch, we anticipate that pile capacities will be developed primarily from skin friction along pile shafts. Pre-stressed concrete piles (12-inch square), in lengths ranging from 30 to 60 feet, have been used successfully in the past. For these lengths, allowable axial capacities in compression will range from about 50 tons to 100 tons. Allowable axial capacities in tension will range from about 25 tons to 55 tons.

The allowable compressive (downward) capacities given above are for service loading cases (dead load plus sustained live loads) and include a 2.0 factor of safety. To estimate the allowable compressive capacities under seismic loading conditions, the compression values can be increased by one-third (1.5 factor of safety).

The allowable tension (upward) capacities given above are for short-term loading cases (wind or seismic loads) and include a 1.5 factor of safety. The buoyant weight of the piles can be added to the soil capacity to evaluate total uplift resistance.

The pile capacities are based on an assumed 4-foot-deep pile cap with the pile cap top at approximately two feet below finished grade elevation. For pile groups with pile spacing of at least three pile widths center-to-center, a group efficiency of 1.0 may be assumed for estimating axial capacity for both static and seismic conditions.

Resistance to short-term lateral loads on piles can be provided by passive soil pressure against the pile cap and grade beams, using allowable passive pressures equivalent to a fluid weighing 300 pounds per cubic foot. Passive pressures should be disregarded for the upper 12 inches of foundation depth, unless confined by a concrete slab or pavement. Lateral resistance can also be obtained from pile bending. However, load-resistance calculations (p-y analyses) are quite project specific and should be performed during final design.

Settlement analyses should be performed once the structural design loads and foundation system geometry are defined for each building. However, it typical settlements of pile-supported buildings (of the type anticipated for this project) would be less than one inch.

5.3.2. Alternative Pile Types

Other pile types can be considered during final design. Based on current construction practices in the Bay Area, alternative pile types could include drilled, cast-in-place, concrete piers; and auger, cast-in-place (ACIP) concrete piles. The lengths and capacity of these alternative pile types would be similar to driven concrete piles, but they would have different costs and installation pros and cons (i.e., less noise during installation, but more difficulty with groundwater (drilled piers) and excavated soil disposal (both drilled piers and ACIP piles).

5.3.3. Miscellaneous Footing Foundations

For light structures and miscellaneous building appurtenances, having a relatively light loads, or heavier structures with relatively large settlement tolerances, shallow foundations could be used. Shallow spread footings or mat foundations should be founded at least 30 inches below the lowest adjacent ground surface on moisture-conditioned, compacted native soils and/or compacted engineered fill. Footings/mats located adjacent to utility trenches should have their bearing surfaces situated below an imaginary 1½:1 (horizontal to vertical) plane projected upward from the bottom of the adjacent utility trench.

Footings/mats conforming to the above requirements could be designed using allowable bearing pressures of no greater than 3,000 pounds per square foot (psf) for dead loads; 3,500 psf for dead plus sustained long term live loads; and 4,500 psf for total loads, including wind or seismic forces. These values are net allowable bearing capacities (the weight of the footing can be neglected).

Settlement analyses can be performed once the structural design loads and foundation system geometry are more clearly defined.

Resistance to lateral loads can be derived from passive resistance acting on the faces of foundation elements oriented perpendicular to the direction of loading and friction acting between the base of the foundations and the supporting subgrade. We recommend using an equivalent fluid pressure of 300 pounds per cubic foot (pcf) to compute passive resistance. The upper 12 inches of embedment should be ignored for passive resistance calculations except where the ground is paved or covered by a slab or pavement. A friction coefficient of 0.3 applied to dead loads can be used to compute base friction. The above values include a factor of safety of 1.5.

Resistance to uplift loads can be provided by the dead load of the structure and weight of the footing plus any soil cover.

5.4. Concrete Slabs-on-Grade

In areas where floor wetness would be undesirable, 4 inches of free draining gravel should be placed beneath the floor slab to serve as a capillary barrier between the subgrade soil and the slab. In order to reduce vapor transmission through the slab, an impermeable membrane should be placed over the gravel. The membrane should be covered with 2 inches of sand or have adequate thickness to protect it during construction.

5.5. Asphalt Pavements

Based on prior report findings and conclusions, we suggest the following preliminary flexible pavement structural section thicknesses.

Traffic Index	Asphalt Cement Thickness (inches)	Class 2[(1)] Aggregate Base Thickness (inches)	Class 2[(1)] Aggregate Subbase Thickness (inches)
4	2.0	8.5	--
	2.0	4.0	6.0
5	2.5	11.0	--
	2.5	6.0	6.0
6	3.0	14.0	--
	3.0	7.0	8.0

(1) Caltrans designation

The above pavement thicknesses are based on an assumed R-value of 5 for the clay subgrade soils. We anticipate that a Traffic Index of 4.0 could be used for parking areas with lower traffic loads and frequencies, while Traffic Indexes of 5.0 and 6.0 would be applicable to occasional to regular heavier traffic loadings and frequencies associated with entry/access roads and truck loading areas, respectively.

Soil subgrades in asphalt-paved areas should be smooth and nonyielding. The upper six-inches should be moisture conditioned, as necessary, to greater than Optimum Moisture Content and compacted to at least 95 percent relative compaction The subgrade should not be allowed to dry out prior to pavement construction. If soft, unstable, or saturated soils are encountered, the questionable soil should be excavated and replaced with subbase material or aggregate base material. The aggregate base and subbase should conform to the criteria specified for Class 2 Aggregate Base and Subbase in the current, adopted Caltrans Standard Specifications. The Subbase and Aggregate Base courses should be moisture conditioned to slightly above optimum moisture content and compacted to at least 95 percent relative compaction prior to placement of the Asphalt Concrete.

5.6. Soil Corrosion Potential

Soil resistivity is a measure of a soil's ability to conduct electrical current. Resistivity is usually related to the soluble salts concentrations in the soil. Low resistivity values generally indicate more corrosive potential. Another factor influencing corrosion potential is pH. Values in the acidic range (pH less than 7.0) indicate environments more conducive to metals and concrete corrosion. Previous soil test results have indicated near surface clay soils have relatively low resistivity values and are considered corrosive to very corrosive when in contact with metallic improvements. pH values are generally in the neutral range (near 7.0).

Sulfate and chloride concentrations in soil can also have a corrosive effect on buried utilities and foundation elements. Sulfates are increasingly corrosive to ferrous metals at concentrations above 1,000 milligrams per kilogram (mg/kg) and to concrete above 2,000 mg/kg. In addition to a chemical corrosion attack, highly concentrated sulfates can exhibit physical degradation on concrete. Chloride does not demonstrate physical concrete degradation. Previous soil test results at the site have indicated negligible ferrous-metals and concrete corrosion potential due to sulfate and chloride concentrations.

It is our opinion that the near-surface soils at the site have a corrosive to very corrosive potential to ferrous metals contained within buried reinforced concrete elements and utilities. Because of potential soil corrosion affects on reinforced concrete elements and utilities, we recommend that ferrous elements be shielded from soil exposure. We also recommend that any imported fill material be tested for corrosion potential before being used.

6.0 GEOTECHNICAL ENGINEERING SERVICES DURING FINAL DESIGN AND CONSTRUCTION

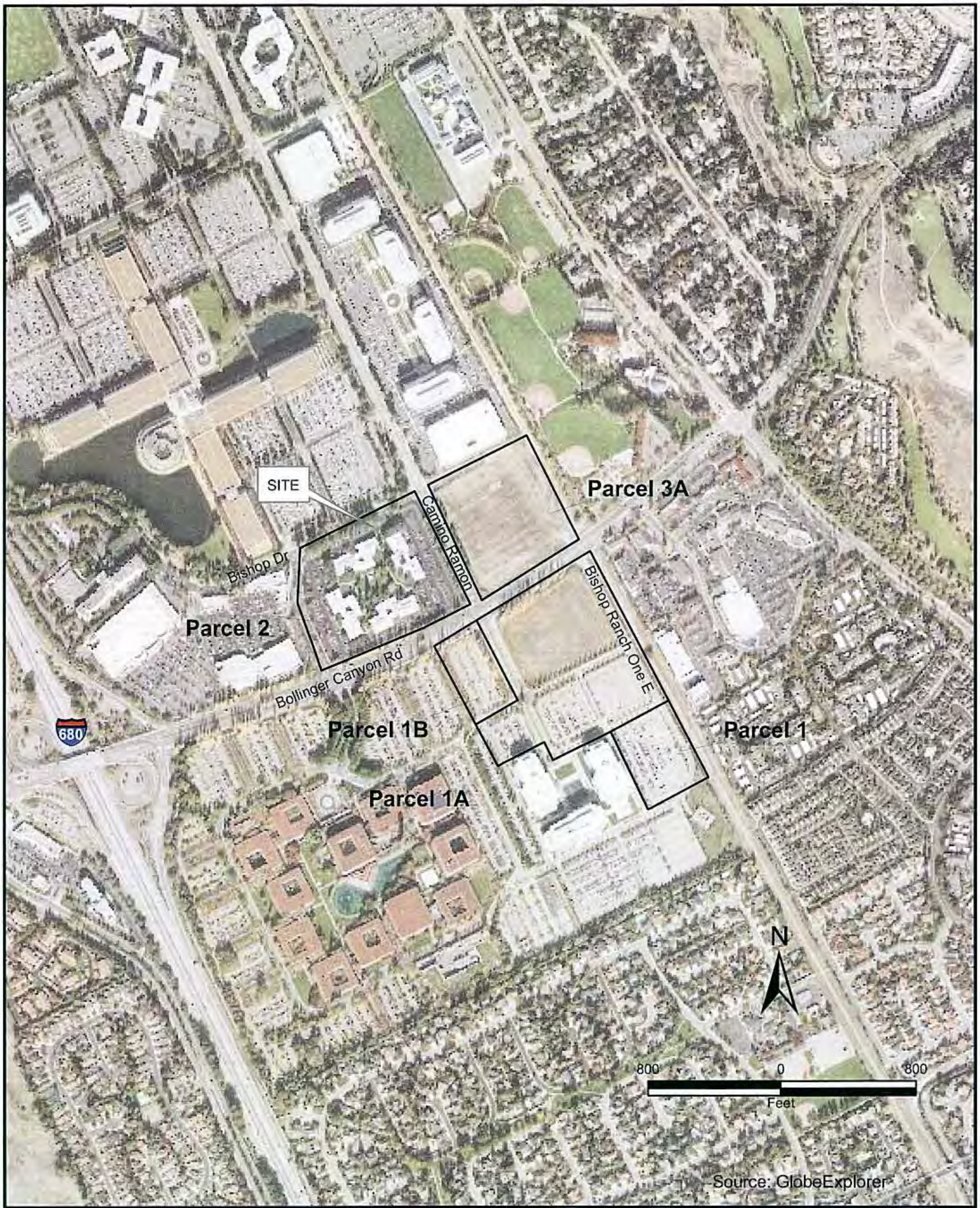
This report has been prepared for planning of the project. During design, additional geotechnical engineering should be performed to meet the specific needs of the various elements of the project. We recommend that additional subsurface investigations be performed if appropriate to confirm or augment the site data available from previous investigations and/or to support the design requirements of the project teams. Additional investigations could be needed for the following:

- To determine the subsurface conditions in areas that have not been previously explored,
- To investigate the nature and extent of stockpiled soils (undocumented fills) on a parcel,
- To obtain deeper soil data to support the analysis of longer and higher-capacity piles than have been used in the past, and
- To obtain current information on depths to groundwater for buildings that will have full-depth basements.

During construction, the project geotechnical engineer should review and/or observe and perform quality control testing of the following work items:

- Site preparation,
- Excavations and installation of temporary support systems,
- Foundation excavations,
- Subgrade compaction,
- Fill and backfill compaction,
- Utility trench bedding and backfill compaction, and
- Foundation installation.

PLATES



MACTEC

Site Location and Vicinity Map

San Ramon City Center
San Ramon, California

PLATE
1-1

DRAWN	JOB NUMBER	CHECKED	CHECKED DATE	APPROVED	APPROVED DATE
GFA	4096075707 05		4/2007	PWX	4/2/07

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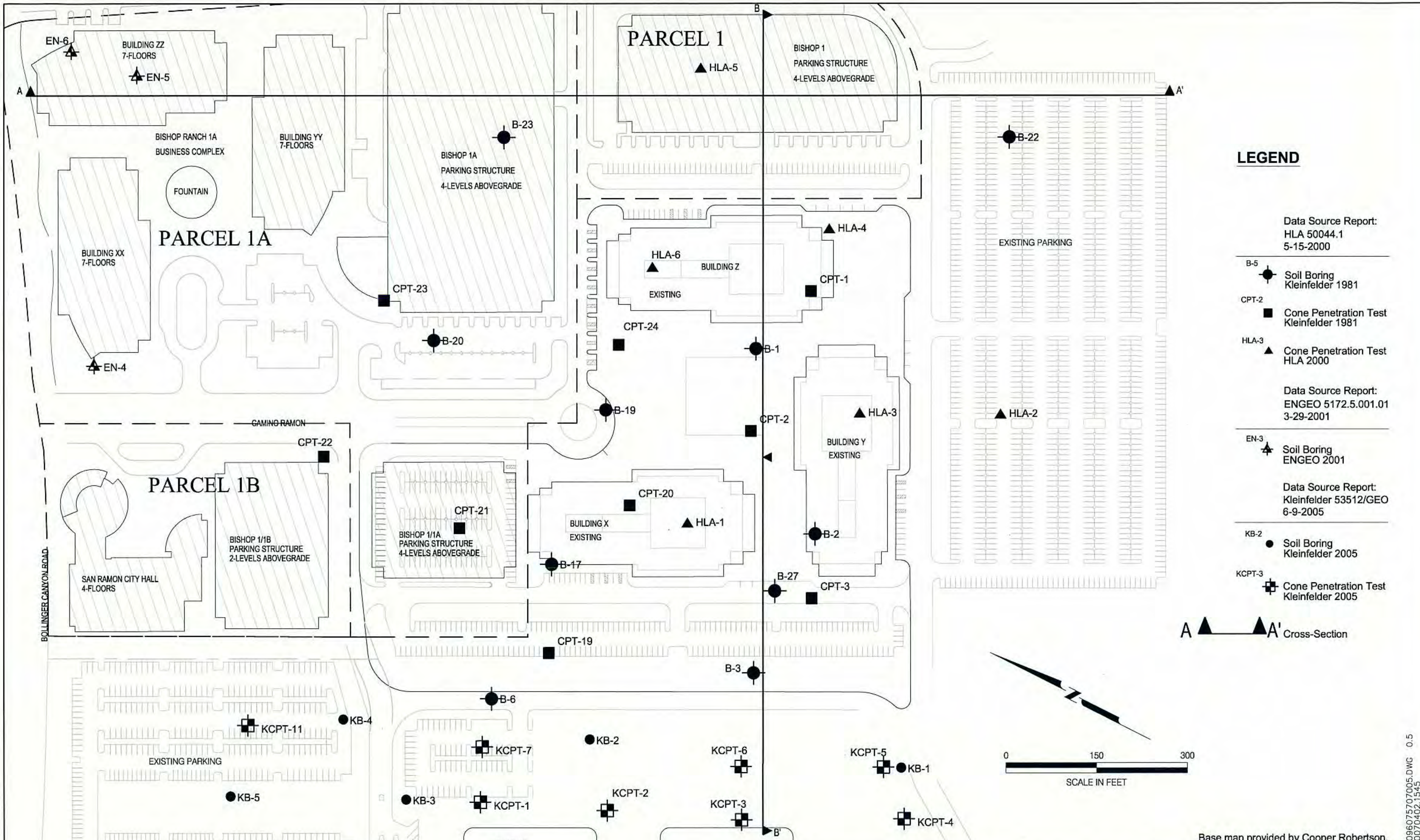


Base map provided by Cooper Robertson.

4096075707005.DWG 0.5
20070402.1545

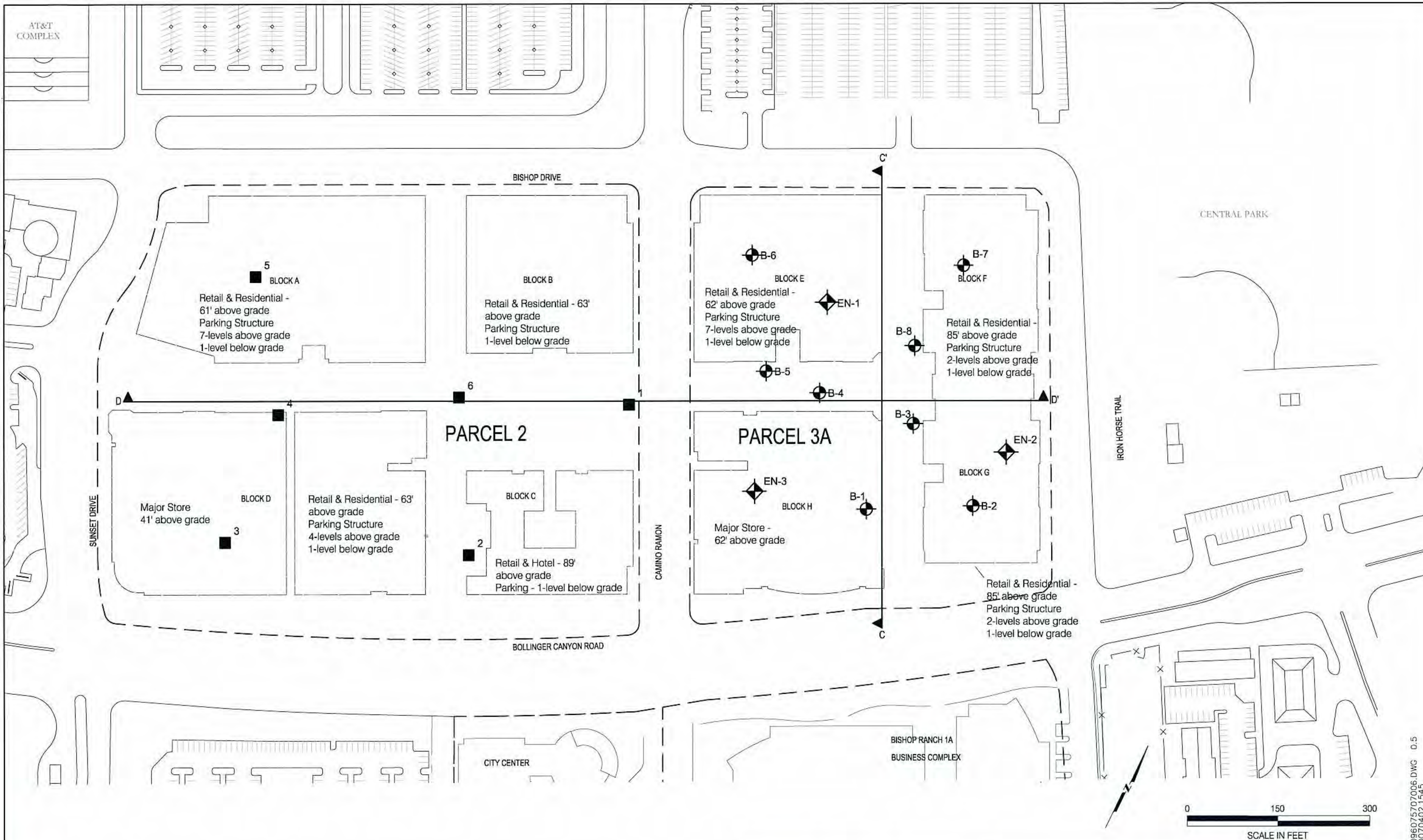
MACTEC

Site Plan, Parcels 1, 1A, 1B
San Ramon City Center
San Ramon, California

PLATE

1-2

DRAWN	JOB NUMBER	CHECKED	CHECKED DATE	APPROVED	APPROVED DATE
GFA	4096075707		4/2007	DWQ	4/2/07



LEGEND

B-5 Data Source Report: HLA 8294.019.03 10-6-86 HLA Soil Boring

EN-3 Data Source Report: ENGEO 5172.5.001.01 3-29-2001 ENGEO Soil Boring

2 Data Source Report: HLA 8294,009.03 4-6-82 HLA Soil Boring

D — D' Cross-Section

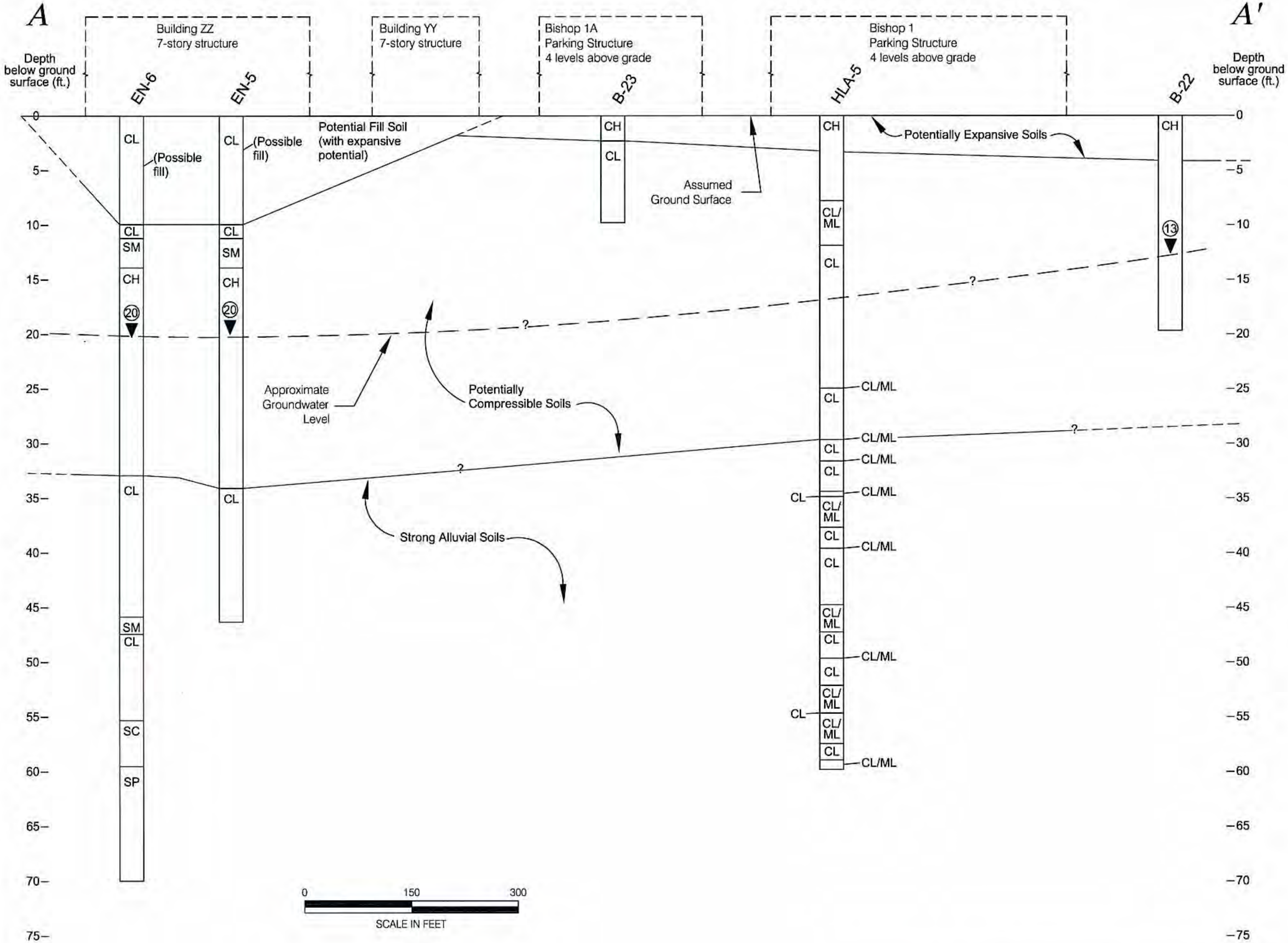
Base map provided by Cooper Robertson.

MACTEC

Site Plan, Parcels 2 and 3A
San Ramon City Center
San Ramon, California

PLATE
1-3

DRAWN	JOB NUMBER	CHECKED	CHECKED DATE	APPROVED	APPROVED DATE
GFA	4096075707		4/2007	DMG	4/2/07



Legend:

㉑ ▼ Depth to water during drilling (feet)

Notes:

Lithology from Unified Soil Classification System:

CL = Fat Clay
CH = Lean Clay
ML = Silt
SM = Silty Sand
SP = Poorly - Graded Sand
SC = Clayey Sand

4096075707001.DWG 0.5
20070402.1545

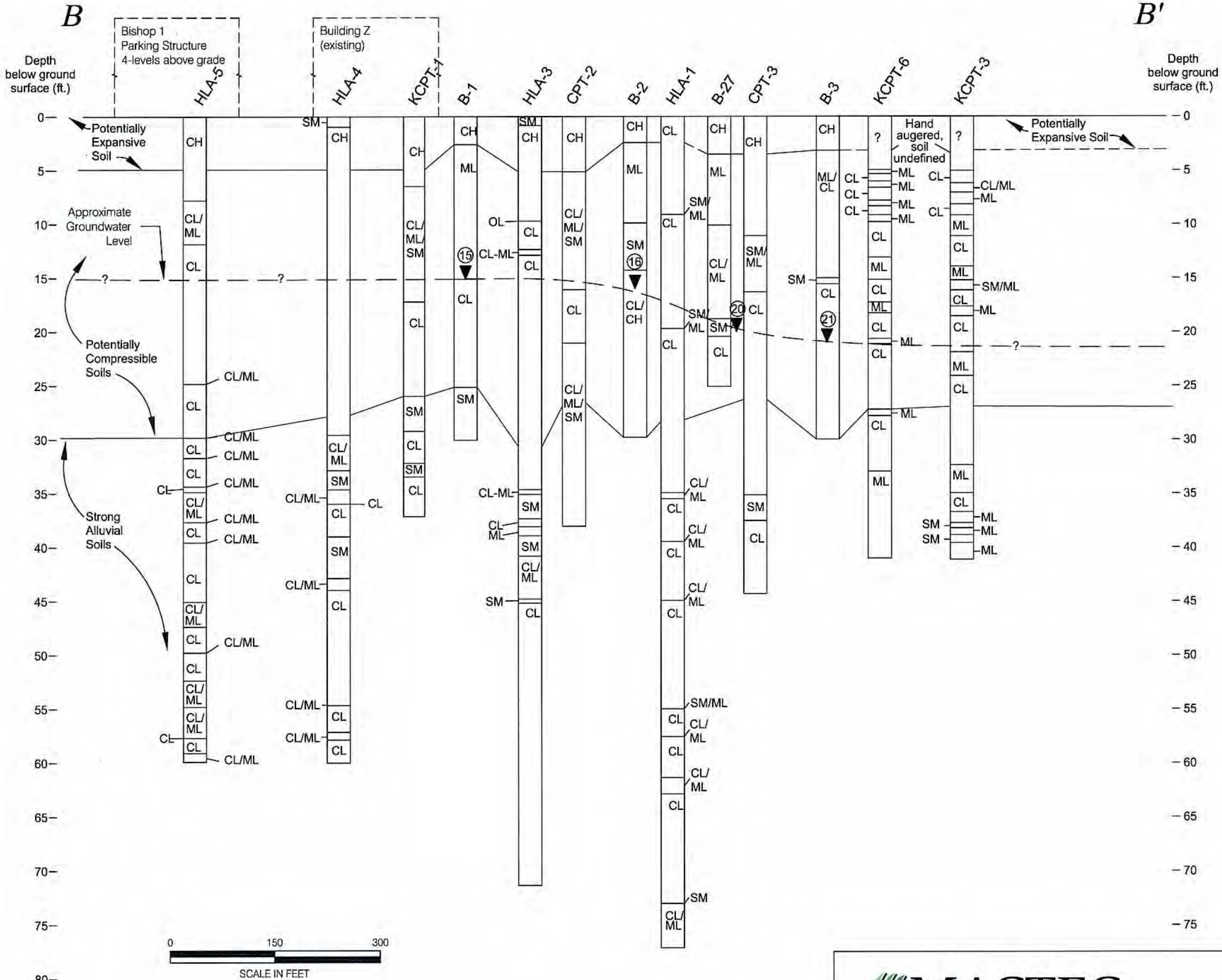
MACTEC

Cross Section A-A'
San Ramon City Center
San Ramon, California

PLATE

3-1

DRAWN	JOB NUMBER	CHECKED	CHECKED DATE	APPROVED	APPROVED DATE
GFA	4096075707		4/2007	DMR	4/2/07



Legend:

㉑ ▼ Depth to water during drilling (feet)

Notes:

Lithology from Unified Soil Classification System:

CL = Fat Clay
CH = Lean Clay
ML = Silt
SM = Silty Sand
SP = Poorly - Graded Sand
SC = Clayey Sand

MACTEC

Cross Section B-B'
San Ramon City Center
San Ramon, California

PLATE

3-2

DRAWN	JOB NUMBER	CHECKED	CHECKED DATE	APPROVED	APPROVED DATE
GFA	4096075707		4/2007	DNQ	4/2/07

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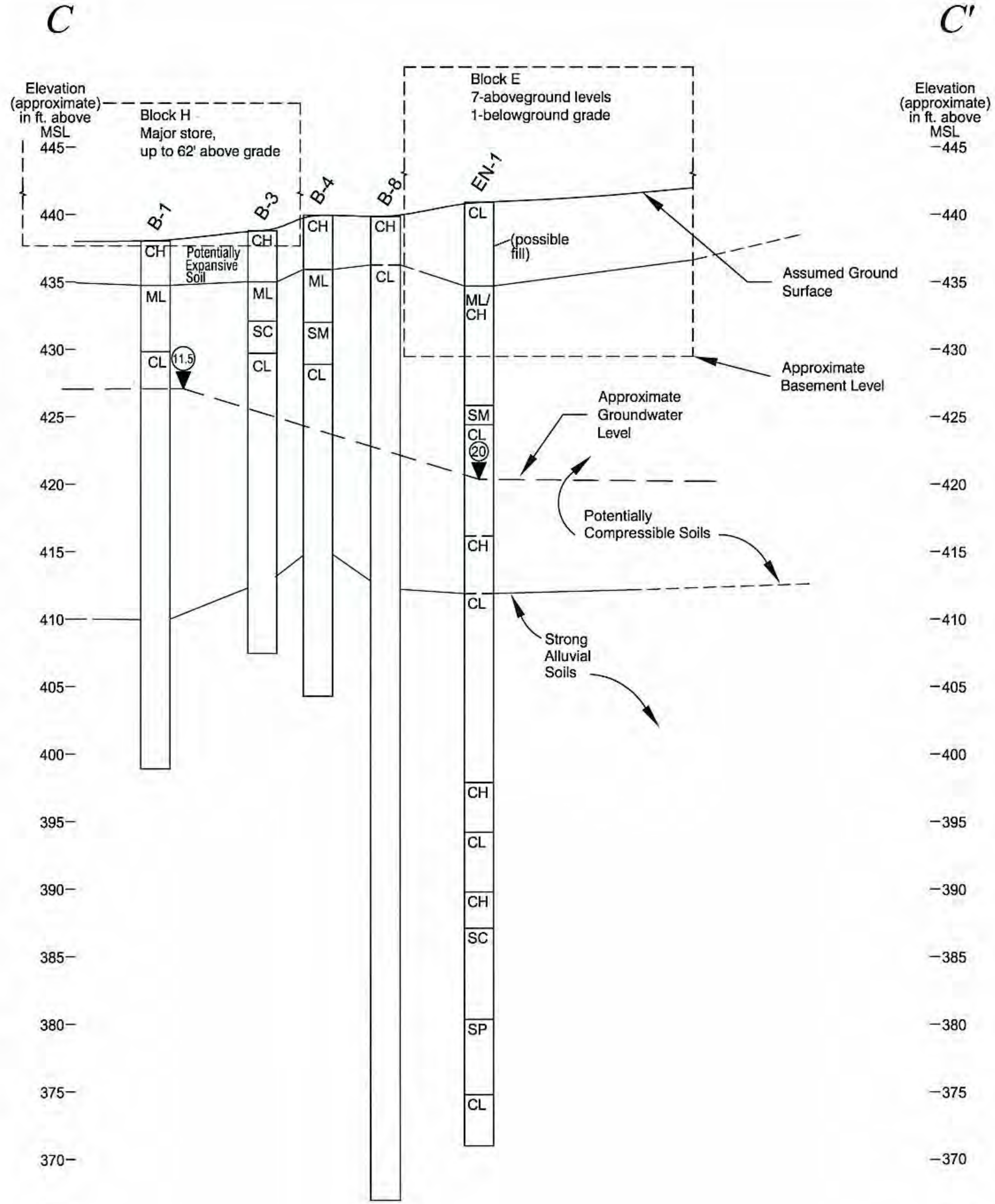
20070402.1457



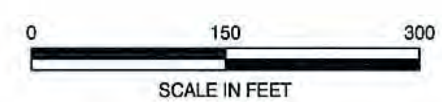
Legend

20 Depth to water during drilling (feet)

Notes:

Lithology from Unified Soil Classification System:

CL = Fat Clay
CH = Lean Clay
ML = Silt
SM = Silty Sand
SP = Poorly - Graded Sand
SC = Clayey Sand



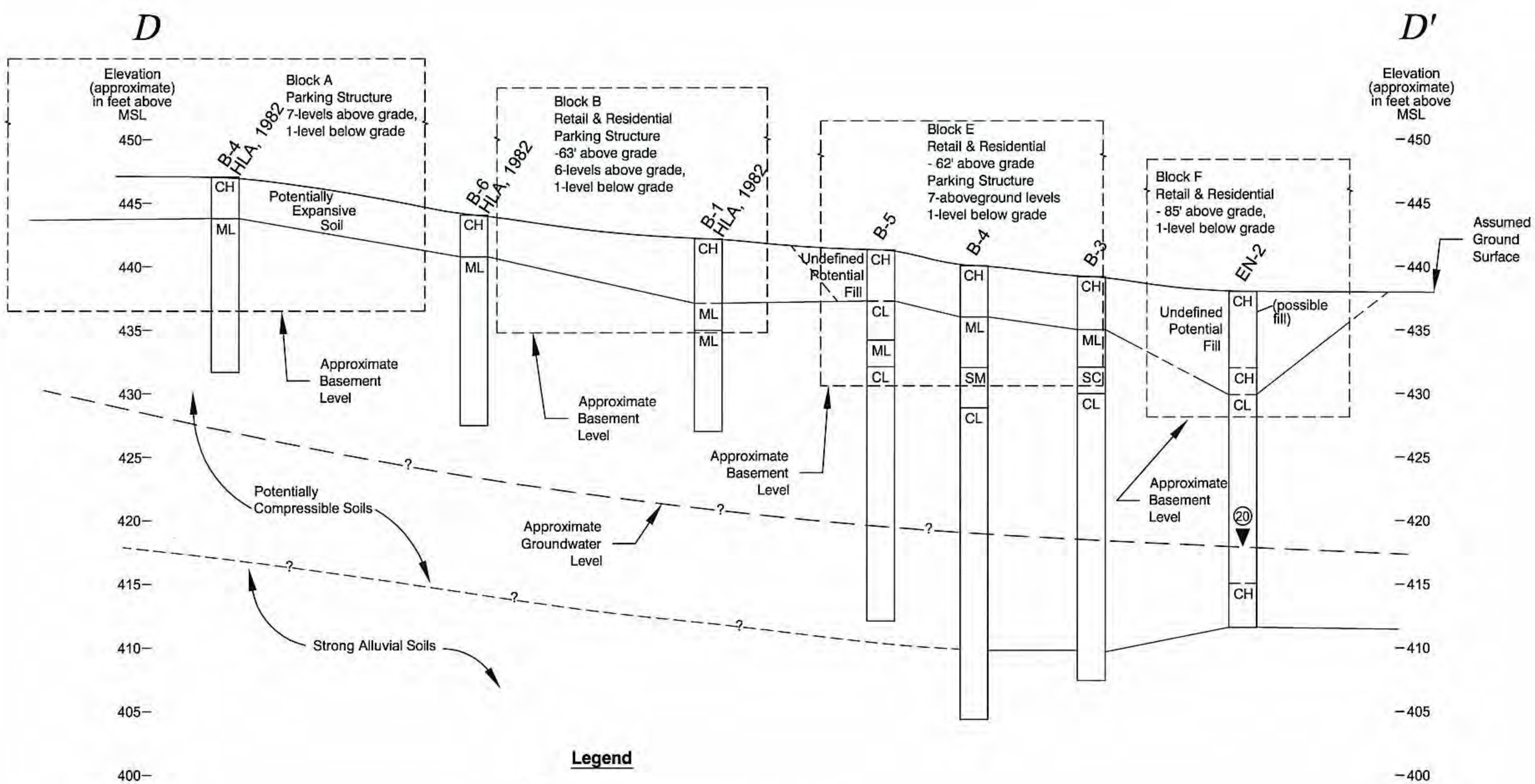
MACTEC

Cross Section C-C'
San Ramon City Center
San Ramon, California

PLATE **3-3**

DRAWN	JOB NUMBER	CHECKED	CHECKED DATE	APPROVED	APPROVED DATE
GFA	4096075707		4/2007	DNR	4/2/07

4096075707003.DWG 1.0
20070402.1537



Legend

20 ▼ Depth to water during drilling (feet)

Notes:

Lithology from Unified Soil Classification System:

CL = Fat Clay
CH = Lean Clay
ML = Silt
SM = Silty Sand
SP = Poorly - Graded Sand
SC = Clayey Sand

0 150 300
SCALE IN FEET

MACTEC

Cross Section D-D'
Bishop Ranch
San Ramon City Center

FIGURE
3-4

DRAWN	JOB NUMBER	CHECKED	CHECKED DATE	APPROVED	APPROVED DATE
GFA	4096075707		4/2007	DMO	4/2/07

4096075707004.DWG 1.0
20070402.1558

APPENDIX A

BORING LOGS FROM PRIOR INVESTIGATIONS

Geotechnical Investigation at Chevron/Texaco Campus Lots 16, 20 and 21 of the Bishop Ranch Business Park, San Ramon, California, prepared for Watry Design, prepared by Kleinfelder, Inc., Kleinfelder Project 53512/Geo, dated June 9, 2005

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS		LTR	ID	DESCRIPTION
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY	GW		Well-graded gravels or gravel with sand, little or no fines.
		GP		Poorly-graded gravels or gravel with sand, little or no fines.
		GM		Silty gravels, silty gravel with sand mixture.
		GC		Clayey gravels, clayey gravel with sand mixture.
	SAND AND SANDY	SW		Well-graded sands or gravelly sands, little or no fines.
		SP		Poorly-graded sands or gravelly sands, little or no fines.
		SM		Silty sand.
		SC		Clayey sand.

MAJOR DIVISIONS		LTR	ID	DESCRIPTION
FINE GRAINED SOILS	SILTS AND CLAYS	ML		Inorganic silts and very fine sands, rock flour or clayey silts with slight plasticity.
		CL		Inorganic lean clays of low to medium plasticity, gravelly clays, sandy clays, silty clays.
		OL		Organic silts and organic silt-clays of low plasticity.
	SILTS AND CLAYS	MH		Inorganic elastic silts, micaceous or diatomaceous or silty soils.
		CH		Inorganic fat clays (high plasticity).
		OH		Organic clays of medium high to high plasticity.
HIGHLY ORGANIC SOILS		Pt		Peat and other highly organic soils.

Standard Penetration Split Spoon Sampler 2.0 inch O.D., 1.4 inch I.D.

Modified California Sampler 2.5 inch O.D., 2.0 inch I.D.

Bulk Sample

California Sampler, 3.0 inch O.D., 2.5 inch I.D.

Shelby Tube 3.0 inch O.D.

0745, 5/31 Approximate water level first observed in boring. Time recorded in reference to a 24 hour clock.

0800, 5/31 Approximate water level observed in boring following drilling

PEN	Pocket Penetrometer reading, in tsf
TV:Su	Torvane shear strength, in ksf

LL	LIQUID LIMIT	TX	TRIAXIAL SHEAR
PI	PLASTICITY INDEX	CONSOL	CONSOLIDATION
%-#200	SIEVE ANALYSIS (#200 SCREEN)	R-Value	RESISTANCE VALUE
DS	DIRECT SHEAR	SE	SAND EQUIVALENT
C	COHESION (PSF)	EI	EXPANSION INDEX
PHI	FRICTION ANGLE	FS	FREE SWELL (U.S.B.R.)

Notes: Blow counts represent the number of blows a 140-pound hammer falling 30 inches required to drive a sampler through the last 12 inches of an 18 inch penetration, unless otherwise noted.

The lines separating strata on the logs represent approximate boundaries only. The actual transition may be gradual. No warranty is provided as to the continuity of soil strata between borings. Logs represent the soil section observed at the boring location on the date of drilling only.

KLEINFELDER

PROJECT NO. **53512-GEO**

BORING LOG LEGEND

CHEVRON/TEXACO INVESTIGATION
CHEVRON-TEXACO WAY
SAN RAMON, CALIFORNIA

PLATE

A-1

6/7/05 5:03:49 PM

Date Completed:	2/5/05	Drilling method:	6" Hollow Stem Auger
Logged By:	J. Allen	Hammer Wt:	140 lbs., 30" drop
Total Depth:	42.0 ft	Notes:	

Depth, ft	FIELD: Sample	FIELD: Blows/ft	LABORATORY: Dry Density pcf	LABORATORY: Moisture Content %	LABORATORY: Compress. Strength tsf	LABORATORY: Other Tests	Pen, tsf	DESCRIPTION (Surface Elevation: Estimated 425 feet (MSL))
								ASPHALT - approximately 2 inches thick
								SILTY CLAY (CL) - brown, low to medium plasticity
								GRAVELLY SILTY CLAY (CH) - gray, high plasticity (Fill) - hand augered to 3 feet bgs
								FAT CLAY (CH) - black, high plasticity, very stiff, moist
5		25	99	24	1.9 @ 12.6%		2.5	
		36	97	26		LL=52; PI=34		**SILTY LEAN CLAY (CL)** - light brown, medium plasticity, hard, moist
10		18	08:45 2/5/05	09:17 2/5/05		LL=0; PI=0 Passing -#200=48%		**SILTY SAND (SM)** - light brown, medium dense, wet
		13						**SAND (SW)** - brown, hard, dense, wet, medium to coarse grained
15			87	33				**FAT CLAY (CH)** - light brown to gray brown, slight plasticity, stiff, moist
		1.0tsf					3.0	
20			92	27		Consolidation See Plate B-1		
								FAT CLAY (Continued)
25		15						- green-gray
								- dark gray-brown
30								

KLEINFELDER

PROJECT NO. 53512-GEO

LOG OF BORING NO. KB-1

CHEVRON/TEXACO INVESTIGATION
CHEVRON-TEXACO WAY
SAN RAMON, CALIFORNIA

PLATE **A-2**

Depth, ft	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests	Pen, tsf	DESCRIPTION
								(Continued from previous plate)
		300psi						
35		35	96	28			2.0	- mottled black-blue-gray
40		41						**WELL-GRADED SAND with GRAVEL (SW)** - greenish brown, dense, weakly cemented, medium to coarse grained sand, angular gravel
45								Boring terminated at approximately 42 feet below ground surface. Note: The compressive strength indicated is the maximum achieved from an unconfined compression test with the associated strain noted.
50								
55								
60								

KLEINFELDER

PROJECT NO. 53512-GEO

LOG OF BORING NO. KB-1

CHEVRON/TEXACO INVESTIGATION
CHEVRON-TEXACO WAY
SAN RAMON, CALIFORNIA

PLATE
A-2
(cont'd)

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6/9/05 3:27:01 PM

Date Completed:	2/5/05	Drilling method:	6" Hollow Stem Auger
Logged By:	J. Allen	Hammer Wt:	140 lbs., 30" drop
Total Depth:	41.5 ft	Notes:	

Depth, ft	FIELD: Sample	FIELD: Blows/ft	LABORATORY: Dry Density pcf	LABORATORY: Moisture Content %	LABORATORY: Compress. Strength tsf	LABORATORY: Other Tests	Pen, tsf	DESCRIPTION *Surface Elevation:* **Estimated 425 feet (MSL)**
								ASPHALT - approximately 2.5 inches thick
								AGGREGATE BASEROCK- approximately 6 inches thick
								SILTY CLAY (CL) - black, dry - hand augered to 3 feet bgs
		48	109	18			4.5	**SILTY SANDY CLAY (CL)** - light brown, plastic, hard, moist, fine grained sand
5		28						- sand seam **SANDY CLAY (CL)** - light brown, medium plasticity, moist, very fine grained sand
10		28	99	26				- sand seam **SANDY LEAN CLAY (CL)** - light brown, medium plasticity, stiff, wet
			12:22 2/5/05					
15		18	11:47 2/5/05			LL=38; PI=20 Passing -#200=83%		
20		29					1.0	**SILTY SANDY LEAN CLAY (CL)** - light brown, very stiff, moist
								LEAN CLAY (CL) - olive, medium to high plasticity, very stiff, moist **LEAN CLAY (Continued)**
25		26	92	31			2.0	
								FAT CLAY (CH) - dark greenish-gray, high plasticity, moist
30								

KLEINFELDER

PROJECT NO. 53512-GEO

LOG OF BORING NO. KB-2

CHEVRON/TEXACO INVESTIGATION
CHEVRON-TEXACO WAY
SAN RAMON, CALIFORNIA

PLATE **A-3**

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6/9/05 3:27:12 PM

Depth, ft	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests	Pen, tsf	DESCRIPTION
								(Continued from previous plate)
		300psi	101	21				
35								
			109	19				**SANDY CLAY (CL)** - olive, medium plasticity, wet
								- sandy clay in cuttings
40		31					2.3	**SAND (SP)** - brown, medium dense, wet, weakly cemented
								Boring terminated at 41.5 feet below ground surface.
45								
50								
55								
60								

KLEINFELDER

PROJECT NO. 53512-GEO

LOG OF BORING NO. KB-2

CHEVRON/TEXACO INVESTIGATION
CHEVRON-TEXACO WAY
SAN RAMON, CALIFORNIA

PLATE

A-3
(cont'd)

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6/8/05 3:27:14 PM

Date Completed:	2/5/05	Drilling method:	6" Hollow Stem Auger
Logged By:	J. Allen	Hammer Wt:	140 lbs., 30" drop
Total Depth:	41.5 ft	Notes:	

Depth, ft	FIELD: Sample	FIELD: Blows/ft	LABORATORY: Dry Density pcf	LABORATORY: Moisture Content %	LABORATORY: Compress. Strength tsf	LABORATORY: Other Tests	Pen, tsf	DESCRIPTION (Surface Elevation: Estimated 425 feet (MSL))
								ASPHALT - approximately 2 inches thick
								AGGREGATE BASEROCK- approximately 8 inches thick
								SILTY LEAN CLAY (CL) - black - hand augered to 3 feet bgs
5		17	98	13		LL=26; PI=9	3.5	CLAYEY SAND (SC) - light brown, medium dense, moist, fine grained
								SAND (SP) - light brown, medium dense, fine grained
10		23						SILTY LEAN CLAY (CL) - medium plasticity, medium stiff, moist
		20	108	22	2.3 @ 12.3%		3.3	SILTY SANDY CLAY (CL) - light brown, medium plasticity, stiff, moist - alternating thin layers of clay and sandy clay - soft
15		14:10 2/5/05	14:40 2/5/05					- wet
		300psi	88	28		Consolidation See Plate B-3	0.5	
20			99	29				
		17						FAT CLAY (CH) - dark green, high plasticity, stiff to very stiff, moist
25							4.5	- stiff
30								SILTY LEAN CLAY (CL) - light brown, medium plasticity, stiff,

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PROJECT NO. 53512-GEO

LOG OF BORING NO. KB-3

CHEVRON/TEXACO INVESTIGATION
CHEVRON-TEXACO WAY
SAN RAMON, CALIFORNIA

PLATE A-4

Depth, ft	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests	Pen, tsf	DESCRIPTION
								(Continued from previous plate)
		21	92	32			0.75-1.0	moist **Silty Lean Clay Continued**
35		35					2.0	
40		30						**SAND (SP)** - no recovery
45								Boring terminated at 41.5 feet below ground surface. Note: The compressive strength indicated is the maximum achieved from an unconfined compression test with the associated strain noted.
50								
55								
60								

KLEINFELDER

PROJECT NO. 53512-GEO

LOG OF BORING NO. KB-3

CHEVRON/TEXACO INVESTIGATION
CHEVRON-TEXACO WAY
SAN RAMON, CALIFORNIA

PLATE

A-4
(cont'd)

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6/9/05 2:46:01 PM

Date Completed:	2/6/05
Logged By:	J. Allen
Total Depth:	41.5 ft
Drilling method:	6" Hollow Stem Auger
Hammer Wt:	140 lbs., 30" drop
Notes:	

Surface Elevation: **Estimated 425 feet (MSL)**

Depth, ft	Sample (FIELD)	Blows/ft (FIELD)	Dry Density pcf (LABORATORY)	Moisture Content % (LABORATORY)	Compress. Strength tsf (LABORATORY)	Other Tests (LABORATORY)	Pen, tsf	DESCRIPTION
								ASPHALT - approximately 3.5 inches thick
								AGGREGATE BASEROCK- approximately 12 inches thick
								SILTY SANDY CLAY (CL) - dark brown, medium plasticity, moist - hand augered to 3 feet bgs
		19	101	24	1.8 @ 5.1%		2.5	
5			95	24				
		20						**SANDY CLAY (CL)** - dark brown, slight plasticity, stiff, moist
10		30				Passing -#200=64% LL=37; PI=20	3.0	- very stiff
		13	08:38 2/6/05	09:00 2/6/05				**SILTY LEAN CLAY (CL)** - brown, medium to high plasticity, stiff, moist
15								- no recovery
20		30						**FAT CLAY (CH)** - dark greenish brown, high plasticity, stiff, moist - no recovery
25		300-320psi	93	28		Consolidation Test. See Plate B-4		
30								

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PROJECT NO. 53512-GEO

LOG OF BORING NO. KB-4

CHEVRON/TEXACO INVESTIGATION
CHEVRON-TEXACO WAY
SAN RAMON, CALIFORNIA

PLATE **A-5**

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Depth, ft	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests	Pen, tsf	DESCRIPTION
								(Continued from previous plate)
		39						- no recovery, slipped out after sampling **Fat Clay Continued**
35								**CLAYEY SAND (SC)** - brown, medium dense, very moist
		34	104	26				**SILTY SAND (SM)** - brown, medium dense, moist, fine grained sand with silt
40		28						
								Boring terminated at 41.5 feet below ground surface.
45								
50								
55								
60								

KLEINFELDER

PROJECT NO. 53512-GEO

LOG OF BORING NO. KB-4

CHEVRON/TEXACO INVESTIGATION
CHEVRON-TEXACO WAY
SAN RAMON, CALIFORNIA

PLATE A-5 (cont'd)

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6/9/05 2:48:36 PM

Date Completed:	2/6/05	Drilling method:	6" Hollow Stem Auger
Logged By:	J. Allen	Hammer Wt:	140 lbs., 30" drop
Total Depth:	36.5 ft	Notes:	

Surface Elevation: **Estimated 430 feet (MSL)**

Depth, ft	FIELD: Sample	FIELD: Blows/ft	LABORATORY: Dry Density pcf	LABORATORY: Moisture Content %	LABORATORY: Compress. Strength tsf	LABORATORY: Other Tests	Pen, tsf	DESCRIPTION
								ASPHALT - approximately 2 inches thick
								AGGREGATE BASEROCK- approximately 8 inches thick
						R-Value Test R<5		**SILTY LEAN CLAY (CL)** - dark brown, medium plasticity, moist
5		12	97	25				**CLAYEY SAND (SC)** - brown, loose, moist
								SILTY LEAN CLAY (CL) - brown, medium plasticity, stiff, moist
10		23	11:13 2/6/05	12:30 2/6/05		LL=35; PI=19 Passing -#200=60%		**SANDY CLAY (CL)** - brown, low plasticity, very stiff, moist to wet
								SILTY SANDY CLAY (CL) - brown, very sift, moist
15		19	93	32			0.5	**SAND (SP)** - brown, dense, moist, fine grained
								SILTY LEAN CLAY (CL) - brown, medium plasticity
20		20						**SAND (SP)** - coarse
								FAT CLAY (CH) - greenish gray, high plasticity, stiff, moist
25		300psi 400psi	101	23	1.7 @ 14.9%			
30								

KLEINFELDER

PROJECT NO. 53512-GEO

LOG OF BORING NO. KB-5

CHEVRON/TEXACO INVESTIGATION
CHEVRON-TEXACO WAY
SAN RAMON, CALIFORNIA

PLATE **A-6**

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Depth, ft	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests	Pen, tsf	DESCRIPTION
								(Continued from previous plate)
		300psi 350psi 400psi 600psi	104	23		Consolidation Test. See Plate B-5		**Fat Clay Continued** - very stiff
35								
								Boring terminated at 36.5 feet below ground surface. Note: The compressive strength indicated is the maximum achieved from an unconfined compression test with the associated strain noted.
40								
45								
50								
55								
60								

KLEINFELDER

PROJECT NO. 53512-GEO

LOG OF BORING NO. KB-5

CHEVRON/TEXACO INVESTIGATION
CHEVRON-TEXACO WAY
SAN RAMON, CALIFORNIA

PLATE **A-6** (cont'd)

Date Completed:	2/6/05	Drilling method:	6" Hollow Stem Auger
Logged By:	J. Allen	Hammer Wt:	140 lbs., 30" drop
Total Depth:	41.5 ft	Notes:	

Depth, ft	Sample (FIELD)	Blows/ft (FIELD)	Dry Density pcf (LABORATORY)	Moisture Content % (LABORATORY)	Compress. Strength tsf (LABORATORY)	Other Tests (LABORATORY)	Pen, tsf	DESCRIPTION Surface Elevation: Estimated 435 feet (MSL)
								ASPHALT - approximately 2 inches thick
								AGGREGATE BASEROCK- approximately 9 inches thick
								SILTY to SANDY CLAY (CL) - brown, plastic, moist - hand augered to 3 feet bgs
			97	23				
		19					2.0	**CLAYEY SAND (SC)** - brown, loose to medium dense, moist
5		11						**SANDY CLAY (CL)** - brown, medium stiff, moist
10		7	14:45 2/6/05					**LEAN CLAY (CL)** - brown, medium plasticity, soft to medium stiff, moist
		5	82	24 15:00 2/6/05			0.8	**SANDY CLAY (CL)** - medium plasticity, soft, wet
15		12				LL=30; PI=13		**SILTY LEAN CLAY (CL)** - olive-brown, medium plasticity, stiff
20		200psi 200psi 300psi 300psi 400psi	112	28		Consolidation Test. See Plate B-6		
25		32					2.5	- very stiff
								CLAYEY SAND (SC) - olive-brown, dense, moist
30								

KLEINFELDER

PROJECT NO. 53512-GEO

LOG OF BORING NO. KB-6

CHEVRON/TEXACO INVESTIGATION
CHEVRON-TEXACO WAY
SAN RAMON, CALIFORNIA

PLATE

A-7

Depth, ft	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests	Pen, tsf	DESCRIPTION
								(Continued from previous plate)
		32	113	17			1.8	**SILTY LEAN CLAY (CL)** - dark olive, medium plasticity, very stiff, moist
35		34					1.8	**SANDY CLAY (CL)** - dark olive-gray, medium plasticity, stiff, moist
40		59	109	20				**CLAYEY GRAVEL (GC) to CLAYEY SAND (SC)** - slight plasticity, dense, moist
								Boring terminated at 41.5 feet below ground surface.
45								
50								
55								
60								

KLEINFELDER

PROJECT NO. 53512-GEO

LOG OF BORING NO. KB-6

CHEVRON/TEXACO INVESTIGATION
CHEVRON-TEXACO WAY
SAN RAMON, CALIFORNIA

PLATE
A-7
(cont'd)

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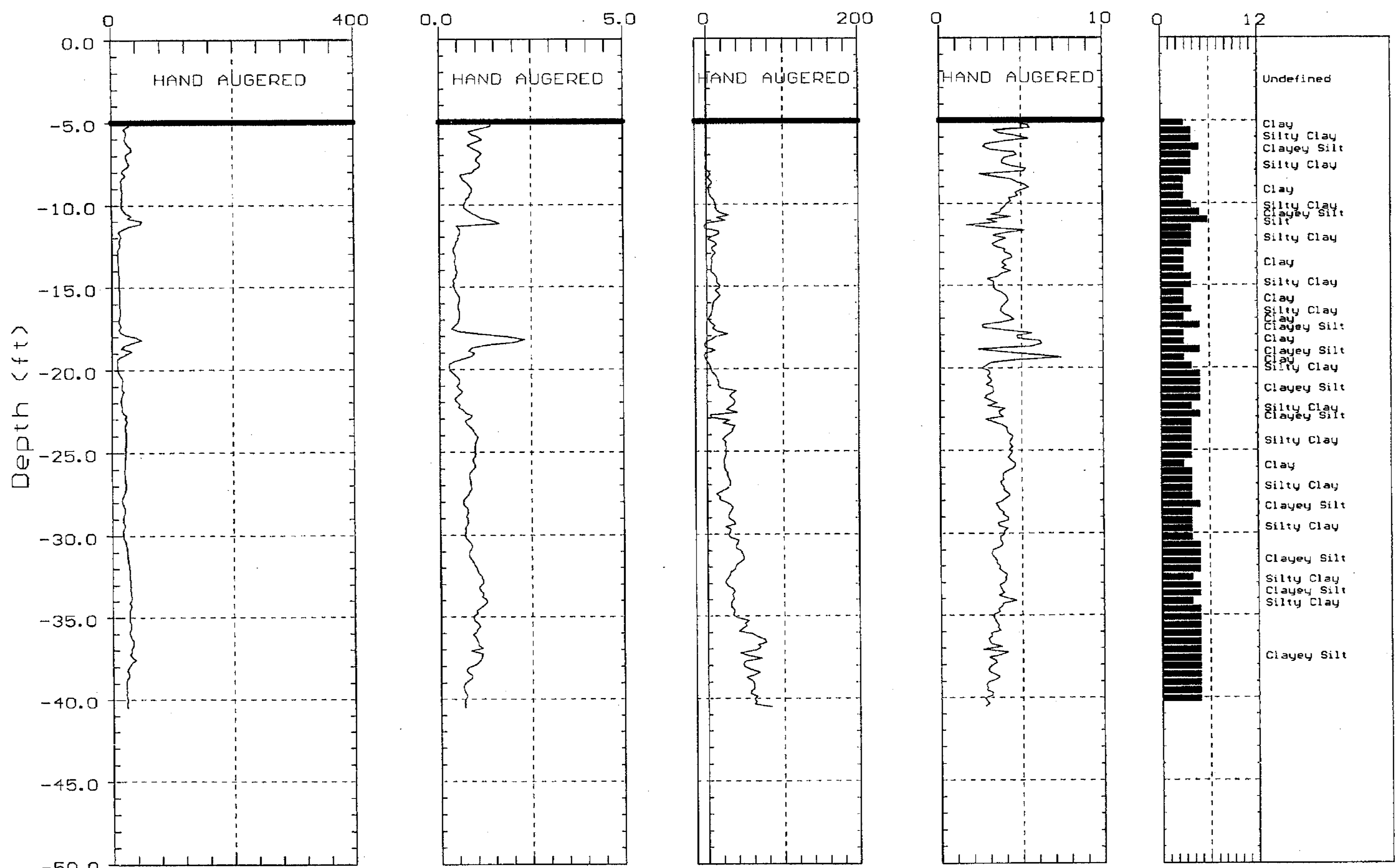
6/9/05 2:51:57 PM

GREGG KLEINFELDER

Site: CHEVRON
Location: CPT-01

Engineer: R. ELLIS
Date: 02:19:05 08:57



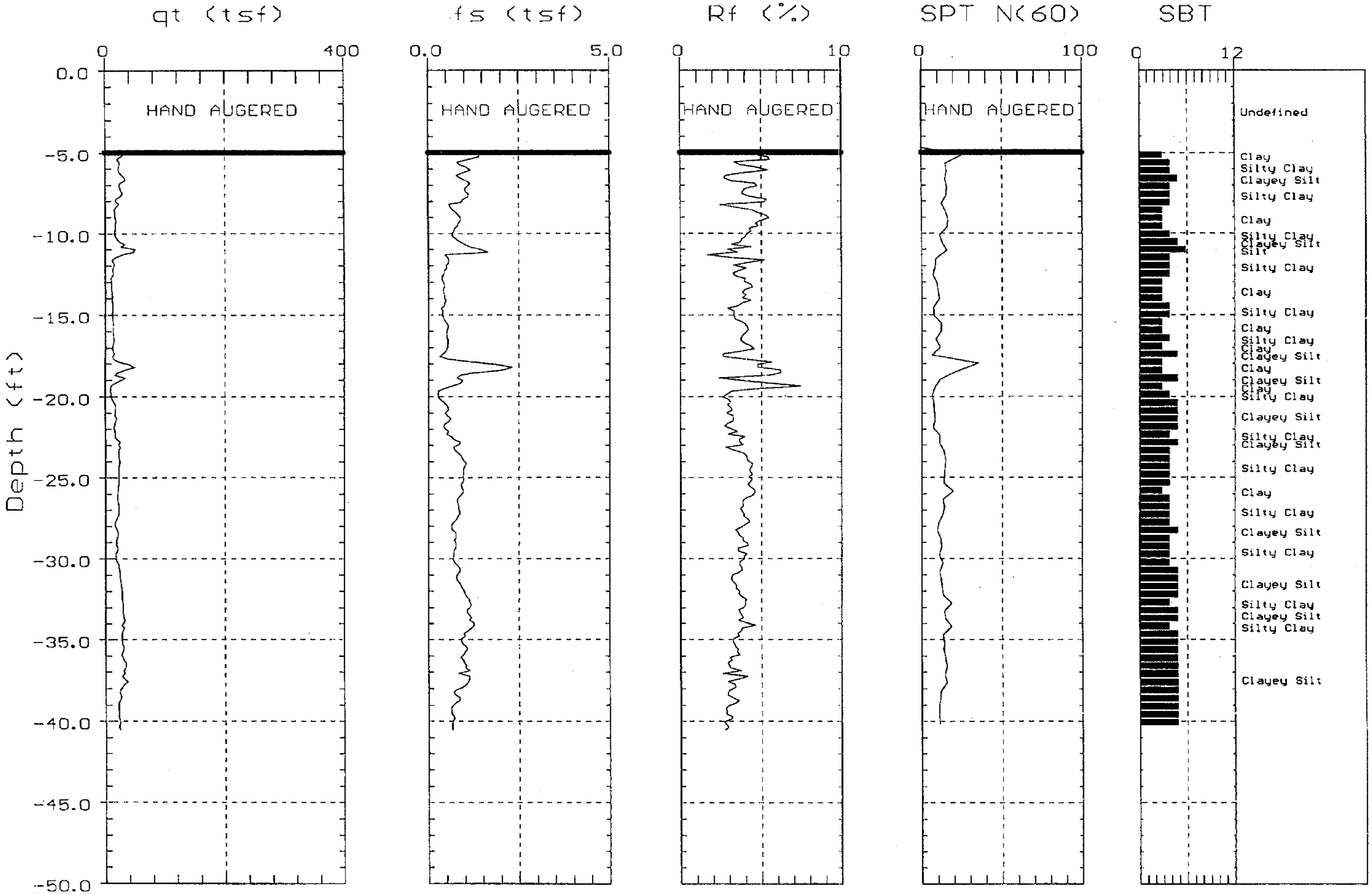
Max. Depth: 40.52 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG **KLEINFELDER**

Site: CHEVRON
Location: CPT-01

Engineer: R. ELLIS
Date: 02:19:05 08:57



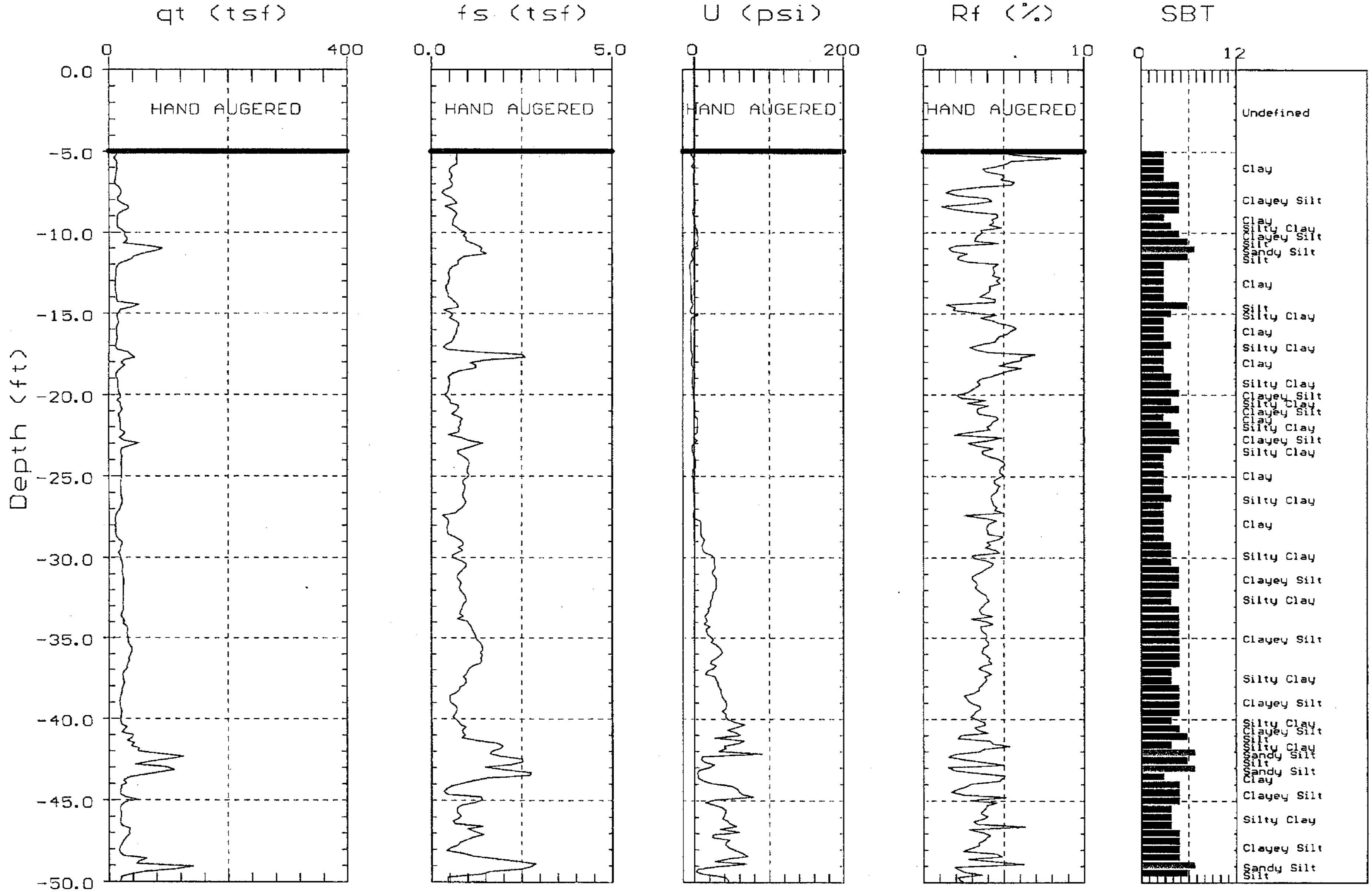
Max. Depth: 40.52 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

KLEINFELDER

Site: CHEVRON
Location: CPT-02

Engineer: R. ELLIS
Date: 02:19:05 10:01



Max. Depth: 50.03 (ft)
Depth Inc.: 0.164 (ft)

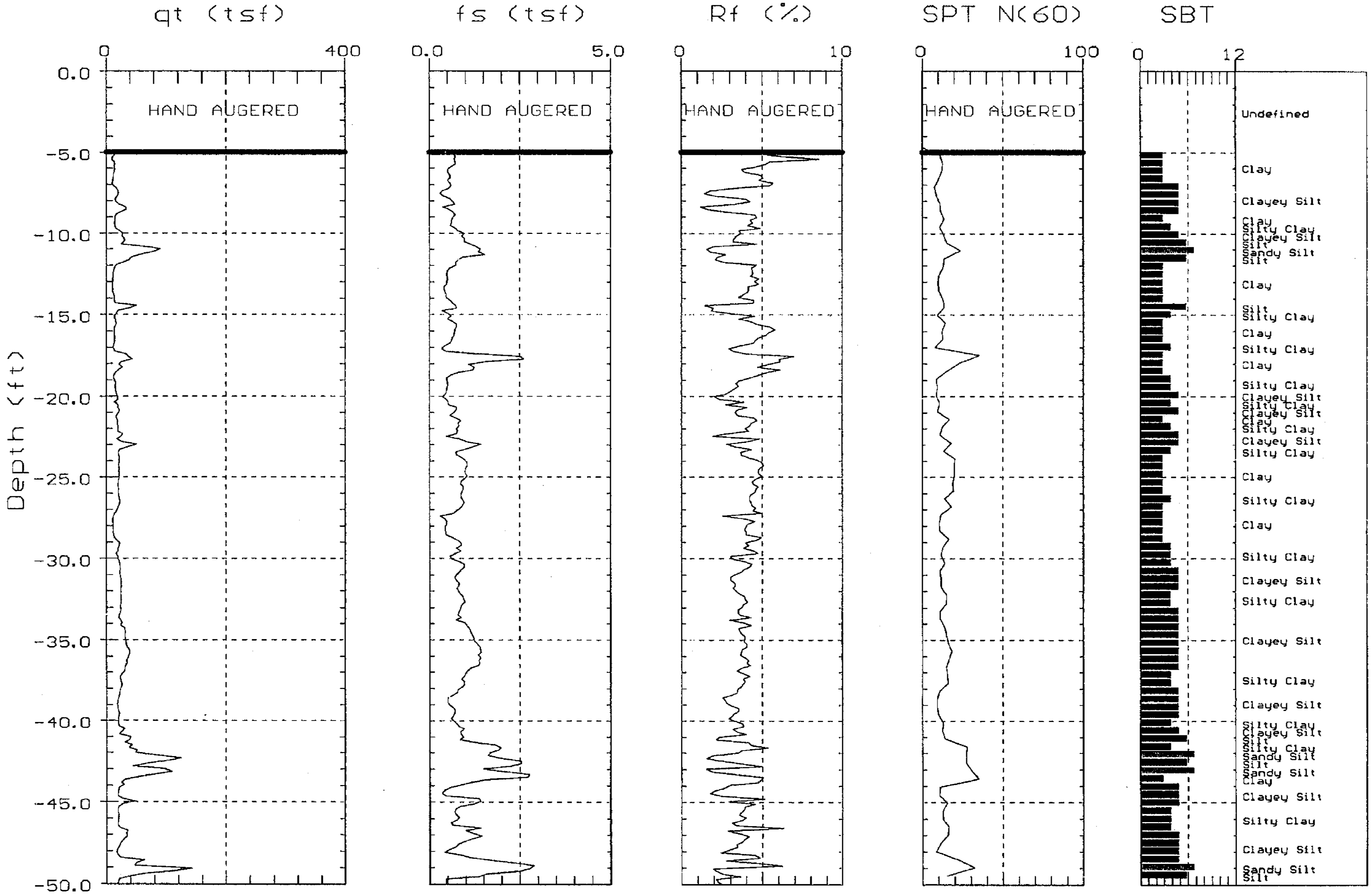
SBT: Soil Behavior Type (Robertson 1990)

GREGG

KLEINFELDER

Site: CHEVRON
Location: CPT-02

Engineer: R. ELLIS
Date: 02:19:05 10:01



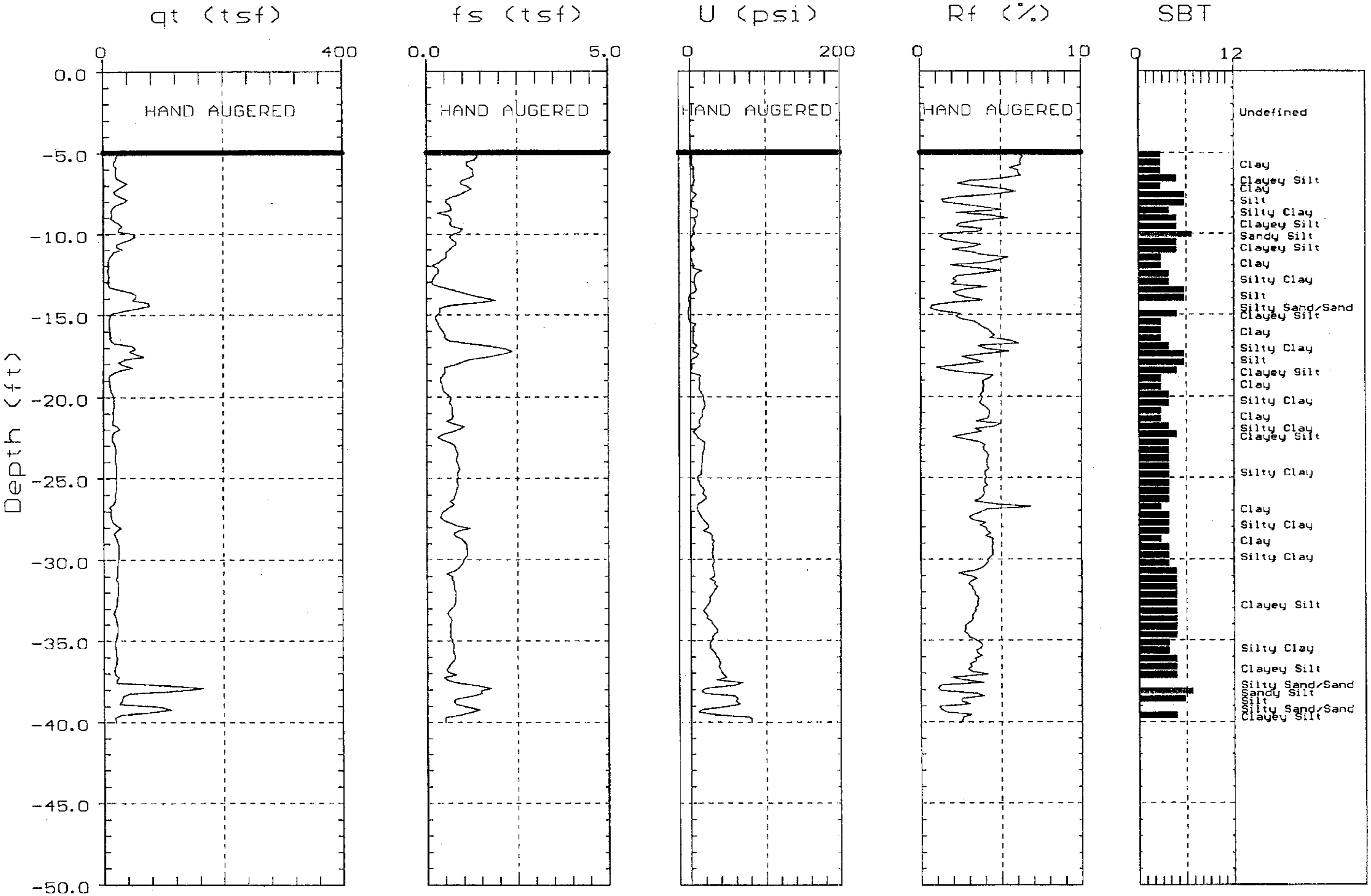
Max. Depth: 50.03 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

KLEINFELDER

Site: CHEVRON
Location: CPT-03

Engineer: R. ELLIS
Date: 02:19:05 10:48



Max. Depth: 40.03 (ft)
Depth Inc.: 0.164 (ft)

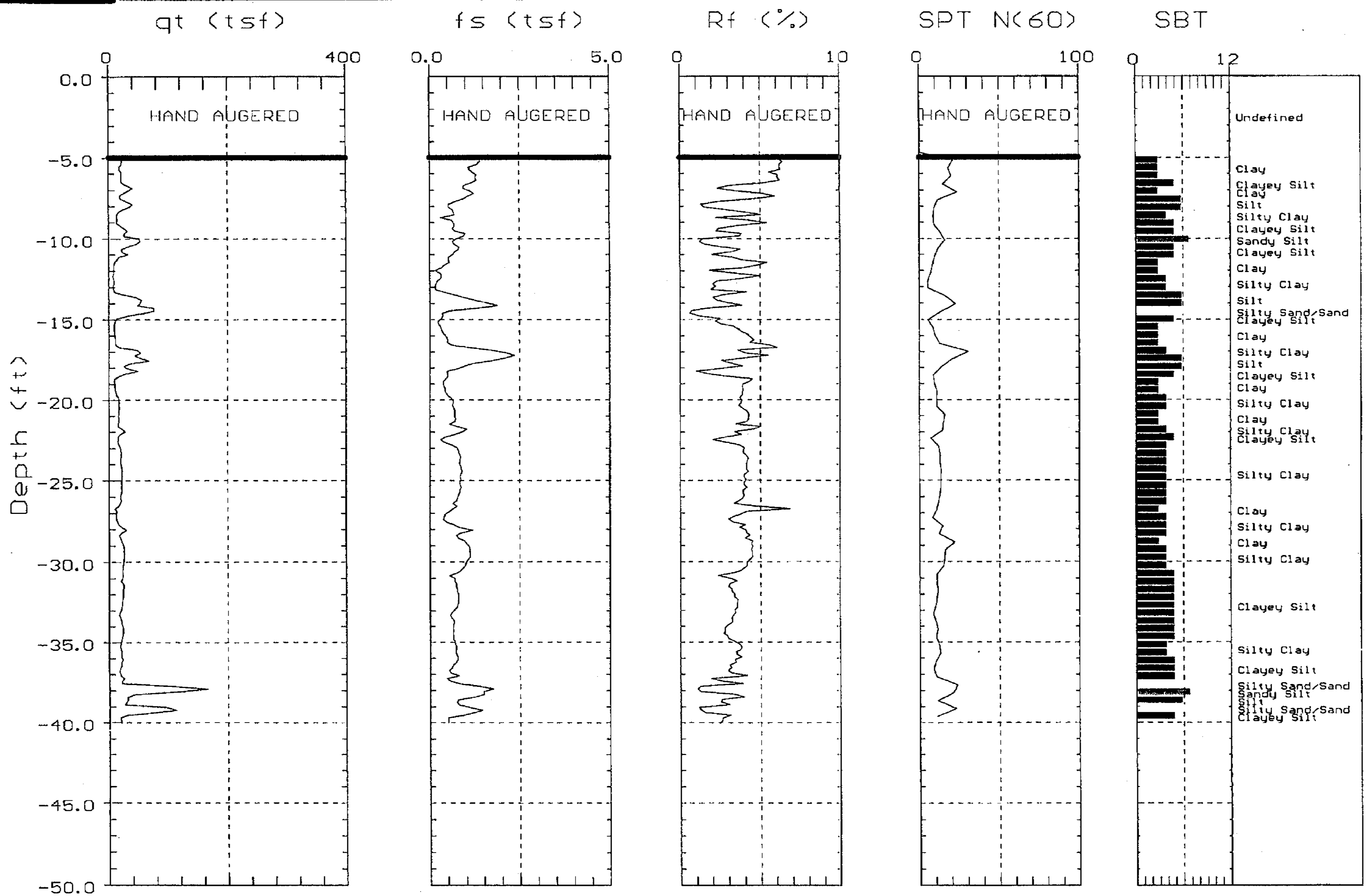
SBT: Soil Behavior Type (Robertson 1990)

GREGG

KLEINFELDER

Site: CHEVRON
Location: CPT-03

Engineer: R. ELLIS
Date: 02:19:05 10:48



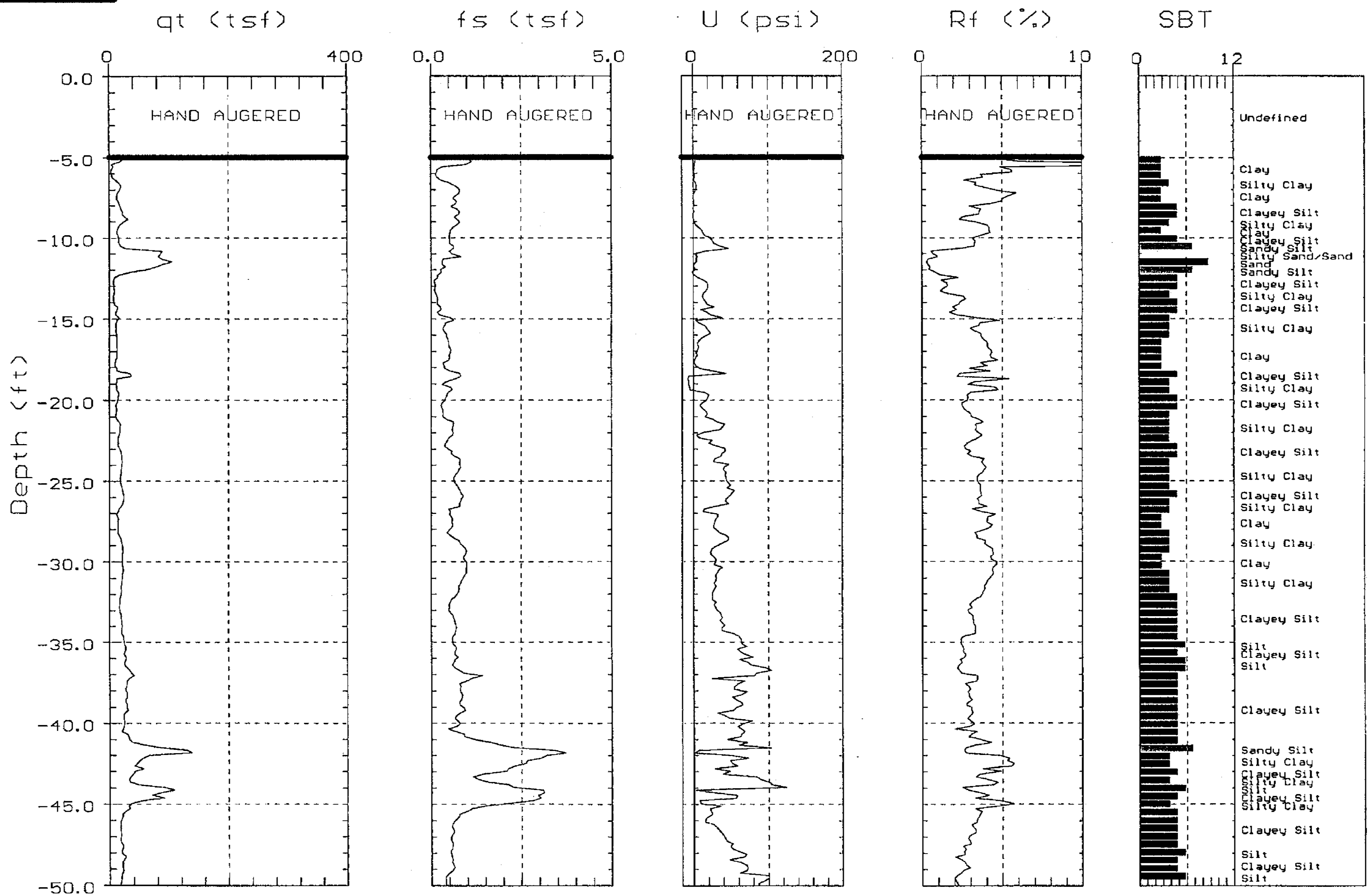
Max. Depth: 40.03 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

KLEINFELDER

Site: CHEVRON
Location: CPT-04

Engineer: R. ELLIS
Date: 02:19:05 11:32



Max. Depth: 50.03 (ft)
Depth Inc.: 0.164 (ft)

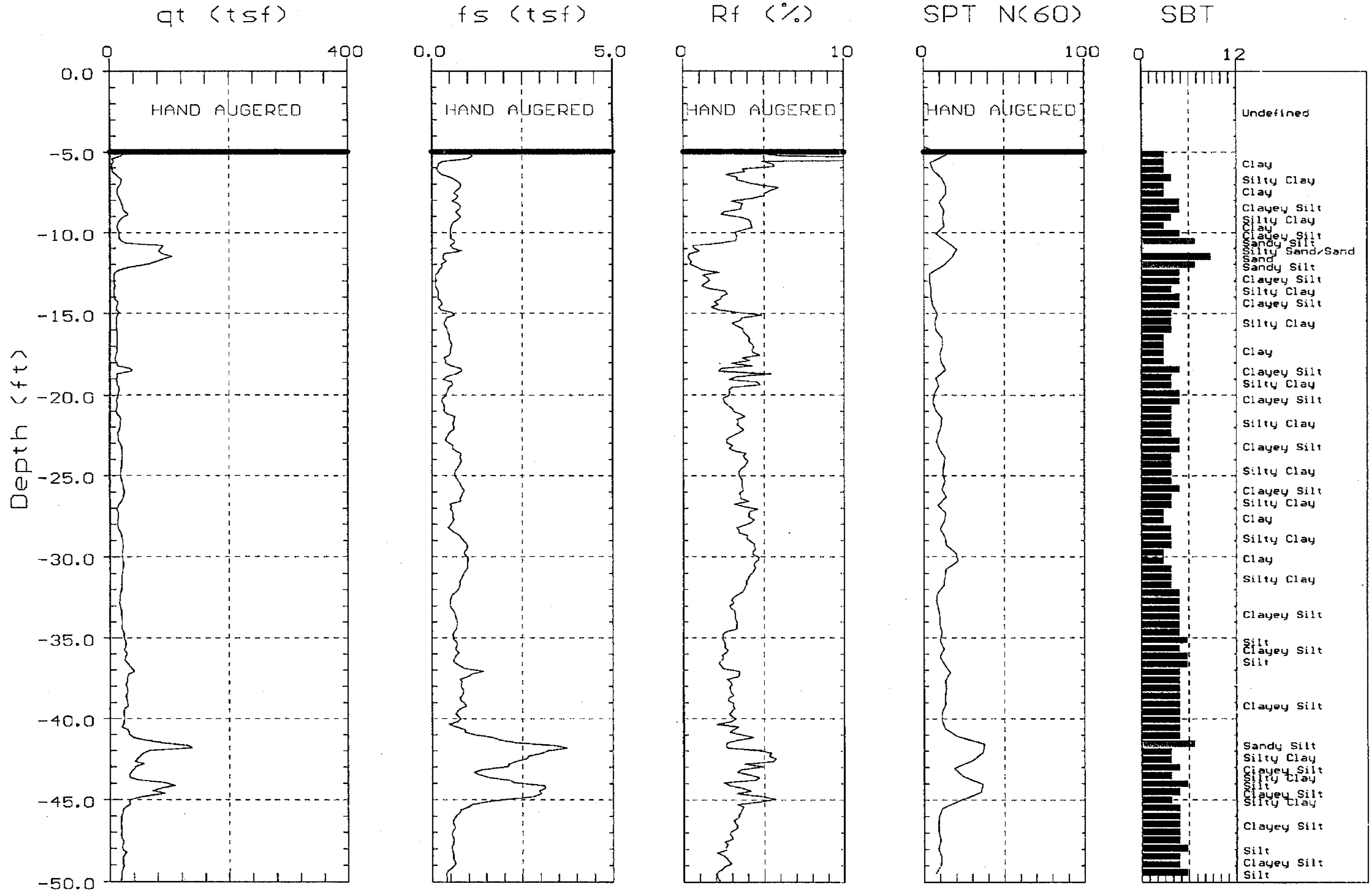
SBT: Soil Behavior Type (Robertson 1990)

GREGG

KLEINFELDER

Site: CHEVRON
Location: CPT-04

Engineer: R. ELLIS
Date: 02:19:05 11:32



Max. Depth: 50.03 (ft)
Depth Inc.: 0.164 (ft)

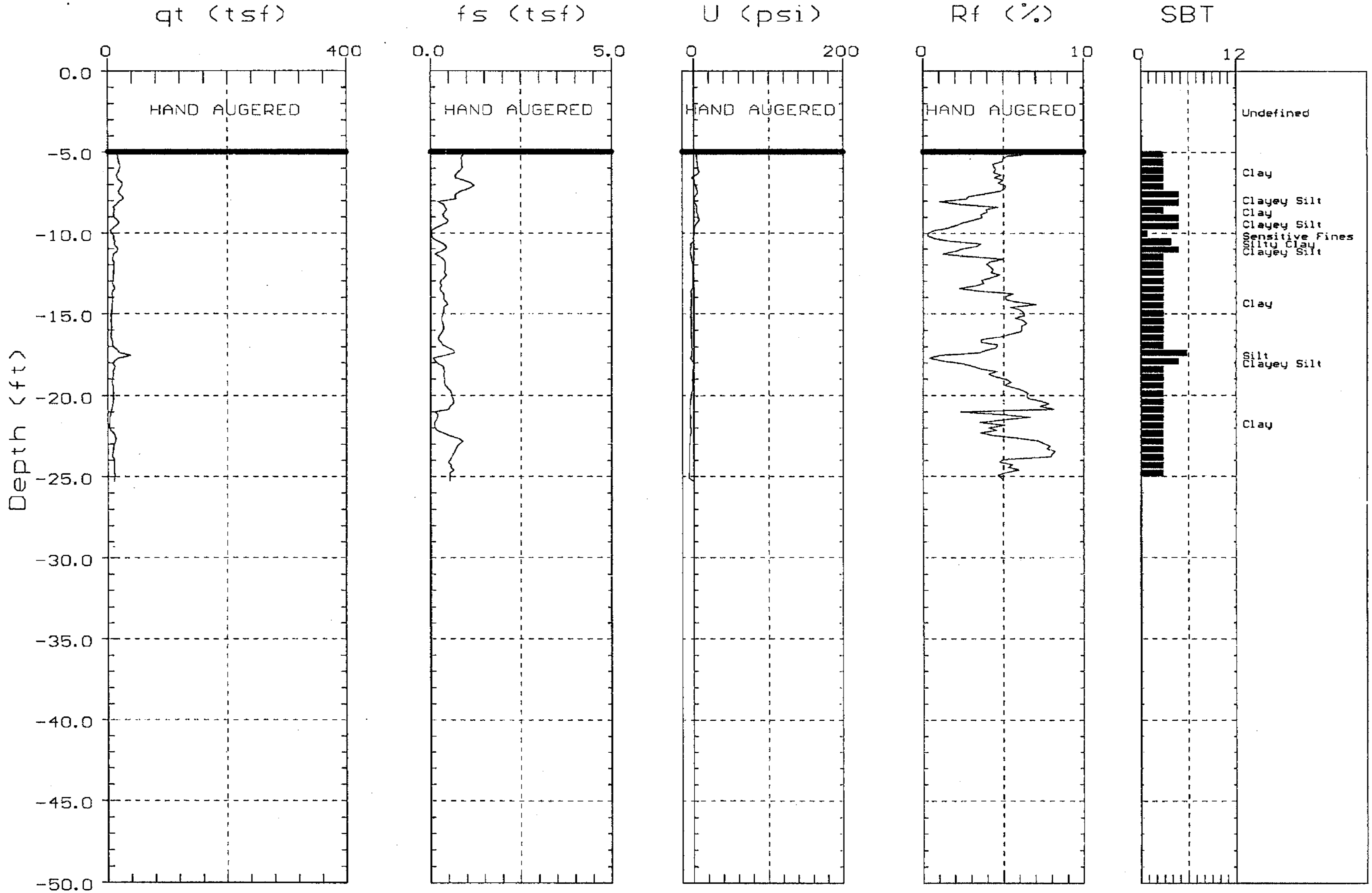
SBT: Soil Behavior Type (Robertson 1990)

GREGG

KLEINFELDER

Site: CHEVRON
Location: CPT-05

Engineer: R. ELLIS
Date: 02:19:05 12:35



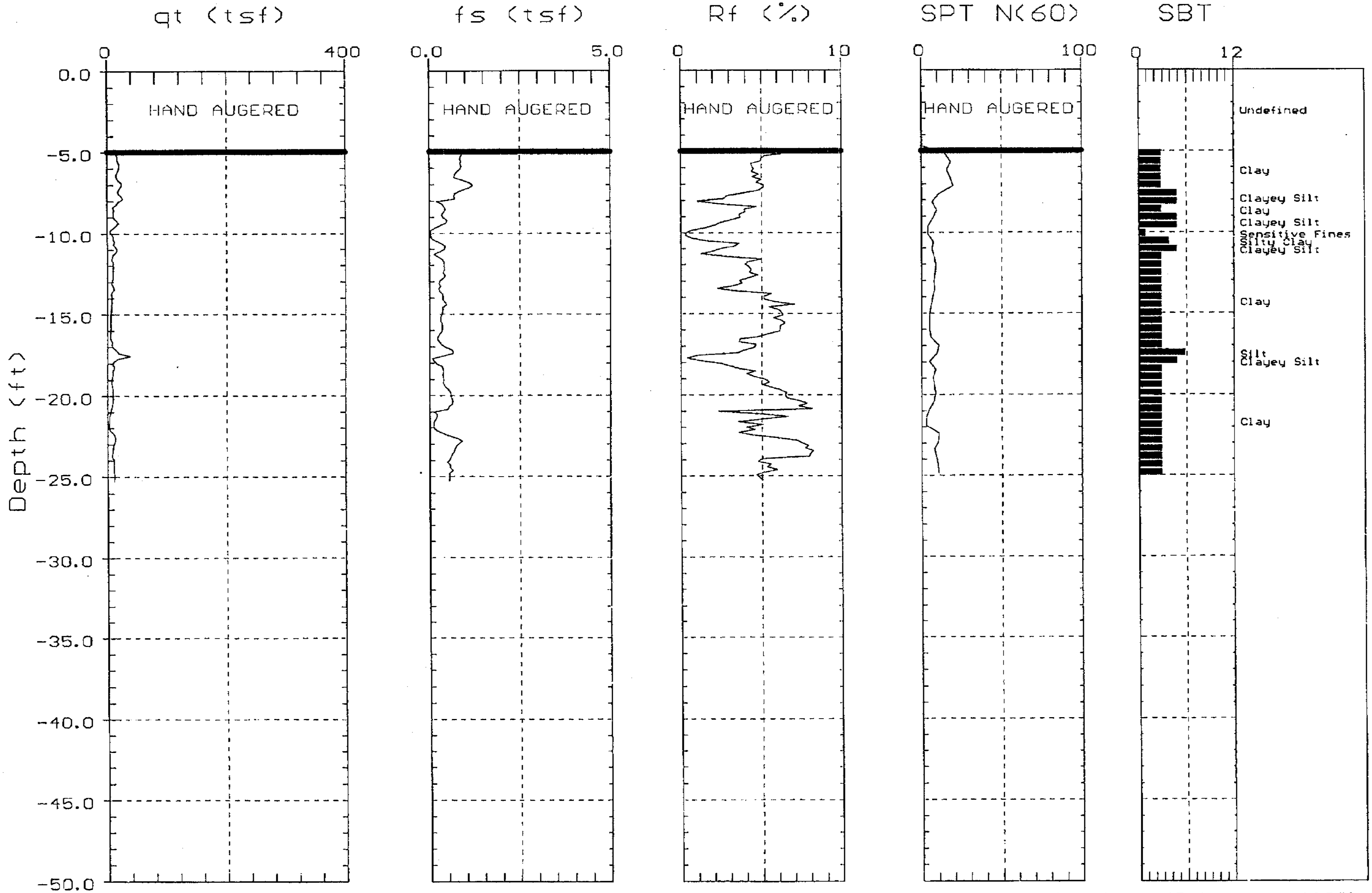
Max. Depth: 25.26 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG KLEINFELDER

Site: CHEVRON
Location: CPT-05

Engineer: R. ELLIS
Date: 02:19:05 12:35



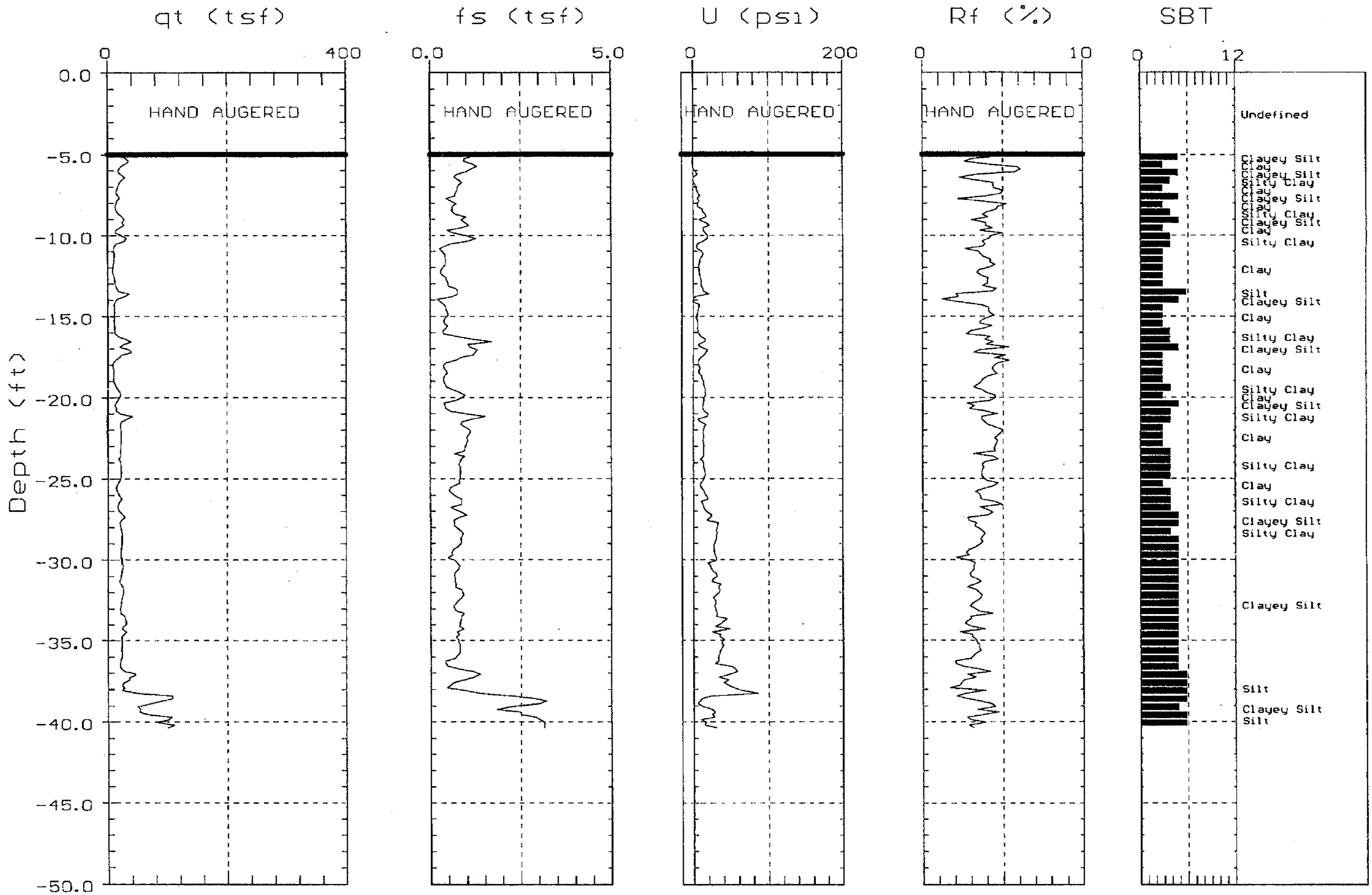
Max. Depth: 25.26 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG KLEINFELDER

Site: CHEVRON
Location: CPT-06

Engineer: R. ELLIS
Date: 02:19:05 14:03



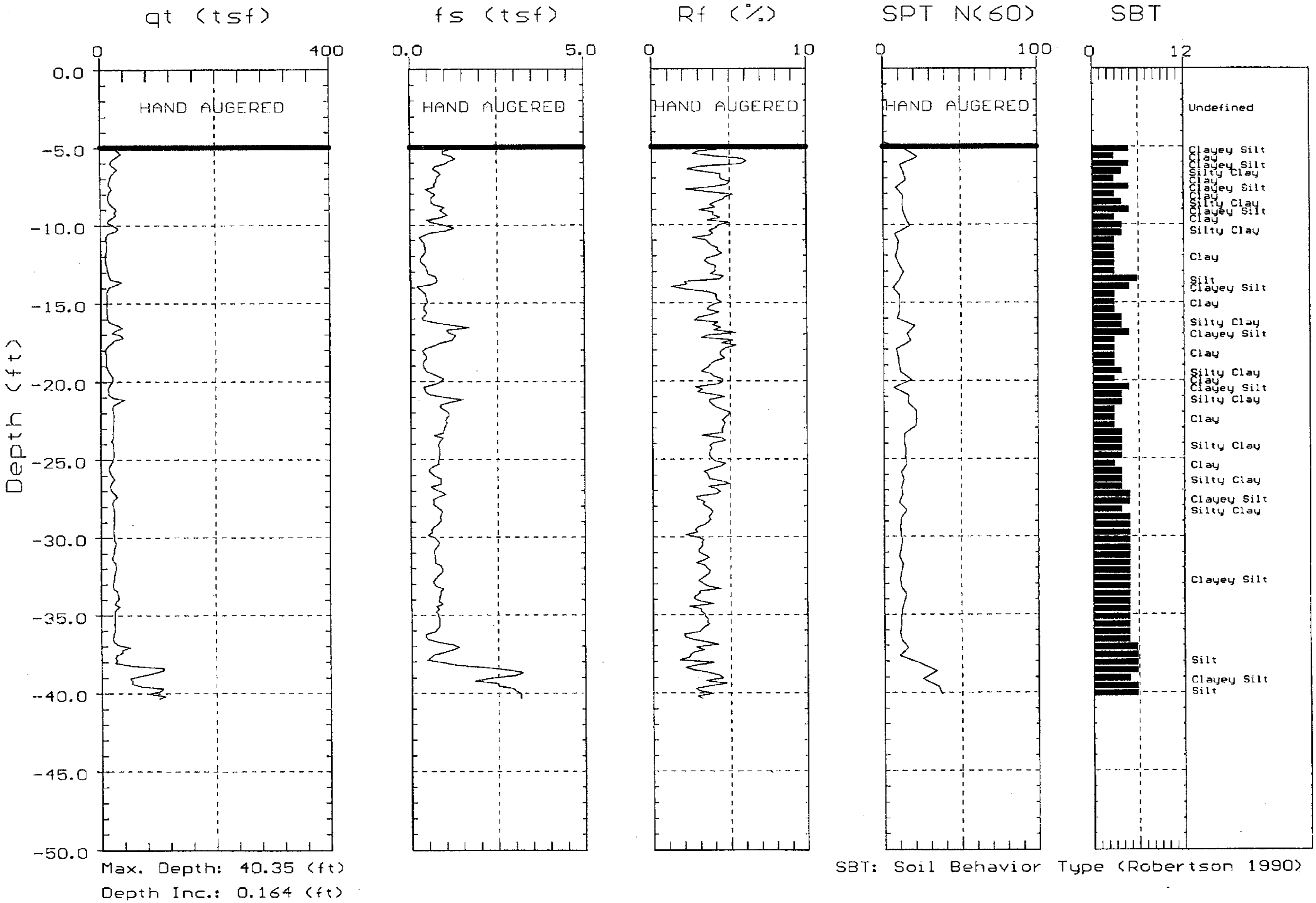
Max. Depth: 40.35 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

KLEINFELDER

Site: CHEVRON
Location: CPT-06

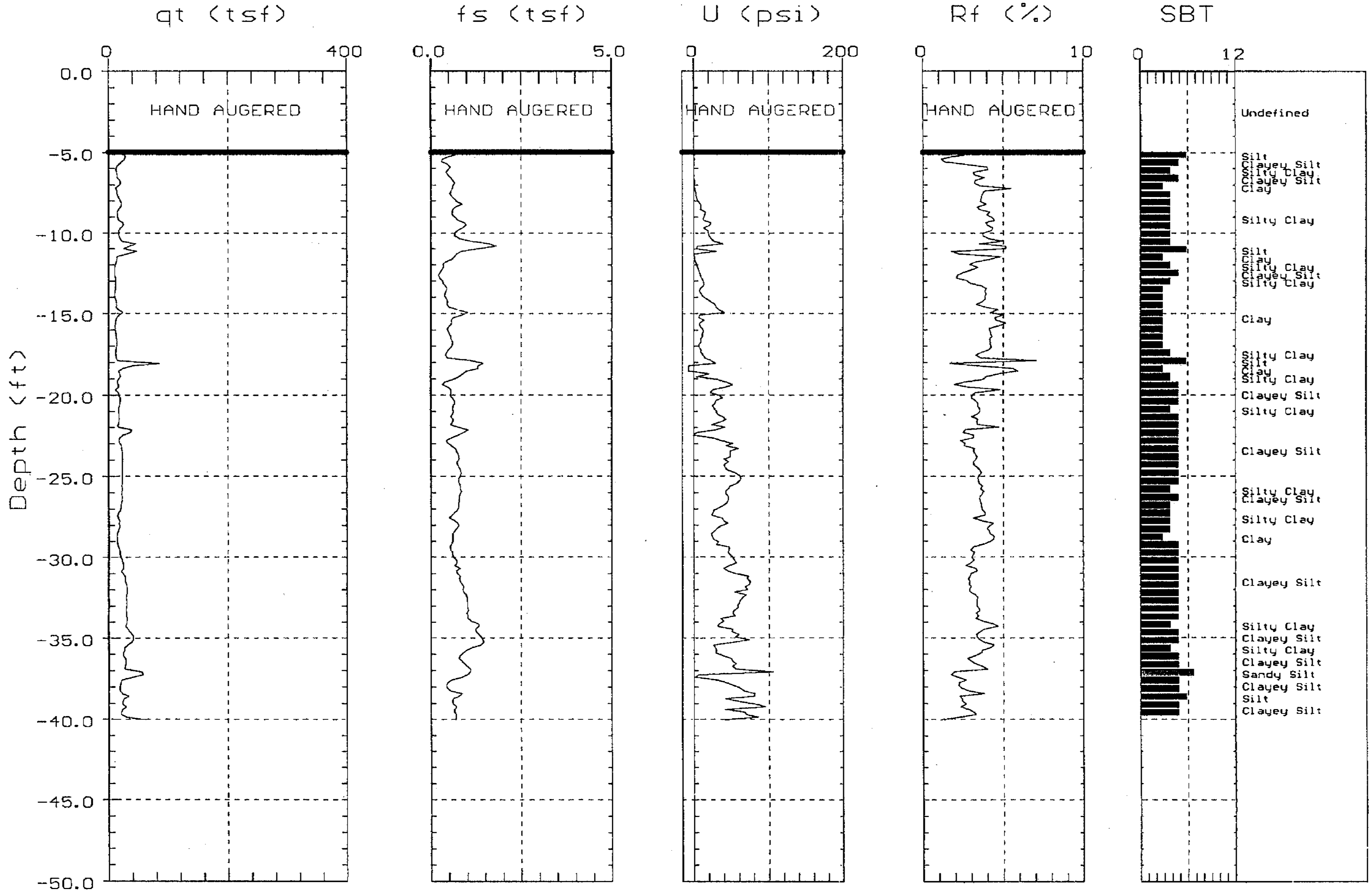
Engineer: R. ELLIS
Date: 02:19:05 14:03



KLEINFELDER

Site: CHEVRON
Location: CPT-07

Engineer: R. ELLIS
Date: 02:19:05 14:51



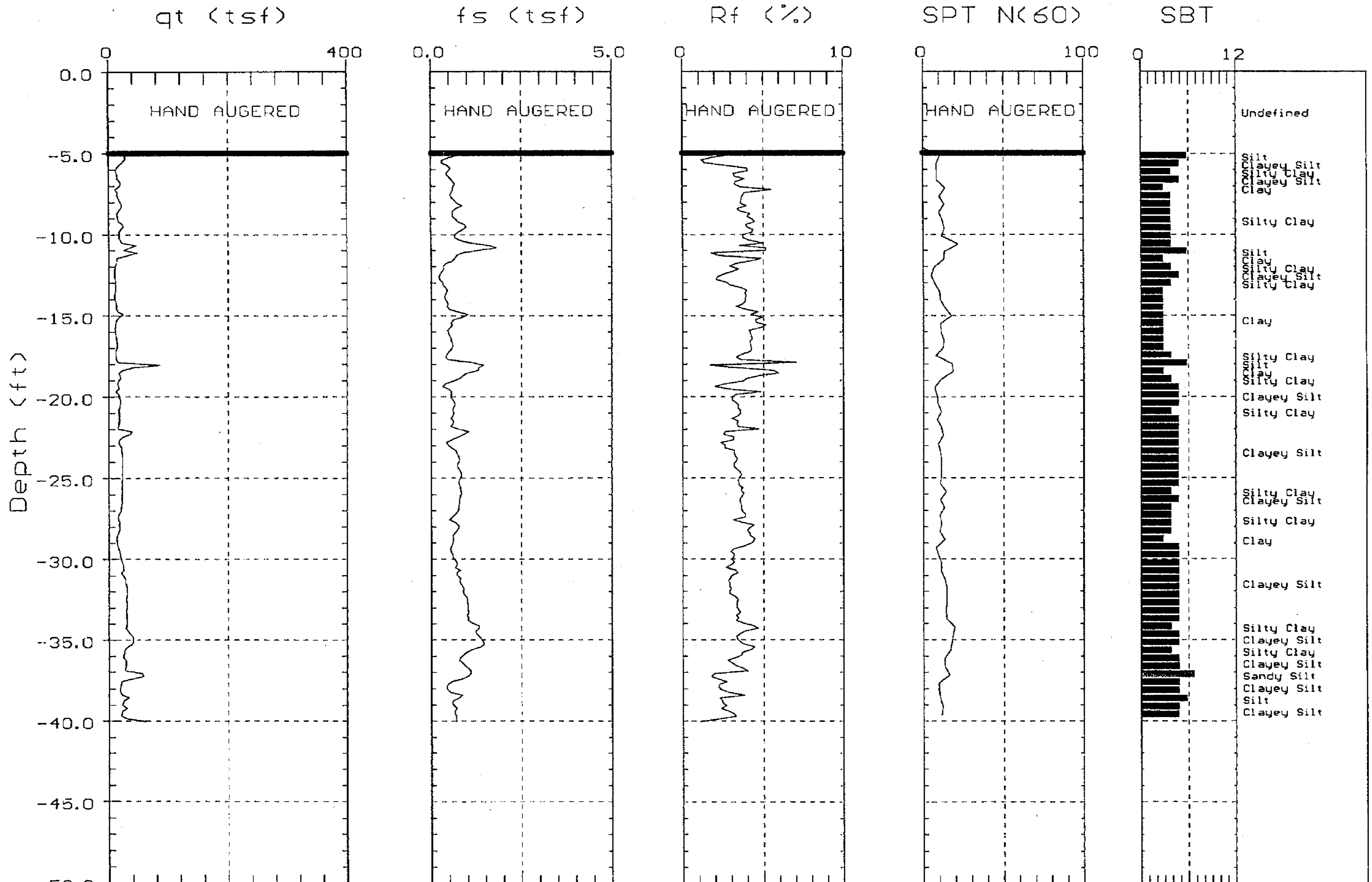
Max. Depth: 40.03 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

KLEINFELDER

Site: CHEVRON
Location: CPT-07

Engineer: R. ELLIS
Date: 02:19:05 14:51



Max. Depth: 40.03 (ft)
Depth Inc.: 0.164 (ft)

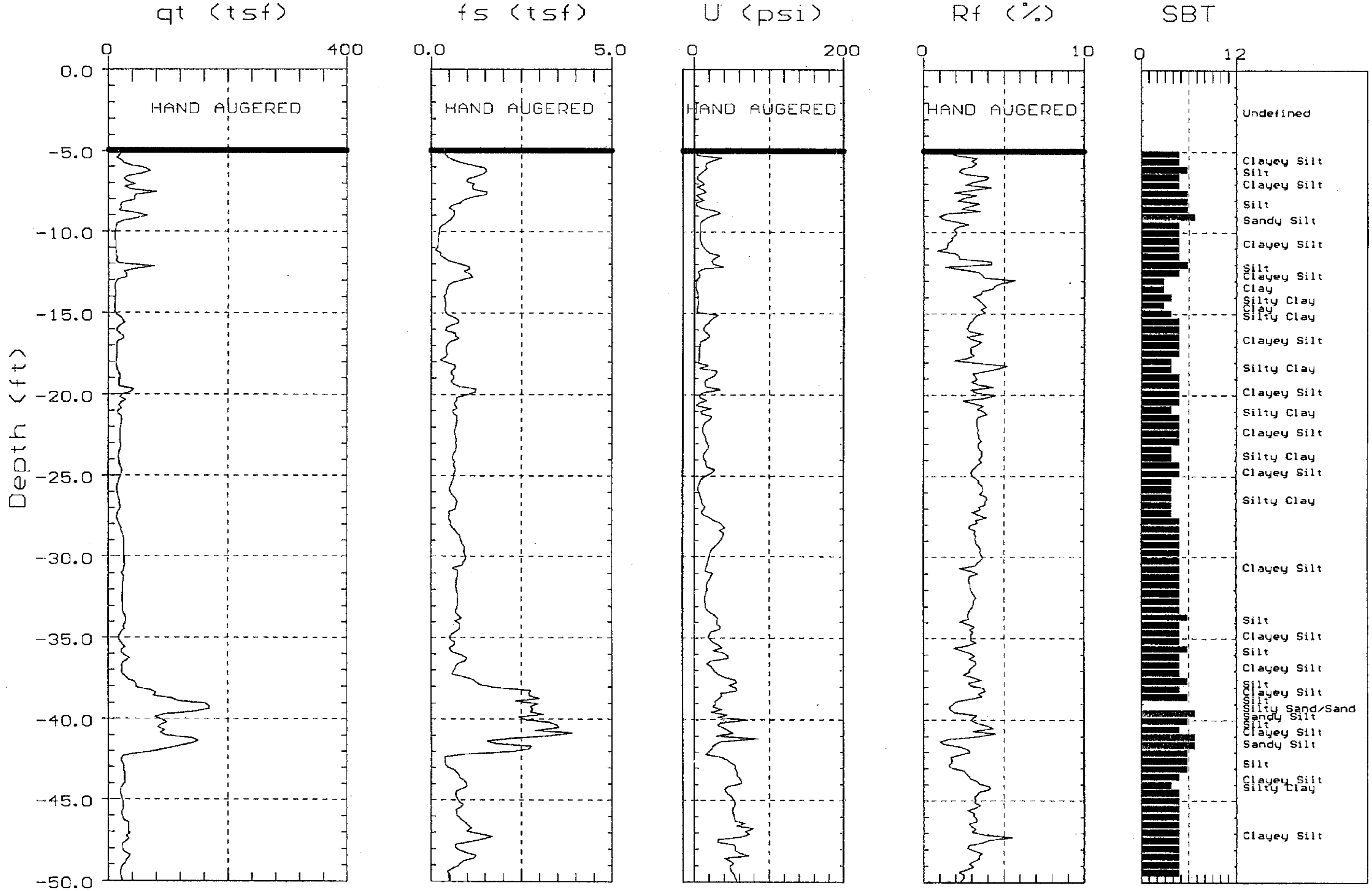
SBT: Soil Behavior Type (Robertson 1990)

GREGG

KLEINFELDER

Site: CHEVRON
Location: CPT-08

Engineer: R. ELLIS
Date: 02:19:05 17:29



Max. Depth: 50.03 (ft)
Depth Inc.: 0.164 (ft)

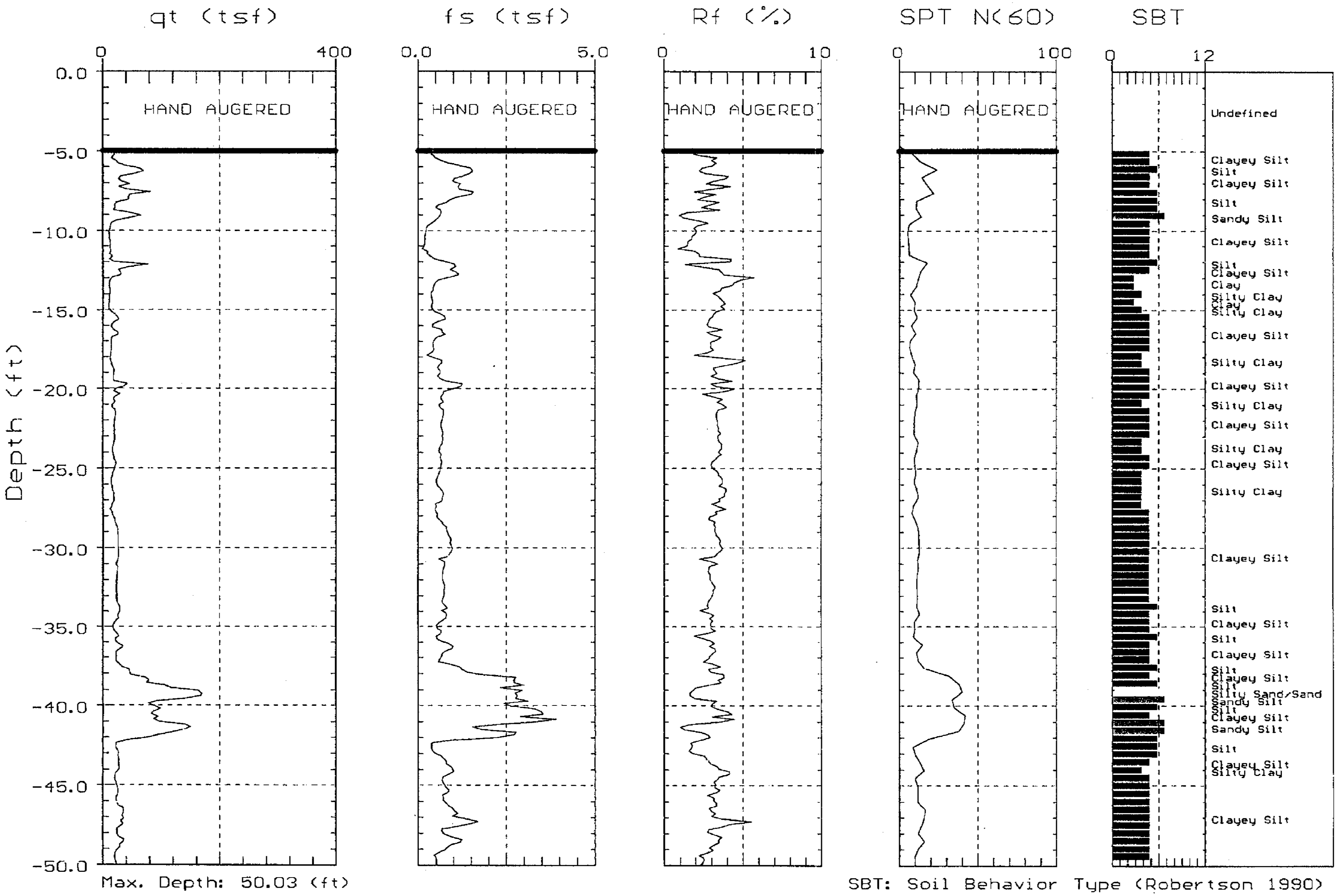
SBT: Soil Behavior Type (Robertson 1990)

GREGG

KLEINFELDER

Site: CHEVRON
Location: CPT-08

Engineer: R. ELLIS
Date: 02:19:05 17:29



Max. Depth: 50.03 (ft)
Depth Inc.: 0.164 (ft)

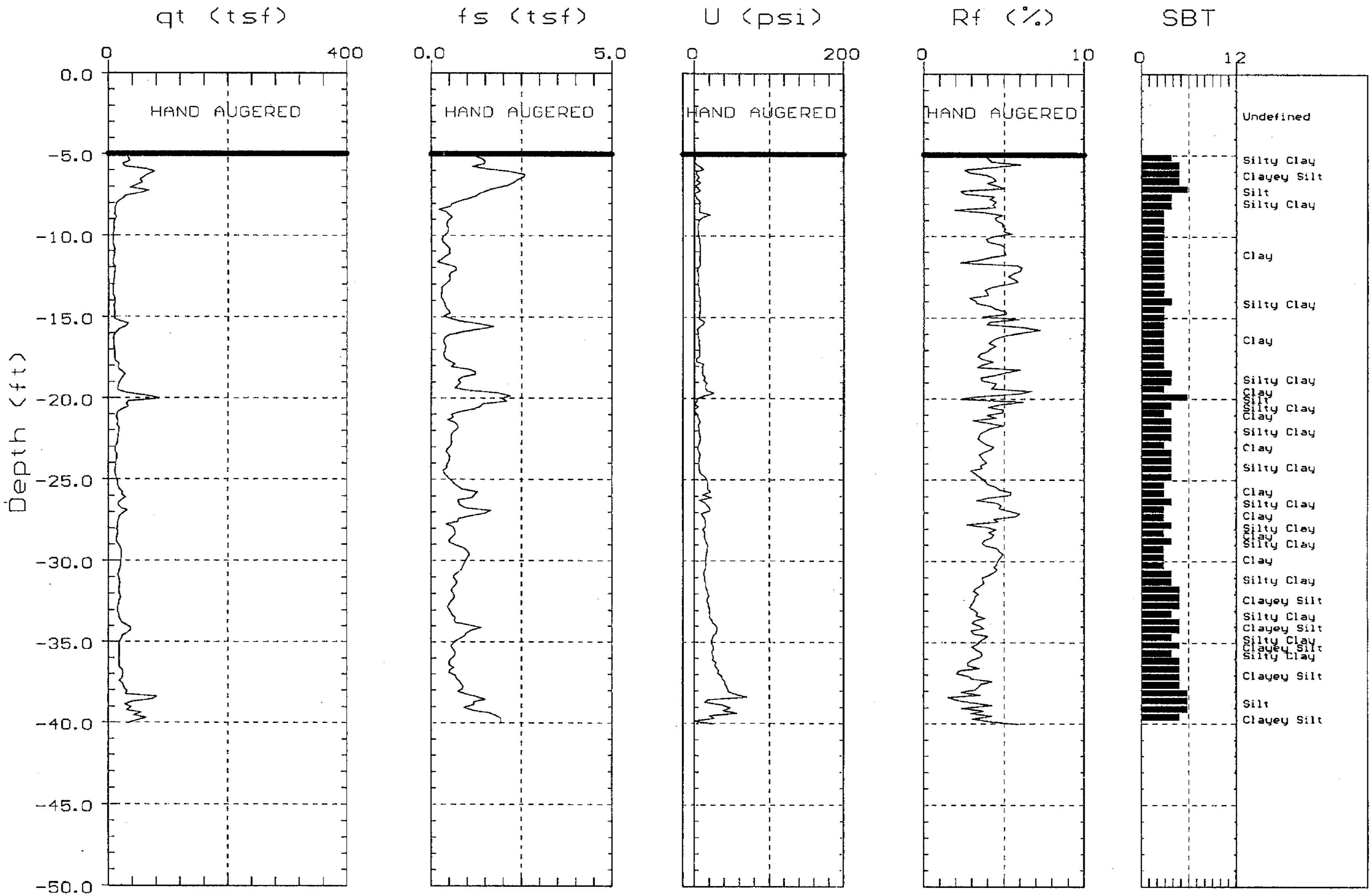
SBT: Soil Behavior Type (Robertson 1990)

GREGG

KLEINFELDER

Site: CHEVRON
Location: CPT-09

Engineer: R. ELLIS
Date: 02:19:05 18:15



Max. Depth: 40.03 (ft)
Depth Inc.: 0.164 (ft)

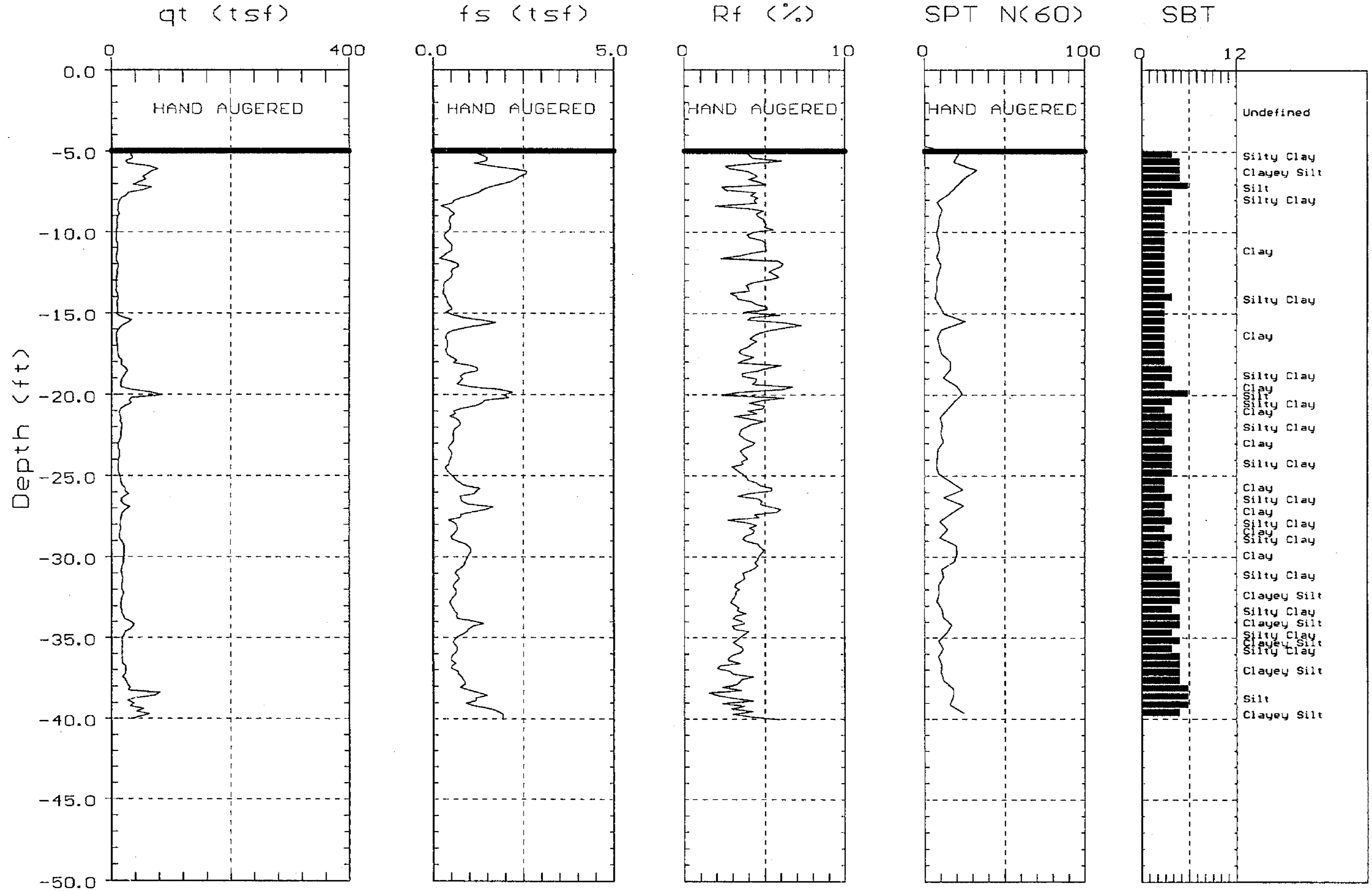
SBT: Soil Behavior Type (Robertson 1990)

GREGG

KLEINFELDER

Site: CHEVRON
Location: CPT-09

Engineer: R. ELLIS
Date: 02:19:05 18:15



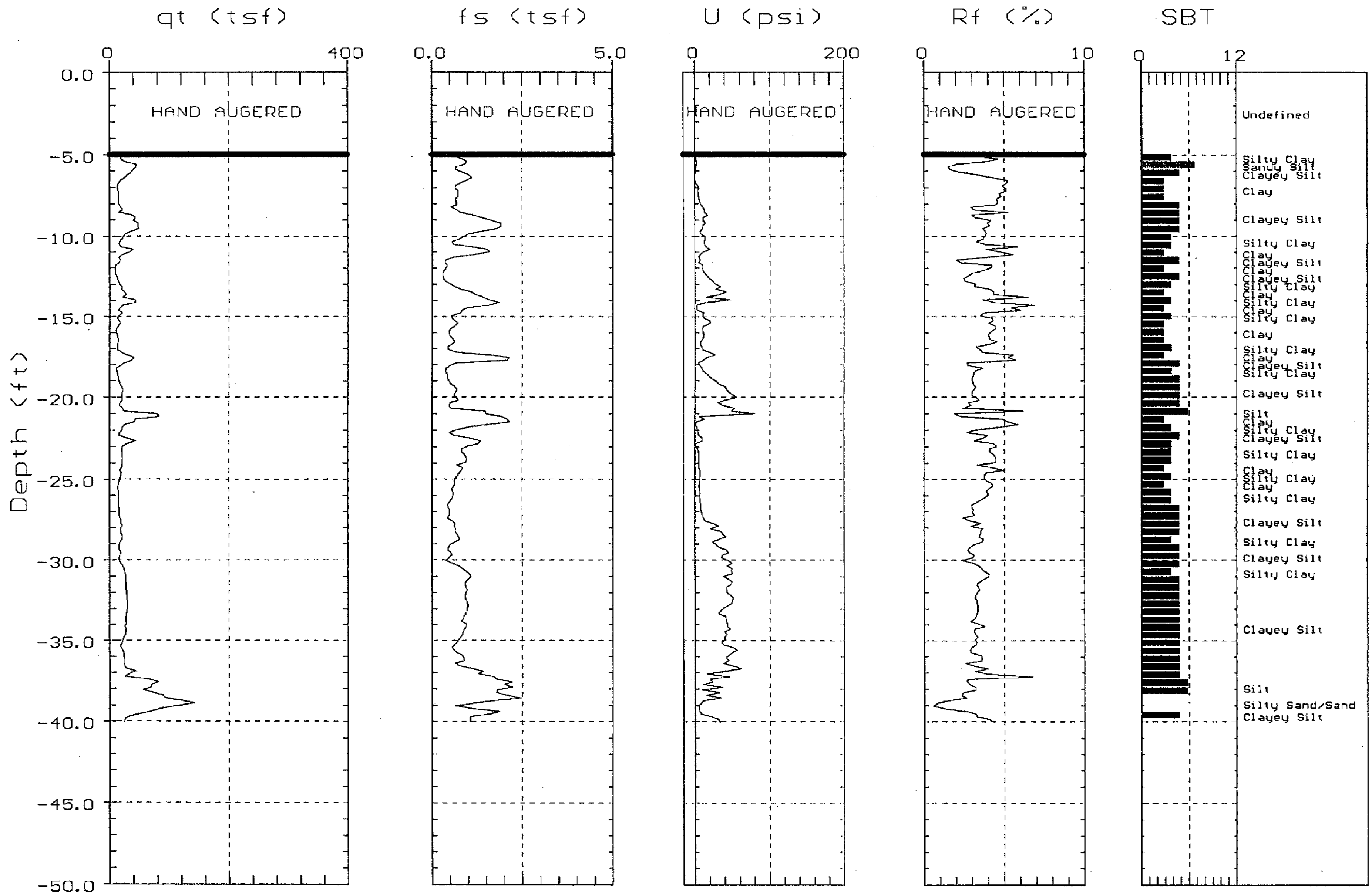
Max. Depth: 40.03 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

KLEINFELDER

Site: CHEVRON
Location: CPT-10

Engineer: R. ELLIS
Date: 02:19:05 15:49



Max. Depth: 40.03 (ft)
Depth Inc.: 0.164 (ft)

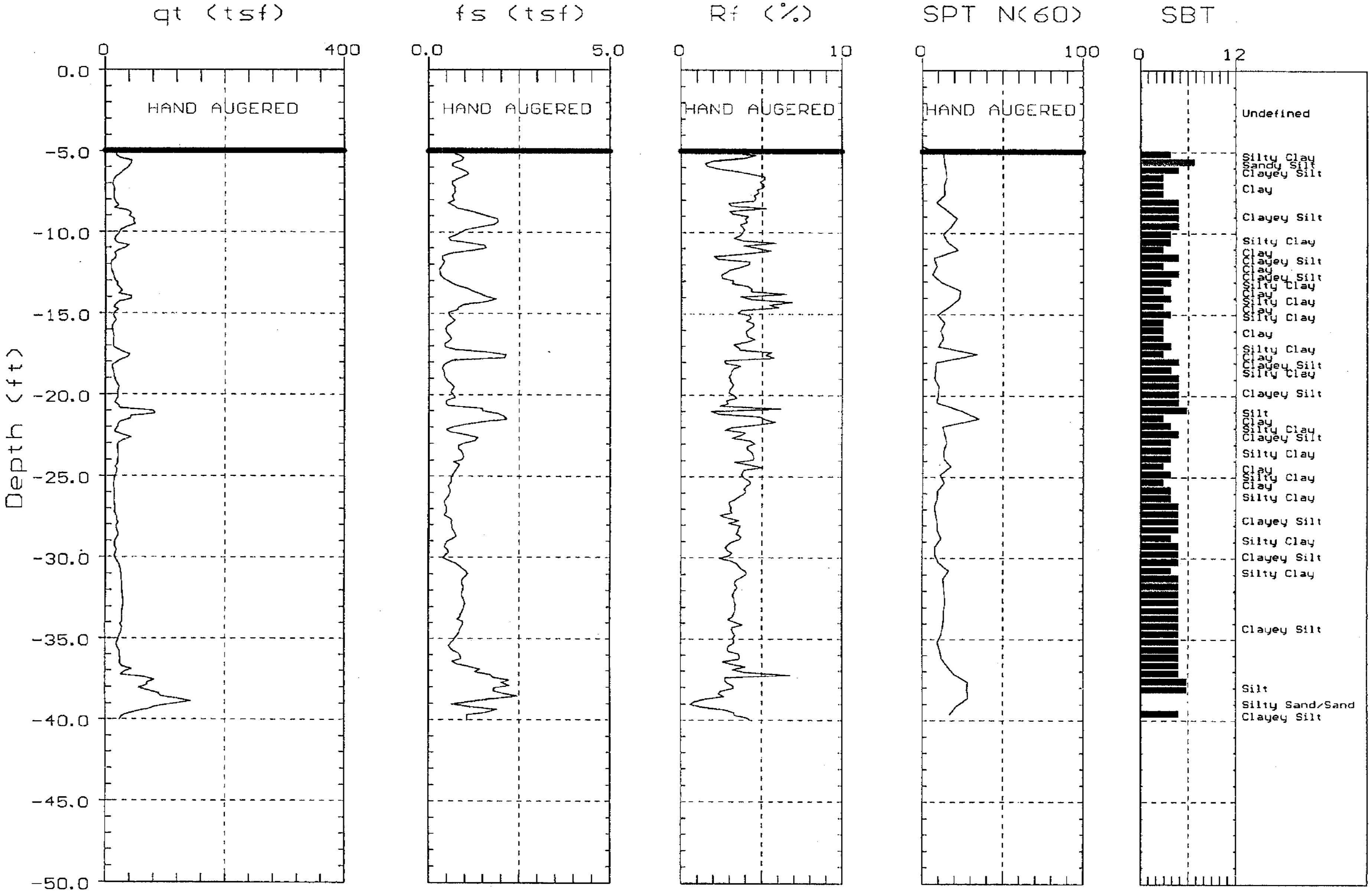
SBT: Soil Behavior Type (Robertson 1990)

GREGG

KLEINFELDER

Site: CHEVRON
Location: CPT-10

Engineer: R. ELLIS
Date: 02:19:05 15:49



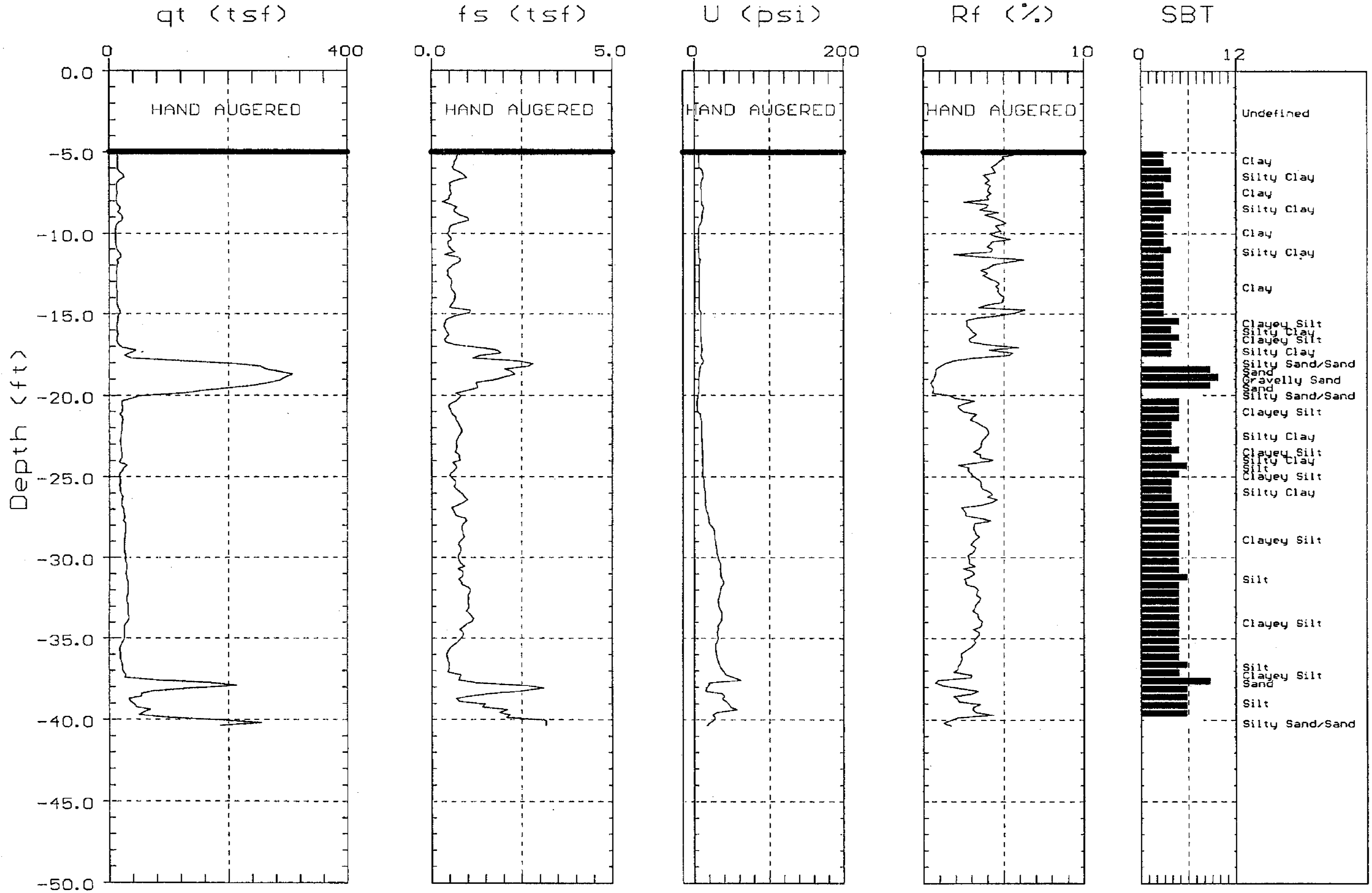
Max. Depth: 40.03 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG **KLEINFELDER**

Site: CHEVRON
Location: CPT-11

Engineer: R. ELLIS
Date: 02:19:05 16:33



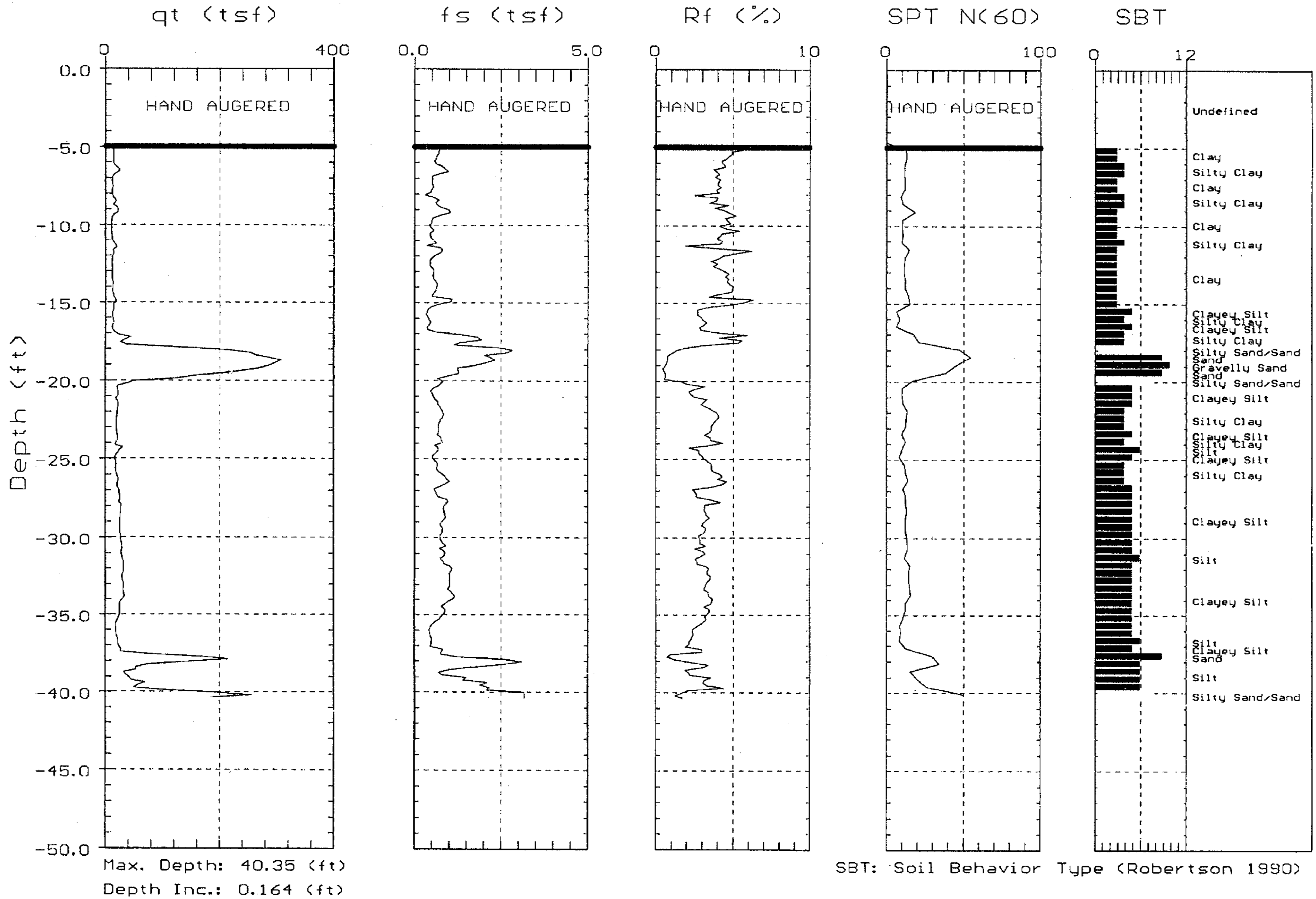
Max. Depth: 40.35 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

KLEINFELDER

Site: CHEVRON
Location: CPT-11

Engineer: R. ELLIS
Date: 02:19:05 16:33



Preliminary Geotechnical Exploration, San Ramon City Center, San Ramon, California, prepared for City of San Ramon, California, prepared by ENGEO Incorporated, ENGEO Project 5172.001.01, dated March 29, 2001

DEPTH (FEET)	DEPTH (METERS)	SAMPLE NUMBER	DESCRIPTION	BLOWS/FT.	qu UNCON STRENGTH (TSF) *FIELD PENET. APPROX.	IN PLACE DRY UNIT WEIGHT (PCF)	IN PLACE MOIST. CONTENT % DRY WEIGHT
			DATE OF BORING: January 22, 2001				
			SURFACE ELEVATION: Approx. 441 feet (134 meters)				
0			SILTY CLAY with sand (CL), black, very stiff, moist, with trace pebbles, and metallic debris. (Fill?)				
	1	1-1		34	2.0*		
5			With trace wood debris.				
	2	1-2	SILTY CLAY (CL), black, stiff to very stiff, moist. (Fill?)	30	1.9	98.8	25.6
			SILTY CLAY (CL/CH), light olive with white mottling, very stiff, moist.				
10	3						
		1-3		43	3.0*	100.2	24.3
	4						
15	5	1-4	SILTY to CLAYEY SAND (SM), brown, medium dense, moist.	25			
20	6		∇ SILTY CLAY with sand (CL), yellowish brown, very stiff, wet.				
		1-5		18			
	7						
25			SILTY CLAY (CH), dark olive grey, very stiff, very moist to wet.				
	8	1-6		18	2.5*		
30	9						
		1-7	SILTY CLAY with sand (CL), dark greyish brown, trace carbonates, very stiff, very moist.	35	2.8	103.0	24.4
	10						
35			SILTY CLAY with sand (CL), grey with black mottling, very stiff, wet, trace medium sand and organics.				
	11	1-8		23			
	12						
40			SANDY CLAY (CL), grey, very stiff, very moist.				
		1-9		19			
	13						

MET 5172.GPJ 3/30/01

DATE OF BORING: January 22, 2001

SURFACE ELEVATION: Approx. 441 feet (134 meters)

DEPTH (FEET)	DEPTH (METERS)	SAMPLE NUMBER	LOG, LOCATION AND TYPE OF SAMPLE	DESCRIPTION	BLOWS/FT.	qu UNCON STRENGTH (TSF) *FIELD PENET. APPROX.	IN PLACE DRY UNIT WEIGHT (PCF)	IN PLACE MOIST. CONTENT % DRY WEIGHT
45	14	1-10		SILTY CLAY (CH), brown and olive, very stiff, very moist, with very thin layers of clayey sand.	48	4.5*	105.8	22.9
				SANDY CLAY (CL), light olive, very stiff, moist to wet, trace charcoal.		2.0*		
50	15	1-11		SILTY CLAY (CH), olive and white mottled, very stiff, moist to wet.	32	3.0*		
55	16, 17	1-12		CLAYEY SAND (SC), greyish brown, medium dense, medium grained, local lenses of gravelly sand.	15			19.4
60	18, 19	1-13		GRAVELLY SAND (SP), greyish brown, very dense, wet, pebbles up to 3/4 inch in diameter, with clayey pockets.	54/6"			12.7
65	20, 21			SILTY CLAY (CL), light olive, very stiff, wet.				
70	22			Bottom of boring at approximately at 70 feet. Ground water encountered at 20 feet during drilling.				
75	23							
80	24, 25							
85	26							

ENGEO INCORPORATED

SAN RAMON CITY CENTER

SAN RAMON, CALIFORNIA

BORING NO.: B-1

DATE: March 2001

PROJ. NO.: 5172.5.001.01

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FIGURE NO. 6

MET 5172.GPJ 3/30/01

DATE OF BORING: January 22, 2001

SURFACE ELEVATION: Approx. 438 feet (134 meters)

DEPTH (FEET)	DEPTH (METERS)	SAMPLE NUMBER	LOG, LOCATION AND TYPE OF SAMPLE	DESCRIPTION	BLOWS/FT.	qu UNCON STRENGTH (TSF) *FIELD PENET. APPROX.	IN PLACE DRY UNIT WEIGHT (PCF)	IN PLACE MOIST. CONTENT % DRY WEIGHT
0				SILTY CLAY (CH), black, hard, dry to moist, trace pebbles, and fine roots. (Fill?)				
	1	2-1			43	+4.5*	113.5	13.2
5								
	2	2-2			41	+4.5*		
				SILTY CLAY (CH), olive, hard, moist.				
				SANDY CLAY (CL), olive brown with white mottling, stiff, very moist.				
10	3							
		2-3			15	2.0*	98.9	24.3
	4							
				SILTY CLAY (CL), olive brown, stiff, very moist, trace fine sand and pebbles.				
15								
	5	2-4			22	1.5*		
20	6			∇				
		2-5		SILTY CLAY (CL), olive, very stiff, wet, trace carbonates.	14			25.8
	7							
				SILTY CLAY (CH), olive grey, very stiff, wet.				
25								
	8	2-6			16			
				Bottom of boring at approximately $26\frac{1}{2}$ feet. Ground water encountered at 20 feet during drilling.				
30	9							

ENGEO INCORPORATED	SAN RAMON CITY CENTER SAN RAMON, CALIFORNIA	BORING NO.: B-2 DATE: March 2001 PROJ. NO.: 5172.5.001.01 CHECKED BY MT	FIGURE NO. 7

MET 5172.GPJ 3/30/01

DATE OF BORING: January 22, 2001

SURFACE ELEVATION: Approx. 442 feet (135 meters)

DEPTH (FEET)	DEPTH (METERS)	SAMPLE NUMBER	LOG, LOCATION AND TYPE OF SAMPLE	DESCRIPTION	BLOWS/FT.	qu UNCON STRENGTH (TSF) *FIELD PENET. APPROX.	IN PLACE DRY UNIT WEIGHT (PCF)	IN PLACE MOIST. CONTENT % DRY WEIGHT
0				SILTY CLAY (CH), black, hard, dry to moist.				
	1	3-1			53	+4.5*		
5	2	3-2		SILTY CLAY (CH), black, moist, very stiff.	31	3.0*	103.1	21.7
				SILTY CLAY (CL), light olive brown with white mottling, very stiff, moist.				
10	3	3-3			29	4.0*		
	4			Increased silt, grades to stiff.				
15	5	3-4		SILTY CLAY (CL), light olive brown, medium stiff, very moist, some carbonates, with very fine sand.	18	0.7	96.2	26.5
				∇				
20	6	3-5		SILTY CLAY (CL), light olive brown, stiff, moist.	14			
	7			SANDY CLAY/CLAYEY SAND (CL/SC), light olive brown, very stiff, very moist.				
25	8	3-6		SILTY CLAY (CH), dark grey, very stiff, very moist.	14			28.4
				Bottom of boring at approximately 26½ feet. Ground water encountered at 18 feet during drilling.				
30	9							

ENGEO INCORPORATED	SAN RAMON CITY CENTER SAN RAMON, CALIFORNIA	BORING NO.: B-3 DATE: March 2001 PROJ. NO.: 5172.5.001.01	CHECKED BY MT	FIGURE NO. 8

MET 5172.GPJ 3/30/01

DEPTH (FEET)	DEPTH (METERS)	SAMPLE NUMBER	LOG, LOCATION AND TYPE OF SAMPLE	DATE OF BORING: January 22, 2001 / SURFACE ELEVATION: Approx. feet (meters) / DESCRIPTION	BLOWS/FT.	qu UNCON STRENGTH (TSF) *FIELD PENET. APPROX.	IN PLACE DRY UNIT WEIGHT (PCF)	IN PLACE MOIST. CONTENT % DRY WEIGHT
0								
	1	4-1		SILTY CLAY (CH), black, damp, hard, with sand and some wood debris. (Fill)	39	+4.5*	106.8	15.8
				SILTY CLAY (CL), greyish brown, abundant carbonates, hard, damp.				
5	2	4-2			26	4.5*	99.0	11.4
				SILTY SAND (SM), light olive, medium dense, damp.				
				SANDY CLAY (CL), olive, very stiff, moist.				
10	3	4-3			27	3.5*		
	4							
15				∇				
	5	4-4		SILTY CLAY (CL), olive brown, stiff, very moist to wet, trace carbonates.	15	1.5*	90.4	31.3
				SILTY CLAY (CH), dark grey, very stiff, wet.				
20	6	4-5			18			
				SANDY CLAY (CL), olive brown, stiff, wet.				
	7							
25				SILTY CLAY (CH), light olive brown, very stiff, wet, trace carbonates.				
	8	4-6			12			28.8
				Bottom of boring at approximately 26 1/2 feet. Ground water encountered at 15 feet during drilling.				
30	9							

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SAN RAMON CITY CENTER
SAN RAMON, CALIFORNIA

BORING NO.: B-4
DATE: March 2001
PROJ. NO.: 5172.5.001.01
CHECKED BY mr
FIGURE NO. 9

DATE OF BORING: January 22, 2001

SURFACE ELEVATION: Approx. feet (meters)

DEPTH (FEET)	DEPTH (METERS)	SAMPLE NUMBER	LOG, LOCATION AND TYPE OF SAMPLE	DESCRIPTION	BLOWS/FT.	qu UNCON STRENGTH (TSF) *FIELD PENET. APPROX.	IN PLACE DRY UNIT WEIGHT (PCF)	IN PLACE MOIST. CONTENT % DRY WEIGHT
0				SILTY CLAY (CL), black, very stiff, dry to moist, with trace hay and other debris. (Fill)				
	1	5-1			28	+4.5*	101.2	16.2
5		5-2-1						
	2	5-2-2		SANDY CLAY with gravel (CL), light brown, moist, hard, poorly sorted. (Fill?)	30			
10	3			SILTY CLAY (CL), light brown, very stiff, moist.				
		5-3		SILTY SAND (SM), olive brown, medium dense, moist.	43	2.0*	112.0	15.5
	4							
15				SILTY CLAY (CH), greyish brown with black mottling, stiff, wet, trace charcoal.				
	5	5-4			16	2.0*	93.0	30.8
20	6			▽				
		5-5		Mottling changes to white.	23	3.0*		
	7			SILTY CLAY (CH), olive grey, very stiff, very moist.				
25	8	5-6			26	2.0	94.0	29.9
30	9							
		5-7			29	3.0*		
	10							

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SAN RAMON CITY CENTER

SAN RAMON, CALIFORNIA

BORING NO.: B-5

DATE: March 2001

PROJ. NO.: 5172.5.001.01

CHECKED BY mr

FIGURE NO. 10

MET 5172.GPJ 3/30/01

DEPTH (FEET)	DEPTH (METERS)	SAMPLE NUMBER	LOG, LOCATION AND TYPE OF SAMPLE	DATE OF BORING: January 22, 2001 SURFACE ELEVATION: Approx. feet (meters) DESCRIPTION	BLOWS/FT.	qu UNCON STRENGTH (TSF) *FIELD PENET. APPROX.	IN PLACE DRY UNIT WEIGHT (PCF)	IN PLACE MOIST. CONTENT % DRY WEIGHT
35	11	5-8		SANDY CLAY (CL), olive brown, hard, moist, some rust stains.	56	4.0*	114.2	17.9
40	12, 13	5-9		Trace charcoal.	50	4.0*		
45	14	5-10		SILTY CLAY (CL), olive brown, very stiff, very moist, with trace carbonates, fine sand.	26	2.5*	100.7	25.6
				Bottom of boring at approximately 46½ feet. Ground water encountered at 20 feet during drilling.				
50	15, 16							
55	17							
60	18, 19							
65	20							

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INCORPORATED

SAN RAMON CITY CENTER

SAN RAMON, CALIFORNIA

BORING NO.: B-5

DATE: March 2001

PROJ. NO.: 5172.5.001.01

CHECKED BY MT

FIGURE NO. 10

MET 5172.GPJ 3/30/01

DEPTH (FEET)	DEPTH (METERS)	SAMPLE NUMBER	LOG, LOCATION AND TYPE OF SAMPLE	DATE OF BORING: January 29, 2001 SURFACE ELEVATION: Approx. feet (meters) DESCRIPTION	BLOWS/FT.	qu UNCON STRENGTH (TSF) *FIELD PENET. APPROX.	IN PLACE DRY UNIT WEIGHT (PCF)	IN PLACE MOIST. CONTENT % DRY WEIGHT
0				SILTY CLAY (CL), black, very stiff, dry to moist, with trace hay and other debris. (Fill)				
5	1, 2			SANDY CLAY with gravel (CL), light brown, hard, moist, poorly sorted. (Fill?)				
10	3			SILTY CLAY (CL), light brown, stiff, moist.				
				SILTY SAND (SM), olive brown, medium dense, moist.				
15	4, 5			SILTY CLAY (CH), greyish brown with black mottling, stiff, wet, trace charcoal.				
20	6			▽				
25	7, 8			SILTY CLAY (CH), olive grey, very stiff, very moist.				
				Grades to very stiff.				
30	9, 10							
35	11			SANDY CLAY (CL), olive brown, hard, moist.				
40	12, 13							
45	14			SILTY CLAY (CL), olive brown, very stiff, very moist, with trace carbonate.				
				SILTY SAND (SM), olive brown, dense, wet, medium grained.				
	15			SILTY CLAY (CL), light olive brown, very stiff, wet.				

ENGEO INCORPORATED	SAN RAMON CITY CENTER SAN RAMON, CALIFORNIA	BORING NO.: B-6 DATE: March 2001 PROJ. NO.: 5172.5.001.01 CHECKED BY mr	FIGURE NO. 11

MET 5172.GPJ 3/30/01

DEPTH (FEET)	DEPTH (METERS)	SAMPLE NUMBER	LOG, LOCATION AND TYPE OF SAMPLE	DATE OF BORING: January 29, 2001 SURFACE ELEVATION: Approx. feet (meters) DESCRIPTION	BLOWS/FT.	qu UNCON STRENGTH (TSF) *FIELD PENET. APPROX.	IN PLACE DRY UNIT WEIGHT (PCF)	IN PLACE MOIST. CONTENT % DRY WEIGHT
50	16	6-1		SILTY CLAY with sand (CL), light olive brown, very stiff, wet, some chunks of carbonates, minor rust stains.	27	3.0*	99.5	26.4
55	17	6-2		CLAYEY SAND with gravel (SC), brown, very dense, wet.	50/6"		126.1	12.6
60, 65	18, 19, 20, 21			GRAVELLY SAND (SP), greyish brown, very dense, wet.				
70, 75, 80, 85, 90, 95	22, 23, 24, 25, 26, 27, 28, 29, 30			Bottom of boring at approximately 70 feet. Ground water encountered at 20 feet during drilling.				

MET 5172.GPJ 3/30/01

ENGEO
INCORPORATED

SAN RAMON CITY CENTER
SAN RAMON, CALIFORNIA

BORING NO.: B-6
DATE: March 2001
PROJ. NO.: 5172.5.001.01
CHECKED BY: MT

FIGURE NO. 11

Geotechnical Investigation, Bishop Ranch 1 Development, San Ramon, California, prepared for Sunset Development Company, prepared by Harding Lawson Associates (HLA), HLA Project 50044.1, dated May 15, 2000

April 21, 2000

RECEIVED
APR 24 2000
HARDING LAWSON

Mr. Ryan Shafer
Harding, Lawson and Associates, Inc.
383 Fourth St
Suite 300
Oakland, CA 94607

PROJECT NAME: CPT Testing at Bishop Ranch 1
PROJECT NO.: 50044.1

Dear Mr. Shafer:

Enclosed please find copies of the cone penetrometer testing (CPT) data for the above referenced project along with a copy of the corresponding invoice.

The cone penetrometer testing conducted for this project consisted of pushing an instrumented cone-tipped probe into the ground while simultaneously recording the resistance to penetration at the cone tip and along the friction sleeve.

The cone penetrometer testing described in this report was conducted in general accordance with the current ASTM specifications (ASTM D5778-95 and D3441-94) using an electronic cone penetrometer.

The CPT equipment operated by Holguin, Fahan & Associates, Inc. (HFA) consists of a cone assembly mounted at the end of a series of hollow sounding rods. A set of hydraulic rams is used to continuously push the cone and rods into the soil at a rate of 20-mm per second (approximately four feet per minute) while the cone tip resistance and sleeve friction resistance are recorded every 50-mm (approximately two inches) and stored in digital form. A specially designed all wheel drive 23-ton truck provides the required reaction weight for pushing the cone assembly and is also used to transport and house the test equipment.

The cone penetrometer assembly used for this project consists of a conical tip and a cylindrical friction sleeve. The conical tip has a 60° apex angle and a diameter of 35.6-mm (1.40-inch) resulting in a projected cross-sectional area of 10 cm^2 (1.5 square inches). The cylindrical friction sleeve is 133-mm (5.25-inch) in length and has an outside diameter of 35.8-mm (1.41-inch), resulting in a surface area of 150 cm^2 (23 square inches).

The interior of the cone penetrometer is instrumented with strain gauges that allow simultaneous measurement of cone tip and friction sleeve resistance during penetration. Continuous electric signals from the strain gauges are transmitted by a shielded cable in the sounding rods to the PC-based data acquisition hardware in the CPT truck. The sounding log is also displayed on a monitor.

[illegible] South Figueroa Street
Ventura, California [illegible]
(805) 652-0219
(805) 652-0793 FAX
Internet: [illegible]

[illegible] Lakeshore Drive
Cypress, California [illegible]
(714) [illegible]
(714) [illegible] FAX
Internet: [illegible]

2820 Pegasus Drive, Suite [illegible]
Bakersfield, California [illegible]
(661) 391-0517
(661) 391-0826 FAX
Internet: [illegible]

[illegible] South 35th Street, Suite [illegible]
Phoenix, Arizona 85034
[illegible]
[illegible] FAX
Internet: [illegible]

The CPT data processing is performed using the truck mounted computer based data acquisition and presentation system. The computer generated graphical logs include cone resistance, friction resistance, friction ratio, and pore pressure ratio versus depth at a user selectable scale.

Soil behavior type interpretations are based on the following reference: Robertson, P.K. and Campanella, R.C., 1989, "Guidelines for Geotechnical Design using the Cone Penetrometer Test and CPT with Pore Pressure Measurement." Soil Mechanics series No. 120, Civil Engineering Department, University of British Columbia, Vancouver, B.C., V6T 1Z4, September 1989.

Interpretations and plotting has been done using HFA's proprietary data interpretation and presentation software. It is important to note that the data is not averaged. All interpretations are point interpretations at the corresponding depth listed.

It is also important to note that the soil behavior type correlations are based on a combination of theory, field research, research performed under laboratory conditions, and literature review. The information presented in the tabulated and/or graphical logs should, therefore, be viewed as a guideline rather than as precise measurements.

Some care is recommended when using the soil behavior type interpretations. If a tabulation depth happens to fall on a soil layer interface, or a seam of soil differing from the rest of the layer, the tabulated data can be misleading. The solution to this problem is the proper use of the graphical CPT logs. The tip and sleeve penetration resistance logs are the primary source of profile description; the soil behavior type logs are supplemental. The graphical logs of tip and sleeve resistance should be examined and layer boundaries delineated in accordance with the project requirements. The soil behavior type interpretations are only representative of the response of the soil to the large shear deformations imposed during cone penetration. This is not necessarily a prediction of grain size distribution. However, it has been found that the interpreted soil behavior types generally agree well with the soil types defined in accordance with the grain size distribution methods such as used in the Unified Soil Classification System.

<u>Limitations</u>

Holguin, Fahan & Associates, Inc. (HFA) presents the attached data in accordance with ASTM Standards D5778-95 and D3441-94 and generally accepted cone penetrometer testing practices and standards. The attached data further relates only to the specific project and location discussed in the data. Judgement may be required to verify the CPT soil behavior interpretations.

The "Client" may distribute this data or excerpts therefrom provided the following statement is prominently displayed and included with the distribution:

> "Neither CLIENT nor HFA make any guarantee or warranty, express or implied, regarding this data. THE USE OF THIS INFORMATION SHALL BE AT THE USER'S SOLE RISK REGARDLESS OF ANY FAULT OR NEGLIGENCE OF THE CLIENT OR HFA."

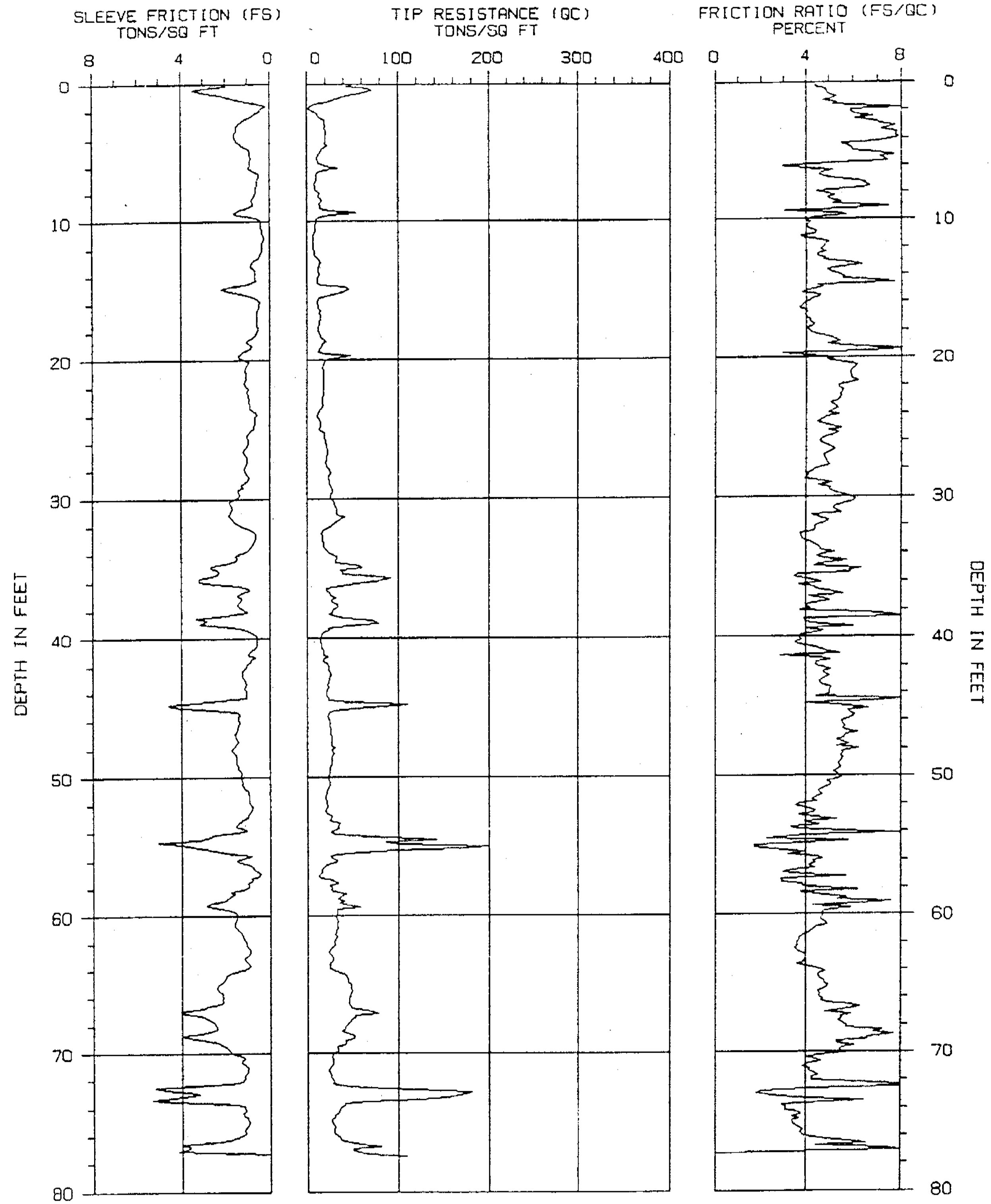
Please feel free to call if you have any questions.

Respectfully submitted,

Dick Carlton

Dick Carlton
CPT Operations Manager
Holguin, Fahan & Associates, Inc.

:DC\Enclosures



TIP RESISTANCE NOT CORRECTED FOR END AREA EFFECT

CONE PENETRATION TEST

SOUNDING NUMBER: HLA-1

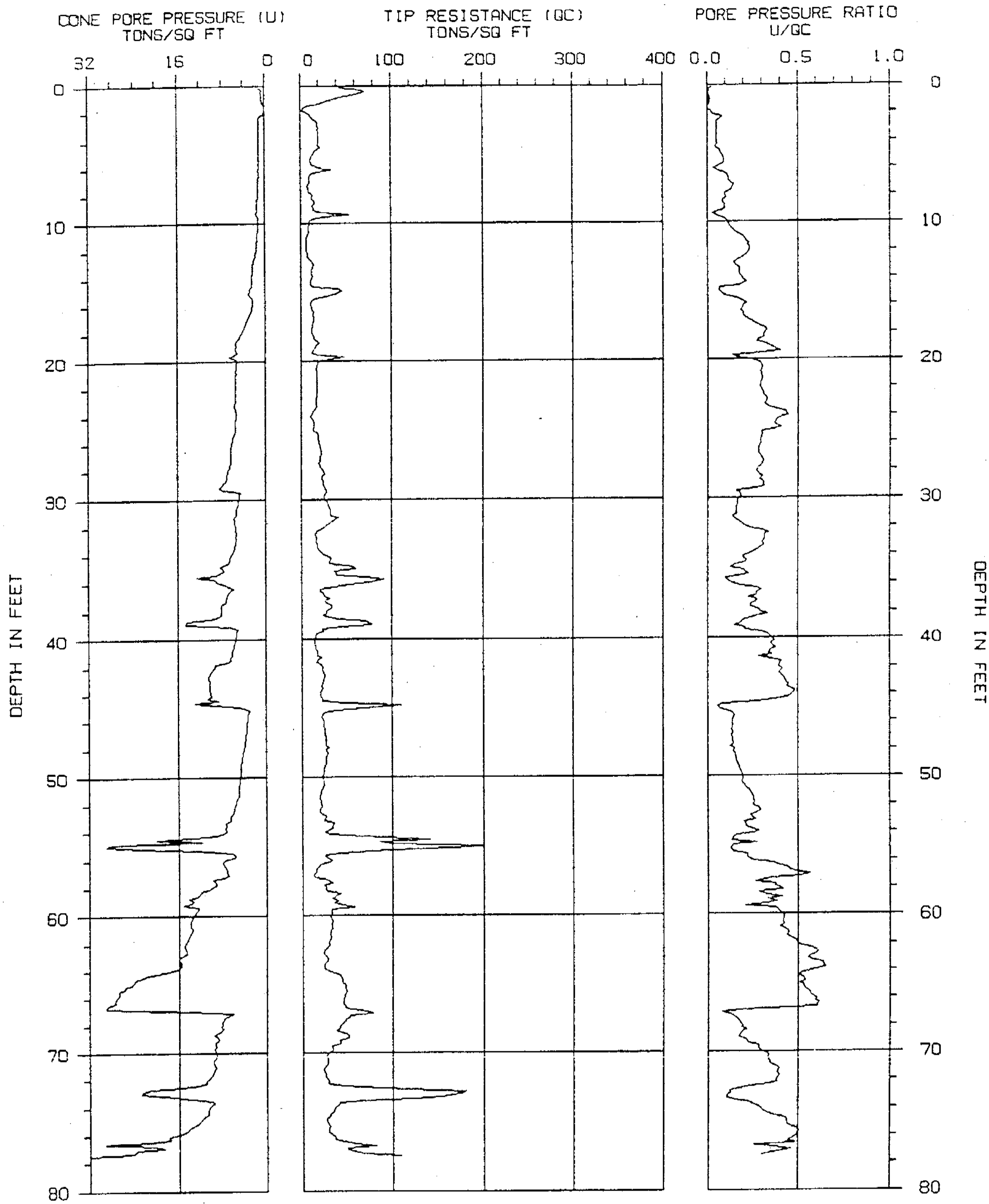
PROJECT NAME : HLA/BISHOP RH 1

PROJECT NUMBER : 50044.1

CONE/RIG : 491/BH.V0/R#4

DATE/TIME: 04-13-00 07:51

HFA



TIP RESISTANCE NOT CORRECTED FOR END AREA EFFECT

CONE PENETRATION TEST

SOUNDING NUMBER: HLA-1

PROJECT NAME : HLA/BISHOP RH 1

PROJECT NUMBER : 50044.1

CONE/RIG : 491/BH.VQ/R#4

DATE/TIME: 04-13-00 07:51

HFA

CPT INTERPRETATIONS

SOUNDING : HLA-1
PROJECT : HLA/BISHOP RH 1
DATE/TIME: 04-13-00 07:51

PROJECT No.: 50044.1
CONE/RIG : 491/BH,VO/R#4

DEPTH (m)	DEPTH (ft)	TIP RESISTANCE (tsf)	FRICTION RATIO (%)	SOIL BEHAVIOR TYPE	N(60)	N1(60)	Dr (%)	Su (tsf)	PHI (Degrees)
.150	.49	71.51	4.83	*VERY STIFF FINE GRAINED	72	100			
.300	.98	35.48	5.29	CLAY	35	57		2.1	
.450	1.48	9.71	5.33	CLAY	10	16		.6	
.600	1.97	7.22	5.93	CLAY	7	12		.5	
.750	2.46	14.49	6.82	CLAY	14	23		1.0	
.900	2.95	20.46	7.10	CLAY	20	33		1.4	
1.050	3.44	20.78	7.18	CLAY	21	33		1.4	
1.200	3.94	19.89	7.86	CLAY	20	32		1.3	
1.350	4.43	22.88	5.53	CLAY	23	37		1.3	
1.500	4.92	14.36	6.02	CLAY	14	23		.9	
1.650	5.41	11.96	7.12	CLAY	12	19		.8	
1.800	5.91	21.54	4.12	CLAY to SILTY CLAY	14	23		1.4	
1.950	6.40	11.75	5.15	CLAY	12	19		.8	
2.100	6.89	10.37	5.03	CLAY	10	17		.7	
2.250	7.38	9.09	6.47	CLAY	9	14		.6	
2.400	7.87	14.04	4.45	CLAY	14	22		.9	
2.550	8.37	15.70	4.95	CLAY	16	24		1.0	
2.700	8.86	14.74	5.16	CLAY	15	22		1.0	
2.850	9.35	53.47	3.02	SANDY SILT to CLAYEY SILT	21	32		3.5	
3.000	9.84	10.75	4.39	CLAY	11	16		.7	
3.150	10.33	9.79	4.09	CLAY	10	14		.6	
3.300	10.83	8.37	4.44	CLAY	8	12		.5	
3.450	11.32	7.10	3.98	CLAY	7	10		.4	
3.600	11.81	6.99	4.86	CLAY	7	10		.4	
3.750	12.30	8.35	4.84	CLAY	8	12		.5	
3.900	12.80	13.43	4.86	CLAY	13	18		.8	
4.050	13.29	12.96	6.37	CLAY	13	17		.8	
4.200	13.78	13.24	5.04	CLAY	13	18		.8	
4.350	14.27	11.13	5.60	CLAY	11	15		.7	
4.500	14.76	40.94	4.51	CLAY to SILTY CLAY	27	36		2.4	
4.650	15.26	28.66	3.82	CLAY to SILTY CLAY	19	25		1.9	
4.800	15.75	11.60	4.28	CLAY	12	15		.7	
4.950	16.24	12.87	3.82	CLAY	13	16		.8	
5.100	16.73	14.68	4.03	CLAY	15	18		.9	
5.250	17.22	13.94	4.16	CLAY	14	17		.9	
5.400	17.72	12.30	4.33	CLAY	12	15		.8	
5.550	18.21	15.15	4.34	CLAY	15	19		.9	
5.700	18.70	20.14	5.27	CLAY	20	24		1.1	
5.850	19.19	15.11	5.65	CLAY	15	18		.9	
6.000	19.69	47.97	2.95	SANDY SILT to CLAYEY SILT	19	23		3.1	
6.150	20.18	19.25	4.88	CLAY	19	23		1.2	

*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 pcf
ASSUMED DEPTH OF WATER TABLE = 7.5 ft
N(60) = EQUIVALENT SPT VALUE (60% Energy)
N1(60) = OVERBURDEN NORMALIZED EQUIVALENT SPT VALUE (60% Energy)
Dr = OVERBURDEN NORMALIZED EQUIVALENT RELATIVE DENSITY
Su = OVERBURDEN NORMALIZED UNDRAINED SHEAR STRENGTH
PHI = OVERBURDEN NORMALIZED EQUIVALENT FRICTION ANGLE

HOLGUIN, FAHAN & ASSOCIATES, INC.

Interpretations based on: Robertson and Campanella, 1989.

SOUNDING : HLA-1

DEPTH (m)	DEPTH (ft)	TIP RESISTANCE (tsf)	FRICTION RATIO (%)	SOIL BEHAVIOR TYPE	N(60)	N1(60)	Dr (%)	Su (tsf)	PHI (Degrees)
6.300	20.67	17.95	6.12	CLAY	18	21		1.1	
6.450	21.16	17.97	5.91	CLAY	18	21		1.1	
6.600	21.65	18.65	6.22	CLAY	19	22		1.0	
6.750	22.15	18.06	5.40	CLAY	18	21		1.1	
6.900	22.64	17.46	5.47	CLAY	17	20		1.1	
7.050	23.13	17.17	5.40	CLAY	17	19		1.1	
7.200	23.62	14.00	5.38	CLAY	14	16		.8	
7.350	24.11	11.92	5.43	CLAY	12	13		.7	
7.500	24.61	14.98	4.51	CLAY	15	17		.9	
7.650	25.10	15.02	5.50	CLAY	15	16		.9	
7.800	25.59	19.76	5.13	CLAY	20	22		1.2	
7.950	26.08	21.05	4.61	CLAY	21	23		1.3	
8.100	26.57	22.50	5.24	CLAY	23	24		1.2	
8.250	27.07	21.20	4.76	CLAY	21	23		1.3	
8.400	27.56	21.33	4.95	CLAY	21	23		1.3	
8.550	28.05	25.79	4.37	CLAY to SILTY CLAY	17	18		1.4	
8.700	28.54	23.24	4.09	CLAY to SILTY CLAY	15	16		1.4	
8.850	29.04	25.43	5.12	CLAY	25	26		1.4	
9.000	29.53	28.00	5.01	CLAY	28	29		1.6	
9.150	30.02	27.36	5.89	CLAY	27	28		1.5	
9.300	30.51	30.32	5.68	CLAY	30	31		1.7	
9.450	31.00	33.10	5.38	CLAY	33	34		1.8	
9.600	31.50	36.84	4.55	CLAY to SILTY CLAY	25	25		2.1	
9.750	31.99	26.30	4.48	CLAY to SILTY CLAY	18	18		1.4	
9.900	32.48	15.70	4.35	CLAY	16	16		.9	
10.050	32.97	17.38	3.84	CLAY to SILTY CLAY	12	11		1.0	
10.200	33.46	18.44	4.46	CLAY	18	18		1.1	
10.350	33.96	26.94	5.25	CLAY	27	26		1.5	
10.500	34.45	31.00	4.80	CLAY	31	30		1.7	
10.650	34.94	60.78	4.35	CLAYEY SILT to SILTY CLAY	30	29		3.5	
10.800	35.43	39.37	5.93	CLAY	39	38		2.2	
10.950	35.93	75.48	4.24	CLAYEY SILT to SILTY CLAY	38	36		4.3	
11.100	36.42	21.92	4.35	CLAY to SILTY CLAY	15	14		1.3	
11.250	36.91	26.02	5.62	CLAY	26	25		1.4	
11.400	37.40	27.62	5.02	CLAY	28	26		1.5	
11.550	37.89	27.83	4.18	CLAY to SILTY CLAY	19	17		1.5	
11.700	38.39	31.65	7.55	CLAY	32	30		1.7	
11.850	38.88	78.14	4.01	CLAYEY SILT to SILTY CLAY	39	36		4.5	
12.000	39.37	24.98	4.01	CLAY to SILTY CLAY	17	15		1.5	
12.150	39.86	15.81	3.78	CLAY to SILTY CLAY	11	10		.9	
12.300	40.35	16.49	3.52	CLAY to SILTY CLAY	11	10		1.0	
12.450	40.85	17.65	4.56	CLAY	18	16		1.0	
12.600	41.34	22.77	2.87	CLAYEY SILT to SILTY CLAY	11	10		1.4	
12.750	41.83	23.03	4.46	CLAY	23	21		1.4	
12.900	42.32	24.75	5.05	CLAY	25	22		1.3	
13.050	42.81	25.05	5.00	CLAY	25	22		1.3	
13.200	43.31	22.90	4.63	CLAY	23	20		1.4	
13.350	43.80	20.97	5.07	CLAY	21	19		1.1	
13.500	44.29	23.79	4.47	CLAY	24	21		1.4	
13.650	44.78	110.47	4.12	CLAYEY SILT to SILTY CLAY	55	48		6.4	

*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 pcf
ASSUMED DEPTH OF WATER TABLE = 7.5 ft
N(60) = EQUIVALENT SPT VALUE (60% Energy)
N1(60) = OVERBURDEN NORMALIZED EQUIVALENT SPT VALUE (60% Energy)
Dr = OVERBURDEN NORMALIZED EQUIVALENT RELATIVE DENSITY
Su = OVERBURDEN NORMALIZED UNDRAINED SHEAR STRENGTH
PHI = OVERBURDEN NORMALIZED EQUIVALENT FRICTION ANGLE

Interpretations based on: Robertson and Campanella, 1989.

SOUNDING : HLA-1

DEPTH (m)	DEPTH (ft)	TIP RESISTANCE (tsf)	FRICTION RATIO (%)	SOIL BEHAVIOR TYPE	N(60)	N1(60)	Dr (%)	Su (tsf)	PHI (Degrees)
13.800	45.28	25.64	5.83	CLAY	26	22		1.4	
13.950	45.77	23.62	6.03	CLAY	24	21		1.2	
14.100	46.26	25.26	5.58	CLAY	25	22		1.3	
14.250	46.75	26.05	5.78	CLAY	26	22		1.4	
14.400	47.24	26.77	5.62	CLAY	27	23		1.4	
14.550	47.74	26.68	5.87	CLAY	27	23		1.4	
14.700	48.23	29.06	5.55	CLAY	29	25		1.6	
14.850	48.72	27.17	5.59	CLAY	27	23		1.4	
15.000	49.21	26.36	5.42	CLAY	26	22		1.4	
15.150	49.70	24.47	5.18	CLAY	24	21		1.3	
15.300	50.20	23.56	5.55	CLAY	24	20		1.2	
15.450	50.69	23.28	5.07	CLAY	23	19		1.2	
15.600	51.18	21.07	4.57	CLAY	21	17		1.2	
15.750	51.67	21.29	4.29	CLAY to SILTY CLAY	14	12		1.2	
15.900	52.17	22.56	3.50	CLAYEY SILT to SILTY CLAY	11	9		1.3	
16.050	52.66	22.73	4.33	CLAY to SILTY CLAY	15	12		1.3	
16.200	53.15	24.43	5.36	CLAY	24	20		1.3	
16.350	53.64	35.20	3.35	CLAYEY SILT to SILTY CLAY	18	14		2.1	
16.500	54.13	31.82	7.94	CLAY	32	26		1.7	
16.650	54.63	87.12	5.81	*VERY STIFF FINE GRAINED	87	70			
16.800	55.12	167.90	1.75	SAND to SILTY SAND	42	34	76		40.5
16.950	55.61	25.94	3.21	CLAYEY SILT to SILTY CLAY	13	10		1.5	
17.100	56.10	31.23	4.32	CLAY to SILTY CLAY	21	17		1.7	
17.250	56.59	16.02	4.41	CLAY	16	13		.9	
17.400	57.09	12.32	3.98	CLAY	12	10		.6	
17.550	57.58	34.16	2.93	CLAYEY SILT to SILTY CLAY	17	13		2.1	
17.700	58.07	25.62	4.77	CLAY	26	20		1.3	
17.850	58.56	37.43	4.86	CLAY	37	29		2.0	
18.000	59.06	35.56	7.57	CLAY	36	28		1.9	
18.150	59.55	32.67	5.98	CLAY	33	25		1.7	
18.300	60.04	31.85	4.75	CLAY	32	25		1.7	
18.450	60.53	33.08	4.86	CLAY	33	26		1.8	
18.600	61.02	32.04	4.38	CLAY to SILTY CLAY	21	16		1.7	
18.750	61.52	32.12	3.88	CLAYEY SILT to SILTY CLAY	16	12		1.7	
18.900	62.01	30.00	3.60	CLAYEY SILT to SILTY CLAY	15	11		1.8	
19.050	62.50	24.64	3.51	CLAYEY SILT to SILTY CLAY	12	9		1.4	
19.200	62.99	28.19	4.01	CLAY to SILTY CLAY	19	14		1.6	
19.350	63.48	24.54	3.91	CLAY to SILTY CLAY	16	12		1.4	
19.500	63.98	29.42	4.63	CLAY to SILTY CLAY	20	15		1.5	
19.650	64.47	43.57	4.55	CLAY to SILTY CLAY	29	22		2.4	
19.800	64.96	47.95	4.82	CLAY to SILTY CLAY	32	24		2.6	
19.950	65.45	49.10	4.80	CLAY to SILTY CLAY	33	24		2.7	
20.100	65.94	46.29	4.57	CLAY to SILTY CLAY	31	23		2.5	
20.250	66.44	45.83	4.95	CLAY to SILTY CLAY	31	23		2.5	
20.400	66.93	71.89	5.60	*VERY STIFF FINE GRAINED	72	53			
20.550	67.42	52.13	5.51	CLAY	52	38		2.8	
20.700	67.91	43.89	5.67	CLAY	44	32		2.4	
20.850	68.41	37.88	7.26	CLAY	38	28		2.0	
21.000	68.90	51.75	6.61	CLAY	52	38		2.8	
21.150	69.39	41.00	5.38	CLAY	41	30		2.2	

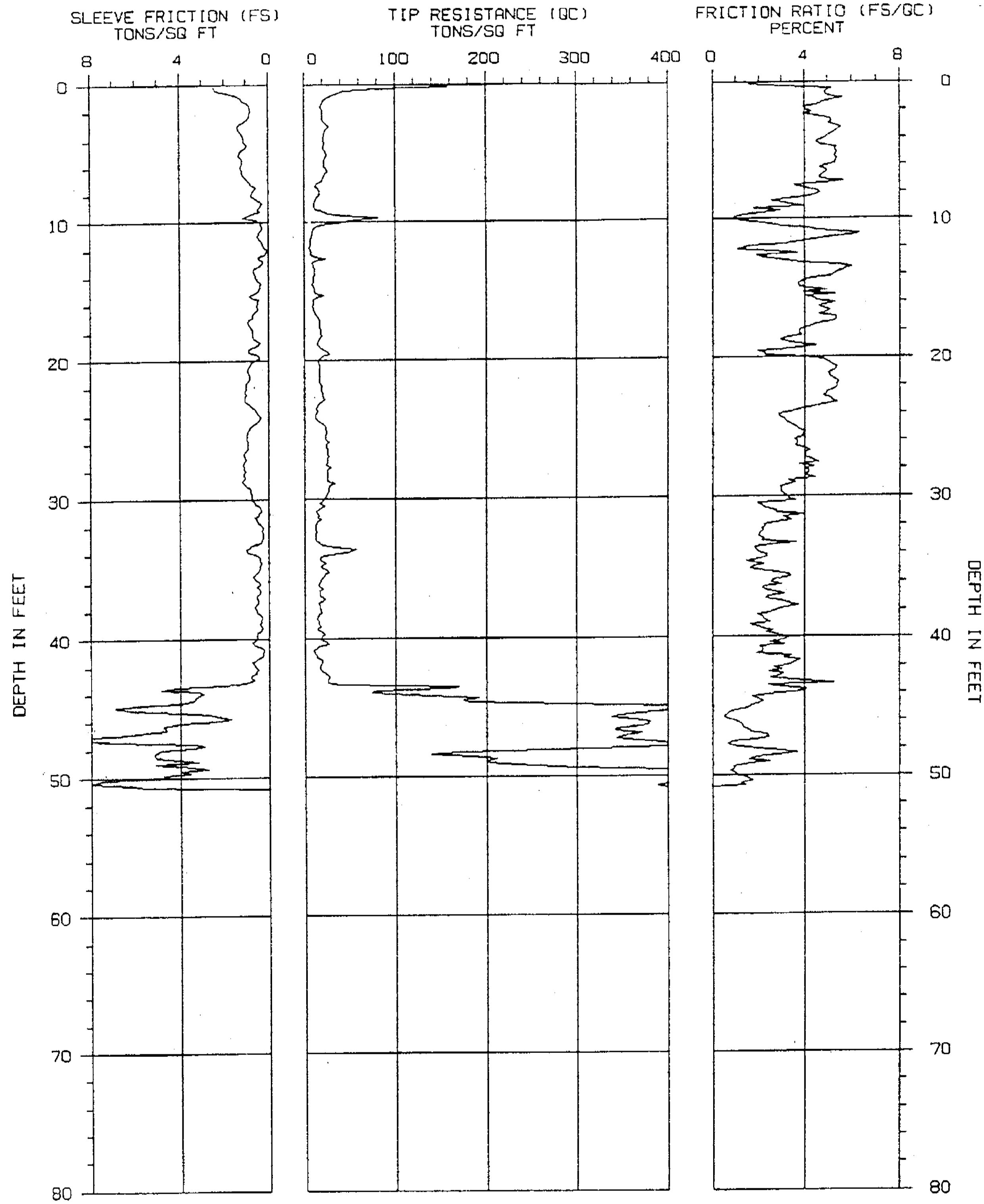
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 pcf
ASSUMED DEPTH OF WATER TABLE = 7.5 ft
N(60) = EQUIVALENT SPT VALUE (60% Energy)
N1(60) = OVERBURDEN NORMALIZED EQUIVALENT SPT VALUE (60% Energy)
Dr = OVERBURDEN NORMALIZED EQUIVALENT RELATIVE DENSITY
Su = OVERBURDEN NORMALIZED UNDRAINED SHEAR STRENGTH
PHI = OVERBURDEN NORMALIZED EQUIVALENT FRICTION ANGLE

Interpretations based on: Robertson and Campanella, 1989.

SOUNDING : HLA-1

DEPTH (m)	DEPTH (ft)	TIP RESISTANCE (tsf)	FRICTION RATIO (%)	SOIL BEHAVIOR TYPE	N(60)	N1(60)	Dr (%)	Su (tsf)	PHI (Degrees)
21.300	69.88	33.38	5.47	CLAY	33	24		1.7	
21.450	70.37	28.40	3.98	CLAY to SILTY CLAY	19	14		1.6	
21.600	70.87	27.64	4.20	CLAY to SILTY CLAY	18	13		1.4	
21.750	71.36	24.88	4.15	CLAY to SILTY CLAY	17	12		1.4	
21.900	71.85	26.79	4.26	CLAY to SILTY CLAY	18	13		1.3	
22.050	72.34	35.97	9.56	CLAY	36	26		1.9	
22.200	72.83	179.86	2.01	SILTY SAND to SANDY SILT	60	43	74		39.5
22.350	73.33	124.77	4.26	*VERY STIFF FINE GRAINED	100	89			
22.500	73.82	40.77	2.96	CLAYEY SILT to SILTY CLAY	20	14		2.4	
22.650	74.31	33.95	3.70	CLAYEY SILT to SILTY CLAY	17	12		2.0	
22.800	74.80	27.21	3.68	CLAYEY SILT to SILTY CLAY	14	10		1.5	
22.950	75.30	29.89	3.57	CLAYEY SILT to SILTY CLAY	15	10		1.7	
23.100	75.79	29.32	3.73	CLAYEY SILT to SILTY CLAY	15	10		1.7	
23.250	76.28	37.28	4.94	CLAY	37	26		1.9	
23.400	76.77	80.88	4.45	CLAYEY SILT to SILTY CLAY	40	28		4.5	
23.550	77.26	67.98	*****		0	0			.0

*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 pcf
ASSUMED DEPTH OF WATER TABLE = 7.5 ft
N(60) = EQUIVALENT SPT VALUE (60% Energy)
N1(60) = OVERBURDEN NORMALIZED EQUIVALENT SPT VALUE (60% Energy)
Dr = OVERBURDEN NORMALIZED EQUIVALENT RELATIVE DENSITY
Su = OVERBURDEN NORMALIZED UNDRAINED SHEAR STRENGTH
PHI = OVERBURDEN NORMALIZED EQUIVALENT FRICTION ANGLE



TIP RESISTANCE NOT CORRECTED FOR END AREA EFFECT

CONE PENETRATION TEST

SOUNDING NUMBER: HLA-2

PROJECT NAME : HLA/BISHOP RH 1

PROJECT NUMBER : 50044.1

CONE/RIG : 491/BH.VO/R#4

DATE/TIME: 04-12-00 07:36

HFA

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CPT INTERPRETATIONS

SOUNDING : HLA-2
PROJECT : HLA/BISHOP RH 1
DATE/TIME: 04-12-00 07:36

PROJECT No.: 50044.1
CONE/RIG : 491/BH,VO/R#4

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DEPTH (m)	DEPTH (ft)	TIP RESISTANCE (tsf)	FRICTION RATIO (%)	SOIL BEHAVIOR TYPE	N(60)	N1(60)	Dr (%)	Su (tsf)	PHI (Degrees)
.150	.49	45.08	5.18	CLAY	45	72		2.7	
.300	.98	24.81	5.08	CLAY	25	40		1.5	
.450	1.48	18.84	4.76	CLAY	19	30		1.3	
.600	1.97	20.40	4.01	CLAY to SILTY CLAY	14	22		1.4	
.750	2.46	20.73	4.52	CLAY	21	33		1.4	
.900	2.95	27.43	5.02	CLAY	27	44		1.6	
1.050	3.44	22.90	5.41	CLAY	23	37		1.3	
1.200	3.94	22.05	4.94	CLAY	22	35		1.3	
1.350	4.43	21.52	4.53	CLAY	22	34		1.4	
1.500	4.92	24.79	5.27	CLAY	25	40		1.4	
1.650	5.41	22.99	5.30	CLAY	23	37		1.3	
1.800	5.91	23.01	5.30	CLAY	23	37		1.3	
1.950	6.40	24.28	4.95	CLAY	24	39		1.4	
2.100	6.89	20.10	4.61	CLAY	20	32		1.3	
2.250	7.38	12.83	4.84	CLAY	13	20		.8	
2.400	7.87	16.85	4.60	CLAY	17	26		1.1	
2.550	8.37	12.58	4.03	CLAY	13	19		.8	
2.700	8.86	12.00	3.06	CLAY to SILTY CLAY	8	12		.8	
2.850	9.35	25.85	2.93	CLAYEY SILT to SILTY CLAY	13	19		1.7	
3.000	9.84	58.27	.93	SILTY SAND to SANDY SILT	19	28	61		41.5
3.150	10.33	12.47	2.48	CLAYEY SILT to SILTY CLAY	6	9		1.0	
3.300	10.83	9.65	4.63	CLAY	10	14		.6	
3.450	11.32	6.95	4.99	CLAY	7	10		.4	
3.600	11.81	6.48	3.16	CLAY	6	9		.4	
3.750	12.30	7.24	2.68	CLAY to SILTY CLAY	5	7		.5	
3.900	12.80	13.00	2.17	CLAYEY SILT to SILTY CLAY	7	9		1.0	
4.050	13.29	10.96	5.47	CLAY	11	15		.7	
4.200	13.78	11.11	5.51	CLAY	11	15		.7	
4.350	14.27	10.16	4.33	CLAY	10	13		.6	
4.500	14.76	10.96	3.74	CLAY	11	14		.7	
4.650	15.26	21.16	3.97	CLAY to SILTY CLAY	14	18		1.4	
4.800	15.75	10.47	4.46	CLAY	10	13		.6	
4.950	16.24	10.92	4.60	CLAY	11	14		.7	
5.100	16.73	14.30	4.94	CLAY	14	18		.9	
5.250	17.22	17.51	5.33	CLAY	18	22		1.1	
5.400	17.72	17.80	4.33	CLAY	18	22		1.1	
5.550	18.21	18.76	3.80	CLAY to SILTY CLAY	13	15		1.2	
5.700	18.70	14.34	2.93	CLAY to SILTY CLAY	10	12		.9	
5.850	19.19	19.33	4.51	CLAY	19	23		1.2	
6.000	19.69	20.08	2.27	CLAYEY SILT to SILTY CLAY	10	12		1.5	
6.150	20.18	15.83	4.80	CLAY	16	19		1.0	

*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 pcf
ASSUMED DEPTH OF WATER TABLE = 7.5 ft
N(60) = EQUIVALENT SPT VALUE (60% Energy)
N1(60) = OVERBURDEN NORMALIZED EQUIVALENT SPT VALUE (60% Energy)
Dr = OVERBURDEN NORMALIZED EQUIVALENT RELATIVE DENSITY
Su = OVERBURDEN NORMALIZED UNDRAINED SHEAR STRENGTH
PHI = OVERBURDEN NORMALIZED EQUIVALENT FRICTION ANGLE

HOLGUIN, FAHAN & ASSOCIATES, INC.

Interpretations based on: Robertson and Campanella, 1989.

SOUNDING : HLA-2

DEPTH (m)	DEPTH (ft)	TIP RESISTANCE (tsf)	FRICTION RATIO (%)	SOIL BEHAVIOR TYPE	N(60)	N1(60)	Dr (%)	Su (tsf)	PHI (Degrees)
6.300	20.67	17.06	5.36	CLAY	17	20		1.1	
6.450	21.16	17.02	5.02	CLAY	17	20		1.1	
6.600	21.65	18.50	5.40	CLAY	19	21		1.2	
6.750	22.15	19.31	5.36	CLAY	19	22		1.2	
6.900	22.64	21.27	4.93	CLAY	21	24		1.3	
7.050	23.13	17.14	5.15	CLAY	17	19		1.1	
7.200	23.62	14.34	4.16	CLAY	14	16		.9	
7.350	24.11	12.47	2.87	CLAY to SILTY CLAY	8	9		.7	
7.500	24.61	21.24	3.19	CLAYEY SILT to SILTY CLAY	11	12		1.3	
7.650	25.10	25.05	3.70	CLAY to SILTY CLAY	17	18		1.6	
7.800	25.59	24.22	3.97	CLAY to SILTY CLAY	16	18		1.5	
7.950	26.08	24.96	3.69	CLAY to SILTY CLAY	17	18		1.6	
8.100	26.57	25.71	4.10	CLAY to SILTY CLAY	17	18		1.6	
8.250	27.07	25.94	4.06	CLAY to SILTY CLAY	17	18		1.6	
8.400	27.56	24.88	4.60	CLAY	25	26		1.4	
8.550	28.05	26.15	4.05	CLAY to SILTY CLAY	17	18		1.6	
8.700	28.54	26.32	4.02	CLAY to SILTY CLAY	18	18		1.7	
8.850	29.04	28.66	3.61	CLAYEY SILT to SILTY CLAY	14	15		1.8	
9.000	29.53	26.51	3.00	CLAYEY SILT to SILTY CLAY	13	14		1.7	
9.150	30.02	22.50	3.29	CLAYEY SILT to SILTY CLAY	11	12		1.4	
9.300	30.51	22.26	1.96	SANDY SILT to CLAYEY SILT	9	9		1.6	
9.450	31.00	15.23	2.78	CLAYEY SILT to SILTY CLAY	8	8		.9	
9.600	31.50	17.91	3.07	CLAYEY SILT to SILTY CLAY	9	9		1.1	
9.750	31.99	12.11	2.25	CLAYEY SILT to SILTY CLAY	6	6		.8	
9.900	32.48	13.11	2.17	CLAYEY SILT to SILTY CLAY	7	7		.9	
10.050	32.97	14.11	2.21	CLAYEY SILT to SILTY CLAY	7	7		1.0	
10.200	33.46	33.27	2.51	SANDY SILT to CLAYEY SILT	13	13		2.1	
10.350	33.96	29.15	2.02	SANDY SILT to CLAYEY SILT	12	11		2.2	
10.500	34.45	18.74	2.03	CLAYEY SILT to SILTY CLAY	9	9		1.3	
10.650	34.94	21.92	1.80	SANDY SILT to CLAYEY SILT	9	8		1.6	
10.800	35.43	22.35	2.79	CLAYEY SILT to SILTY CLAY	11	11		1.4	
10.950	35.93	17.59	2.63	CLAYEY SILT to SILTY CLAY	9	8		1.0	
11.100	36.42	19.86	2.25	CLAYEY SILT to SILTY CLAY	10	9		1.4	
11.250	36.91	16.72	3.11	CLAYEY SILT to SILTY CLAY	8	8		1.0	
11.400	37.40	16.42	2.96	CLAYEY SILT to SILTY CLAY	8	8		1.0	
11.550	37.89	18.67	2.92	CLAYEY SILT to SILTY CLAY	9	9		1.1	
11.700	38.39	15.06	1.97	CLAYEY SILT to SILTY CLAY	8	7		1.0	
11.850	38.88	16.42	2.48	CLAYEY SILT to SILTY CLAY	8	8		1.0	
12.000	39.37	15.87	2.16	CLAYEY SILT to SILTY CLAY	8	7		1.1	
12.150	39.86	19.63	2.79	CLAYEY SILT to SILTY CLAY	10	9		1.2	
12.300	40.35	26.96	2.51	CLAYEY SILT to SILTY CLAY	13	12		1.6	
12.450	40.85	10.86	2.17	CLAYEY SILT to SILTY CLAY	5	5		.7	
12.600	41.34	13.53	3.41	CLAY to SILTY CLAY	9	8		.8	
12.750	41.83	17.91	3.60	CLAY to SILTY CLAY	12	11		1.0	
12.900	42.32	19.08	3.04	CLAYEY SILT to SILTY CLAY	10	9		1.1	
13.050	42.81	27.62	2.89	CLAYEY SILT to SILTY CLAY	14	12		1.7	
13.200	43.31	38.81	5.26	CLAY	39	35		2.1	
13.350	43.80	77.90	4.10	CLAYEY SILT to SILTY CLAY	39	34		4.4	
13.500	44.29	190.78	1.73	SAND to SILTY SAND	48	42	82		42.5
13.650	44.78	289.55	2.04	SAND to SILTY SAND	72	63	94		44.0

*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 pcf
ASSUMED DEPTH OF WATER TABLE = 7.5 ft
N(60) = EQUIVALENT SPT VALUE (60% Energy)
N1(60) = OVERBURDEN NORMALIZED EQUIVALENT SPT VALUE (60% Energy)
Dr = OVERBURDEN NORMALIZED EQUIVALENT RELATIVE DENSITY
Su = OVERBURDEN NORMALIZED UNDRAINED SHEAR STRENGTH
PHI = OVERBURDEN NORMALIZED EQUIVALENT FRICTION ANGLE

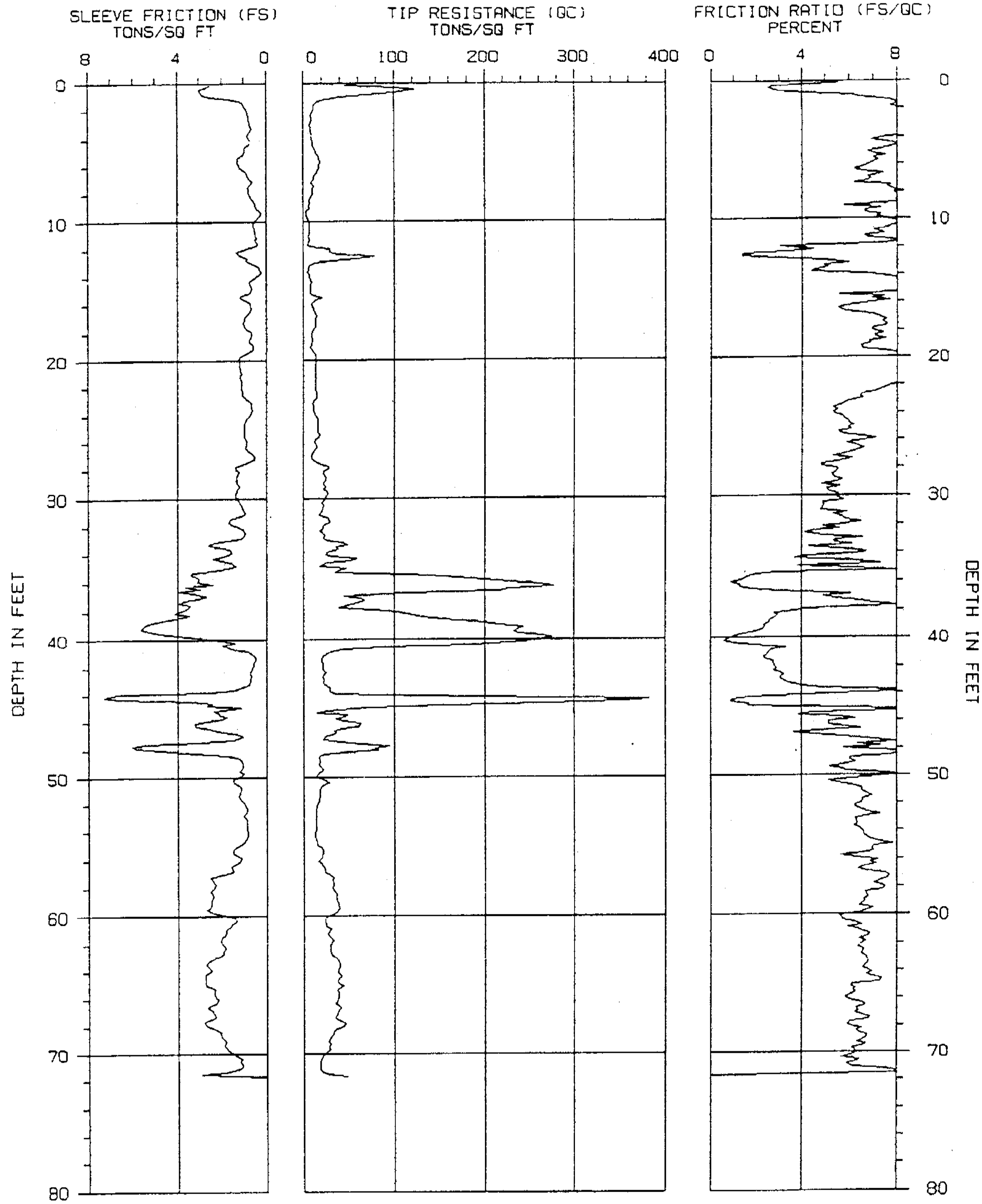
SOUNDING : HLA-2

DEPTH (m)	DEPTH (ft)	TIP RESISTANCE (tsf)	FRICTION RATIO (%)	SOIL BEHAVIOR TYPE	N(60)	N1(60)	Dr (%)	Su (tsf)	PHI (Degrees)
13.800	45.28	398.77	1.01	SAND	80	70	100		45.5
13.950	45.77	338.71	.51	GRAVELLY SAND to SAND	56	49	98		44.5
14.100	46.26	378.77	1.25	SAND	76	66	100		45.0
14.250	46.75	342.68	1.61	SAND to SILTY SAND	86	74	98		44.5
14.400	47.24	344.46	2.47	SILTY SAND to SANDY SILT	100	99	98		44.5
14.550	47.74	440.45	.66	GRAVELLY SAND to SAND	73	63	100		46.0
14.700	48.23	169.62	3.02	SANDY SILT to CLAYEY SILT	68	58		9.8	
14.850	48.72	211.45	1.93	SAND to SILTY SAND	53	45	84		42.5
15.000	49.21	233.10	1.67	SAND to SILTY SAND	58	49	86		43.0
15.150	49.70	467.87	.76	GRAVELLY SAND to SAND	78	66	100		46.0
15.300	50.20	494.86	1.51	SAND	99	83	100		46.0
15.450	50.69	389.23	1.43	SAND	78	65	100		45.0

*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 pcf
ASSUMED DEPTH OF WATER TABLE = 7.5 ft
N(60) = EQUIVALENT SPT VALUE (60% Energy)
N1(60) = OVERBURDEN NORMALIZED EQUIVALENT SPT VALUE (60% Energy)
Dr = OVERBURDEN NORMALIZED EQUIVALENT RELATIVE DENSITY
Su = OVERBURDEN NORMALIZED UNDRAINED SHEAR STRENGTH
PHI = OVERBURDEN NORMALIZED EQUIVALENT FRICTION ANGLE

HOLGUIN, FAHAN & ASSOCIATES, INC.

Interpretations based on: Robertson and Campanella, 1989.



TIP RESISTANCE NOT CORRECTED FOR END AREA EFFECT

CONE PENETRATION TEST

SOUNDING NUMBER: HLA-3

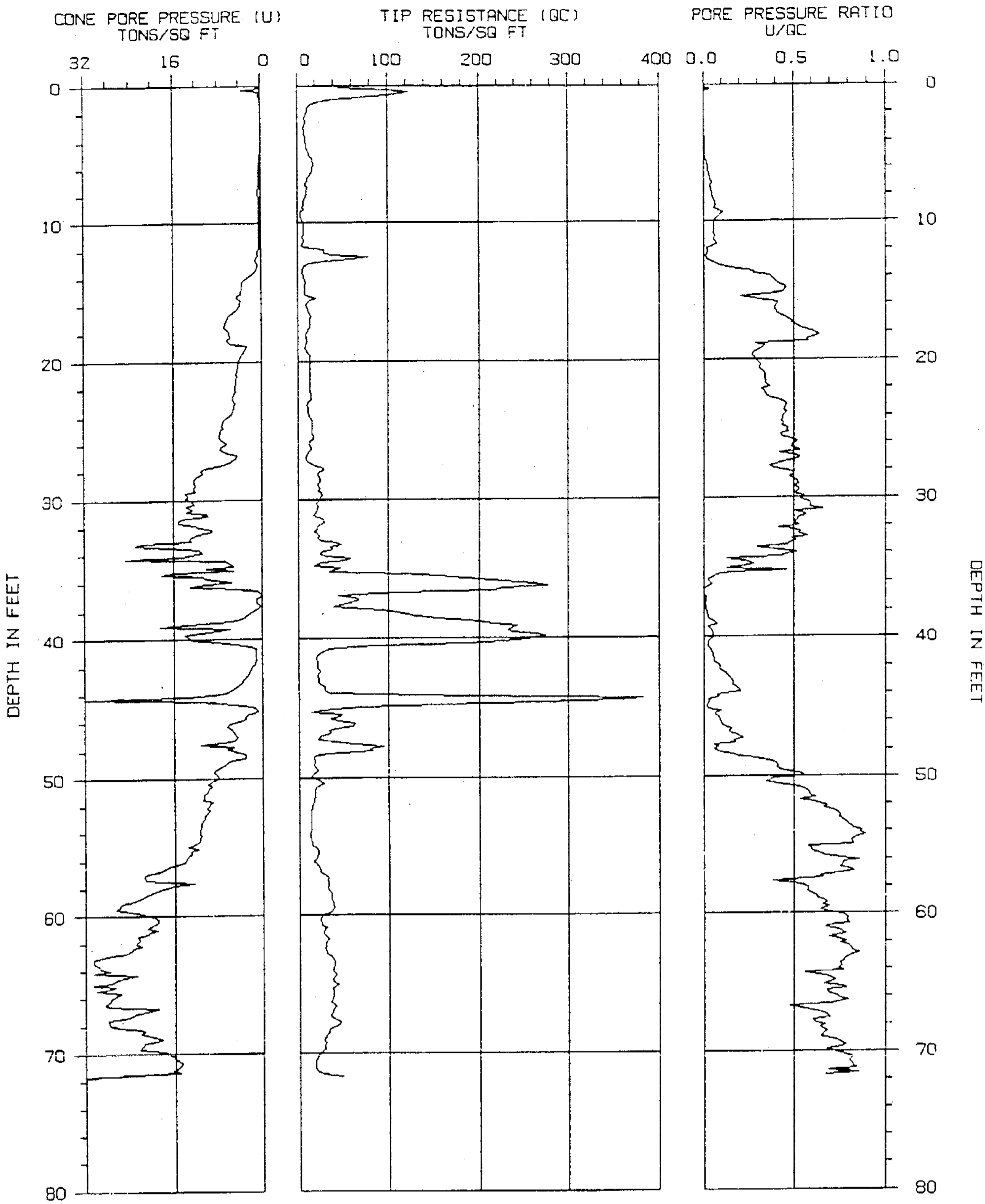
PROJECT NAME : HLA/BISHOP RH 1

PROJECT NUMBER : 50044.1

CONE/RIG : 491/BH.VO/R#4

DATE/TIME: 04-13-00 09:26

HFA



TIP RESISTANCE NOT CORRECTED FOR END AREA EFFECT

CONE PENETRATION TEST

SOUNDING NUMBER: HLA-3

PROJECT NAME : HLA/BISHOP RH 1

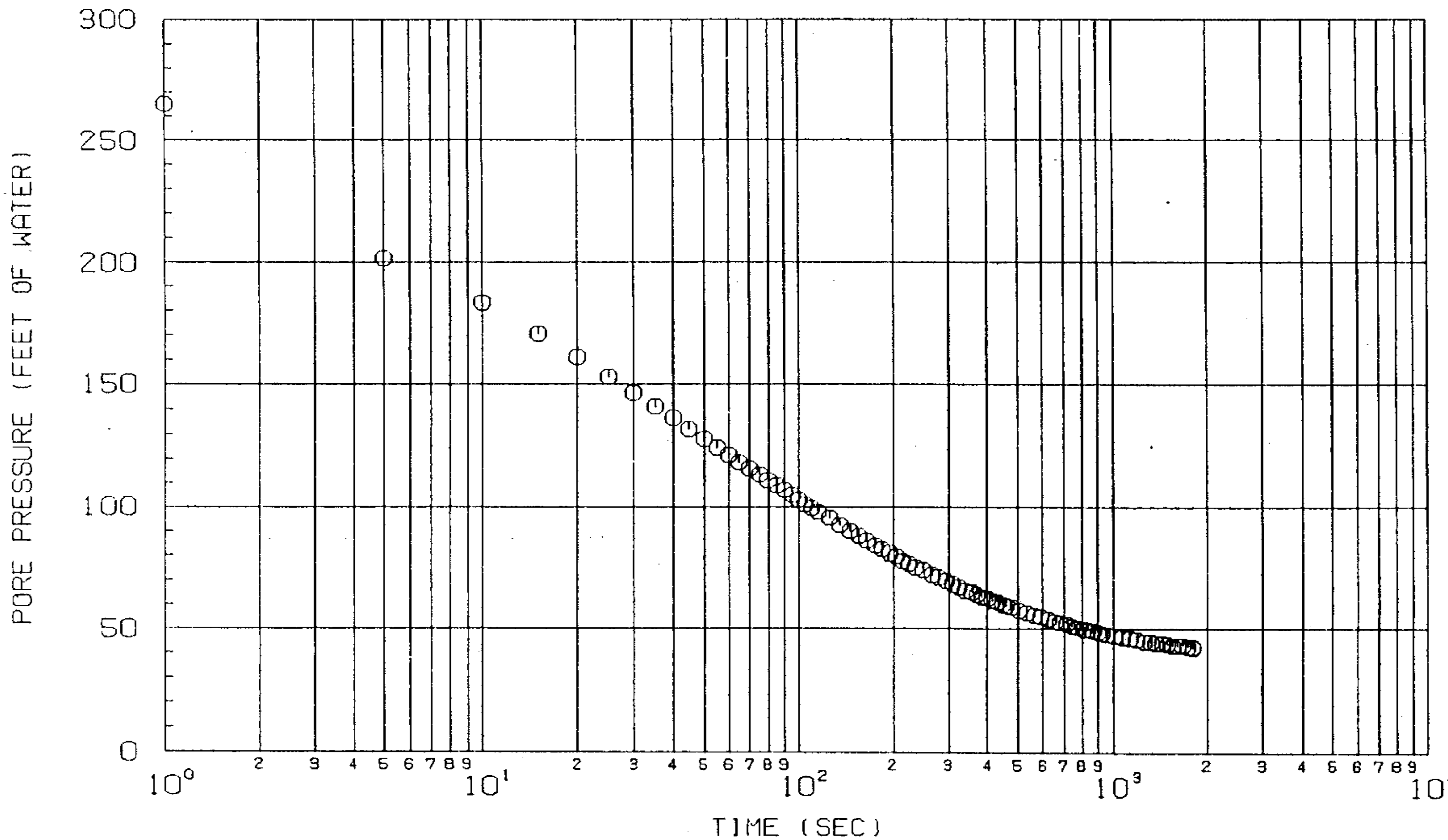
CONE/RIG : 491/BH.VO/R#4

PROJECT NUMBER : 50044.1

DATE/TIME: 04-13-00 09:26

HFA

PORE PRESSURE DISSIPATION CURVES



DEPTH: ⓘ 36.3 FT

TIP-SENSING PIEZOMETRIC CPT

SOUNDING NUMBER: HLA-3

PROJECT NAME : HLA/BISHOP RH 1

PROJECT NUMBER : 50044.1

CONE/RIG : 491/BH.V0/R#4

DATE/TIME: 04-13-00 09:26

HFA

CPT INTERPRETATIONS

SOUNDING : HLA-3
PROJECT : HLA/BISHOP RH 1
DATE/TIME: 04-13-00 09:26

PROJECT No.: 50044.1
CONE/RIG : 491/BH,VO/R#4

DEPTH (m)	DEPTH (ft)	TIP RESISTANCE (tsf)	FRICTION RATIO (%)	SOIL BEHAVIOR TYPE	N(60)	N1(60)	Dr (%)	Su (tsf)	PHI (Degrees)
.150	.49	122.22	2.48	SILTY SAND to SANDY SILT	41	65	82		
.300	.98	40.17	6.15	CLAY	40	64		2.4	
.450	1.48	13.62	7.86	CLAY	14	22		.9	
.600	1.97	10.64	8.27	CLAY	11	17		.7	
.750	2.46	9.24	8.48	CLAY	9	15		.6	
.900	2.95	7.48	9.83	CLAY	7	12		.5	
1.050	3.44	8.52	8.29	CLAY	9	14		.6	
1.200	3.94	9.82	8.01	CLAY	10	16		.6	
1.350	4.43	10.56	7.54	CLAY	11	17		.7	
1.500	4.92	13.34	7.33	CLAY	13	21		.9	
1.650	5.41	17.36	7.52	CLAY	17	28		1.1	
1.800	5.91	17.59	6.94	CLAY	18	28		1.2	
1.950	6.40	14.89	6.24	CLAY	15	24		1.0	
2.100	6.89	11.17	6.79	CLAY	11	18		.7	
2.250	7.38	11.92	6.24	CLAY	12	19		.8	
2.400	7.87	10.13	7.97	CLAY	10	16		.6	
2.550	8.37	7.54	8.27	CLAY	8	11		.5	
2.700	8.86	5.99	8.31	CLAY	6	9		.4	
2.850	9.35	3.36	6.65	ORGANIC MATERIAL	3	5		.3	
3.000	9.84	6.08	7.13	CLAY	6	9		.4	
3.150	10.33	6.56	8.59	CLAY	7	9		.4	
3.300	10.83	7.03	7.08	CLAY	7	10		.4	
3.450	11.32	6.88	6.79	CLAY	7	10		.4	
3.600	11.81	7.84	7.52	CLAY	8	11		.5	
3.750	12.30	36.73	3.38	CLAYEY SILT to SILTY CLAY	18	25		2.4	
3.900	12.80	31.27	2.88	CLAYEY SILT to SILTY CLAY	16	21		2.0	
4.050	13.29	6.42	4.94	CLAY	6	9		.4	
4.200	13.78	6.84	4.40	CLAY	7	9		.4	
4.350	14.27	8.82	8.45	CLAY	9	12		.5	
4.500	14.76	7.73	8.51	CLAY	8	10		.5	
4.650	15.26	12.02	9.11	CLAY	12	16		.7	
4.800	15.75	11.43	6.93	CLAY	11	15		.7	
4.950	16.24	11.28	5.87	CLAY	11	14		.7	
5.100	16.73	14.36	6.21	CLAY	14	18		.9	
5.250	17.22	13.45	7.57	CLAY	13	17		.8	
5.400	17.72	11.54	7.56	CLAY	12	14		.7	
5.550	18.21	8.80	7.41	CLAY	9	11		.5	
5.700	18.70	9.88	7.49	CLAY	10	12		.6	
5.850	19.19	9.20	6.49	CLAY	9	11		.5	
6.000	19.69	14.21	8.09	CLAY	14	17		.9	
6.150	20.18	13.79	8.80	CLAY	14	16		.8	

*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 pcf
ASSUMED DEPTH OF WATER TABLE = 7.5 ft
N(60) = EQUIVALENT SPT VALUE (60% Energy)
N1(60) = OVERBURDEN NORMALIZED EQUIVALENT SPT VALUE (60% Energy)
Dr = OVERBURDEN NORMALIZED EQUIVALENT RELATIVE DENSITY
Su = OVERBURDEN NORMALIZED UNDRAINED SHEAR STRENGTH
PHI = OVERBURDEN NORMALIZED EQUIVALENT FRICTION ANGLE

SOUNDING : HLA-3

DEPTH (m)	DEPTH (ft)	TIP RESISTANCE (tsf)	FRICTION RATIO (%)	SOIL BEHAVIOR TYPE	N(60)	N1(60)	Dr (%)	Su (tsf)	PHI (Degrees)
6.300	20.67	14.19	8.11	CLAY	14	17		.9	
6.450	21.16	13.45	8.42	CLAY	13	16		.8	
6.600	21.65	13.83	8.03	CLAY	14	16		.8	
6.750	22.15	14.30	7.59	CLAY	14	16		.9	
6.900	22.64	14.70	6.54	CLAY	15	17		.9	
7.050	23.13	10.83	6.18	CLAY	11	12		.6	
7.200	23.62	12.00	5.32	CLAY	12	13		.7	
7.350	24.11	14.83	5.39	CLAY	15	16		.9	
7.500	24.61	16.29	5.94	CLAY	16	18		1.0	
7.650	25.10	16.02	5.97	CLAY	16	18		1.0	
7.800	25.59	17.19	5.73	CLAY	17	19		1.1	
7.950	26.08	13.38	6.56	CLAY	13	14		.8	
8.100	26.57	11.83	6.60	CLAY	12	13		.7	
8.250	27.07	9.07	5.77	CLAY	9	10		.5	
8.400	27.56	20.16	5.53	CLAY	20	21		1.1	
8.550	28.05	22.88	5.49	CLAY	23	24		1.3	
8.700	28.54	25.37	5.28	CLAY	25	27		1.4	
8.850	29.04	23.07	5.46	CLAY	23	24		1.3	
9.000	29.53	26.28	5.08	CLAY	26	27		1.5	
9.150	30.02	24.47	5.40	CLAY	24	25		1.3	
9.300	30.51	22.97	4.91	CLAY	23	23		1.3	
9.450	31.00	19.33	4.79	CLAY	19	20		1.2	
9.600	31.50	28.47	5.68	CLAY	28	29		1.6	
9.750	31.99	21.29	5.86	CLAY	21	21		1.1	
9.900	32.48	20.97	4.53	CLAY	21	21		1.3	
10.050	32.97	26.34	6.58	CLAY	26	26		1.4	
10.200	33.46	36.35	6.14	CLAY	36	36		2.0	
10.350	33.96	24.58	6.76	CLAY	25	24		1.3	
10.500	34.45	53.75	3.70	CLAYEY SILT to SILTY CLAY	27	26		3.1	
10.650	34.94	47.12	3.81	CLAYEY SILT to SILTY CLAY	24	23		2.7	
10.800	35.43	117.19	2.88	SANDY SILT to CLAYEY SILT	47	45		6.8	
10.950	35.93	228.06	1.36	SAND to SILTY SAND	57	55	89		44.0
11.100	36.42	226.68	1.32	SAND to SILTY SAND	57	54	89		44.0
11.250	36.91	44.49	6.09	CLAY	44	42		2.5	
11.400	37.40	59.57	6.53	CLAY	60	56		3.4	
11.550	37.89	93.75	4.11	CLAYEY SILT to SILTY CLAY	47	44		5.4	
11.700	38.39	131.34	2.92	SANDY SILT to CLAYEY SILT	53	49		7.6	
11.850	38.88	216.78	2.52	SILTY SAND to SANDY SILT	72	67	87		43.5
12.000	39.37	231.91	2.26	SILTY SAND to SANDY SILT	77	71	89		43.5
12.150	39.86	273.82	1.14	SAND	55	50	93		44.5
12.300	40.35	187.83	1.05	SAND	38	34	82		42.5
12.450	40.85	30.04	2.68	CLAYEY SILT to SILTY CLAY	15	14		1.9	
12.600	41.34	20.76	2.32	CLAYEY SILT to SILTY CLAY	10	9		1.2	
12.750	41.83	21.31	2.75	CLAYEY SILT to SILTY CLAY	11	10		1.3	
12.900	42.32	25.03	2.75	CLAYEY SILT to SILTY CLAY	13	11		1.5	
13.050	42.81	22.43	3.09	CLAYEY SILT to SILTY CLAY	11	10		1.3	
13.200	43.31	25.83	3.64	CLAYEY SILT to SILTY CLAY	13	11		1.6	
13.350	43.80	30.66	8.39	CLAY	31	27		1.7	
13.500	44.29	383.11	1.71	SAND to SILTY SAND	96	84	100		45.5
13.650	44.78	157.57	1.69	SAND to SILTY SAND	39	35	76		41.5

*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 pcf
ASSUMED DEPTH OF WATER TABLE = 7.5 ft
N(60) = EQUIVALENT SPT VALUE (60% Energy)
N1(60) = OVERBURDEN NORMALIZED EQUIVALENT SPT VALUE (60% Energy)
Dr = OVERBURDEN NORMALIZED EQUIVALENT RELATIVE DENSITY
Su = OVERBURDEN NORMALIZED UNDRAINED SHEAR STRENGTH
PHI = OVERBURDEN NORMALIZED EQUIVALENT FRICTION ANGLE

SOUNDING : HLA-3

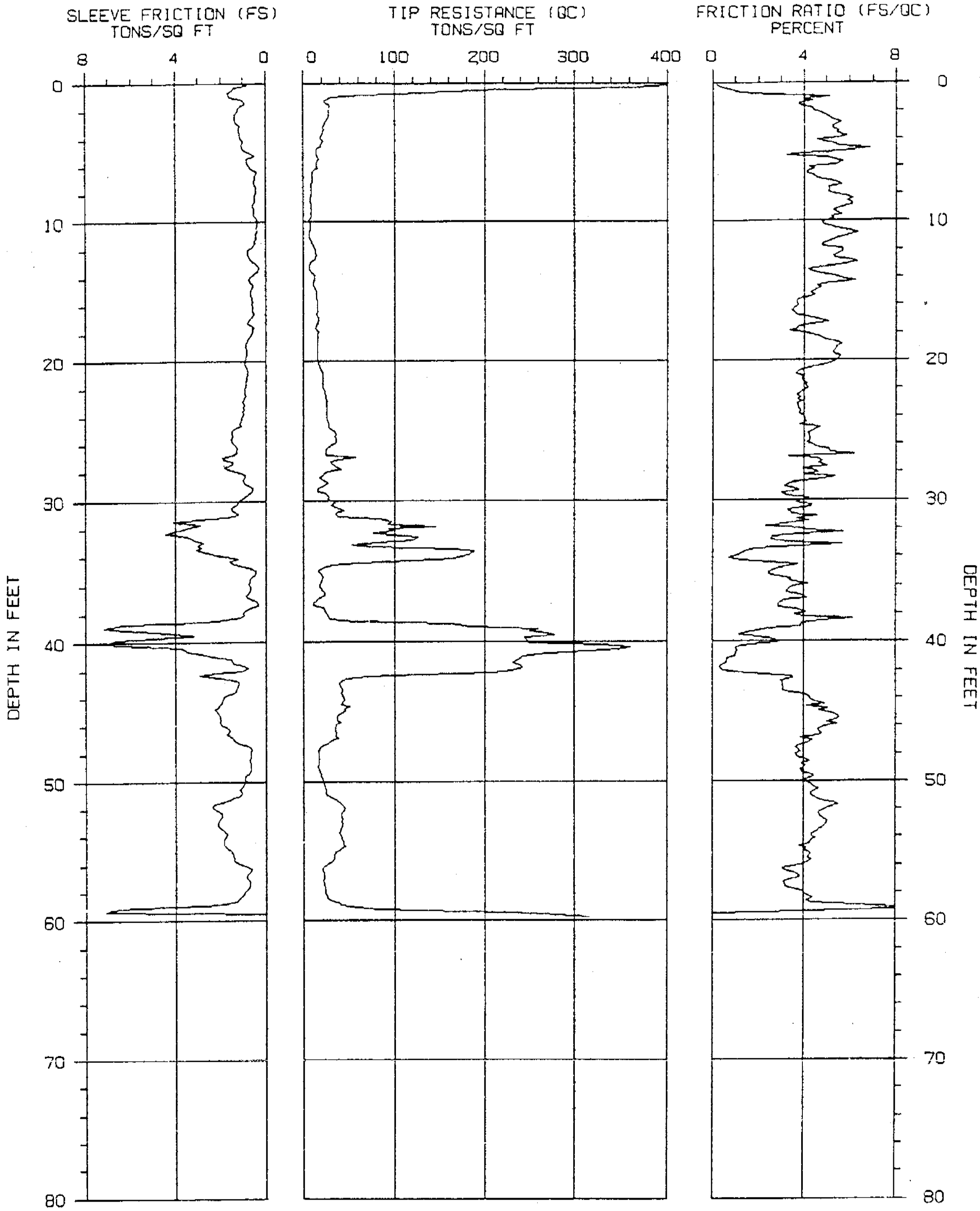
DEPTH (m)	DEPTH (ft)	TIP RESISTANCE (tsf)	FRICTION RATIO (%)	SOIL BEHAVIOR TYPE	N(60)	N1(60)	Dr (%)	Su (tsf)	PHI (Degrees)
13.800	45.28	15.28	13.92	CLAY	15	13		.9	
13.950	45.77	35.48	5.61	CLAY	35	31		1.9	
14.100	46.26	60.99	5.14	CLAY to SILTY CLAY	41	35		3.4	
14.250	46.75	35.39	4.67	CLAY to SILTY CLAY	24	20		1.9	
14.400	47.24	23.11	6.31	CLAY	23	20		1.2	
14.550	47.74	94.31	6.37	*VERY STIFF FINE GRAINED	94	81			
14.700	48.23	32.91	9.74	CLAY	33	28		1.8	
14.850	48.72	18.70	6.08	CLAY	19	16		.9	
15.000	49.21	18.23	5.93	CLAY	18	15		1.0	
15.150	49.70	17.06	5.86	CLAY	17	14		1.0	
15.300	50.20	22.97	6.65	CLAY	23	19		1.2	
15.450	50.69	19.01	6.02	CLAY	19	16		1.0	
15.600	51.18	18.21	6.54	CLAY	18	15		1.0	
15.750	51.67	17.00	6.55	CLAY	17	14		.9	
15.900	52.17	14.64	6.27	CLAY	15	12		.8	
16.050	52.66	14.17	6.78	CLAY	14	12		.8	
16.200	53.15	14.26	6.26	CLAY	14	12		.8	
16.350	53.64	13.94	6.23	CLAY	14	11		.7	
16.500	54.13	13.04	6.61	CLAY	13	11		.7	
16.650	54.63	14.34	6.93	CLAY	14	12		.8	
16.800	55.12	20.16	7.07	CLAY	20	16		1.1	
16.950	55.61	20.88	6.60	CLAY	21	17		1.0	
17.100	56.10	16.51	7.22	CLAY	17	13		.9	
17.250	56.59	23.65	6.53	CLAY	24	19		1.2	
17.400	57.09	28.70	7.55	CLAY	29	23		1.5	
17.550	57.58	32.53	7.25	CLAY	33	26		1.7	
17.700	58.07	32.48	7.52	CLAY	32	26		1.7	
17.850	58.56	35.54	6.74	CLAY	36	28		1.9	
18.000	59.06	37.60	6.65	CLAY	38	29		2.0	
18.150	59.55	38.16	7.03	CLAY	38	30		2.1	
18.300	60.04	25.92	5.58	CLAY	26	20		1.3	
18.450	60.53	24.39	6.28	CLAY	24	19		1.2	
18.600	61.02	28.45	6.33	CLAY	28	22		1.5	
18.750	61.52	28.98	6.86	CLAY	29	22		1.5	
18.900	62.01	29.36	6.58	CLAY	29	22		1.5	
19.050	62.50	29.23	6.62	CLAY	29	22		1.5	
19.200	62.99	35.37	6.75	CLAY	35	27		1.9	
19.350	63.48	39.52	6.81	CLAY	40	30		2.1	
19.500	63.98	37.11	6.85	CLAY	37	28		2.0	
19.650	64.47	39.30	6.99	CLAY	39	30		2.1	
19.800	64.96	43.57	6.17	CLAY	44	33		2.4	
19.950	65.45	37.94	6.19	CLAY	38	28		2.0	
20.100	65.94	37.09	5.88	CLAY	37	28		2.0	
20.250	66.44	38.03	6.65	CLAY	38	28		2.0	
20.400	66.93	37.56	6.40	CLAY	38	28		2.0	
20.550	67.42	36.22	6.87	CLAY	36	27		1.9	
20.700	67.91	44.64	5.94	CLAY	45	33		2.4	
20.850	68.41	32.48	6.31	CLAY	32	24		1.7	
21.000	68.90	28.21	6.74	CLAY	28	21		1.4	
21.150	69.39	28.36	6.72	CLAY	28	21		1.4	

*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 pcf
ASSUMED DEPTH OF WATER TABLE = 7.5 ft
N(60) = EQUIVALENT SPT VALUE (60% Energy)
N1(60) = OVERBURDEN NORMALIZED EQUIVALENT SPT VALUE (60% Energy)
Dr = OVERBURDEN NORMALIZED EQUIVALENT RELATIVE DENSITY
Su = OVERBURDEN NORMALIZED UNDRAINED SHEAR STRENGTH
PHI = OVERBURDEN NORMALIZED EQUIVALENT FRICTION ANGLE

SOUNDING : HLA-3

DEPTH (m)	DEPTH (ft)	TIP RESISTANCE (tsf)	FRICTION RATIO (%)	SOIL BEHAVIOR TYPE	N(60)	N1(60)	Dr (%)	Su (tsf)	PHI (Degrees)
21.300	69.88	26.26	6.27	CLAY	26	19		1.3	
21.450	70.37	19.38	5.69	CLAY	19	14		.9	
21.600	70.87	18.31	5.90	CLAY	18	13		1.0	
21.750	71.36	21.63	8.53	CLAY	22	16		1.2	

*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 pcf
ASSUMED DEPTH OF WATER TABLE = 7.5 ft
N(60) = EQUIVALENT SPT VALUE (60% Energy)
N1(60) = OVERBURDEN NORMALIZED EQUIVALENT SPT VALUE (60% Energy)
Dr = OVERBURDEN NORMALIZED EQUIVALENT RELATIVE DENSITY
Su = OVERBURDEN NORMALIZED UNDRAINED SHEAR STRENGTH
PHI = OVERBURDEN NORMALIZED EQUIVALENT FRICTION ANGLE



TIP RESISTANCE NOT CORRECTED FOR END AREA EFFECT

CONE PENETRATION TEST	SOUNDING NUMBER: HLA-4
PROJECT NAME : HLA/BISHOP RH 1	CONE/RIG : 491/BH.VD/R#4
PROJECT NUMBER : 50044.1	DATE/TIME: 04-12-00 17:19

HFA

CPT INTERPRETATIONS

SOUNDING : HLA-4
PROJECT : HLA/BISHOP RH 1
DATE/TIME: 04-12-00 17:19

PROJECT No.: 50044.1
CONE/RIG : 491/BH,VO/R#4

DEPTH (m)	DEPTH (ft)	TIP RESISTANCE (tsf)	FRICTION RATIO (%)	SOIL BEHAVIOR TYPE	N(60)	N1(60)	Dr (%)	Su (tsf)	PHI (Degrees)
.150	.49	218.69	.68	SAND	44	70	99		
.300	.98	30.72	5.12	CLAY	31	49		1.8	
.450	1.48	25.15	3.78	CLAY to SILTY CLAY	17	27		1.7	
.600	1.97	28.47	4.40	CLAY to SILTY CLAY	19	30		1.7	
.750	2.46	27.34	5.09	CLAY	27	44		1.6	
.900	2.95	22.43	5.41	CLAY	22	36		1.3	
1.050	3.44	21.75	5.51	CLAY	22	35		1.3	
1.200	3.94	19.74	5.56	CLAY	20	32		1.1	
1.350	4.43	19.82	5.38	CLAY	20	32		1.2	
1.500	4.92	14.34	5.63	CLAY	14	23		.9	
1.650	5.41	16.76	5.01	CLAY	17	27		1.1	
1.800	5.91	14.32	5.39	CLAY	14	23		.9	
1.950	6.40	9.92	4.13	CLAY	10	16		.6	
2.100	6.89	10.62	4.59	CLAY	11	17		.7	
2.250	7.38	8.77	5.64	CLAY	9	14		.6	
2.400	7.87	9.09	5.07	CLAY	9	14		.6	
2.550	8.37	7.90	6.13	CLAY	8	12		.5	
2.700	8.86	9.16	6.11	CLAY	9	13		.6	
2.850	9.35	9.56	5.46	CLAY	10	14		.6	
3.000	9.84	7.58	5.30	CLAY	8	11		.5	
3.150	10.33	7.99	5.14	CLAY	8	11		.5	
3.300	10.83	6.95	6.34	CLAY	7	10		.4	
3.450	11.32	9.07	5.31	CLAY	9	12		.6	
3.600	11.81	12.79	4.79	CLAY	13	17		.8	
3.750	12.30	14.55	5.49	CLAY	15	20		.9	
3.900	12.80	10.35	6.03	CLAY	10	14		.6	
4.050	13.29	6.69	4.80	CLAY	7	9		.4	
4.200	13.78	12.47	4.79	CLAY	12	16		.8	
4.350	14.27	11.11	6.22	CLAY	11	14		.7	
4.500	14.76	13.21	4.76	CLAY	13	17		.8	
4.650	15.26	15.00	4.49	CLAY	15	19		.9	
4.800	15.75	16.10	3.69	CLAY to SILTY CLAY	11	13		1.0	
4.950	16.24	16.10	3.55	CLAY to SILTY CLAY	11	13		1.0	
5.100	16.73	15.72	3.65	CLAY to SILTY CLAY	10	13		1.0	
5.250	17.22	15.66	5.07	CLAY	16	19		1.0	
5.400	17.72	15.08	3.76	CLAY to SILTY CLAY	10	12		.9	
5.550	18.21	15.93	4.56	CLAY	16	19		1.0	
5.700	18.70	16.15	5.49	CLAY	16	19		1.0	
5.850	19.19	15.78	5.44	CLAY	16	19		1.0	
6.000	19.69	15.70	5.60	CLAY	16	18		1.0	
6.150	20.18	17.38	5.32	CLAY	17	20		1.1	

*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 pcf
ASSUMED DEPTH OF WATER TABLE = 8.3 ft
N(60) = EQUIVALENT SPT VALUE (60% Energy)
N1(60) = OVERBURDEN NORMALIZED EQUIVALENT SPT VALUE (60% Energy)
Dr = OVERBURDEN NORMALIZED EQUIVALENT RELATIVE DENSITY
Su = OVERBURDEN NORMALIZED UNDRAINED SHEAR STRENGTH
PHI = OVERBURDEN NORMALIZED EQUIVALENT FRICTION ANGLE

Interpretations based on: Robertson and Campanella, 1989.

SOUNDING : HLA-4

DEPTH (m)	DEPTH (ft)	TIP RESISTANCE (tsf)	FRICTION RATIO (%)	SOIL BEHAVIOR TYPE	N(60)	N1(60)	Dr (%)	Su (tsf)	PHI (Degrees)
6.300	20.67	20.88	3.87	CLAY to SILTY CLAY	14	16		1.3	
6.450	21.16	21.27	3.95	CLAY to SILTY CLAY	14	16		1.3	
6.600	21.65	21.37	4.16	CLAY to SILTY CLAY	14	16		1.3	
6.750	22.15	23.39	4.01	CLAY to SILTY CLAY	16	18		1.5	
6.900	22.64	25.15	3.88	CLAY to SILTY CLAY	17	19		1.6	
7.050	23.13	25.75	3.68	CLAY to SILTY CLAY	17	19		1.6	
7.200	23.62	25.85	3.87	CLAY to SILTY CLAY	17	19		1.6	
7.350	24.11	26.07	4.00	CLAY to SILTY CLAY	17	19		1.6	
7.500	24.61	27.96	3.83	CLAY to SILTY CLAY	19	20		1.8	
7.650	25.10	34.74	4.36	CLAY to SILTY CLAY	23	25		2.0	
7.800	25.59	36.16	4.26	CLAY to SILTY CLAY	24	26		2.0	
7.950	26.08	29.87	4.45	CLAY to SILTY CLAY	20	21		1.7	
8.100	26.57	24.88	5.15	CLAY	25	26		1.4	
8.250	27.07	40.24	4.61	CLAY to SILTY CLAY	27	28		2.3	
8.400	27.56	35.76	5.03	CLAY	36	37		2.0	
8.550	28.05	22.54	4.61	CLAY	23	23		1.4	
8.700	28.54	20.69	4.84	CLAY	21	21		1.3	
8.850	29.04	18.59	3.17	CLAYEY SILT to SILTY CLAY	9	10		1.1	
9.000	29.53	24.69	3.05	CLAYEY SILT to SILTY CLAY	12	13		1.5	
9.150	30.02	30.74	3.92	CLAY to SILTY CLAY	20	21		1.9	
9.300	30.51	35.73	4.30	CLAY to SILTY CLAY	24	24		2.0	
9.450	31.00	36.03	3.46	CLAYEY SILT to SILTY CLAY	18	18		2.3	
9.600	31.50	96.56	4.21	CLAYEY SILT to SILTY CLAY	48	48		5.6	
9.750	31.99	93.12	3.89	CLAYEY SILT to SILTY CLAY	47	46		5.4	
9.900	32.48	96.15	3.84	CLAYEY SILT to SILTY CLAY	48	47		5.6	
10.050	32.97	82.30	3.35	SANDY SILT to CLAYEY SILT	33	32		4.7	
10.200	33.46	166.60	1.85	SILTY SAND to SANDY SILT	56	54	81		42.5
10.350	33.96	175.93	1.00	SAND	35	34	82		43.0
10.500	34.45	60.00	2.50	SANDY SILT to CLAYEY SILT	24	23		3.9	
10.650	34.94	17.00	2.67	CLAYEY SILT to SILTY CLAY	9	8		1.0	
10.800	35.43	21.48	2.80	CLAYEY SILT to SILTY CLAY	11	10		1.3	
10.950	35.93	18.25	4.19	CLAY	18	17		1.1	
11.100	36.42	21.41	3.30	CLAYEY SILT to SILTY CLAY	11	10		1.3	
11.250	36.91	16.93	4.14	CLAY	17	16		1.0	
11.400	37.40	11.81	2.84	CLAY to SILTY CLAY	8	7		.7	
11.550	37.89	24.56	4.08	CLAY to SILTY CLAY	16	15		1.5	
11.700	38.39	29.70	6.13	CLAY	30	27		1.6	
11.850	38.88	184.24	3.89	*SAND to CLAYEY SAND	92	85			
12.000	39.37	269.75	1.47	SAND to SILTY SAND	67	62	93		44.0
12.150	39.86	246.55	2.72	SILTY SAND to SANDY SILT	82	75	90		44.0
12.300	40.35	360.61	1.04	SAND	72	65	100		45.5
12.450	40.85	270.11	1.06	SAND	54	49	92		44.0
12.600	41.34	234.99	.63	SAND	47	42	88		43.5
12.750	41.83	241.98	.33	SAND	48	43	89		43.5
12.900	42.32	128.25	2.27	SILTY SAND to SANDY SILT	43	38	71		40.0
13.050	42.81	41.07	2.97	CLAYEY SILT to SILTY CLAY	21	18		2.6	
13.200	43.31	42.13	3.10	CLAYEY SILT to SILTY CLAY	21	19		2.6	
13.350	43.80	42.98	4.07	CLAYEY SILT to SILTY CLAY	21	19		2.4	
13.500	44.29	42.85	4.54	CLAY to SILTY CLAY	29	25		2.4	
13.650	44.78	44.83	5.05	CLAY	45	39		2.5	

*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 pcf
ASSUMED DEPTH OF WATER TABLE = 8.3 ft
N(60) = EQUIVALENT SPT VALUE (60% Energy)
N1(60) = OVERBURDEN NORMALIZED EQUIVALENT SPT VALUE (60% Energy)
Dr = OVERBURDEN NORMALIZED EQUIVALENT RELATIVE DENSITY
Su = OVERBURDEN NORMALIZED UNDRAINED SHEAR STRENGTH
PHI = OVERBURDEN NORMALIZED EQUIVALENT FRICTION ANGLE

Interpretations based on: Robertson and Campanella, 1989.

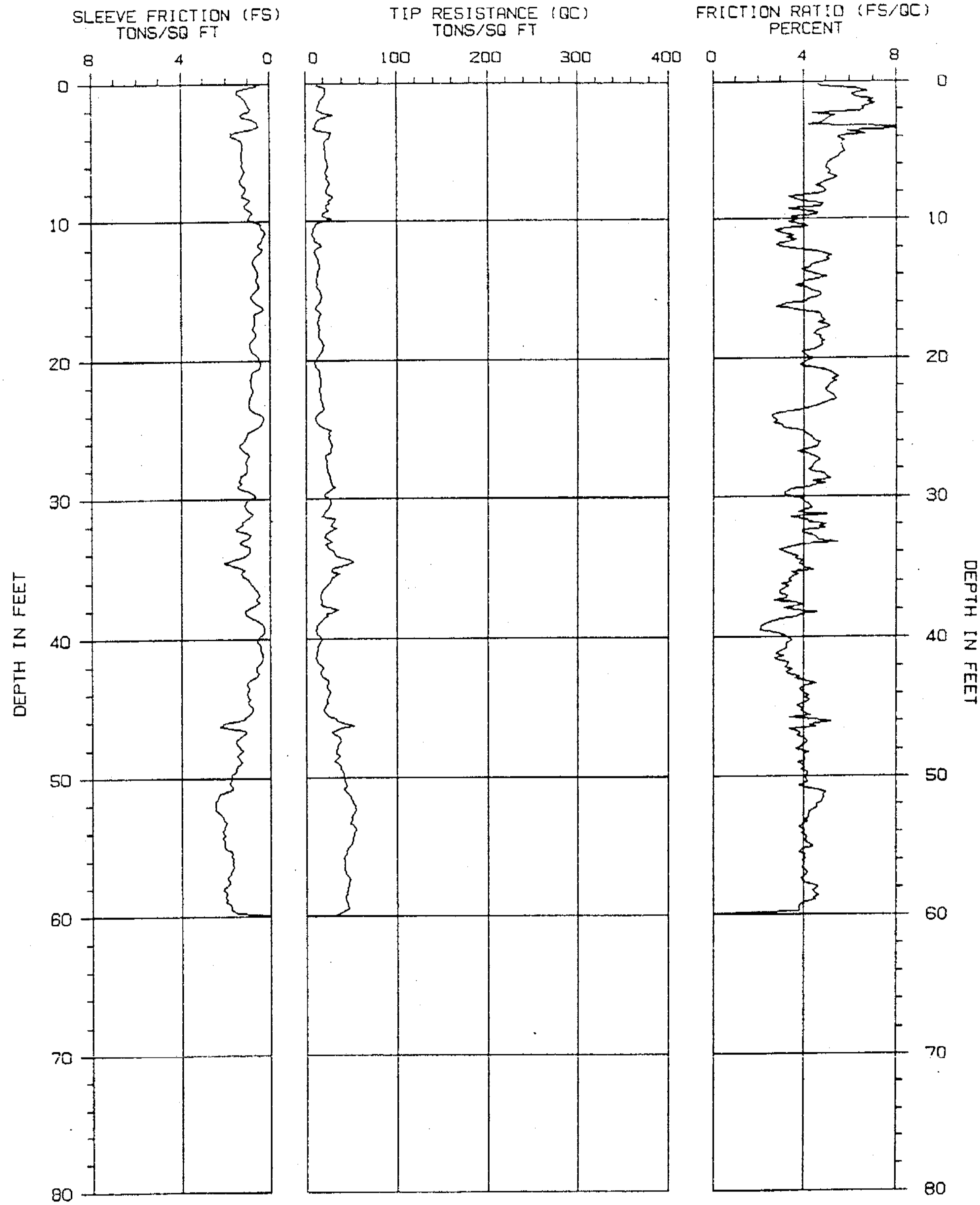
SOUNDING : HLA-4

DEPTH (m)	DEPTH (ft)	TIP RESISTANCE (tsf)	FRICTION RATIO (%)	SOIL BEHAVIOR TYPE	N(60)	N1(60)	Dr (%)	Su (tsf)	PHI (Degrees)
13.800	45.28	37.48	5.47	CLAY	37	32		2.1	
13.950	45.77	40.51	5.03	CLAY	41	35		2.2	
14.100	46.26	34.67	4.61	CLAY to SILTY CLAY	23	20		1.9	
14.250	46.75	34.31	4.67	CLAY to SILTY CLAY	23	20		1.9	
14.400	47.24	26.62	4.12	CLAY to SILTY CLAY	18	15		1.6	
14.550	47.74	16.70	3.80	CLAY to SILTY CLAY	11	9		.9	
14.700	48.23	17.46	3.73	CLAY to SILTY CLAY	12	10		1.0	
14.850	48.72	17.48	3.92	CLAY to SILTY CLAY	12	10		1.0	
15.000	49.21	17.23	3.85	CLAY to SILTY CLAY	11	10		1.0	
15.150	49.70	20.88	4.45	CLAY	21	17		1.2	
15.300	50.20	22.56	4.32	CLAY to SILTY CLAY	15	12		1.3	
15.450	50.69	24.28	4.53	CLAY	24	20		1.3	
15.600	51.18	31.76	4.45	CLAY to SILTY CLAY	21	17		1.7	
15.750	51.67	42.45	5.49	CLAY	42	35		2.3	
15.900	52.17	44.00	4.78	CLAY to SILTY CLAY	29	24		2.4	
16.050	52.66	42.09	4.87	CLAY to SILTY CLAY	28	23		2.3	
16.200	53.15	42.81	4.99	CLAY	43	35		2.3	
16.350	53.64	39.05	4.59	CLAY to SILTY CLAY	26	21		2.1	
16.500	54.13	41.47	4.53	CLAY to SILTY CLAY	28	22		2.3	
16.650	54.63	45.93	3.85	CLAYEY SILT to SILTY CLAY	23	18		2.5	
16.800	55.12	35.10	4.23	CLAY to SILTY CLAY	23	19		1.9	
16.950	55.61	32.38	4.36	CLAY to SILTY CLAY	22	17		1.7	
17.100	56.10	22.73	3.57	CLAY to SILTY CLAY	15	12		1.3	
17.250	56.59	22.39	3.65	CLAY to SILTY CLAY	15	12		1.3	
17.400	57.09	21.69	3.40	CLAYEY SILT to SILTY CLAY	11	9		1.2	
17.550	57.58	23.67	3.27	CLAYEY SILT to SILTY CLAY	12	9		1.4	
17.700	58.07	24.96	3.99	CLAY to SILTY CLAY	17	13		1.5	
17.850	58.56	31.14	4.15	CLAY to SILTY CLAY	21	16		1.6	
18.000	59.06	59.17	9.80	CLAY	59	46		3.3	
18.150	59.55	262.82	*****		0	0			.0

*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 pcf
ASSUMED DEPTH OF WATER TABLE = 8.3 ft
N(60) = EQUIVALENT SPT VALUE (60% Energy)
N1(60) = OVERBURDEN NORMALIZED EQUIVALENT SPT VALUE (60% Energy)
Dr = OVERBURDEN NORMALIZED EQUIVALENT RELATIVE DENSITY
Su = OVERBURDEN NORMALIZED UNDRAINED SHEAR STRENGTH
PHI = OVERBURDEN NORMALIZED EQUIVALENT FRICTION ANGLE

HOLGUIN, FAHAN & ASSOCIATES, INC.

Interpretations based on: Robertson and Campanella, 1989.



TIP RESISTANCE NOT CORRECTED FOR END AREA EFFECT

CONE PENETRATION TEST	SOUNDING NUMBER: HLA-5
PROJECT NAME : HLA/BISHOP RH 1	CONE/RIG : 491/BH.VD/R#4
PROJECT NUMBER : 50044.1	DATE/TIME: 04-13-90 13:56

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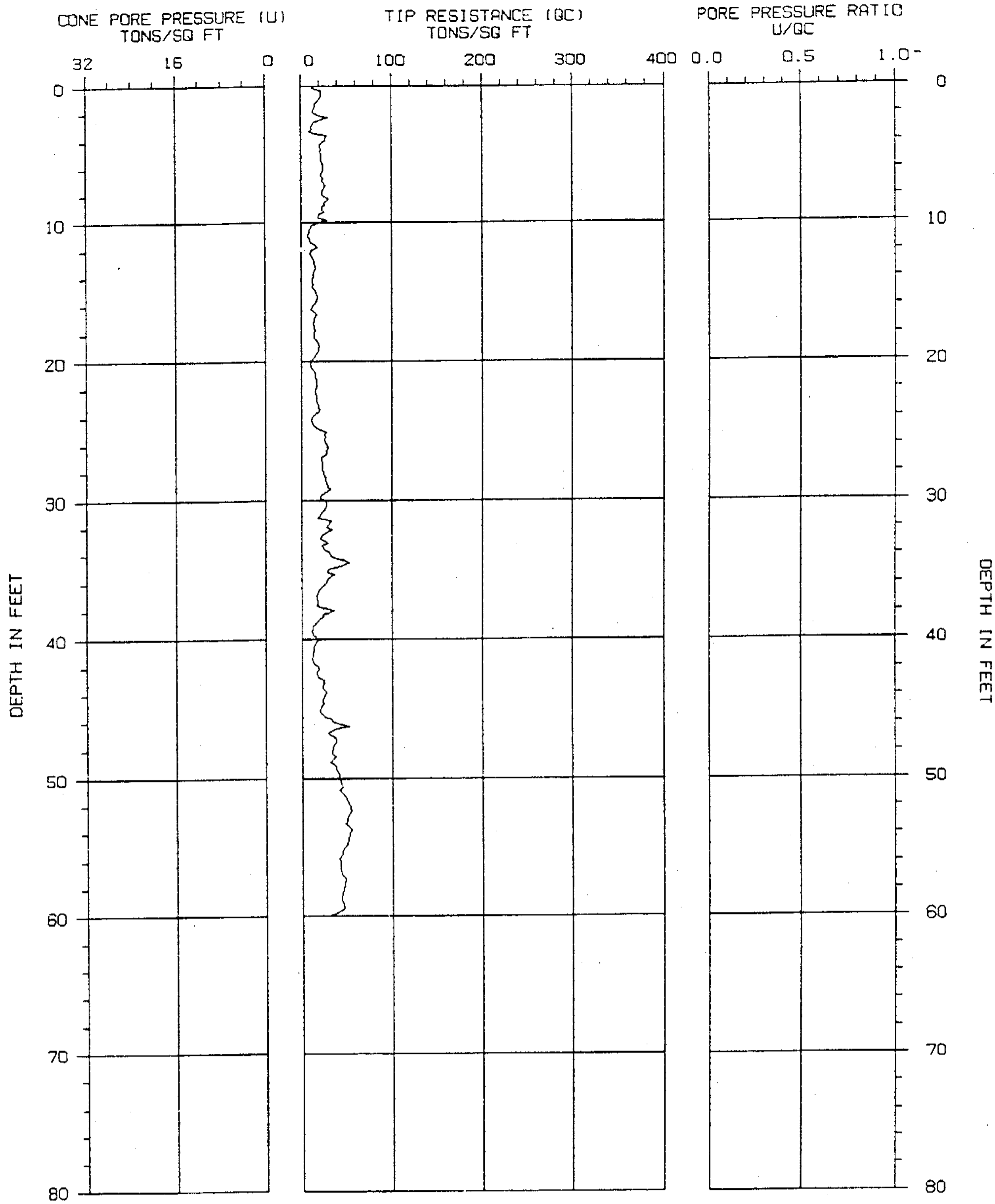

TIP RESISTANCE NOT CORRECTED FOR END AREA EFFECT

CONE PENETRATION TEST

SOUNDING NUMBER: HLA-5

PROJECT NAME : HLA/BISHOP RH 1	CONE/RIG : 491/BH.V0/R#4	HFA
PROJECT NUMBER : 50044.1	DATE/TIME: 04-13-90 13:56	

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*                                                                    *
*                     CPT INTERPRETATIONS                            *
*                                                                    *
*  SOUNDING : HLA-5                    PROJECT No.: 50044.1          *
*  PROJECT  : HLA/BISHOP RH 1          CONE/RIG : 491/BH,VO/R#4      *
*  DATE/TIME: 04-13-90 13:56                                         *
*                                                                    *
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DEPTH (m)	DEPTH (ft)	TIP RESISTANCE (tsf)	FRICTION RATIO (%)	SOIL BEHAVIOR TYPE	N(60)	N1(60)	Dr (%)	Su (tsf)	PHI (Degrees)
.150	.49	22.99	6.27	CLAY	23	37		1.4	
.300	.98	20.48	6.13	CLAY	20	33		1.2	
.450	1.48	15.47	6.76	CLAY	15	25		1.0	
.600	1.97	14.43	6.60	CLAY	14	23		1.0	
.750	2.46	23.11	5.40	CLAY	23	37		1.4	
.900	2.95	11.66	4.76	CLAY	12	19		.8	
1.050	3.44	15.30	8.44	CLAY	15	24		1.0	
1.200	3.94	26.94	5.55	CLAY	27	43		1.6	
1.350	4.43	22.03	5.60	CLAY	22	35		1.3	
1.500	4.92	22.20	5.74	CLAY	22	36		1.3	
1.650	5.41	23.11	5.56	CLAY	23	37		1.3	
1.800	5.91	25.30	5.05	CLAY	25	40		1.5	
1.950	6.40	22.99	5.10	CLAY	23	37		1.3	
2.100	6.89	23.92	5.48	CLAY	24	38		1.4	
2.250	7.38	25.39	4.80	CLAY	25	40		1.5	
2.400	7.87	23.71	5.00	CLAY	24	36		1.4	
2.550	8.37	29.40	3.34	CLAYEY SILT to SILTY CLAY	15	22		1.9	
2.700	8.86	24.03	4.83	CLAY	24	35		1.4	
2.850	9.35	20.01	4.03	CLAY to SILTY CLAY	13	19		1.3	
3.000	9.84	28.83	3.48	CLAYEY SILT to SILTY CLAY	14	20		1.9	
3.150	10.33	11.24	3.87	CLAY	11	16		.7	
3.300	10.83	8.54	2.75	CLAY to SILTY CLAY	6	8		.6	
3.450	11.32	10.37	3.25	CLAY to SILTY CLAY	7	9		.6	
3.600	11.81	18.57	2.82	CLAYEY SILT to SILTY CLAY	9	12		1.2	
3.750	12.30	11.51	4.60	CLAY	12	15		.7	
3.900	12.80	15.00	4.98	CLAY	15	20		1.0	
4.050	13.29	15.68	4.30	CLAY	16	20		1.0	
4.200	13.78	13.60	4.12	CLAY	14	18		.9	
4.350	14.27	13.13	4.60	CLAY	13	17		.8	
4.500	14.76	14.28	3.67	CLAY to SILTY CLAY	10	12		.9	
4.650	15.26	17.97	4.72	CLAY	18	23		1.1	
4.800	15.75	16.87	4.17	CLAY	17	21		1.1	
4.950	16.24	11.51	2.82	CLAY to SILTY CLAY	8	9		.7	
5.100	16.73	15.61	4.68	CLAY	16	19		1.0	
5.250	17.22	14.28	4.92	CLAY	14	17		.9	
5.400	17.72	15.49	5.10	CLAY	15	19		1.0	
5.550	18.21	14.47	4.45	CLAY	14	17		.9	
5.700	18.70	19.25	4.88	CLAY	19	23		1.2	
5.850	19.19	18.74	4.70	CLAY	19	22		1.2	
6.000	19.69	14.32	4.06	CLAY	14	17		.9	
6.150	20.18	10.88	4.23	CLAY	11	13		.7	

*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 pcf
ASSUMED DEPTH OF WATER TABLE = 8.8 ft
N(60) = EQUIVALENT SPT VALUE (60% Energy)
N1(60) = OVERBURDEN NORMALIZED EQUIVALENT SPT VALUE (60% Energy)
Dr = OVERBURDEN NORMALIZED EQUIVALENT RELATIVE DENSITY
Su = OVERBURDEN NORMALIZED UNDRAINED SHEAR STRENGTH
PHI = OVERBURDEN NORMALIZED EQUIVALENT FRICTION ANGLE

HOLGUIN, FAHAN & ASSOCIATES, INC.

Interpretations based on: Robertson and Campanella, 1989.

SOUNDING : HLA-5

DEPTH (m)	DEPTH (ft)	TIP RESISTANCE (tsf)	FRICTION RATIO (%)	SOIL BEHAVIOR TYPE	N(60)	N1(60)	Dr (%)	Su (tsf)	PHI (Degrees)
6.300	20.67	15.11	4.46	CLAY	15	17		.9	
6.450	21.16	16.29	5.30	CLAY	16	18		1.0	
6.600	21.65	16.55	5.41	CLAY	17	19		1.0	
6.750	22.15	15.83	5.07	CLAY	16	18		1.0	
6.900	22.64	17.29	5.29	CLAY	17	19		1.1	
7.050	23.13	18.89	5.10	CLAY	19	21		1.2	
7.200	23.62	19.67	4.11	CLAY to SILTY CLAY	13	14		1.2	
7.350	24.11	11.71	2.64	CLAY to SILTY CLAY	8	8		.8	
7.500	24.61	14.74	2.65	CLAYEY SILT to SILTY CLAY	7	8		.9	
7.650	25.10	27.75	3.23	CLAYEY SILT to SILTY CLAY	14	15		1.8	
7.800	25.59	25.83	4.32	CLAY to SILTY CLAY	17	18		1.4	
7.950	26.08	29.64	4.71	CLAY	30	31		1.7	
8.100	26.57	28.53	4.11	CLAY to SILTY CLAY	19	20		1.6	
8.250	27.07	22.84	4.40	CLAY	23	24		1.4	
8.400	27.56	24.11	4.48	CLAY	24	25		1.5	
8.550	28.05	24.96	4.23	CLAY to SILTY CLAY	17	17		1.6	
8.700	28.54	27.13	4.97	CLAY	27	28		1.5	
8.850	29.04	29.66	4.92	CLAY	30	30		1.7	
9.000	29.53	26.49	3.43	CLAYEY SILT to SILTY CLAY	13	13		1.7	
9.150	30.02	26.64	3.47	CLAYEY SILT to SILTY CLAY	13	13		1.7	
9.300	30.51	27.26	4.17	CLAY to SILTY CLAY	18	18		1.5	
9.450	31.00	21.54	3.96	CLAY to SILTY CLAY	14	14		1.3	
9.600	31.50	32.14	3.44	CLAYEY SILT to SILTY CLAY	16	16		2.0	
9.750	31.99	27.62	4.99	CLAY	28	27		1.5	
9.900	32.48	26.24	3.98	CLAY to SILTY CLAY	17	17		1.6	
10.050	32.97	27.07	4.57	CLAY	27	26		1.5	
10.200	33.46	25.09	3.97	CLAY to SILTY CLAY	17	16		1.5	
10.350	33.96	32.57	3.15	CLAYEY SILT to SILTY CLAY	16	16		2.0	
10.500	34.45	48.97	3.64	CLAYEY SILT to SILTY CLAY	24	23		2.8	
10.650	34.94	33.57	3.96	CLAY to SILTY CLAY	22	21		1.9	
10.800	35.43	36.92	3.48	CLAYEY SILT to SILTY CLAY	18	17		2.3	
10.950	35.93	27.62	3.33	CLAYEY SILT to SILTY CLAY	14	13		1.7	
11.100	36.42	21.20	3.33	CLAYEY SILT to SILTY CLAY	11	10		1.3	
11.250	36.91	17.00	2.97	CLAYEY SILT to SILTY CLAY	9	8		1.0	
11.400	37.40	18.08	2.74	CLAYEY SILT to SILTY CLAY	9	8		1.1	
11.550	37.89	35.59	3.16	CLAYEY SILT to SILTY CLAY	18	16		2.2	
11.700	38.39	25.13	3.88	CLAY to SILTY CLAY	17	15		1.5	
11.850	38.88	14.64	2.55	CLAYEY SILT to SILTY CLAY	7	7		.8	
12.000	39.37	11.96	2.13	CLAYEY SILT to SILTY CLAY	6	5		.8	
12.150	39.86	16.36	3.10	CLAY to SILTY CLAY	11	10		.9	
12.300	40.35	14.89	3.29	CLAY to SILTY CLAY	10	9		.8	
12.450	40.85	13.28	3.23	CLAY to SILTY CLAY	9	8		.7	
12.600	41.34	11.96	3.11	CLAY to SILTY CLAY	8	7		.6	
12.750	41.83	14.74	3.33	CLAY to SILTY CLAY	10	9		.8	
12.900	42.32	17.53	3.51	CLAY to SILTY CLAY	12	10		1.0	
13.050	42.81	19.35	3.83	CLAY to SILTY CLAY	13	11		1.1	
13.200	43.31	23.65	4.52	CLAY	24	21		1.4	
13.350	43.80	26.51	3.88	CLAY to SILTY CLAY	18	15		1.6	
13.500	44.29	23.39	4.03	CLAY to SILTY CLAY	16	14		1.4	
13.650	44.78	22.94	3.96	CLAY to SILTY CLAY	15	13		1.4	

*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 pcf
ASSUMED DEPTH OF WATER TABLE = 8.8 ft
N(60) = EQUIVALENT SPT VALUE (60% Energy)
N1(60) = OVERBURDEN NORMALIZED EQUIVALENT SPT VALUE (60% Energy)
Dr = OVERBURDEN NORMALIZED EQUIVALENT RELATIVE DENSITY
Su = OVERBURDEN NORMALIZED UNDRAINED SHEAR STRENGTH
PHI = OVERBURDEN NORMALIZED EQUIVALENT FRICTION ANGLE

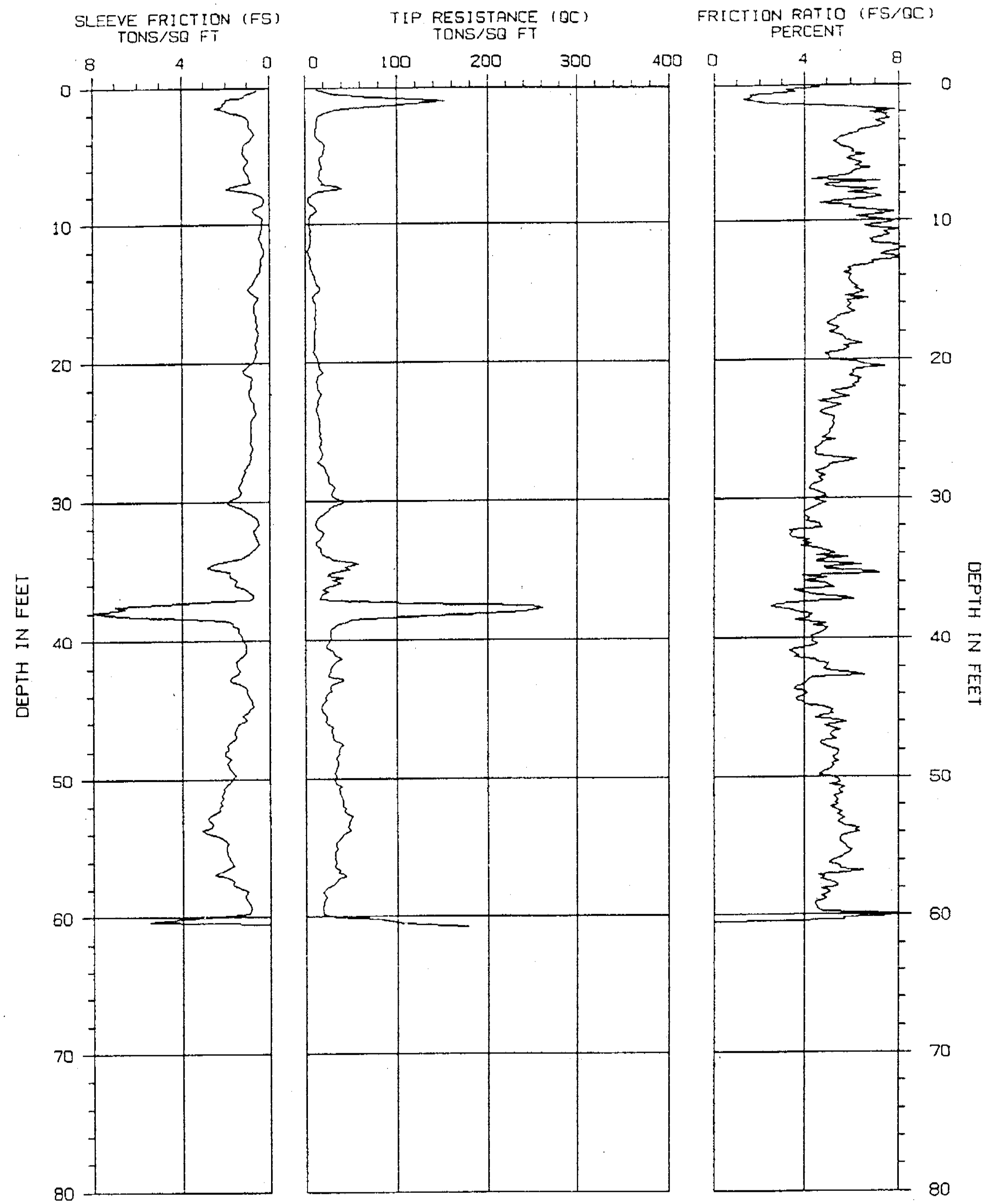
SOUNDING : HLA-5

DEPTH (m)	DEPTH (ft)	TIP RESISTANCE (tsf)	FRICTION RATIO (%)	SOIL BEHAVIOR TYPE	N(60)	N1(60)	Dr (%)	Su (tsf)	PHI (Degrees)
13.800	45.28	21.54	3.91	CLAY to SILTY CLAY	14	12		1.3	
13.950	45.77	33.93	3.37	CLAYEY SILT to SILTY CLAY	17	15		2.1	
14.100	46.26	52.77	4.27	CLAYEY SILT to SILTY CLAY	26	23		3.0	
14.250	46.75	29.57	3.76	CLAYEY SILT to SILTY CLAY	15	13		1.8	
14.400	47.24	38.64	4.03	CLAYEY SILT to SILTY CLAY	19	16		2.1	
14.550	47.74	35.18	3.98	CLAYEY SILT to SILTY CLAY	18	15		1.9	
14.700	48.23	33.29	4.22	CLAY to SILTY CLAY	22	19		1.8	
14.850	48.72	33.46	4.04	CLAY to SILTY CLAY	22	19		1.8	
15.000	49.21	38.24	3.92	CLAYEY SILT to SILTY CLAY	19	16		2.1	
15.150	49.70	41.17	4.20	CLAY to SILTY CLAY	27	23		2.3	
15.300	50.20	43.11	4.08	CLAYEY SILT to SILTY CLAY	22	18		2.4	
15.450	50.69	44.36	3.85	CLAYEY SILT to SILTY CLAY	22	18		2.4	
15.600	51.18	46.06	4.98	CLAY	46	38		2.5	
15.750	51.67	51.58	4.83	CLAY to SILTY CLAY	34	28		2.9	
15.900	52.17	53.94	4.58	CLAY to SILTY CLAY	36	29		3.0	
16.050	52.66	51.67	4.29	CLAYEY SILT to SILTY CLAY	26	21		2.9	
16.200	53.15	49.82	4.07	CLAYEY SILT to SILTY CLAY	25	20		2.8	
16.350	53.64	54.98	3.81	CLAYEY SILT to SILTY CLAY	27	22		3.1	
16.500	54.13	52.20	3.92	CLAYEY SILT to SILTY CLAY	26	21		2.9	
16.650	54.63	50.41	4.10	CLAYEY SILT to SILTY CLAY	25	20		2.8	
16.800	55.12	46.16	4.41	CLAY to SILTY CLAY	31	24		2.5	
16.950	55.61	42.60	4.11	CLAYEY SILT to SILTY CLAY	21	17		2.3	
17.100	56.10	42.87	3.95	CLAYEY SILT to SILTY CLAY	21	17		2.3	
17.250	56.59	43.11	3.97	CLAYEY SILT to SILTY CLAY	22	17		2.4	
17.400	57.09	45.63	4.14	CLAYEY SILT to SILTY CLAY	23	18		2.5	
17.550	57.58	46.61	3.99	CLAYEY SILT to SILTY CLAY	23	18		2.6	
17.700	58.07	46.40	4.61	CLAY to SILTY CLAY	31	24		2.5	
17.850	58.56	43.42	4.65	CLAY to SILTY CLAY	29	22		2.4	
18.000	59.06	45.40	4.12	CLAYEY SILT to SILTY CLAY	23	18		2.5	
18.150	59.55	45.87	3.84	CLAYEY SILT to SILTY CLAY	23	18		2.5	

*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 pcf
ASSUMED DEPTH OF WATER TABLE = 8.8 ft
N(60) = EQUIVALENT SPT VALUE (60% Energy)
N1(60) = OVERBURDEN NORMALIZED EQUIVALENT SPT VALUE (60% Energy)
Dr = OVERBURDEN NORMALIZED EQUIVALENT RELATIVE DENSITY
Su = OVERBURDEN NORMALIZED UNDRAINED SHEAR STRENGTH
PHI = OVERBURDEN NORMALIZED EQUIVALENT FRICTION ANGLE

HOLGUIN, FAHAN & ASSOCIATES, INC.

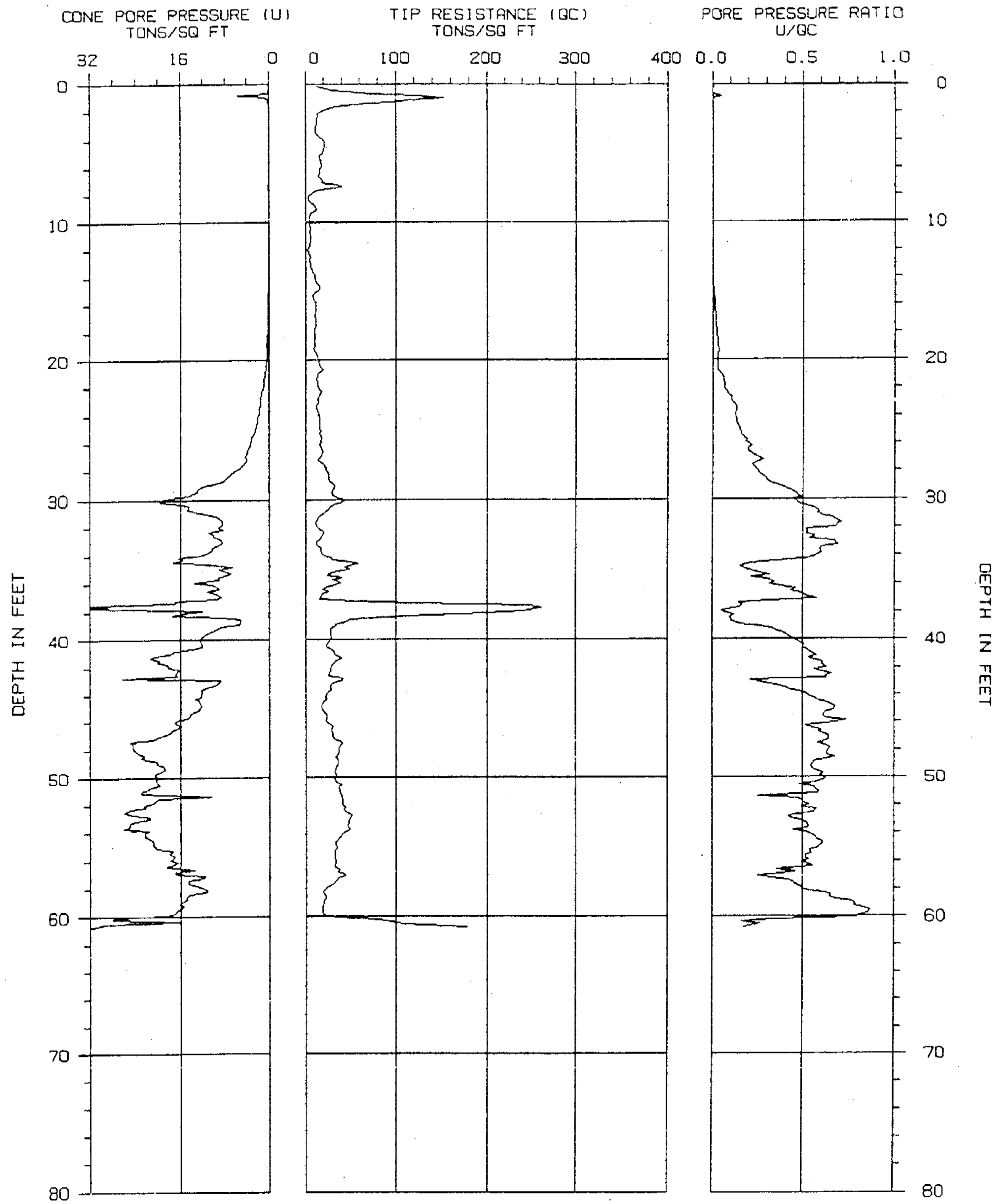
Interpretations based on: Robertson and Campanella, 1989.



TIP RESISTANCE NOT CORRECTED FOR END AREA EFFECT

CONE PENETRATION TEST	SOUNDING NUMBER: HLA-6
PROJECT NAME : HLA/BISHOP RH 1	CONE/RIG : 491/BH.VO/R#4
PROJECT NUMBER : 50044.1	DATE/TIME: 04-13-00 11:55

HFA



TIP RESISTANCE NOT CORRECTED FOR END AREA EFFECT

CONE PENETRATION TEST	SOUNDING NUMBER: HLA-6
PROJECT NAME : HLA/BISHOP RH 1	CONE/RIG : 491/BH.VO/R#4
PROJECT NUMBER : 50044.1	DATE/TIME: 04-13-00 11:55

HFA

CPT INTERPRETATIONS

SOUNDING : HLA-6
PROJECT : HLA/BISHOP RH 1
DATE/TIME: 04-13-00 11:55

PROJECT No.: 50044.1
CONE/RIG : 491/BH,VO/R#4

DEPTH (m)	DEPTH (ft)	TIP RESISTANCE (tsf)	FRICTION RATIO (%)	SOIL BEHAVIOR TYPE	N(60)	N1(60)	Dr (%)	Su (tsf)	PHI (Degrees)
.150	.49	30.61	3.59	CLAYEY SILT to SILTY CLAY	15	24		2.0	
.300	.98	151.96	1.32	SAND to SILTY SAND	38	61	88		
.450	1.48	54.64	4.58	CLAY to SILTY CLAY	36	58		3.2	
.600	1.97	18.63	6.82	CLAY	19	30		1.2	
.750	2.46	12.51	7.59	CLAY	13	20		.8	
.900	2.95	11.83	7.27	CLAY	12	19		.8	
1.050	3.44	11.41	6.31	CLAY	11	18		.7	
1.200	3.94	19.31	5.44	CLAY	19	31		1.3	
1.350	4.43	21.67	5.49	CLAY	22	35		1.3	
1.500	4.92	19.33	6.05	CLAY	19	31		1.1	
1.650	5.41	16.89	5.80	CLAY	17	27		1.1	
1.800	5.91	18.23	6.20	CLAY	18	29		1.2	
1.950	6.40	16.17	6.06	CLAY	16	26		1.1	
2.100	6.89	19.46	4.32	CLAY	19	31		1.3	
2.250	7.38	40.39	4.88	CLAY to SILTY CLAY	27	42		2.4	
2.400	7.87	6.84	5.85	CLAY	7	10		.4	
2.550	8.37	4.02	6.47	CLAY	4	6		.2	
2.700	8.86	11.98	6.01	CLAY	12	17		.8	
2.850	9.35	6.42	7.79	CLAY	6	9		.4	
3.000	9.84	4.91	6.92	CLAY	5	7		.3	
3.150	10.33	5.48	6.57	CLAY	5	7		.3	
3.300	10.83	5.97	7.37	CLAY	6	8		.4	
3.450	11.32	6.05	6.78	CLAY	6	8		.4	
3.600	11.81	3.87	8.01	ORGANIC MATERIAL	4	5		.3	
3.750	12.30	4.42	7.47	CLAY	4	5		.2	
3.900	12.80	4.78	8.37	ORGANIC MATERIAL	5	6		.4	
4.050	13.29	7.35	6.12	CLAY	7	9		.4	
4.200	13.78	10.20	5.69	CLAY	10	12		.6	
4.350	14.27	13.00	5.92	CLAY	13	15		.8	
4.500	14.76	15.66	6.26	CLAY	16	18		1.0	
4.650	15.26	8.63	6.26	CLAY	9	10		.5	
4.800	15.75	11.47	5.84	CLAY	11	13		.7	
4.950	16.24	12.02	5.82	CLAY	12	14		.7	
5.100	16.73	10.92	5.86	CLAY	11	12		.7	
5.250	17.22	11.49	5.13	CLAY	11	13		.7	
5.400	17.72	10.81	5.46	CLAY	11	12		.7	
5.550	18.21	10.37	5.59	CLAY	10	11		.6	
5.700	18.70	10.73	6.06	CLAY	11	12		.6	
5.850	19.19	9.79	5.92	CLAY	10	11		.6	
6.000	19.69	13.41	5.07	CLAY	13	15		.8	
6.150	20.18	15.38	6.18	CLAY	15	17		1.0	

*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 pcf
ASSUMED DEPTH OF WATER TABLE = 12.3 ft
N(60) = EQUIVALENT SPT VALUE (60% Energy)
N1(60) = OVERBURDEN NORMALIZED EQUIVALENT SPT VALUE (60% Energy)
Dr = OVERBURDEN NORMALIZED EQUIVALENT RELATIVE DENSITY
Su = OVERBURDEN NORMALIZED UNDRAINED SHEAR STRENGTH
PHI = OVERBURDEN NORMALIZED EQUIVALENT FRICTION ANGLE

HOLGUIN, FAHAN & ASSOCIATES, INC.

Interpretations based on: Robertson and Campanella, 1989.

SOUNDING : HLA-6

DEPTH (m)	DEPTH (ft)	TIP RESISTANCE (tsf)	FRICTION RATIO (%)	SOIL BEHAVIOR TYPE	N(60)	N1(60)	Dr (%)	Su (tsf)	PHI (Degrees)
6.300	20.67	19.10	6.23	CLAY	19	20		1.1	
6.450	21.16	13.49	5.93	CLAY	13	14		.8	
6.600	21.65	13.32	6.31	CLAY	13	14		.8	
6.750	22.15	16.46	5.77	CLAY	16	17		1.0	
6.900	22.64	14.51	5.93	CLAY	15	15		.9	
7.050	23.13	14.17	5.08	CLAY	14	15		.9	
7.200	23.62	13.19	4.78	CLAY	13	14		.8	
7.350	24.11	15.44	5.31	CLAY	15	16		.9	
7.500	24.61	16.10	5.28	CLAY	16	16		1.0	
7.650	25.10	16.57	5.07	CLAY	17	17		1.0	
7.800	25.59	17.72	4.74	CLAY	18	18		1.1	
7.950	26.08	16.32	4.78	CLAY	16	16		1.0	
8.100	26.57	19.18	4.54	CLAY	19	19		1.2	
8.250	27.07	16.15	5.39	CLAY	16	16		1.0	
8.400	27.56	21.12	5.07	CLAY	21	21		1.2	
8.550	28.05	25.13	4.50	CLAY to SILTY CLAY	17	16		1.4	
8.700	28.54	26.47	4.65	CLAY	26	26		1.5	
8.850	29.04	32.27	4.37	CLAY to SILTY CLAY	22	21		1.8	
9.000	29.53	29.08	4.54	CLAY to SILTY CLAY	19	19		1.6	
9.150	30.02	44.15	4.35	CLAY to SILTY CLAY	29	28		2.5	
9.300	30.51	27.89	4.66	CLAY	28	26		1.5	
9.450	31.00	19.89	3.97	CLAY to SILTY CLAY	13	13		1.2	
9.600	31.50	12.56	4.22	CLAY	13	12		.7	
9.750	31.99	13.47	4.68	CLAY	13	13		.8	
9.900	32.48	19.59	3.47	CLAY to SILTY CLAY	13	12		1.2	
10.050	32.97	12.58	4.21	CLAY	13	12		.7	
10.200	33.46	17.29	3.88	CLAY to SILTY CLAY	12	11		1.0	
10.350	33.96	21.75	5.33	CLAY	22	20		1.2	
10.500	34.45	49.14	4.62	CLAY to SILTY CLAY	33	30		2.8	
10.650	34.94	49.46	4.85	CLAY to SILTY CLAY	33	30		2.8	
10.800	35.43	25.07	7.18	CLAY	25	23		1.4	
10.950	35.93	38.98	4.03	CLAYEY SILT to SILTY CLAY	19	18		2.2	
11.100	36.42	19.67	5.29	CLAY	20	18		1.2	
11.250	36.91	16.66	4.62	CLAY	17	15		1.0	
11.400	37.40	117.55	4.16	*VERY STIFF FINE GRAINED	100	100			
11.550	37.89	240.66	3.51	*SAND to CLAYEY SAND	100	100			
11.700	38.39	89.40	4.16	CLAYEY SILT to SILTY CLAY	45	39		5.1	
11.850	38.88	33.89	4.93	CLAY	34	30		1.9	
12.000	39.37	28.28	4.95	CLAY	28	25		1.5	
12.150	39.86	28.72	4.32	CLAY to SILTY CLAY	19	17		1.6	
12.300	40.35	23.69	4.56	CLAY	24	20		1.4	
12.450	40.85	31.59	3.32	CLAYEY SILT to SILTY CLAY	16	14		2.0	
12.600	41.34	40.03	3.55	CLAYEY SILT to SILTY CLAY	20	17		2.5	
12.750	41.83	30.06	5.06	CLAY	30	26		1.6	
12.900	42.32	27.55	5.23	CLAY	28	23		1.5	
13.050	42.81	41.38	4.35	CLAY to SILTY CLAY	28	23		2.3	
13.200	43.31	28.13	3.95	CLAY to SILTY CLAY	19	16		1.7	
13.350	43.80	25.45	4.05	CLAY to SILTY CLAY	17	14		1.5	
13.500	44.29	23.33	3.64	CLAY to SILTY CLAY	16	13		1.4	
13.650	44.78	18.63	4.03	CLAY to SILTY CLAY	12	10		1.1	

*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 pcf
ASSUMED DEPTH OF WATER TABLE = 12.3 ft
N(60) = EQUIVALENT SPT VALUE (60% Energy)
N1(60) = OVERBURDEN NORMALIZED EQUIVALENT SPT VALUE (60% Energy)
Dr = OVERBURDEN NORMALIZED EQUIVALENT RELATIVE DENSITY
Su = OVERBURDEN NORMALIZED UNDRAINED SHEAR STRENGTH
PHI = OVERBURDEN NORMALIZED EQUIVALENT FRICTION ANGLE

SOUNDING : HLA-6

DEPTH (m)	DEPTH (ft)	TIP RESISTANCE (tsf)	FRICTION RATIO (%)	SOIL BEHAVIOR TYPE	N(60)	N1(60)	Dr (%)	Su (tsf)	PHI (Degrees)
13.800	45.28	21.95	5.15	CLAY	22	18		1.1	
13.950	45.77	23.60	4.49	CLAY	24	19		1.4	
14.100	46.26	30.74	4.91	CLAY	31	25		1.7	
14.250	46.75	30.06	5.26	CLAY	30	25		1.6	
14.400	47.24	32.25	5.40	CLAY	32	26		1.7	
14.550	47.74	38.50	4.91	CLAY	39	31		2.1	
14.700	48.23	37.07	5.48	CLAY	37	30		2.0	
14.850	48.72	35.42	5.28	CLAY	35	29		1.9	
15.000	49.21	34.91	5.30	CLAY	35	28		1.9	
15.150	49.70	33.16	4.73	CLAY	33	27		1.8	
15.300	50.20	32.40	5.46	CLAY	32	26		1.7	
15.450	50.69	37.48	5.74	CLAY	37	30		2.0	
15.600	51.18	39.37	5.66	CLAY	39	31		2.2	
15.750	51.67	41.60	5.48	CLAY	42	33		2.3	
15.900	52.17	44.74	5.16	CLAY	45	35		2.5	
16.050	52.66	51.03	5.41	CLAY	51	40		2.8	
16.200	53.15	48.23	5.52	CLAY	48	38		2.7	
16.350	53.64	49.12	6.35	CLAY	49	38		2.7	
16.500	54.13	40.54	5.92	CLAY	41	31		2.2	
16.650	54.63	34.08	5.58	CLAY	34	26		1.8	
16.800	55.12	34.40	5.81	CLAY	34	26		1.8	
16.950	55.61	32.82	5.73	CLAY	33	25		1.8	
17.100	56.10	33.18	5.15	CLAY	33	25		1.8	
17.250	56.59	37.82	5.55	CLAY	38	29		2.0	
17.400	57.09	44.49	4.61	CLAY to SILTY CLAY	30	22		2.4	
17.550	57.58	31.78	5.29	CLAY	32	24		1.7	
17.700	58.07	21.86	4.76	CLAY	22	16		1.2	
17.850	58.56	22.82	4.78	CLAY	23	17		1.2	
18.000	59.06	20.44	4.50	CLAY	20	15		1.1	
18.150	59.55	18.91	4.60	CLAY	19	14		1.0	
18.300	60.04	34.29	8.78	CLAY	34	25		1.8	
18.450	60.53	109.39	*****		0	0			.0

*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 pcf
ASSUMED DEPTH OF WATER TABLE = 12.3 ft
N(60) = EQUIVALENT SPT VALUE (60% Energy)
N1(60) = OVERBURDEN NORMALIZED EQUIVALENT SPT VALUE (60% Energy)
Dr = OVERBURDEN NORMALIZED EQUIVALENT RELATIVE DENSITY
Su = OVERBURDEN NORMALIZED UNDRAINED SHEAR STRENGTH
PHI = OVERBURDEN NORMALIZED EQUIVALENT FRICTION ANGLE

Interpretations based on: Robertson and Campanella, 1989.

DEPTH IN FEET	DRY DENSITY lb/ft^3	MOISTURE CONTENT % DRY WEIGHT	BLOW COUNT	SAMPLE	USCS	DESCRIPTION
0					CH	Black, silty clay, roots, medium stiff, dry, desiccated.
	113.2	15.2	26	1-2		
5			18	1-5	ML	Brown, clayey sandy silt, medium dense, dry, caliche, small seep holes.
10			20	1-10		
15			20	1-15	CL	Brown to dark brown, silty clay, stiff, damp.
20			23	1-20		
25			20	1-25	SM	Brown to light brown, silty sand, caliche, medium dense, damp. Silty clay between 28 - 31 ft.
30			21	1-30		Bottom of boring at 30 ft.

J.H. KLEINFELDER & ASSOCIATES
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PREPARED BY: PLC DATE: 8/81

CHECKED BY: DCM DATE: 8/81

CHEVRON PARK
SAN RAMON, CALIFORNIA

LOG OF BORING NO. B-1

PROJECT NO. B-1109-1

PLATE A-2

DEPTH IN FEET	DRY DENSITY lb/ft^3	MOISTURE CONTENT % DRY WEIGHT	BLOW COUNT	SAMPLE	USCS	DESCRIPTION
0					CH	Black, silty clay, desiccated, roots to 3 ft, dry, stiff.
			35	2-2		
5	105.1	16.8	16	2-5	ML	Brown, sandy clayey silt, dense, dry, caliche.
10	111.1	5.0	23	2-10	SM	Brown, silty sand, fine to medium grained, medium dense, dry, with fine gravel.
15	98.5	23.5	18	2-15	CL/CH	Dark brown, mottled gray, silty clay, medium stiff, damp.
20			18	2-20		
25			21	2-25		Color change to greenish gray.
30			22	2-30		Bottom of boring at 30 ft.

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CHEVRON PARK
SAN RAMON, CALIFORNIA
LOG OF BORING NO. B-2

PROJECT NO. B-1109-1

PLATE A-3

Depth (ft)	DRY DENSITY lb/ft³	MOISTURE CONTENT % DRY WEIGHT	BLOW COUNT	SAMPLE	USCS	DESCRIPTION
0					CH	Black, silty clay, dry, desiccated roots, stiff.
			26	3-2		
						Brown, clayey sandy silt, dry, caliche, medium dense.
5	95.3	17.6	16	3-2		
10			33	3-10	ML/CL	
15						Fine sand lenses with gravel at 15 ft.
	87.4	9.3	18	3-15		
						Black, silty clay, damp, medium stiff.
20			25	3-20	CL	▼ Color changes to dark brown.
25					CL	Brown, clayey sandy silt, moist, medium dense.
			21	3-25		
					CL	Black, silty clay, stiff, damp. Color changes to greenish gray.
30			18	3-30		Bottom of boring at 30 ft.

DEPTH IN FEET

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CHEVRON PARK
SAN RAMON, CALIFORNIA

LOG OF BORING NO. B-3

PROJECT NO. B-1109-1

PLATE A-4

DEPTH IN FEET	DRY DENSITY lb/ft³	MOISTURE CONTENT % DRY WEIGHT	BLOW COUNT	SAMPLE	USCS	DESCRIPTION
0					CH	Black, silty clay, dry, roots, desiccated, stiff.
	101.9	10.6	26	6-2		
5			30	6-5	ML	Brown to light brown, clayey silt, medium dense, dry. 6 inches sand lense at 6 ft.
10			24	6-10		
15	96.9	14.9	19	6-15	CL	Brown to gray, silty clay, stiff, dry.
20			19	6-20		▼ Sand lenses at 24 ft.
25			20	6-25		Wet at 25½ ft.
30			18	6-30	CL	Dark gray, silty clay, stiff, moist.
						Bottom of boring at 30 ft.

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CHEVRON PARK
SAN RAMON, CALIFORNIA
LOG OF BORING NO. B-6

PROJECT NO. B-1109-1

PLATE A-7

Depth (ft)	DRY DENSITY lb/ft³	MOISTURE CONTENT % DRY WEIGHT	BLOW COUNT	SAMPLE	USCS	DESCRIPTION
0					CL	Black, silty clay, desiccated, dry, stiff.
						Dark brown to brown, sandy clayey silt, caliche, stiff,dry.
5			19	17-5		
10	101.4	18.3	25	17-10	ML	
15			36	17-15		
						With pebbles.
20	91.3	30.4	16	17-20	SC	Brown, clayey sand, medium dense, wet.
					CH/CL	Dark grey, silty clay, medium stiff to stiff.
25	99.5	26.4	17	17-25		Color change to greyish brown.
30	110.3	19.0	40	17-30		
35						

DEPTH IN FEET

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CHEVRON PARK
SAN RAMON, CALIFORNIA

LOG OF BORING NO. B-17

PROJECT NO. B-1109-1

PLATE

A-18

DEPTH IN FEET	DRY DENSITY lb/ft^3	MOISTURE CONTENT % DRY WEIGHT	BLOW COUNT	SAMPLE	USCS	DESCRIPTION
35			27	17-35		Brown, fine sand with trace of clay.
40			32	17-40	SM	Sand and gravel at 41-43 ft.
45			34	17-45		
50			38	17-50		Bottom of boring at 50 ft.

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CHEVRON PARK
SAN RAMON, CALIFORNIA
LOG OF BORING NO. B-17 (con't)

PROJECT NO. B-1109-1

PLATE
A-18.1

Depth (feet)	Dry Density lb/ft³	Moisture Content % Dry Weight	Blow Count	Sample	USCS	Description
0					CH	Black, silty clay, stiff, dry, dessiccated.
5			11	19-5	ML	Brown, sandy clayey silt with pebbles, medium dense, dry.
10			10	19-10		Sand at 10½-11½ ft. moist.
15			18	19-15		
20			21	19-20		
					CL	Dark brown, sity clay, medium stiff dry to damp.
25	108.0	20.5	19	19-25		Color change to grey brown.
30			25	19-30		
35					SM	Brown, clayey fine sand medium dense.

DEPTH IN FEET

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CHEVRON PARK
SAN RAMON, CALIFORNIA

LOG OF BORING NO. B-19

PROJECT NO. B-1109-1

PLATE A-20

DEPTH IN FEET	DRY DENSITY lb/ft^3	MOISTURE CONTENT % DRY WEIGHT	BLOW COUNT	SAMPLE	USCS	DESCRIPTION
35			30	19-35	SM	Brown, fine sand and gravel, wet.
40						
45						
					GP	Brown, sand and gravel with clay.
50			37	19-50	CL	Grey-brown, sandy clay with gravel, stiff.
						Bottom of boring at 50 ft.

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PREPARED BY: PLC DATE: 8/81
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CHEVRON PARK
SAN RAMON, CALIFORNIA
LOG OF BORING NO. B-19 (con't)

PROJECT NO. B-1109-1

PLATE A-20.1

DEPTH IN FEET	DRY DENSITY lb/ft³	MOISTURE CONTENT % DRY WEIGHT	BLOW COUNT	SAMPLE	USCS	DESCRIPTION
0					CH	Black, silty clay, stiff, roots, dry, desiccated.
			22	20-2		
5			21	20-5	ML	Brown, sandy clayey silt, dry dense, grading change to sandy silt/ silty sand with fine gravel, caliche.
10			13	20-10		
15	97.1	24.4	15	20-15		
					CL	Brown to dark brown, silty clay, medium stiff, damp.
20			20	20-20		
25			20	20-25	ML	Brown, sandy clay silt, damp to moist, medium dense.
30			17	20-30		Bottom of boring at 30 ft.

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CHEVRON PARK
SAN RAMON, CALIFORNIA

LOG OF BORING NO. B-20

PLATE A-21

PREPARED BY: PLC DATE: 8/81

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PROJECT NO. B-1109-1

DEPTH IN FEET	DRY DENSITY lb/ft3	MOISTURE CONTENT % DRY WEIGHT	BLOW COUNT	SAMPLE	USCS	DESCRIPTION
0					CH	Black, silty clay, desiccated, dry, stiff.
				22-2		Brown, silty clay, caliche, medium stiff, dry.
5				22-5		
10	108.0	33.0		22-10	CH	Trace of sand.
15				22-15		Color change to dark brown with sand.
20				22-20		Bottom of boring at 20 ft.

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CHEVRON PARK
SAN RAMON, CALIFORNIA
LOG OF BORING NO. B-22

PLATE A-23

PREPARED BY: PLC DATE: 8/81
CHECKED BY: DCM DATE: 8/81

PROJECT NO. B-1109-1

DRY DENSITY lb/ft³	MOISTURE CONTENT % DRY WEIGHT	BLOW COUNT	SAMPLE	USCS	DESCRIPTION
			Bulk	CH	Black, silty clay, desiccated dry stiff.
				CL	Dark brown to brown, silty clay, stiff, trace of sand and pebbles below 8 ft.
					Bottom of boring at 10 ft. NFWE

DEPTH IN FEET: 0, 5, 10

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CHEVRON PARK
SAN RAMON, CALIFORNIA
LOG OF BORING NO. B-23

PROJECT NO. B-1109-1

PLATE
A-24

DEPTH IN FEET	DRY DENSITY lb/ft³	MOISTURE CONTENT % DRY WEIGHT	BLOW COUNT	SAMPLE	USCS	DESCRIPTION
0				Bulk	CL	Black silty clay, dry, desiccated, caliche, stiff.
5					ML	Light brown, sandy clayey silt. caliche trace of gravel, dry.
10						Bottom of boring at 10 ft. NFWE

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CHEVRON PARK
SAN RAMON, CALIFORNIA
LOG OF BORING NO. B-26

PROJECT NO. B-1109-1

PLATE
A-27

DEPTH IN FEET	DRY DENSITY lb/ft³	MOISTURE CONTENT % DRY WEIGHT	BLOW COUNT	SAMPLE	USCS	DESCRIPTION
0					CH	Black to dark brown, silty clay, dry, stiff caliche, disiccated.
			14	27-2		
5			19	27-5	ML	Light brown, sandy clayey silt, trace of gravel at 6½, grading to med. sand at 9-10'.
10			13	27-10	CL ML	Mottled brown-grey, silty clay, medium stiff.
15			16	27-15		Grading to clayey silt.
20			15	27-20	SM	Brown, sand, wet.
					CL	Black, silty clay, stiff, damp.
25			16	27-25		Color change to greenish grey.
						Bottom of boring at 25 ft.
30						

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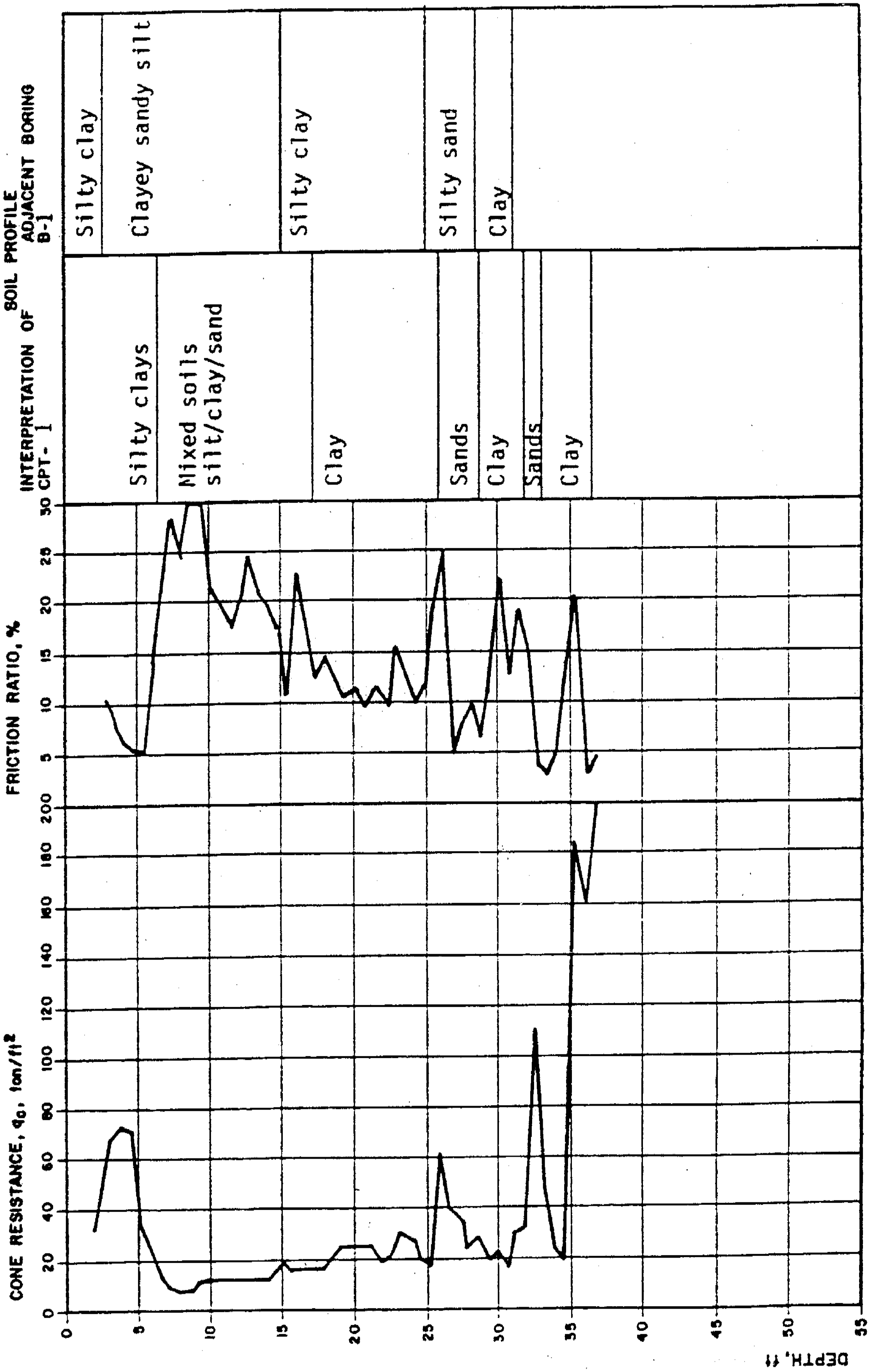
CHEVRON PARK
SAN RAMON, CALIFORNIA
LOG OF BORING NO. B-27

PROJECT NO. B-1109-1

PLATE
A-28



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CHEVRON PARK
SAN RAMON, CALIFORNIA

LOG OF CPT - 1

PLATE

B-3

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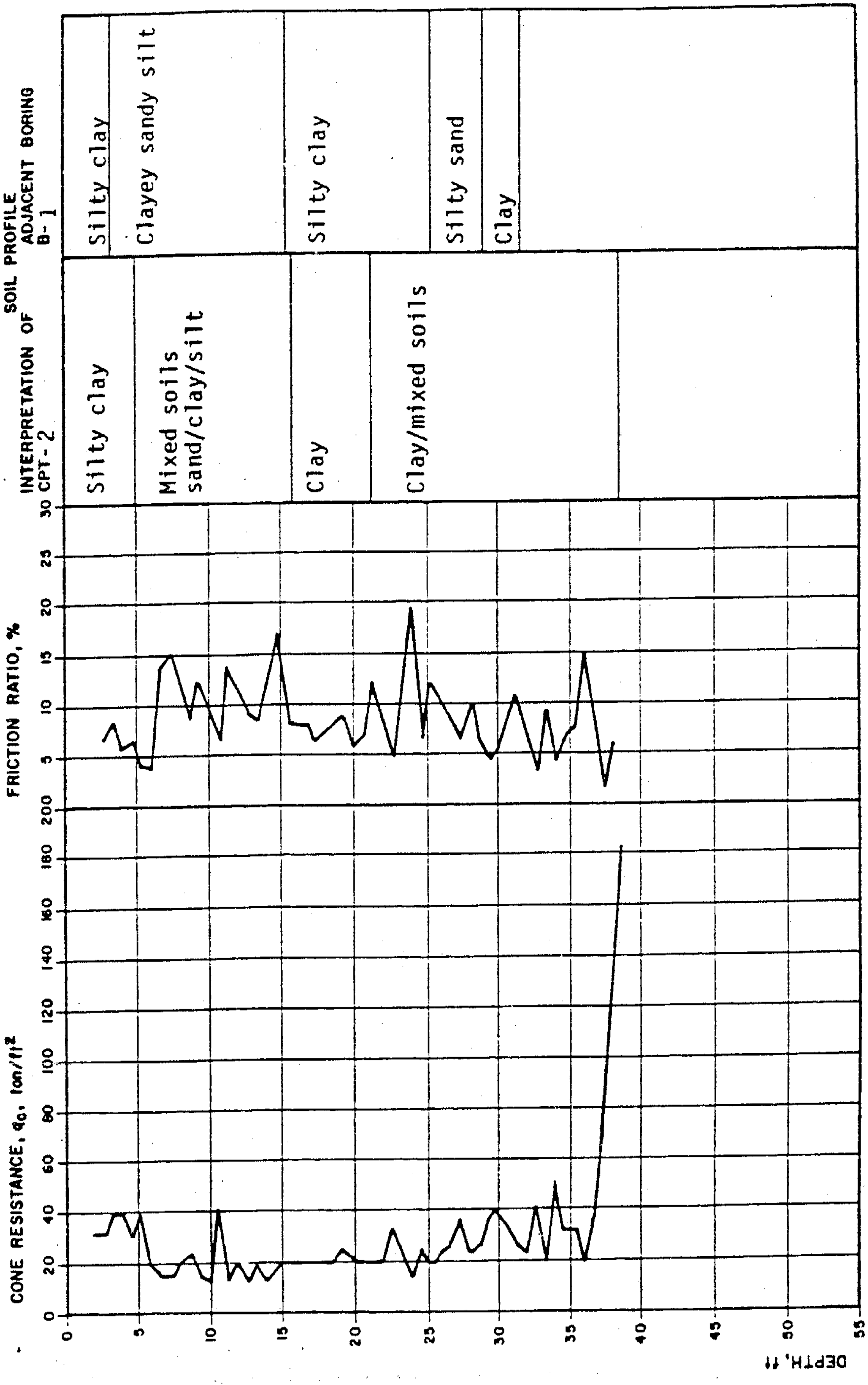

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CHEVRON PARK
SAN RAMON, CALIFORNIA

LOG OF CPT - 2

PLATE
B-4

PREPARED BY: PLC DATE: 8/81
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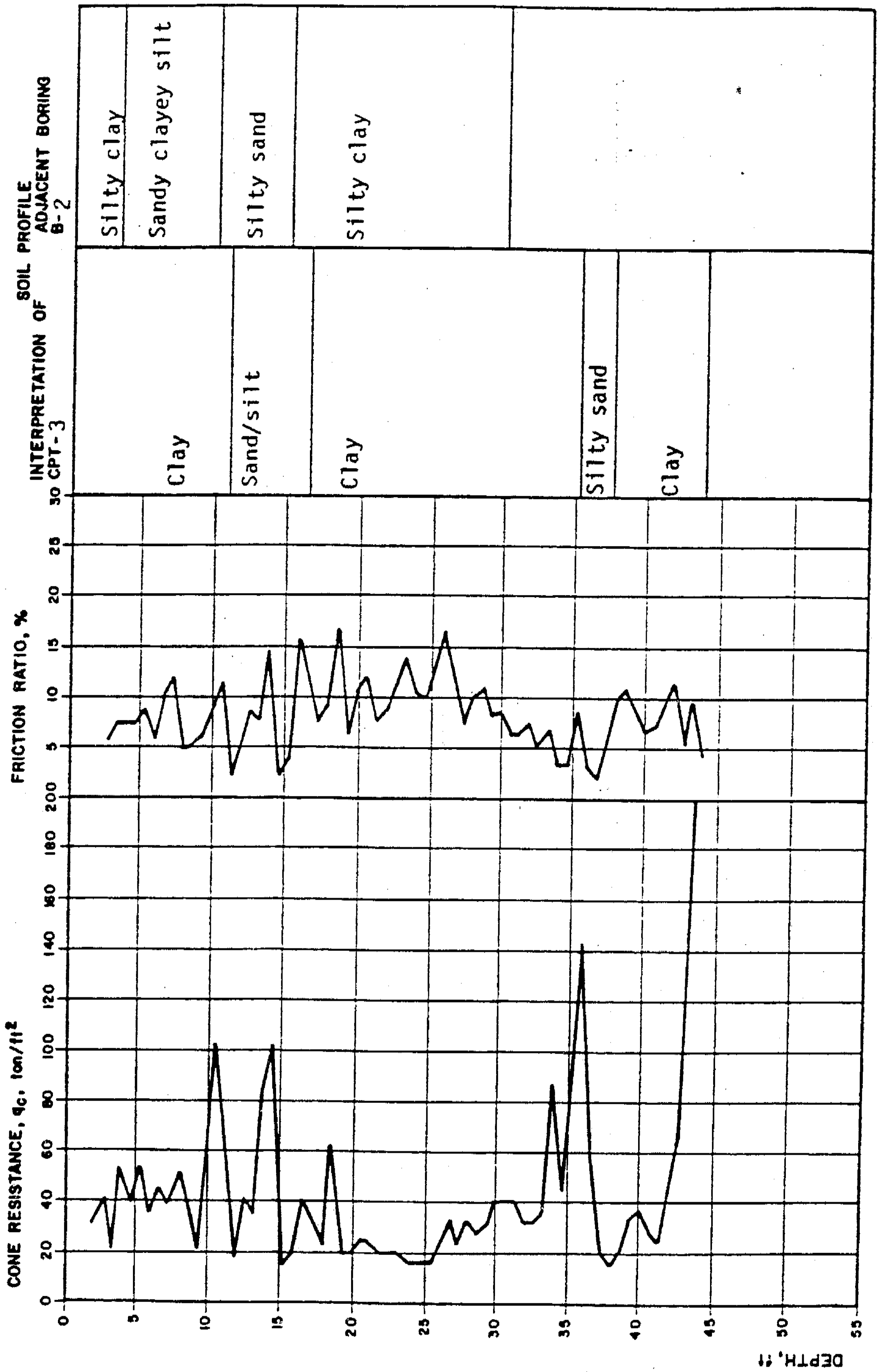

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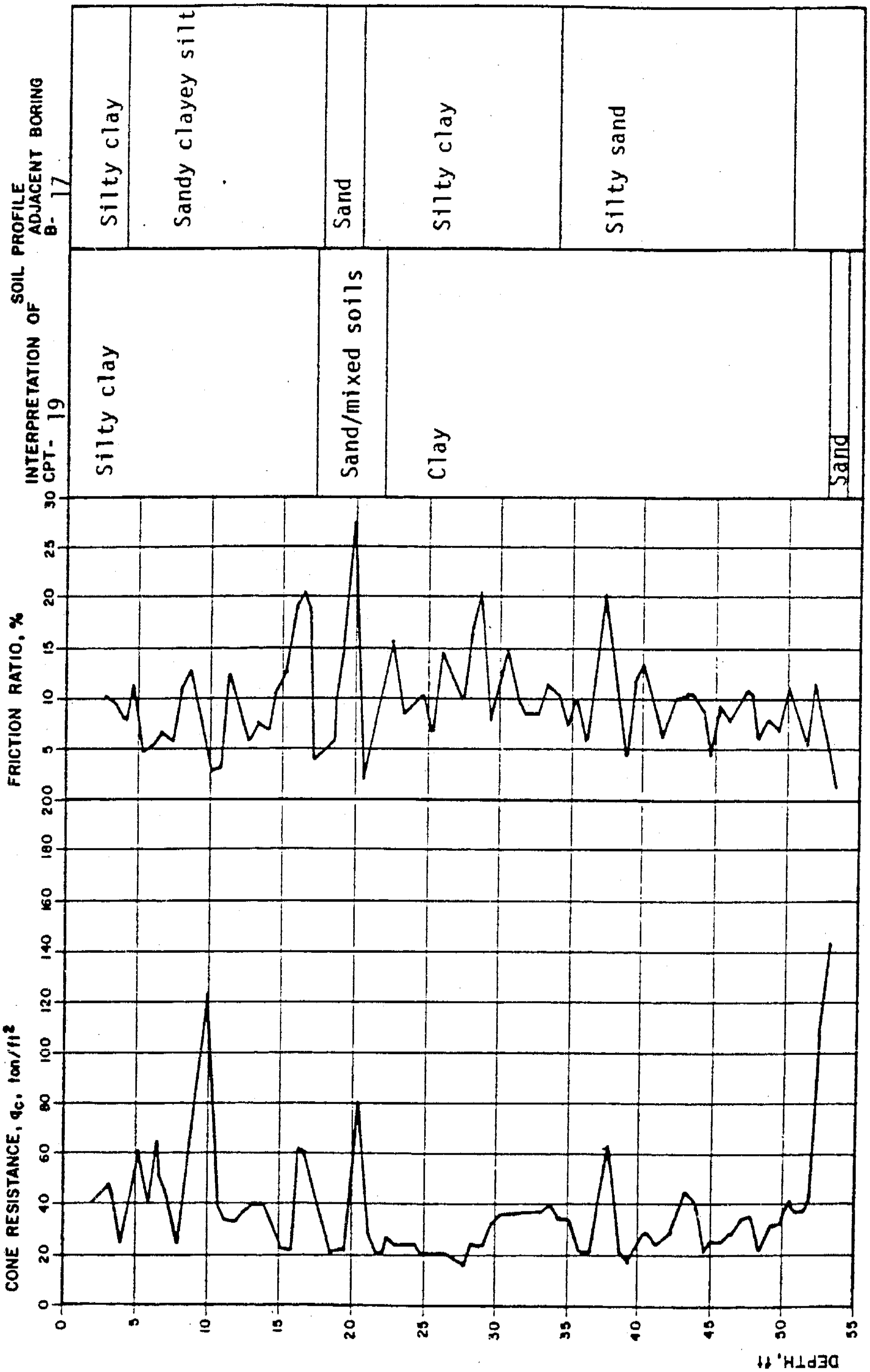
CHEVRON PARK
SAN RAMON, CALIFORNIA

LOG OF CPT - 3

PROJECT NO. B-1109-1

PLATE

B-5



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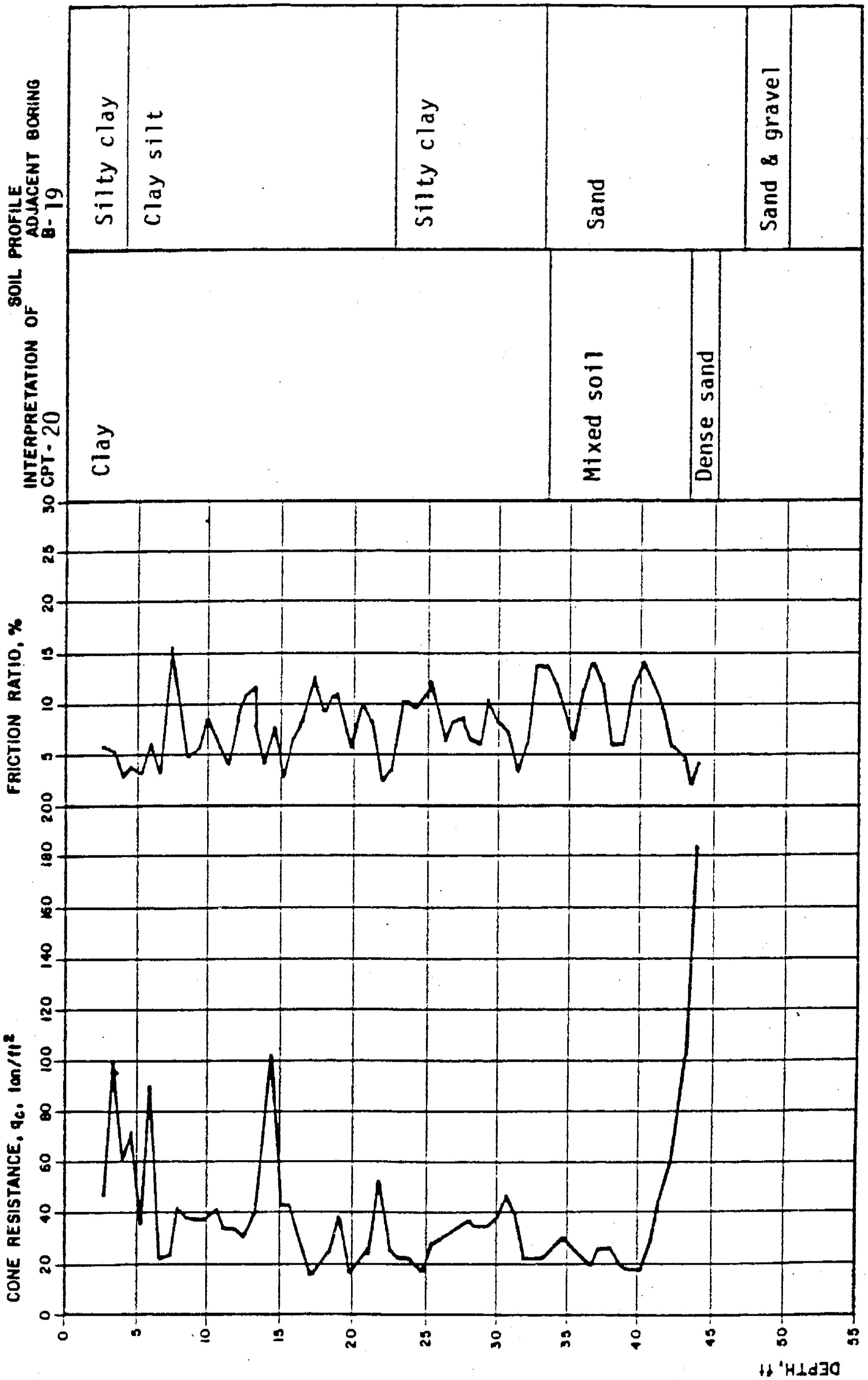
CHEVRON PARK
SAN RAMON, CALIFORNIA

LOG OF CPT-19

PROJECT NO. B-1109-1

PLATE

B-21



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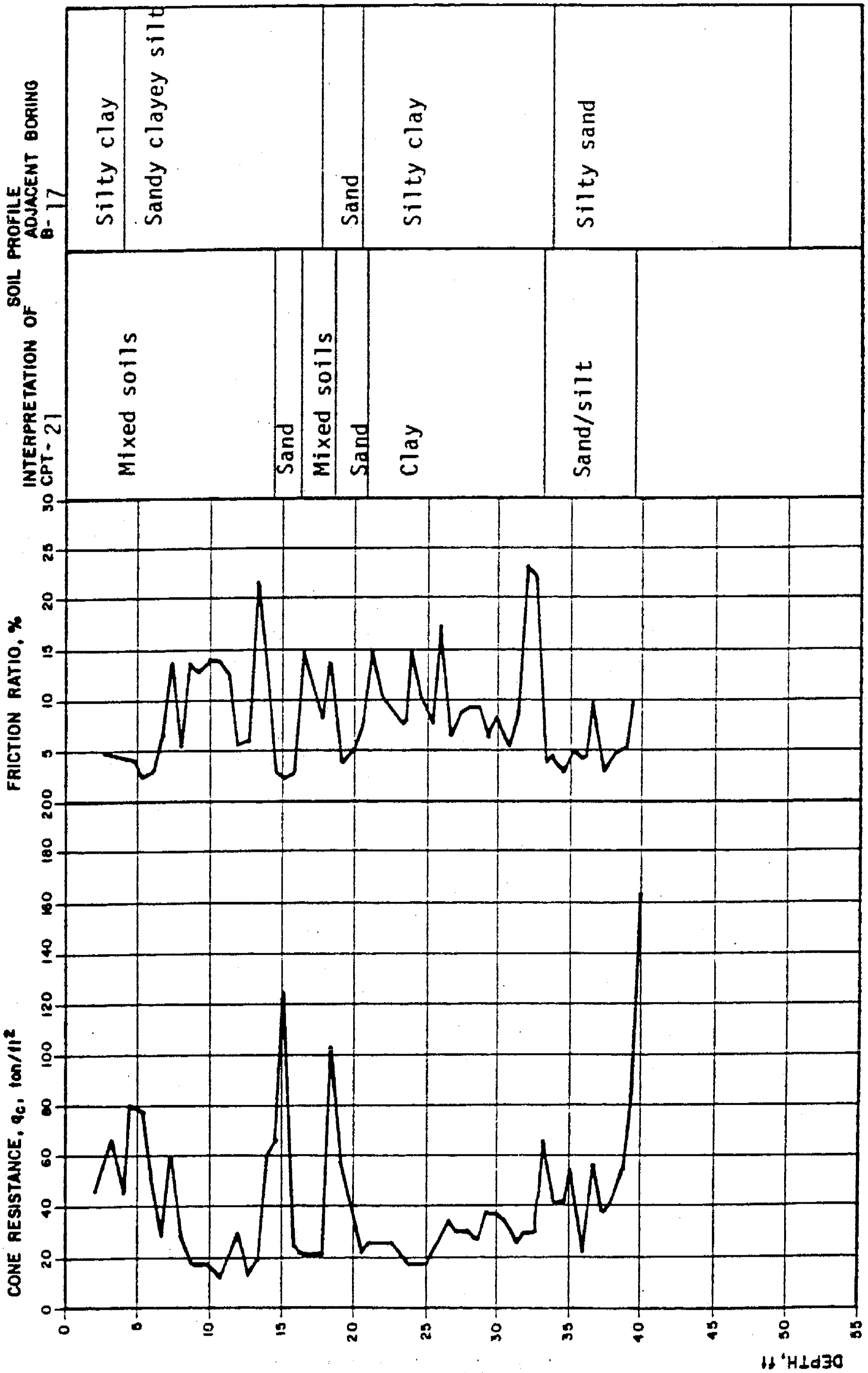
CHEVRON PARK
SAN RAMON, CALIFORNIA

LOG OF CPT-20

PROJECT NO. B-1109-1

PLATE

B-22



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PREPARED BY: PLC DATE: 8/81		
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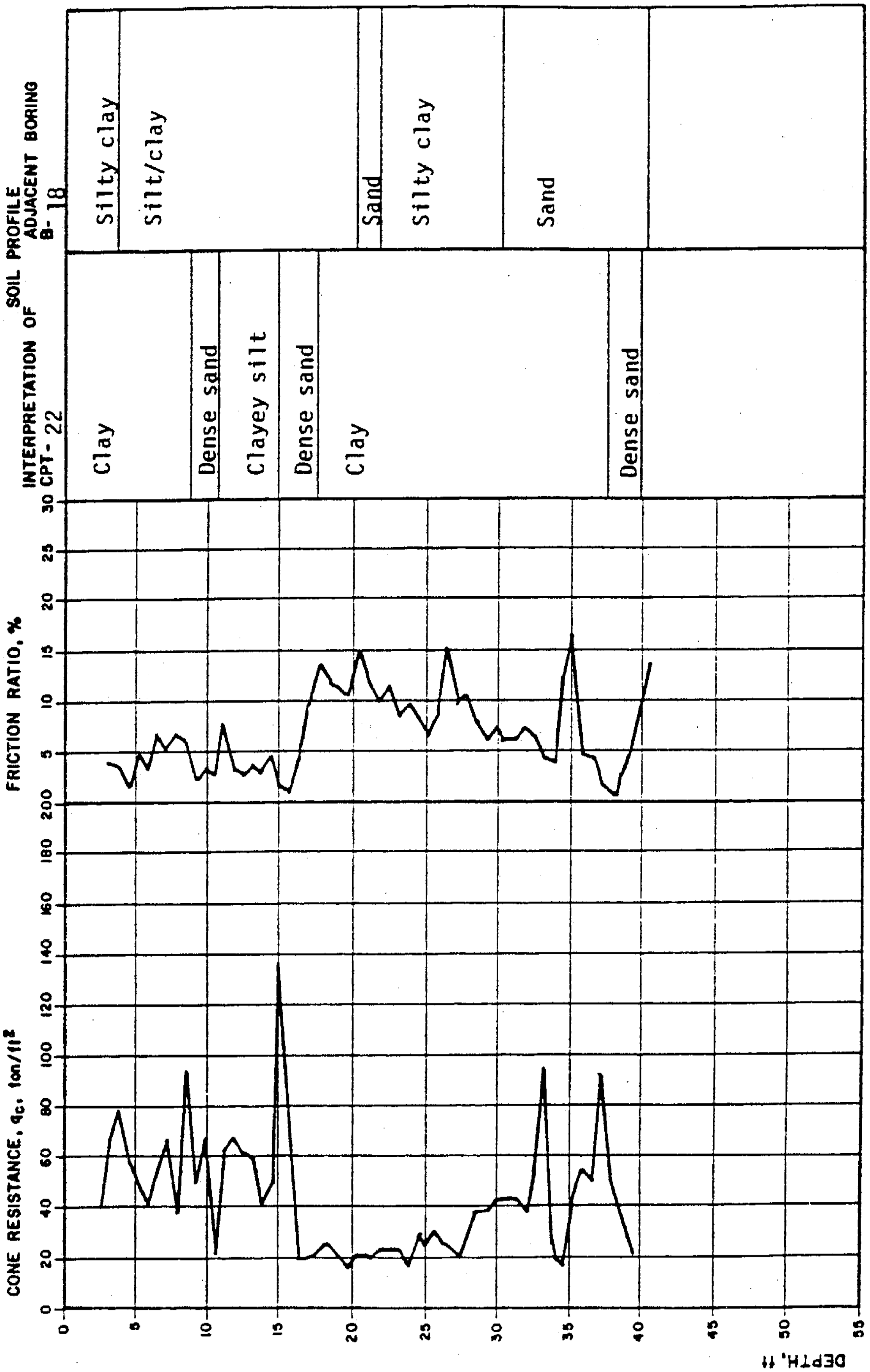

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CHEVRON PARK
SAN RAMON, CALIFORNIA

LOG OF CPT - 22

PLATE

B-24

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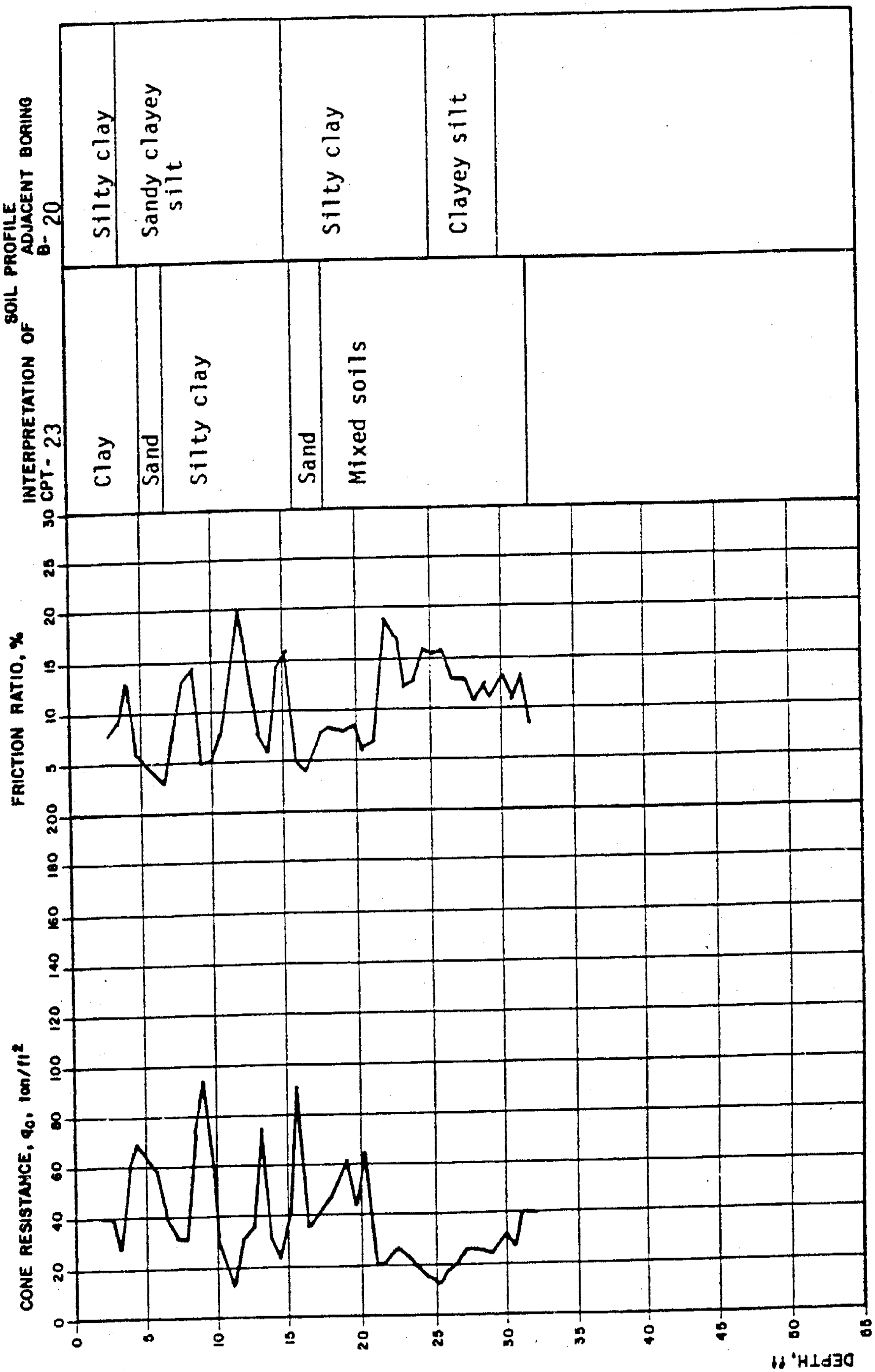
PROJECT NO. B-1109-1



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CHEVRON PARK
SAN RAMON, CALIFORNIA

LOG OF CPT - 23

PLATE

B-25

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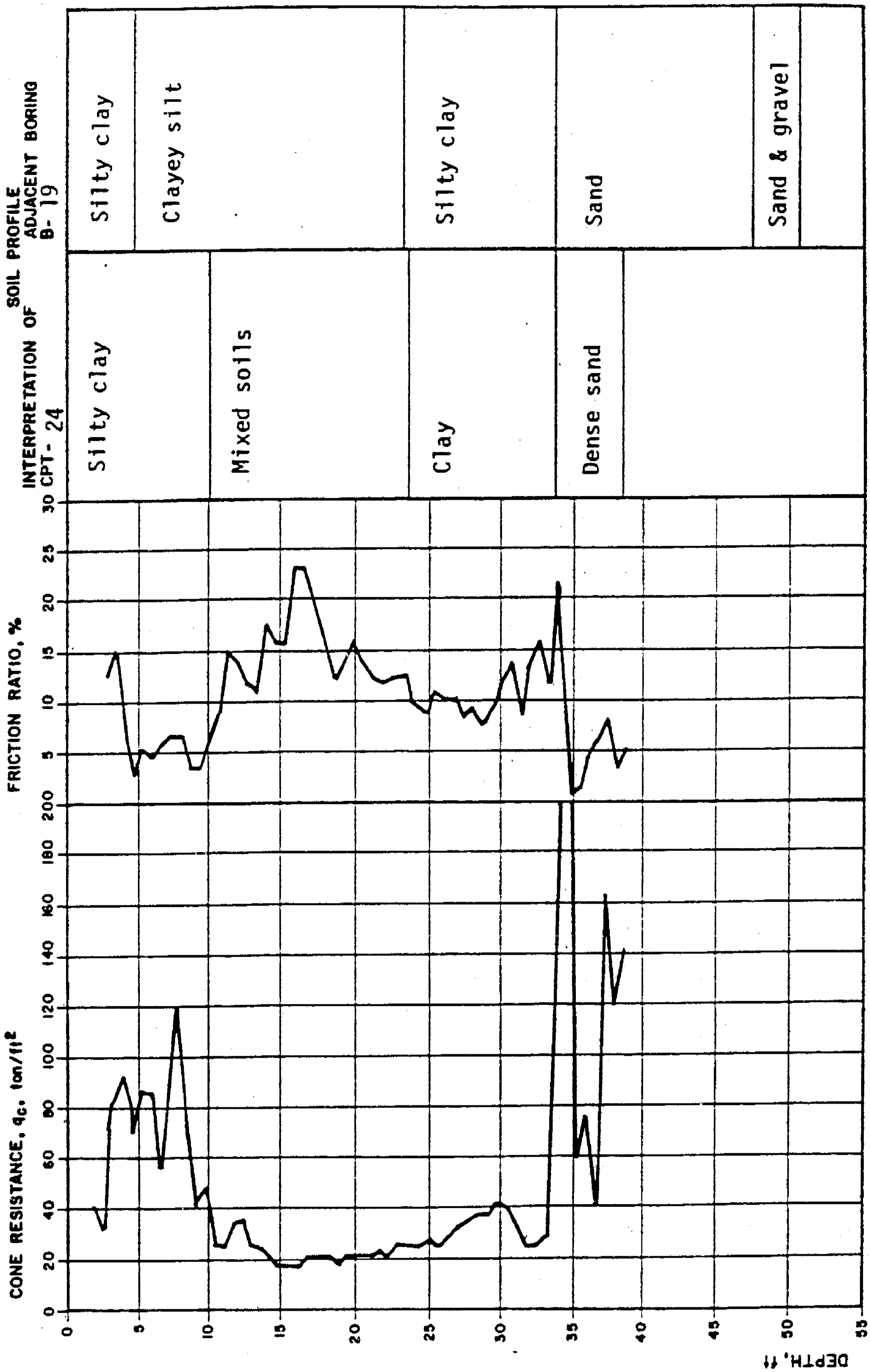

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CHEVRON PARK
SAN RAMON, CALIFORNIA

LOG OF CPT - 24

PLATE
B–26

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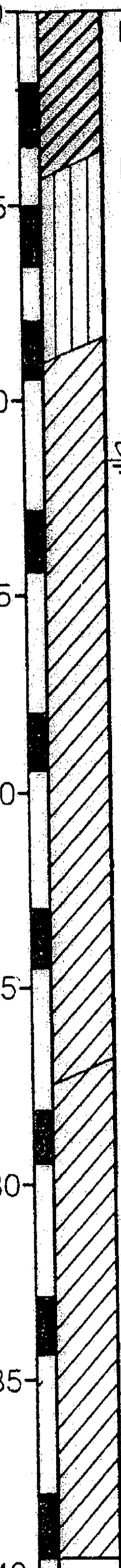
PROJECT NO. B-1109-1

Geotechnical Investigation, Bishop Ranch 1 Development, Bishop Ranch Business Park, San Ramon, California, prepared for Sunset Development Company, prepared by Harding Lawson Associates (HLA), HLA Project 8294,019.03, dated October 6, 1986

Equipment 6" Solid Auger

Elevation 438.5 Feet** Date 7/8/86



Laboratory Tests	Blows/foot*	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Description
				0	BLACK SILTY CLAY (CH) hard, dry, desiccated, presence of organics
	25	14	119		
					LIGHT BROWN CLAYEY SILT (ML) very stiff, moist, presence of sand
TxUU 3025 (420) (Plate 14)	20	21	103	5	
	10				BROWN SILTY CLAY (CL) stiff, moist, presence of sand
				10	
					▽ 8/12/86
	11	34	89		wet
				15	
TxUU (S) 910 (850)	8				
				20	
	16				stiff at 24.0 Feet
				25	
					MOTTLED GREY-BROWN SANDY CLAY (CL) very stiff, moist, presence of rock fragments
	20	20	112		
				30	
	18				white streaks at 34.0 Feet
				35	
	19	19	111		
				40	Bottom of Boring 39.5 Feet

*Blow counts have been converted to Standard Penetration Test (SPT) values (N-values).

**Elevations estimated from Site Plan, Plate 1.

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LOG OF BORING 1
Bishop Ranch 1
San Ramon, California

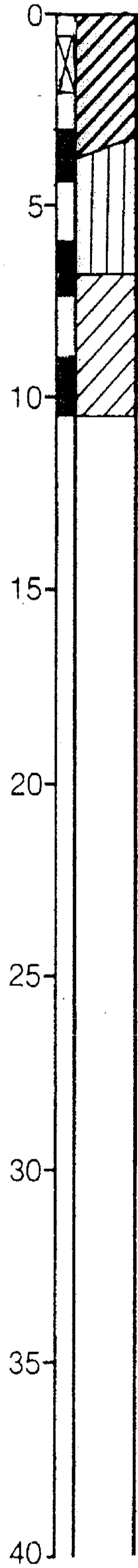
PLATE **2**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
AC	8294,019.03	[signature]	8/86		

Equipment 6" Solid Auger

Elevation 438.0 Feet Date 7/8/86

Laboratory Tests	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Description
LL=64; PI=47 (Plate 10)				0	BLACK SILTY CLAY (CH) hard, dry, desiccated, presence of organics
	16				BROWN CLAYEY SILT (ML) very stiff, moist, presence of sand
	12			5	
	20				LIGHT BROWN SANDY CLAY (CL) stiff, moist.
				10	Bottom of Boring 10.5 Feet



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LOG OF BORING 2
Bishop Ranch 1
San Ramon, California

PLATE **3**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
AC	8294,019.03	[signature]	8/86		

Equipment 6" Solid Auger

Elevation 439.0 Feet Date 7/8/86

Laboratory Tests	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	Description
				0		BLACK SILTY CLAY (CH) hard, dry, desiccated, presence of organics
	24					
	14					LIGHT BROWN CLAYEY SILT (ML) very stiff, dry, presence of sand
				5		
MA (Plate 11)	11					BROWN CLAYEY SAND (SC) medium dense, wet, presence of gravel
						BROWN SANDY CLAY (CL) medium stiff to stiff, moist
				10		
	8					
				15		GREY-BROWN SILTY CLAY (CL) very stiff, moist
	15					
				20		
	15					
				25		
	13					
	25			30		MOTTLED GREY-BROWN SILTY CLAY (CL) very stiff to hard, moist
						Bottom of Boring 31.5 Feet
				35		
				40		

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LOG OF BORING 3
Bishop Ranch 1
San Ramon, California

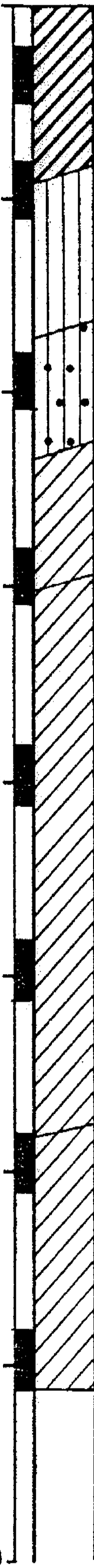
PLATE 4

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
AC	8294,019.03	[signature]	8/86		

Equipment 6" Solid Auger

Elevation 440.0 Feet Date 7/8/86

Laboratory Tests	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Description
				0	BLACK SILTY CLAY (CH) hard, dry, desiccated, presence of organics
	16	13	113		
	16			5	LIGHT BROWN CLAYEY SILT (ML) very stiff, dry
38%< No. 200 Sieve	19	20	112	10	BROWN SILTY SAND (SM) medium dense, moist, fine-grained, trace gravel and clay
					BROWN SILTY CLAY (CL) medium stiff to stiff, moist, trace sand
TxUU 986 (750) (Plate 15)	8	35	88	15	GREY SILTY CLAY (CL) stiff to very stiff, moist
	13			20	
					very stiff at 24.0 Feet
	20			25	
	26			30	GREY-BROWN SILTY CLAY (CL) very stiff, moist
					hard at 34.0 Feet
	34			35	
					Bottom of Boring 35.5 Feet
				40	



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LOG OF BORING 4
Bishop Ranch 1
San Ramon, California

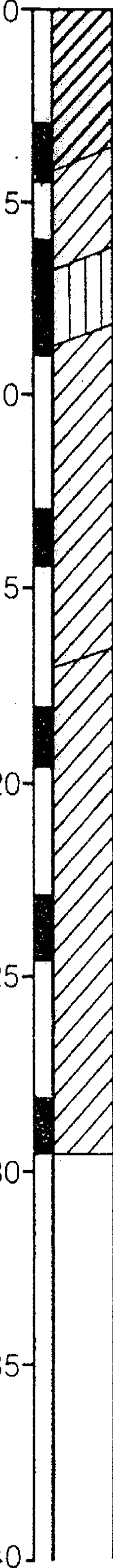
PLATE **5**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
AC	8294,019.03	[signature]	8/86		

Equipment 6" Solid Auger

Elevation 441.5 Feet Date 7/8/86

Laboratory Tests	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Description
				0	BLACK SILTY CLAY (CH) hard, dry, desiccated, presence of organics
	26				DARK BROWN SILTY CLAY (CL) hard, dry, desiccated
				5	
	18				BROWN CLAYEY SILT (ML) stiff, moist, sandy
	18				BROWN SANDY CLAY (CL) stiff, moist
				10	becoming medium stiff at 12.0 Feet
	10				
				15	
					GREY-BROWN SILTY CLAY (CL) very stiff, moist
	14				
				20	
	10				
				25	
	23				
				30	Bottom of Boring 29.5 Feet
				35	
				40	



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LOG OF BORING 5
Bishop Ranch 1
San Ramon, California

PLATE 6

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
AC	8294,019.03	[signature]	8/86		

LOG OF BORING 6

Equipment 6" Solid Auger

Elevation 442.5 Feet   Date 7/8/86

Laboratory Tests	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	Description
				0		BLACK SILTY CLAY (CH) hard, dry, desiccated, presence of organics
	22					
				5		BROWN CLAYEY SILT (ML) stiff, moist
	18					
						medium stiff, sandy at 8.0 Feet
	8					
				10		Bottom of Boring 9.5 Feet
				15		

LOG OF BORING 7

Equipment 6" Solid Auger

Elevation 440.0 Feet   Date 7/3/86

Blows/foot	Depth (ft)	Sample	Description
	0		BLACK SILTY CLAY (CH) hard, dry, desiccated, presence of organics
			BROWN SILTY CLAY (CL) hard, dry, desiccated,
19			
	5		BROWN CLAYEY SILT (ML) stiff, moist, presence of sand lenses
11			
	10		medium stiff at 10 Feet
8			
			Bottom of Boring 11.5 Feet
	15		

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LOG OF BORINGS 6 & 7
Bishop Ranch 1
San Ramon, California

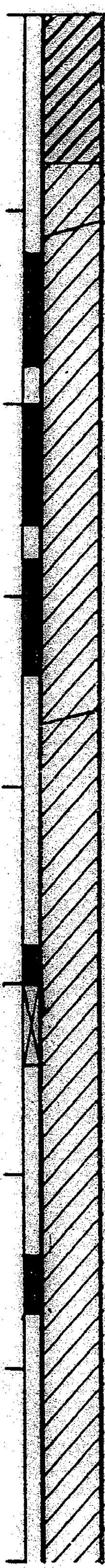
PLATE **7**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
AC	8294,019.03	[signature]	8/86		

Equipment 6" Rotary Wash

Elevation 440.0 Feet Date 7/17/86

Laboratory Tests	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Description
				0	BLACK SILTY CLAY (CH) hard, dry, desiccated, presence of organics
				5	BROWN SILTY CLAY (CL) hard, dry
					BROWN SANDY CLAY (CL) stiff, moist
TxUU 516 (420) (Plate 16)	*	20	104		with concretions of well-cement calcareous nodules at 8.5 Feet presence of sand lenses
Consol (Plate 13) MA (Plate 12)	*	29	94	10	
	*			15	
				20	BROWN-GREY SILTY CLAY (CL) stiff to very stiff, moist, presence of clayey sand lenses
	*			25	
				30	hard at 32.0 Feet
	25				presence of calcareous nodules
				35	
				40	



(Continuation of Log)

Laboratory Tests	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Description
TxUU(S) 1370 (1400)	*			40	sandy
				45	
	36			50	
				55	
	57			60	
				65	
					trace gravel
	*			70	
					Bottom of Boring 73.0 Feet
				75	
				80	

*Samples obtained with a Pitcher barrel.

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& Geophysicists

LOG OF BORING 8
Bishop Ranch 1
San Ramon, California

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
AC	8294,019.03		8/86		

PLATE 8

MAJOR DIVISIONS					TYPICAL NAMES
COARSE - GRAINED SOILS MORE THAN HALF IS LARGER THAN NO. 200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN No. 4 SIEVE SIZE	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW		WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES
			GP		POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES
		GRAVELS WITH OVER 12% FINES	GM		SILTY GRAVELS, POORLY GRADED GRAVEL-SAND-SILT MIXTURES
			GC		CLAYEY GRAVELS, POORLY GRADED GRAVEL - SAND-CLAY MIXTURES
	SANDS MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE SIZE	CLEAN SANDS WITH LITTLE OR NO FINES	SW		WELL-GRADED SANDS, GRAVELLY SANDS
			SP		POORLY GRADED SANDS, GRAVELLY SANDS
		SANDS WITH OVER 12% FINES	SM		SILTY SANDS, POORLY GRADED SAND-SILT MIXTURES
			SC		CLAYEY SANDS, POORLY GRADED SAND-CLAY MIXTURES
FINE - GRAINED SOILS MORE THAN HALF IS SMALLER THAN NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT 50% OR LESS		ML		INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS, OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL		INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			OL		ORGANIC CLAYS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50%		MH		INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH		INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH		ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			Pt		PEAT AND OTHER HIGHLY ORGANIC SOILS

UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM 2487-85)

Perm	—	Permeability
Consol	—	Consolidation
LL	—	Liquid Limit (%)
PI	—	Plastic Index (%)
G_s	—	Specific Gravity
MA	—	Particle Size Analysis
■	—	"Undisturbed" Sample
⊠	—	Bulk or Classification Sample

Shear Strength (psf) Confining Pressure

TxUU (FM) or (S)	3200	(2600)	—	Unconsolidated Undrained Triaxial Shear (field moisture or saturated)
TxCU (P)	3200	(2600)	—	Consolidated Undrained Triaxial Shear (with or without pore pressure measurement)
TxCD	3200	(2600)	—	Consolidated Drained Triaxial Shear
SSCU (P)	3200	(2600)	—	Simple Shear Consolidated Undrained (with or without pore pressure measurement)
SSCD	3200	(2600)	—	Simple Shear Consolidated Drained
DSCD	2700	(2000)	—	Consolidated Drained Direct Shear
UC	470		—	Unconfined Compression
LVS	700		—	Laboratory Vane Shear

KEY TO TEST DATA

Harding Lawson Associates
Engineers, Geologists
& Geophysicists

SOIL CLASSIFICATION & KEY TO TEST DATA
Bishop Ranch 1
San Ramon, California

PLATE
9

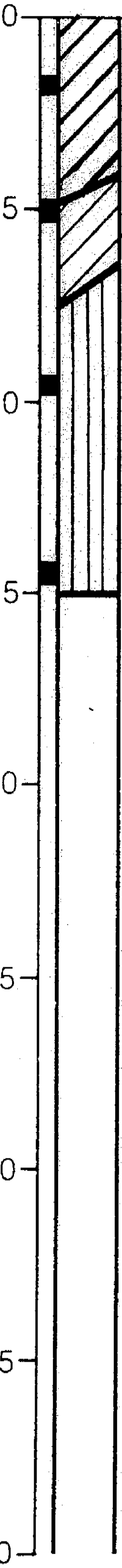
DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
AC	8294,019.03	[signature]	8/86		

Soil Investigation, Bollinger Business Center, Bishop Ranch, San Ramon, California, prepared for Sunset Development Company, prepared by Harding Lawson Associates (HLA), HLA Project 8294,009.03, dated April 6, 1982

Equipment: Solid Stem Auger

Elevation: 442 feet ** Date: 3/17/82

Laboratory Tests	Blows/foot *	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Description
Atterberg Limits LL = 54 PL = 20 PI = 34	5			0	DARK GRAY SILTY CLAY (CH) medium stiff, wet
	17			5	LIGHT BROWN SANDY CLAY (CL) very stiff, moist
					LIGHT BROWN CLAYEY SILT (ML) stiff, moist
	11			10	
	11			15	



Ground water not encountered

NOTES:

*Blows/foot have been converted to Standard Penetration Test "N-values"

**Elevations referred to Subdivision Map 5967, Bishop Ranch by Bryan & Murphy Assoc., Inc., dated October 14, 1980.

Datum is Mean Sea Level

Harding Lawson Associates
Engineers, Geologists & Geophysicists

Log of Boring 1
Bollinger Business Center
San Ramon, California

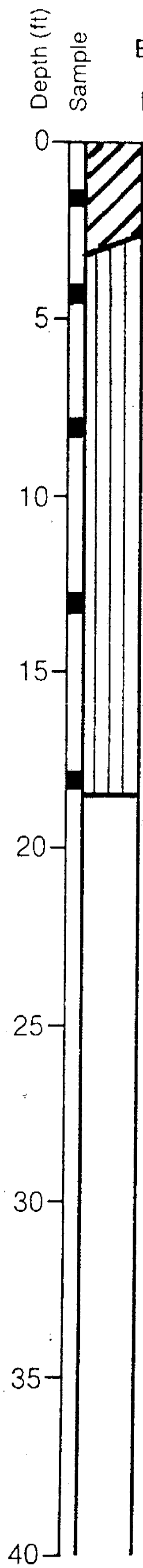
PLATE **2**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
M.Rice	8294,009.03	tc	3/17/82		

Equipment Solid Stem Auger

Elevation 442 feet Date 3/17/82

Laboratory Tests	Blows/foot	Moisture Content (%)	Dry Density (pcf)
	18	24.3	99
	12		
	10	23.0	99
	18	21.4	101
	11	25.2	96



BLACK SILTY CLAY (CH)
very stiff, moist

LIGHT BROWN CLAYEY SILT (ML)
stiff, moist

layer of BROWN SILTY SAND (SM) from 12.5 feet to 13.0 feet

Ground water not encountered

Harding Lawson Associates
Engineers, Geologists & Geophysicists

Log of Boring 2
Bollinger Business Center
San Ramon, California

PLATE **3**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
M.Rice	8294,009.03	tc	3/17/82		

LOG OF BORING 3

Equipment: Solid Stem Auger

Elevation: 444 feet   Date: 3/17/82

Laboratory Tests	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Description
				0	BLACK SILTY CLAY (CH) stiff, moist
Atterberg Limits LL = 50 PL = 20 PI = 30	17				
					LIGHT BROWN CLAYEY SILT (ML) stiff, moist
	12	17.8	105	5	
	9			10	
	14			15	
					Ground water not encountered

LOG OF BORING 4

Equipment: Solid Stem Auger

Elevation: 447 feet   Date: 3/17/82

Laboratory Tests	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Description
				0	BLACK SILTY CLAY (CH) stiff, moist
	9				
					LIGHT BROWN CLAYEY SILT (ML) very stiff, moist
	16				
				5	
TXUU 700 (750)	9	24.8	96		becomes medium stiff
				10	
					becomes SANDY, cemented, clay content decreases
	30				
				15	
					Groundwater not encountered

Harding Lawson Associates
Engineers, Geologists
& Geophysicists

Log of Boring 3,4
Bollinger Business Center
San Ramon, California

PLATE **4**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
M.Rice	8294,009.03	tc	3/17/82		

LOG OF BORING 5

Equipment: Solid Stem Auger

Elevation: 448 feet Date: 3/17/82

Laboratory Tests	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Description
				0	DARK BROWN SILTY CLAY (CH) stiff, moist
TXUU 2050 (250)	13	21.6	104		
Atterberg Limits LL = 37 PL = 18 PI = 19					BROWN SANDY SILT (ML) stiff, moist, interbedded with layers of BROWN SILTY CLAY (CL)
	14			5	
	12			10	
					becomes very stiff below 14 feet, with some gravel at 14.0 feet-14.5 feet
	22	20.5	104	15	
					Ground water not encountered

LOG OF BORING 6

Equipment: Solid Stem Auger

Elevation: 444 feet Date: 3/17/82

Laboratory Tests	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Description
				0	BLACK SILTY CLAY (CH) stiff, moist
TXUU 1660 (500)	13	18.2	109		
	13				LIGHT BROWN SANDY CLAYEY SILT (ML) stiff, moist
				5	
	10				sand content decreases below 6 feet
				10	
	14				sand content increases below 11 feet
				15	becomes hard, cemented
	35				
					Ground water not encountered

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Log of Boring 5,6
Bollinger Business Center
San Ramon, California

PLATE **5**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
M.Rice	8294.009.03	tc	3/17/82		

RF3A

MAJOR DIVISIONS				TYPICAL NAMES
COARSE GRAINED SOILS MORE THAN HALF IS LARGER THAN #200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW	WELL GRADED GRAVELS, GRAVEL - SAND MIXTURES
			GP	POORLY GRADED GRAVELS, GRAVEL - SAND MIXTURES
		GRAVELS WITH OVER 12% FINES	GM	SILTY GRAVELS, POORLY GRADED GRAVEL - SAND - SILT MIXTURES
			GC	CLAYEY GRAVELS, POORLY GRADED GRAVEL - SAND - CLAY MIXTURES
	SANDS MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE SIZE	CLEAN SANDS WITH LITTLE OR NO FINES	SW	WELL GRADED SANDS, GRAVELLY SANDS
			SP	POORLY GRADED SANDS, GRAVELLY SANDS
		SANDS WITH OVER 12% FINES	SM	SILTY SANDS, POORLY GRADED SAND - SILT MIXTURES
			SC	CLAYEY SANDS, POORLY GRADED SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN HALF IS SMALLER THAN #200 SIEVE	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS, OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			OL	ORGANIC CLAYS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACIOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			Pt	PEAT AND OTHER HIGHLY ORGANIC SOILS

UNIFIED SOIL CLASSIFICATION SYSTEM

Shear Strength, psf

Confining Pressure, psf

- Consol — Consolidation
- LL — Liquid Limit (in %)
- PL — Plastic Limit (in %)
- G_s — Specific Gravity
- SA — Sieve Analysis
- ■ "Undisturbed" Sample
- ⊠ Bulk Sample

*Tx	320	(2600)	Unconsolidated Undrained Triaxial
TxCU	320	(2600)	Consolidated Undrained Triaxial
DS	2750	(2000)	Consolidated Drained Direct Shear
FVS	470		Field Vane Shear
*UC	2000		Unconfined Compression
LVS	700		Laboratory Vane Shear

Notes: (1) All strength tests on 2.8" or 2.4" diameter samples unless otherwise indicated.

(2) * Indicates 1.4" diameter sample.

KEY TO TEST DATA

HLA **Harding Lawson Associates**
Engineers, Geologists
& Geophysicists

Soil Classification Chart
& Key to Test Data
Bollinger Business Center
San Ramon, California

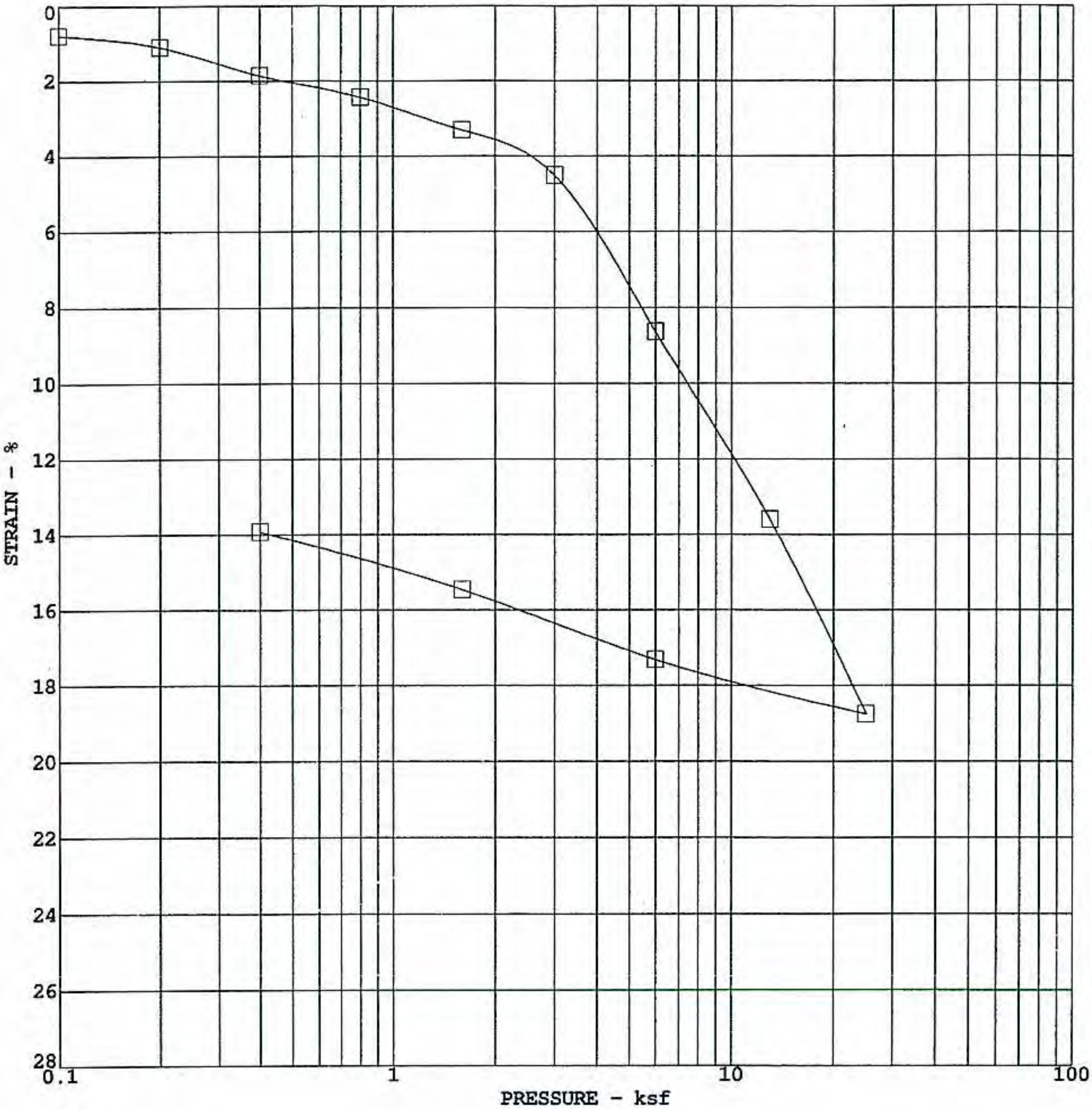
PLATE
6

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
M.Rice	8294.009.03	tc	3/17/82		

APPENDIX B

SELECT LABORATORY RESULTS FROM PRIOR INVESTIGATIONS

Geotechnical Investigation at Chevron/Texaco Campus Lots 16, 20 and 21 of the Bishop Ranch Business Park, San Ramon, California, prepared for Watry Design, prepared by Kleinfelder, Inc., Kleinfelder Project 53512/Geo, dated June 9, 2005



BORING NO. KB-1

DEPTH 21.0

DESCRIPTION Light Brown Fat Clay

PRECONSOLIDATION PRESSURE 3.20 ksf

COMPRESSION RATIO= $C_c/1+e_o$ **0.170**

RECOMPRESSION RATIO= $C_r/1+e_o$ **0.013**

LL = PL =

	INITIAL	FINAL
DRY DENSITY, lb/ft^3	92.5	105.6
WATER CONTENT, %	26.6	24.5
SAMPLE HEIGHT, in.		

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KLEINFELDER

PROJECT NO. 53512-GEO

CONSOLIDATION TEST

CHEVRON/TEXACO INVESTIGATION
CHEVRON-TEXACO WAY
SAN RAMON, CALIFORNIA

PLATE

-B-1

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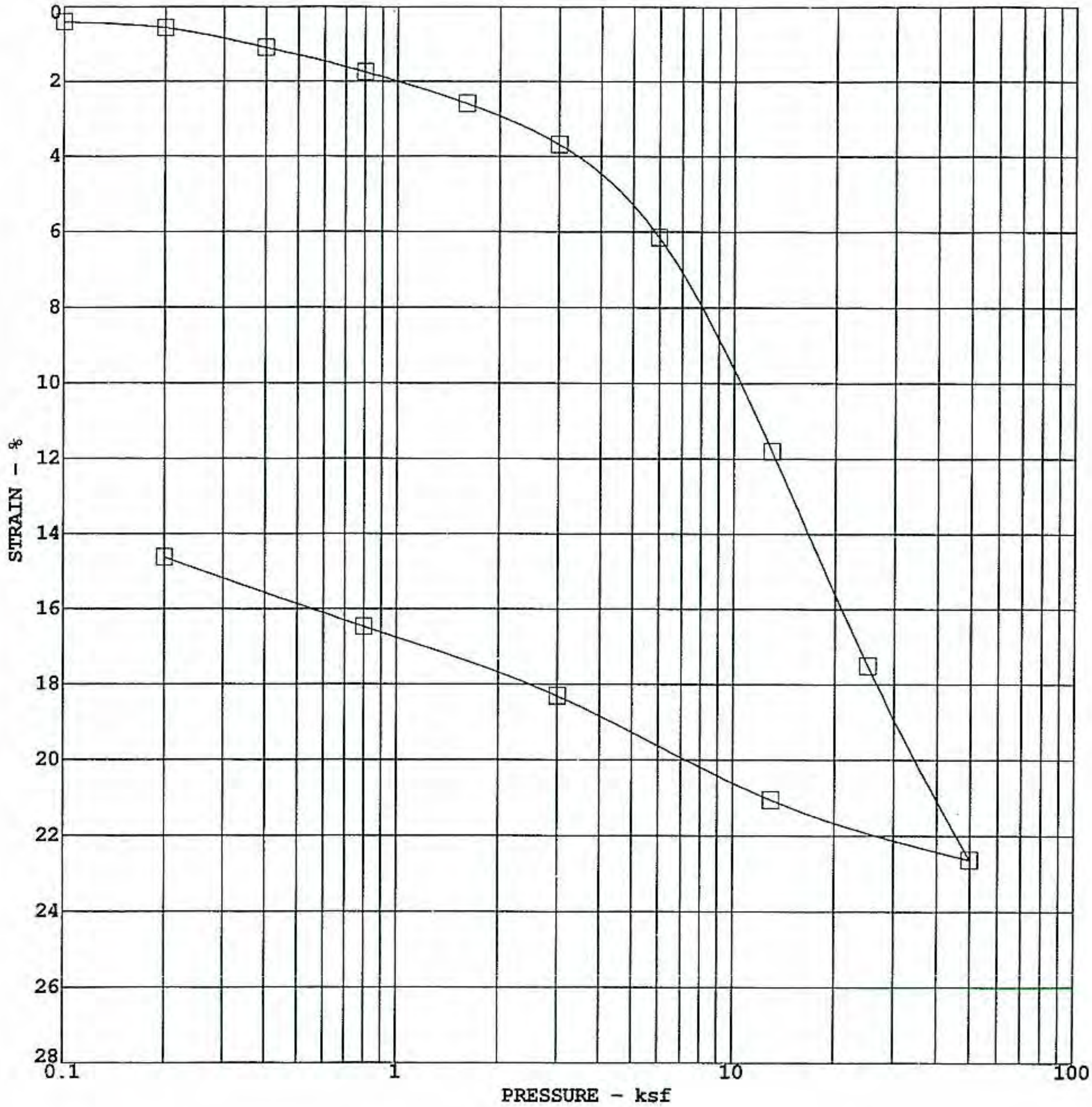

BORING NO. KB-2

DEPTH 31.0

DESCRIPTION Dark Gray Fat Clay

PRECONSOLIDATION PRESSURE 5.80 ksf

COMPRESSION RATIO= $C_c/1+e_o$ **0.210**

RECOMPRESSION RATIO= $C_r/1+e_o$ **0.035**

LL = PL =

	INITIAL	FINAL
DRY DENSITY, lb/ft^3	101.1	113.6
WATER CONTENT, %	20.8	17.8
SAMPLE HEIGHT, in.	.686	.5857

C:\WINDOWS\DESKTOP\53512.GPJ

KLEINFELDER

PROJECT NO. 53512-GEO

CONSOLIDATION TEST

CHEVRON/TEXACO INVESTIGATION
CHEVRON-TEXACO WAY
SAN RAMON, CALIFORNIA

PLATE

-B-2

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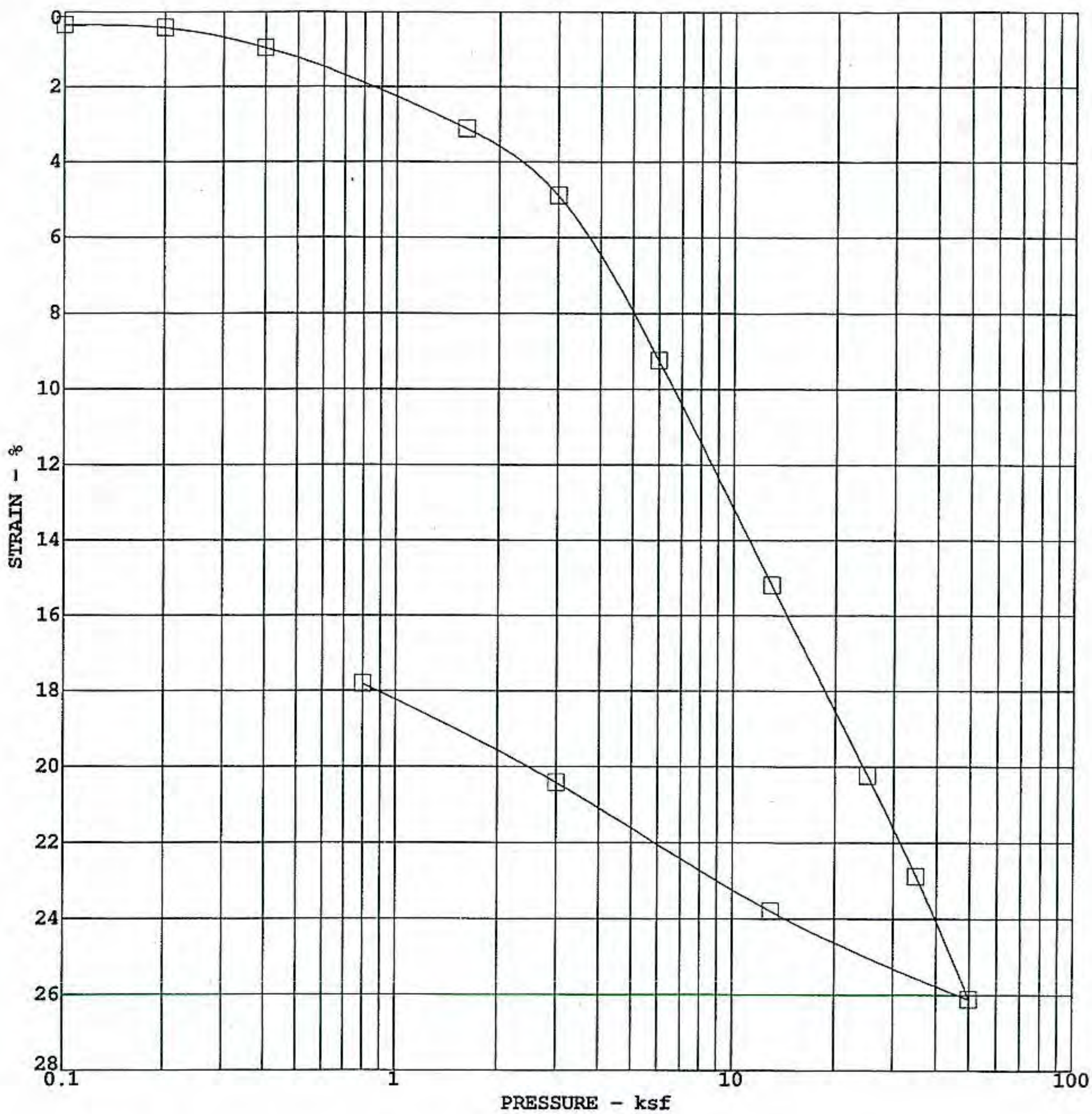

BORING NO. KB-3

DEPTH 16.0

DESCRIPTION Light Brown Silty Sandy Clay

PRECONSOLIDATION PRESSURE 3.20 ksf

COMPRESSION RATIO= $C_c/1+e_o$ **0.190**

RECOMPRESSION RATIO= $C_r/1+e_o$ **0.045**

LL = ______ PL = ______

	INITIAL	FINAL
DRY DENSITY, lb/ft^3	88.1	103.5
WATER CONTENT, %	28.4	22.5
SAMPLE HEIGHT, in.	.687	.5646

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KLEINFELDER

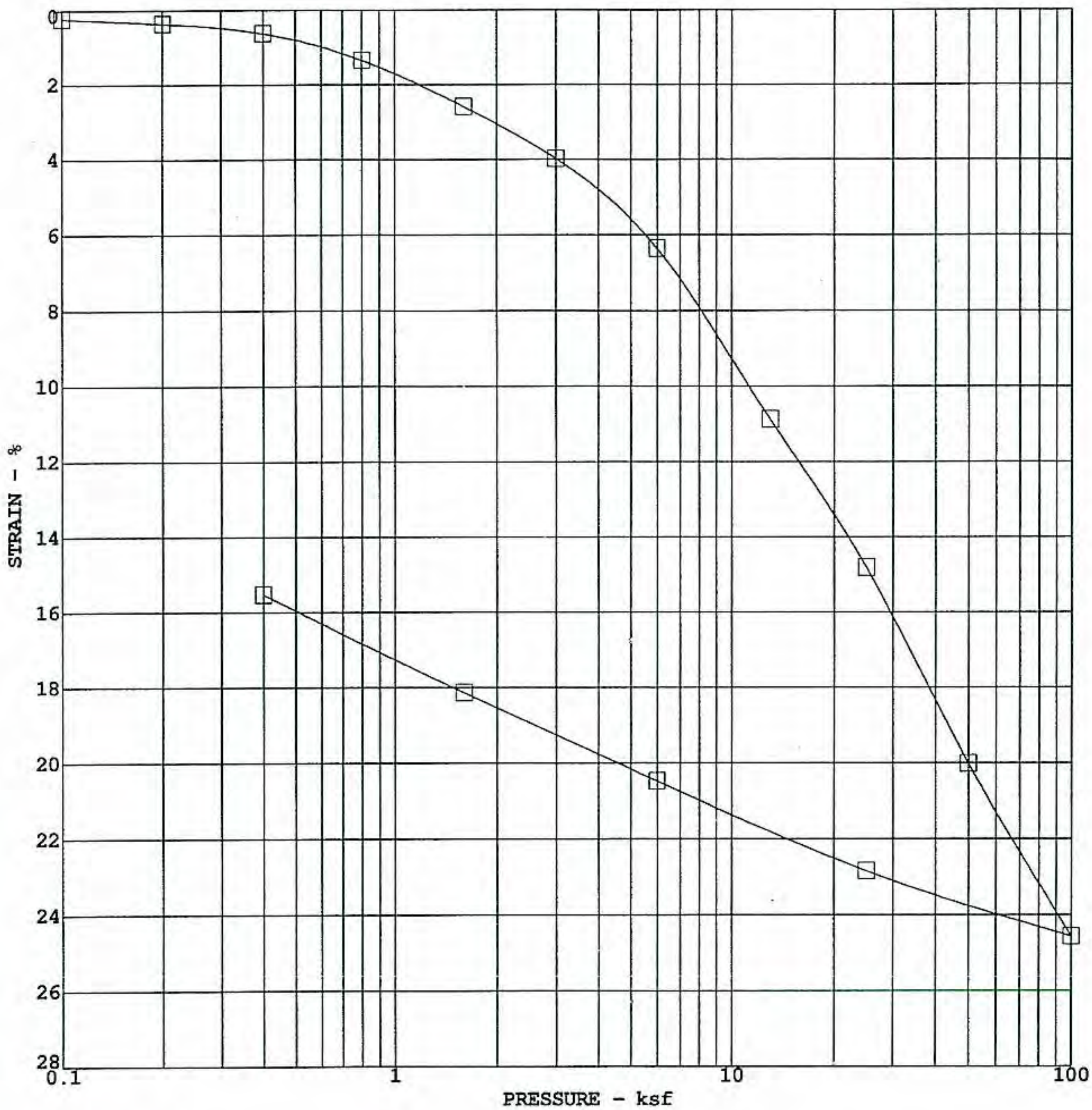
PROJECT NO. *53512-GEO*

CONSOLIDATION TEST

CHEVRON/TEXACO INVESTIGATION
CHEVRON-TEXACO WAY
SAN RAMON, CALIFORNIA

PLATE

-B-3



BORING NO. KB-4

DEPTH 26.0

DESCRIPTION Greenish-Brown Fat Clay

PRECONSOLIDATION PRESSURE 5.50 ksf

COMPRESSION RATIO= $C_c/1+e_o$ **0.150**

RECOMPRESSION RATIO= $C_r/1+e_o$ **0.040**

LL = ____ PL = ____

	INITIAL	FINAL
DRY DENSITY, lb/ft^3	93.5	109.8
WATER CONTENT, %	28.3	21.4
SAMPLE HEIGHT, in.	.637	.5381

KLEINFELDER

PROJECT NO. *53512-GEO*

CONSOLIDATION TEST

CHEVRON/TEXACO INVESTIGATION
CHEVRON-TEXACO WAY
SAN RAMON, CALIFORNIA

PLATE

-B-4

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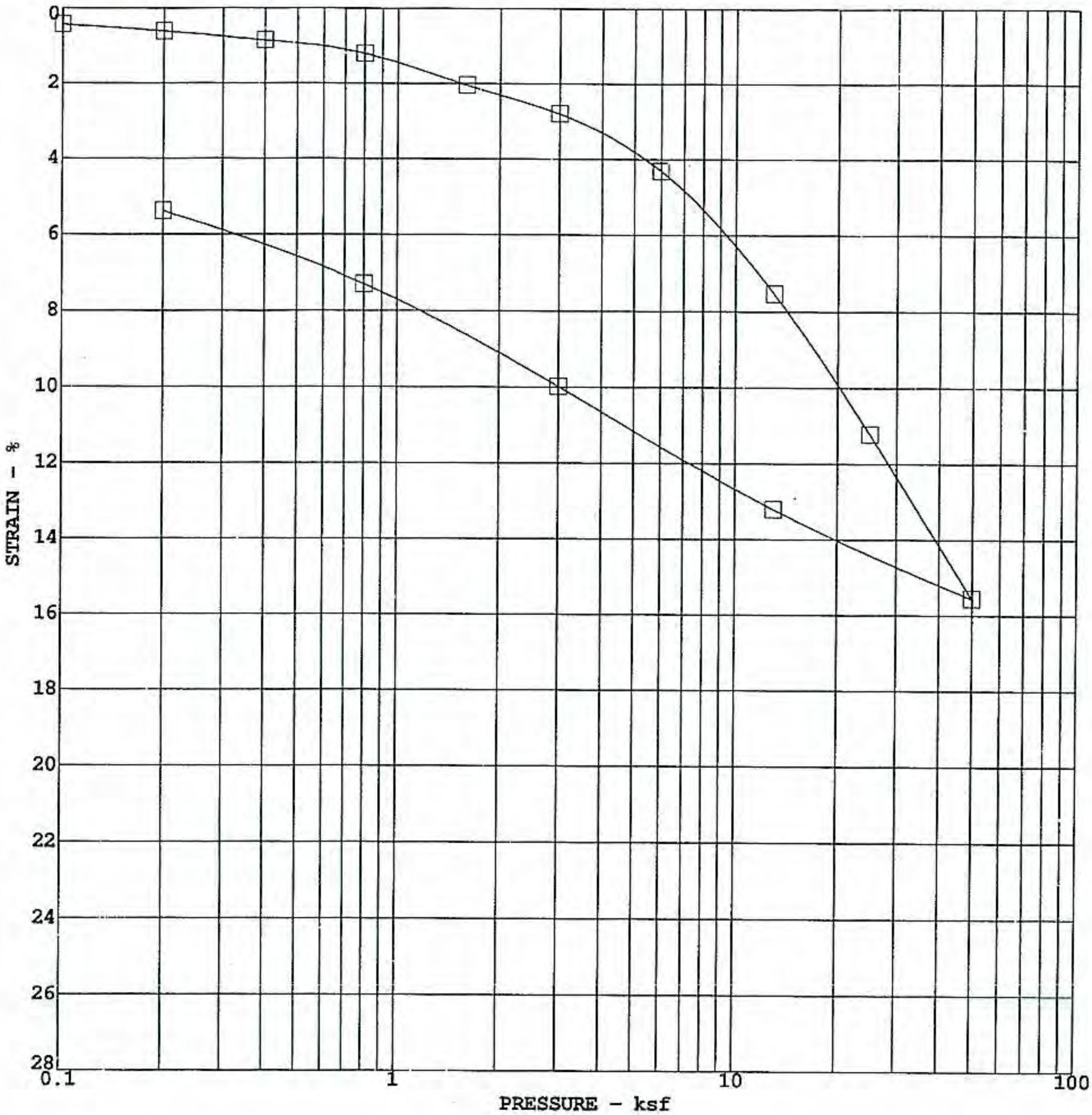

BORING NO.	KB-5
DEPTH	31.0
DESCRIPTION	Very Dark Greenish-Gray Fat Clay
PRECONSOLIDATION PRESSURE	7.50 ksf
COMPRESSION RATIO= $C_c/1+e_o$	**0.140**
RECOMPRESSION RATIO= $C_r/1+e_o$	**0.040**

LL = PL =

	INITIAL	FINAL
DRY DENSITY, lb/ft^3	103.9	109.2
WATER CONTENT, %	22.7	22.5
SAMPLE HEIGHT, in.	.63	.5961

KLEINFELDER

PROJECT NO. *53512-GEO*

CONSOLIDATION TEST

CHEVRON/TEXACO INVESTIGATION
CHEVRON-TEXACO WAY
SAN RAMON, CALIFORNIA

PLATE

-B-5

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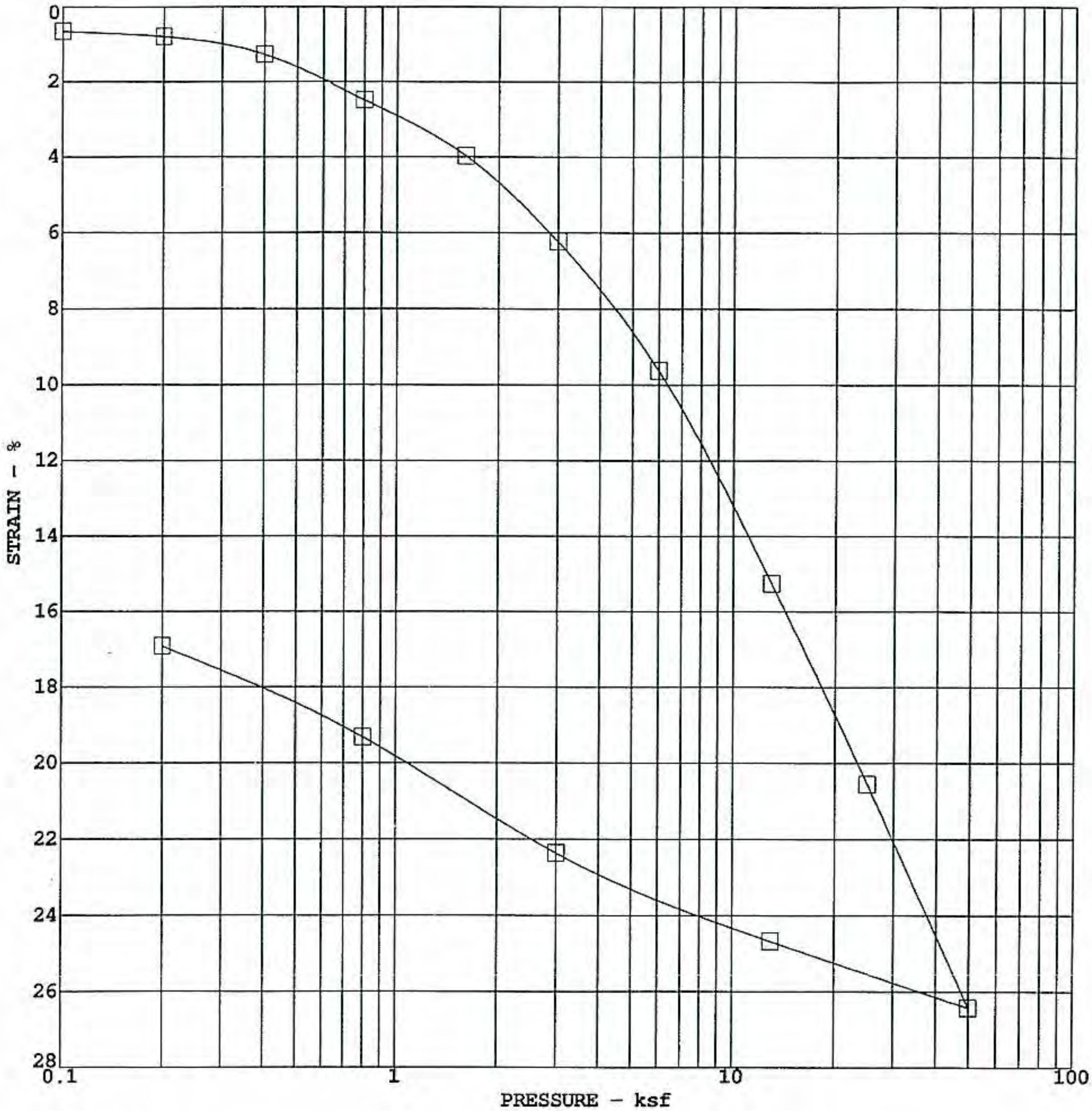

BORING NO. KB-6

DEPTH 21.0

DESCRIPTION Olive-Brown Silty Lean Clay

PRECONSOLIDATION PRESSURE 3.80 ksf

COMPRESSION RATIO= $C_c/1+e_o$ **0.210**

RECOMPRESSION RATIO= $C_r/1+e_o$ **0.040**

LL = PL =

	INITIAL	FINAL
DRY DENSITY, lb/ft^3	111.7	128.2
WATER CONTENT, %	28.4	23.4
SAMPLE HEIGHT, in.	.566	.4702

KLEINFELDER

PROJECT NO. *53512-GEO*

CONSOLIDATION TEST

CHEVRON/TEXACO INVESTIGATION
CHEVRON-TEXACO WAY
SAN RAMON, CALIFORNIA

PLATE

-B-6

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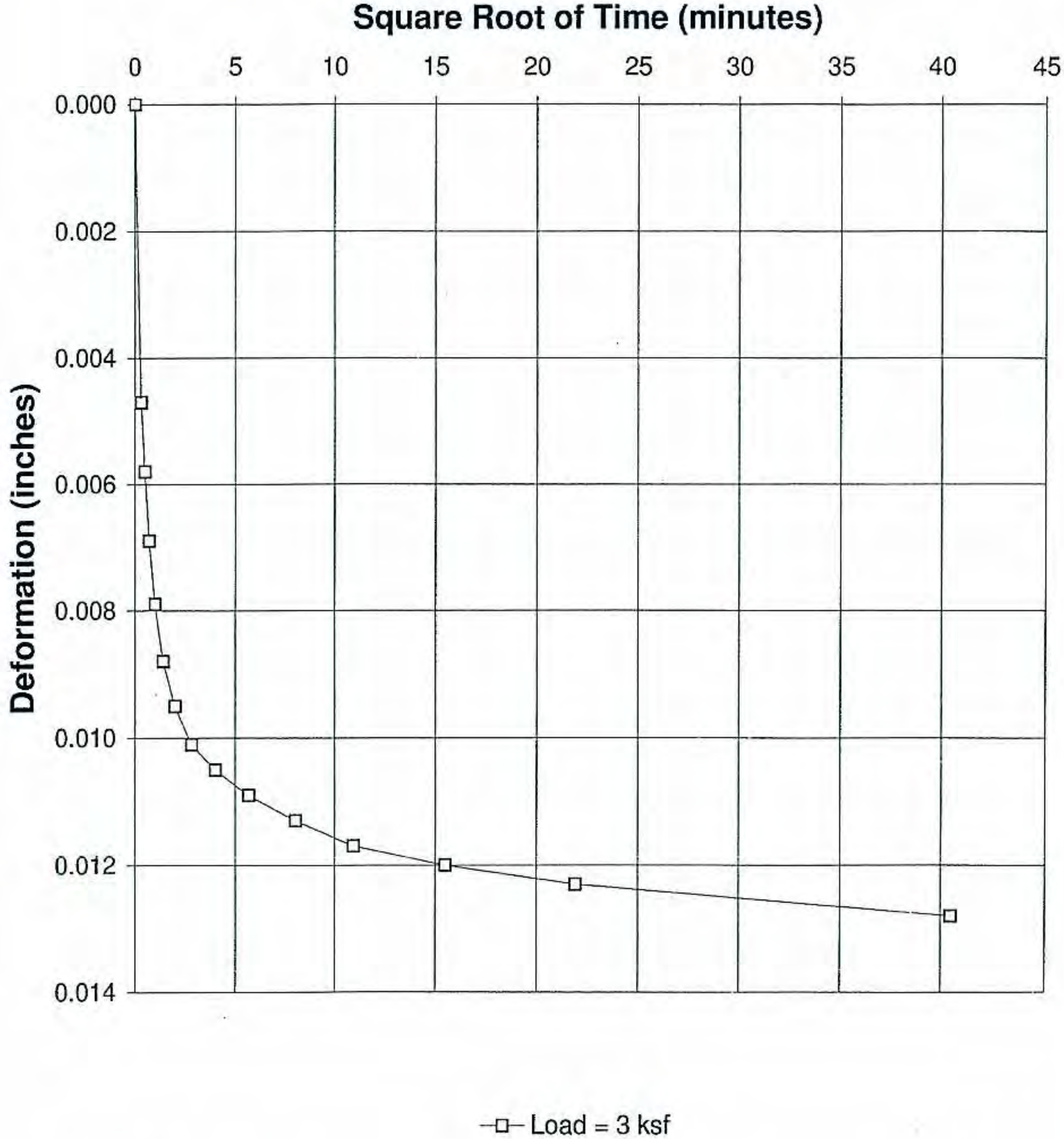
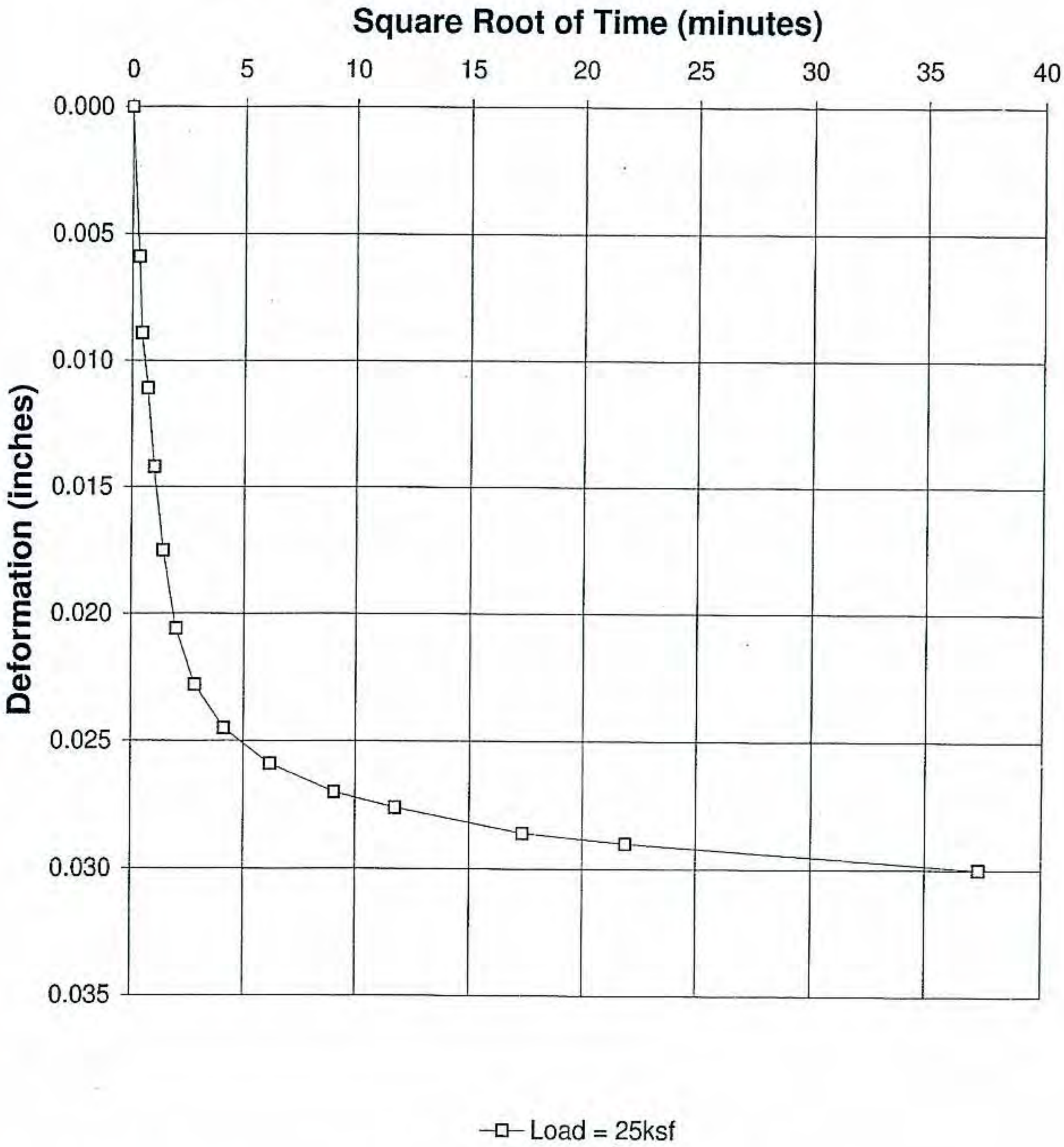
Time Rate of Consolidation



Boring No. KB-6 **Depth: 21 ft.**

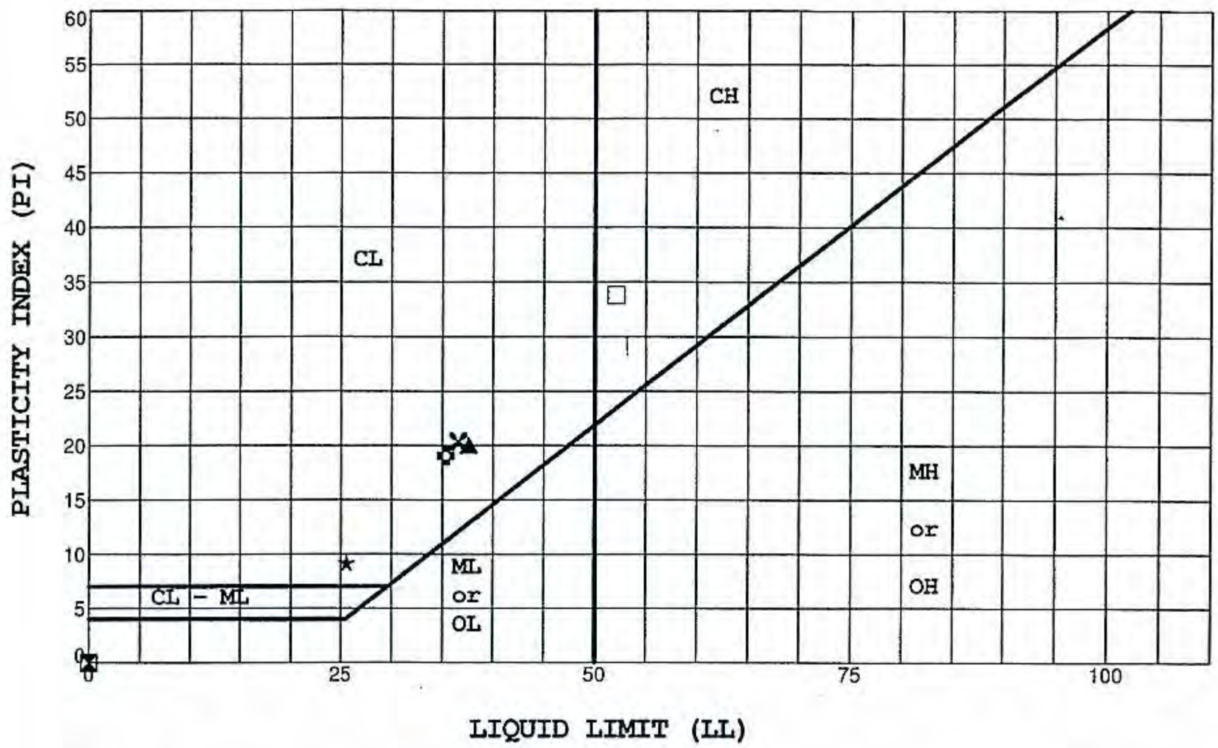
KLEINFELDER	**Chevron/Texaco Investigation** **Chevron-Texaco Way** **San Ramon, California**	*Plate*
Project No.: 53512	**CONSOLIDATION/TIME RATE**	B-7

Time Rate of Consolidation



Boring No. KB-6 **Depth: 21 ft.**

KLEINFELDER	**Chevron/Texaco Investigation** **Chevron-Texaco Way** **San Ramon, California**	*Plate*
Project No.: *53512*	**CONSOLIDATION/TIME RATE**	B-8



Symbol	Boring	Depth	LL	PL	PI	Sample Description
□	KB-1	5.5	52	18	34	Black Clay
⊠	KB-1	9.5	NP	NP	NP	Light Brown Silty Sand
▲	KB-2	16.0	38	18	20	Light Brown Sandy Clay
★	KB-3	4.0	26	16	9	Light Brown Clayey Sand
✖	KB-4	10.5	37	16	20	Dark Brown Sandy Clay
✪	KB-5	10.0	35	16	19	Brown Sandy Clay

Unified Soil Classification

Fine Grained Soil Groups

Symbol	LL < 50	Symbol	LL > 50
ML	Inorganic clayey silts to very fine sands of slight plasticity	MH	Inorganic silts and clayey silts of high plasticity
CL	Inorganic clays of low to medium plasticity	CH	Inorganic clays of high plasticity
OL	Organic silts and organic silty clays of low plasticity	OH	Organic clays of medium to high plasticity, organic silts

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KLEINFELDER

PROJECT NO. 53512-GEO

PLASTICITY CHART

CHEVRON/TEXACO INVESTIGATION
CHEVRON-TEXACO WAY
SAN RAMON, CALIFORNIA

PLATE

B-9

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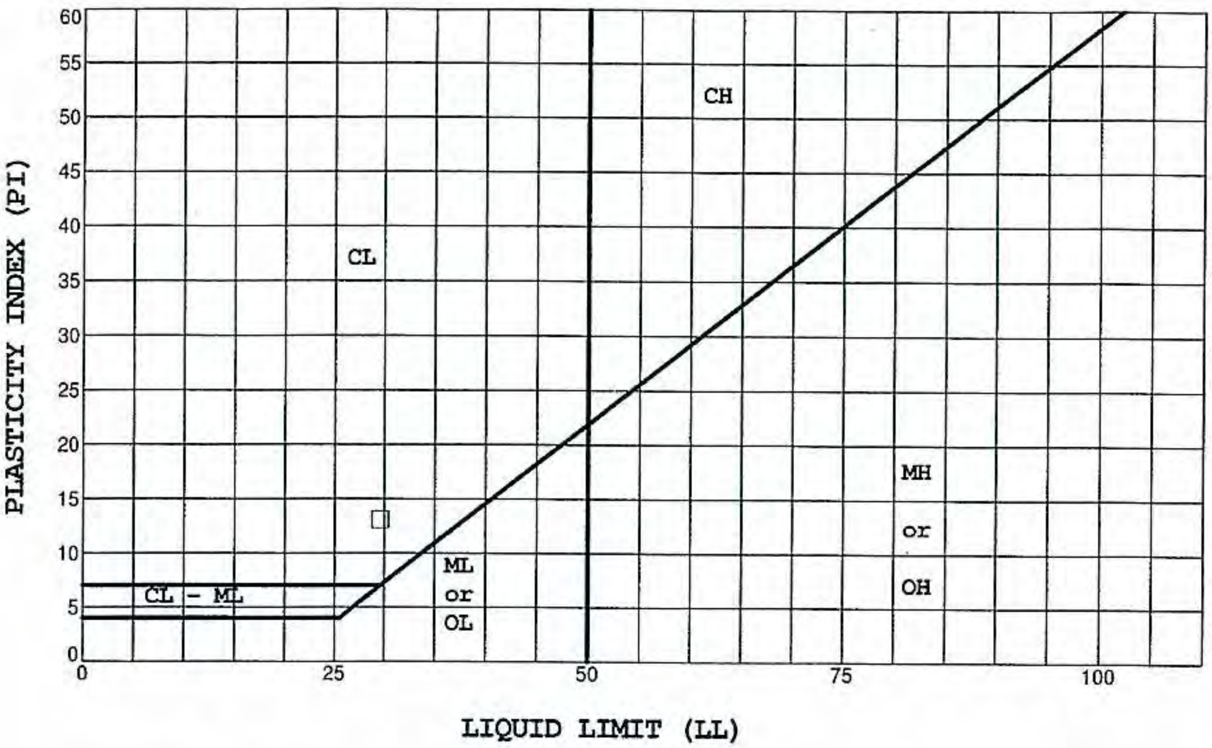


Symbol	Boring	Depth	LL	PL	PI	Sample Description
□	KB-6	15.0	30	17	13	Olive-Brown Silty Clay

Unified Soil Classification

Fine Grained Soil Groups

Symbol	LL < 50	Symbol	LL > 50
ML	Inorganic clayey silts to very fine sands of slight plasticity	MH	Inorganic silts and clayey silts of high plasticity
CL	Inorganic clays of low to medium plasticity	CH	Inorganic clays of high plasticity
OL	Organic silts and organic silty clays of low plasticity	OH	Organic clays of medium to high plasticity, organic silts

KLEINFELDER

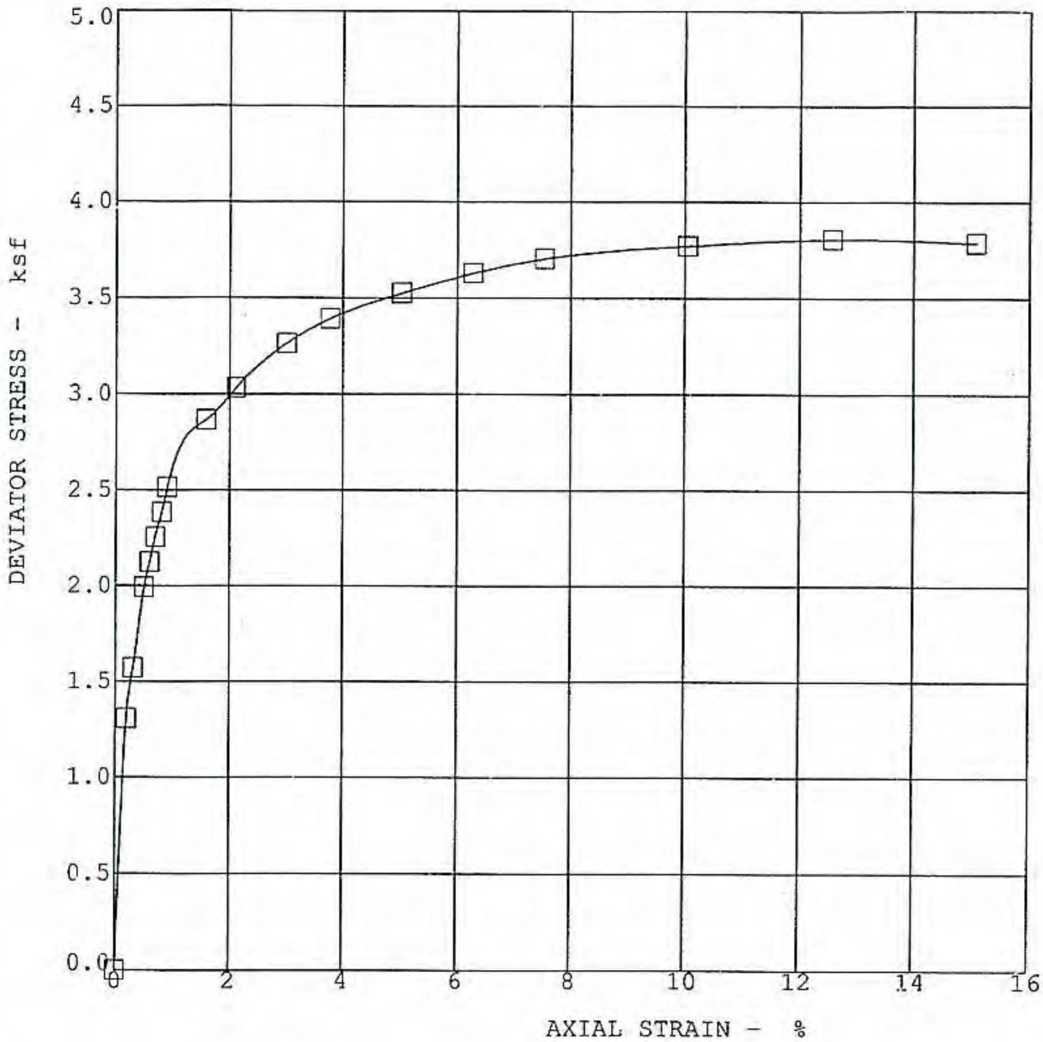
PROJECT NO. 53512-GEO

PLASTICITY CHART

CHEVRON/TEXACO INVESTIGATION
CHEVRON-TEXACO WAY
SAN RAMON, CALIFORNIA

PLATE

B-10



BORING NO.	**KB-1**	**DRY DENSITY - pcf**	**99**
DEPTH - ft	**4.5**	**WATER CONTENT - %**	**23.7**
SOIL DESCRIPTION	**Black Clay**		
SIGMA 3 - ksf	**0.50**		

MAX. DEVIATOR STRESS= 3.81 ksf at 12.6 % STRAIN

KLEINFELDER

UU TRIAXIAL TEST/UNSATURATED

PLATE

B-11

CHEVRON/TEXACO INVESTIGATION
CHEVRON-TEXACO WAY
SAN RAMON, CALIFORNIA

PROJECT NO. **53512-GEO**

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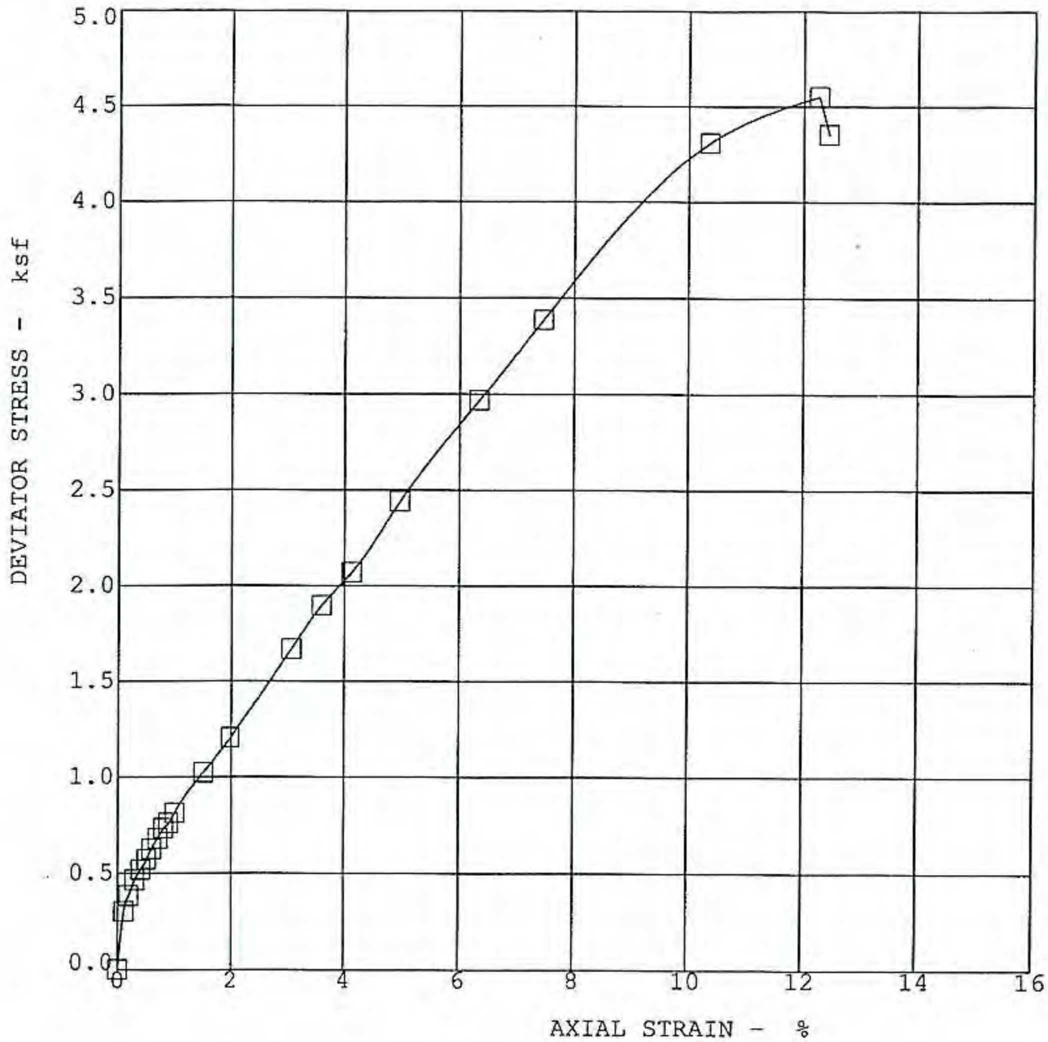

BORING NO. KB-3

DEPTH - ft 10.5

SOIL DESCRIPTION Light Brown Sandy Clay

SIGMA 3 - ksf 1.00

DRY DENSITY - pcf 108

WATER CONTENT - % 22.3

MAX. DEVIATOR STRESS= 4.55 ksf at 12.3 % STRAIN

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KLEINFELDER

PROJECT NO. 53512-GEO

UU TRIAXIAL TEST/UNSATURATED

CHEVRON/TEXACO INVESTIGATION
CHEVRON-TEXACO WAY
SAN RAMON, CALIFORNIA

PLATE

B-12

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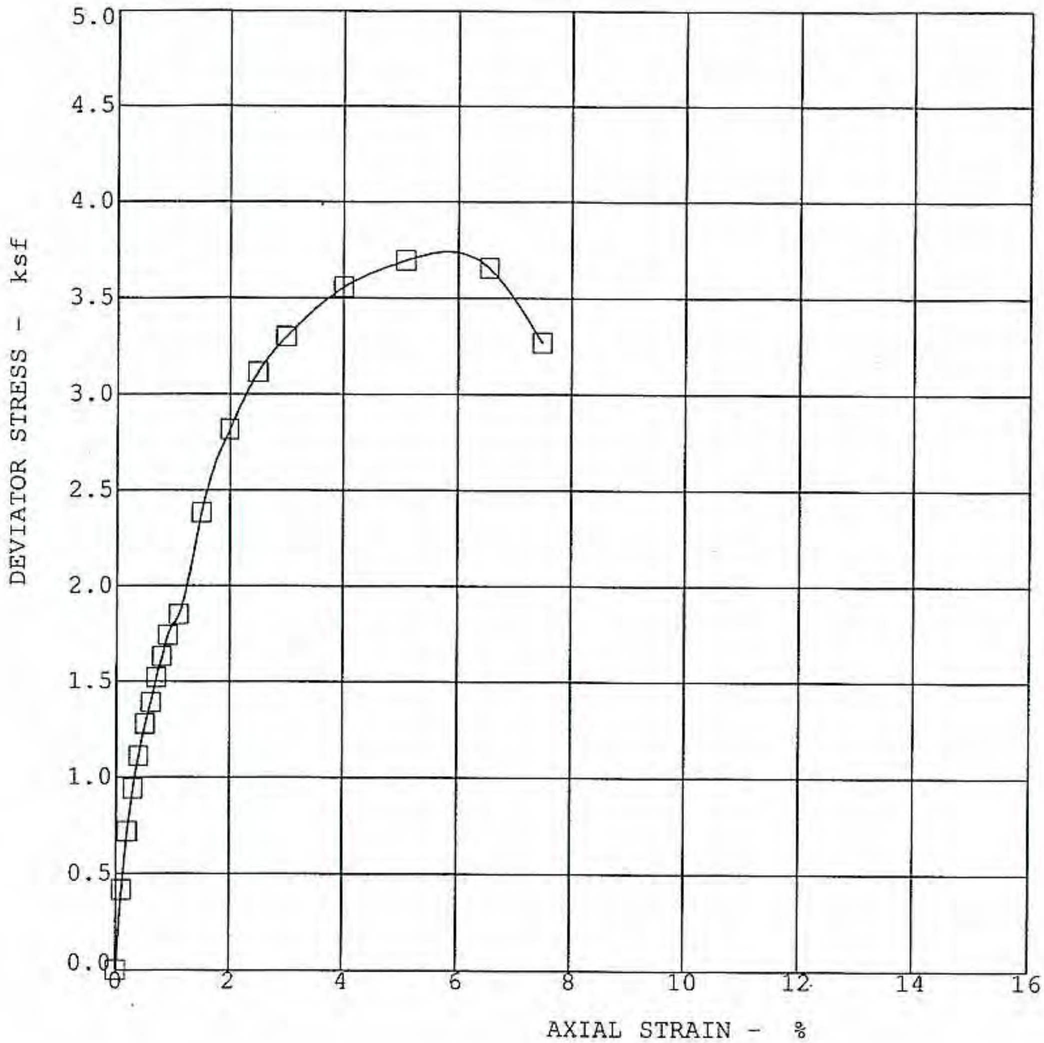

BORING NO.	**KB-4**	**DRY DENSITY - pcf**	**101**
DEPTH - ft	**4**	**WATER CONTENT - %**	**24.3**
SOIL DESCRIPTION	**Dark Brown Silty Sandy Clay**		
SIGMA 3 - ksf	**0.50**		

MAX. DEVIATOR STRESS= 3.69 ksf at 5.1 % STRAIN

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KLEINFELDER

UU TRIAXIAL TEST/UNSATURATED

CHEVRON/TEXACO INVESTIGATION
CHEVRON-TEXACO WAY
SAN RAMON, CALIFORNIA

PLATE

B-13

PROJECT NO. 53512-GEO

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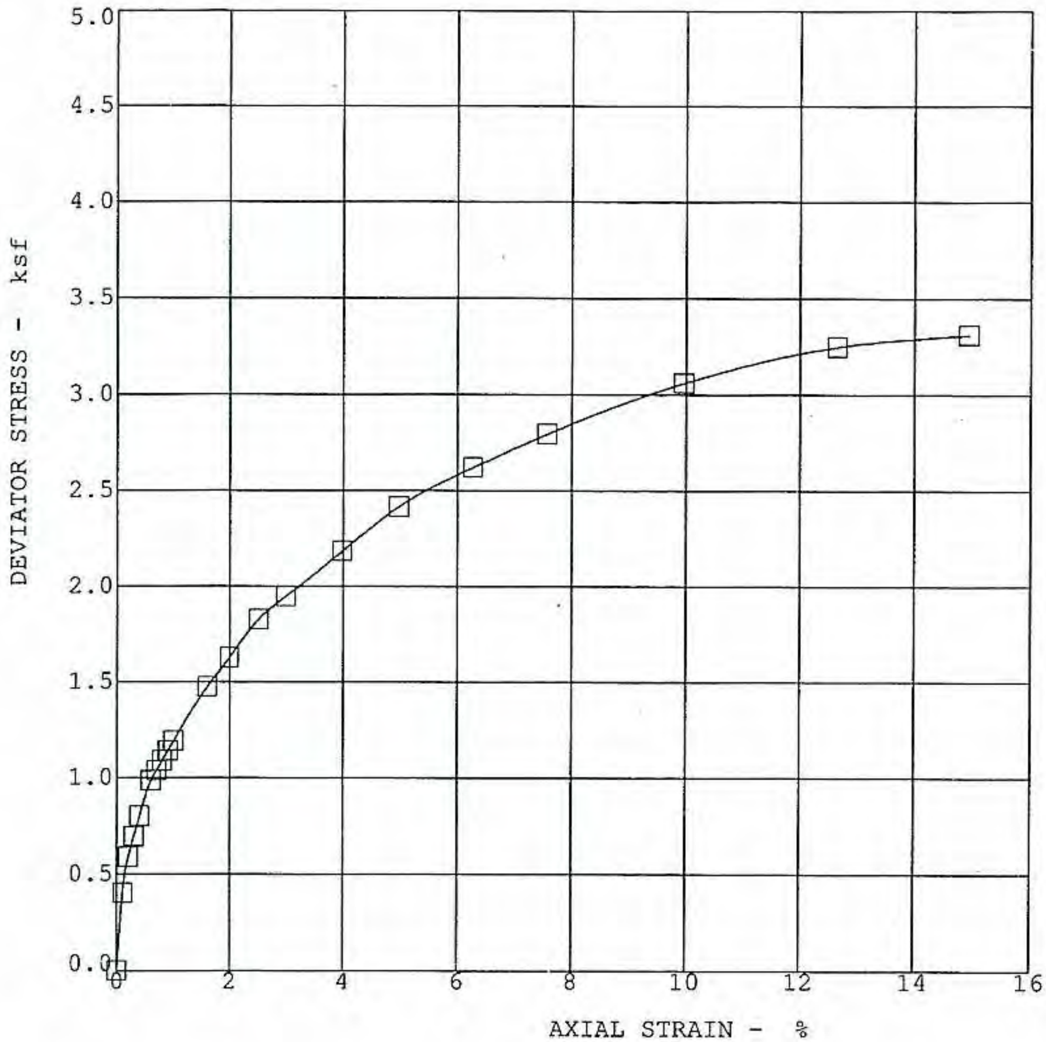

BORING NO.	KB-5	**DRY DENSITY - pcf**	101
DEPTH - ft	26	**WATER CONTENT - %**	23.2
SOIL DESCRIPTION	Greenish-Gray Clay		
SIGMA 3 - ksf	2.00		

MAX. DEVIATOR STRESS= 3.31 ksf at 14.9 % STRAIN

KLEINFELDER

PROJECT NO. 53512-GEO

UU TRIAXIAL TEST/UNSATURATED

CHEVRON/TEXACO INVESTIGATION
CHEVRON-TEXACO WAY
SAN RAMON, CALIFORNIA

PLATE

B-14

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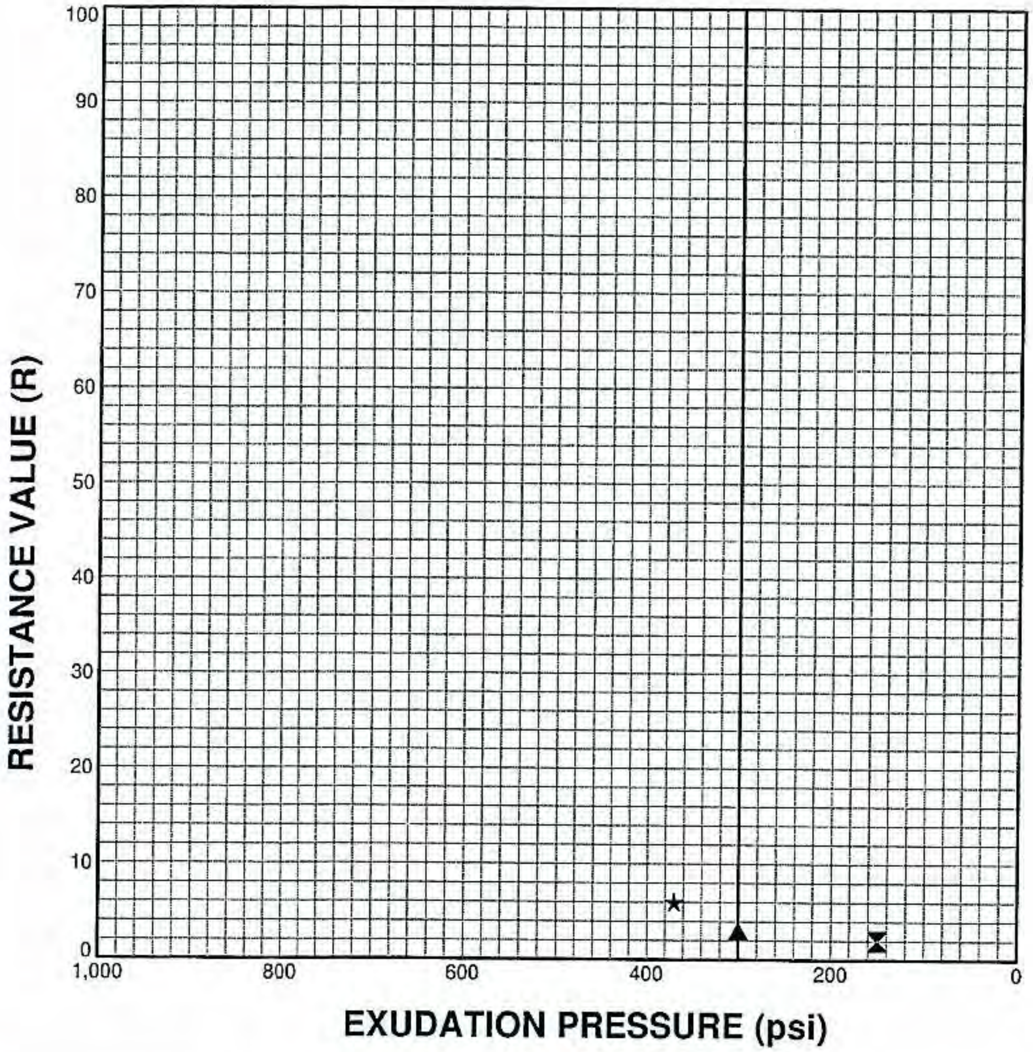


SPECIMEN NO.	☒	▲	★
MOISTURE CONTENT (%)	21.8	19.8	17.9
DRY DENSITY (PCF)	102.5	105.2	110.4
EXUDATION PRESSURE (PSI)	150	300	370
EXPANSION PRESSURE (PSF)	0	0	65
RESISTANCE VALUE (R)	2	3	6

Date Received: 2/7/05

SAMPLE SOURCE	CLASSIFICATION	SAND EQUIVALENT	EXPANSION PRESSURE	R-VALUE
(PL8325)	Brown Clayey Silty	---	0 psf	**<5**

ASTM D 2844, Cal Test 301

KLEINFELDER

PROJECT NO. 53512-GEO

RESISTANCE VALUE TEST DATA

CHEVRON/TEXACO INVESTIGATION
CHEVRON-TEXACO WAY
SAN RAMON, CALIFORNIA

PLATE

B-15

APPENDIX C

California State Certified Laboratory No.2153

CERCO analytical, inc.

3942-A Valley Avenue
Pleasanton, CA 94566-4715
Tel: 925.462.2771
Fax: 925.462.2775

9 March 2005

Job No.0502129
Cust. No.10527

Mr. Robert Ellis
Kleinfelder
7133 Koll Center Parkway
Pleasanton, CA 94566

Subject: Project No.: 53512/GEO
Project Name: Chevron Garage
Corrosivity Analysis – ASTM Test Methods

Dear Mr. Gray:

Pursuant to your request, CERCO Analytical has analyzed the soil sample submitted on February 15, 2005. Based on the analytical results, this brief corrosivity evaluation is enclosed for your consideration.

The resistivity measurements indicate that 0502129-002 is classified as "moderately corrosive" and samples 0502129-001 and 003 are classified as "corrosive". All buried iron, steel, cast iron, ductile iron, galvanized steel and dielectric coated steel or iron should be properly protected against corrosion depending upon the critical nature of the structure. All buried metallic pressure piping such as ductile iron firewater pipelines should be protected against corrosion.

The chloride ion concentrations range from none detected to 57 mg/kg. Because the chloride ion concentrations are less than 300 mg/kg, they are determined to be insufficient to attack steel embedded in a concrete mortar coating.

The sulfate ion concentration ranges from none detected to 83 mg/kg and is determined to be insufficient to damage reinforced concrete structures and cement mortar-coated steel at these locations.

The pH of the soils range from 7.1 to 10.6 which does not present corrosion problems for buried iron, steel, mortar-coated steel and reinforced concrete structures.

The redox potentials range from 410 to 440-mV and is indicative of aerobic soil conditions.

This corrosivity evaluation is based on general corrosion engineering standards and is non-specific in nature. For specific design recommendations or consultation, please call ***JDH Corrosion Consultants, Inc. at (925) 927-6630.***

We appreciate the opportunity of working with you on this project. If you have any questions, or if you require further information, please do not hesitate to contact us.

Very truly yours,
CERCO ANALYTICAL, INC.

Cheryl McMillen for

J. Darby Howard, Jr., P.E.
President

JDH/cm
Enclosure

CERCO Analytical, Inc.

3942-A Valley Avenue, Pleasanton, CA 94566-4715 (925) 462-2771 Fax (925) 462-2775

FINAL RESULTS

Client:	Kleinfelder	Date Sampled:	Not indicated
Client's Project No.:	53512/GEO	Date Received:	15-Feb-2005
Client's Project Name:	Chevron Garage	Date of Report:	9-Mar-2005
Authorization:	PO No. R9032	Matrix:	Soil

Job/Sample No.	Sample I.D.	Redox (mV)	pH	Conductivity (umhos/cm)*	Resistivity (100% Saturation) (ohms-cm)	Sulfide (mg/kg)*	Chloride (mg/kg)*	Sulfate (mg/kg)*
0502129-001	KB-1 1B @ 4'	440	7.1	-	1,400	-	57	39
0502129-002	KB-3 1B @ 3.5'	440	7.2	-	3,500	-	N.D.	N.D.
0502129-003	KB-4 1B @ 3.5'	410	10.6	-	2,000	-	48	83

	Redox	pH	Conductivity	Resistivity	Sulfide	Chloride	Sulfate
Method:	ASTM D1498	ASTM D4972	ASTM D1125M	ASTM G57	ASTM D4658M	ASTM D4327	ASTM D4327
Detection Limit:	-	-	10	-	50	15	15
Date Analyzed:	3-Mar-2005	4-Mar-2005	-	8-Mar-2005	-	4-Mar-2005	4-Mar-2005

* Results Reported on "As Received" Basis

N.D. - None Detected

Cheryl McMillen

Laboratory Director

Quality Control Summary - All laboratory quality control parameters were found to be within established limits

Preliminary Geotechnical Exploration, San Ramon City Center, San Ramon, California, prepared for City of San Ramon, California, prepared by ENGEO Incorporated, ENGEO Project 5172.001.01, dated March 29, 2001

TABLE II

LABORATORY TESTS - PURPOSE

1. Natural Unit Weight and Moisture Content (ASTM D-2216)

   Provides in-place density and percentage moisture by dry weight. These aid in characterizing existing and previous ground-water conditions, soil compressibility, and degree of saturation.

2. Atterberg Limits (ASTM D-4318)

   Performed primarily on cohesive soils. Includes the Liquid Limit and the Plastic Limit. From these, a Plasticity Index can be computed which allows classification of the soil and is an indirect measure of its expansion characteristics.

3. Direct Shear (ASTM D-3080)

   Provides shear strength parameters including cohesion c, and angle of internal friction ϕ, which are used in foundation design and slope stability analyses.

4. Unconfined Compressive Strength (ASTM D-2166)

   Determined usually on cohesive (clay) materials to establish allowable design foundation bearing capacity or estimated shear strength for slope stability studies.

5. Expansion Index (UBC 29-2)

   Determines an "Expansion Index" number derived from a measurement of swell for a remolded soil sample under relatively light loads and prescribed initial density and moisture level.

6. Swell Potential (ASTM D-4546)

   Determines the swell pressure developed by a confined soil when subjected to increased moisture. Also measures volume change due to heave for various initial moisture levels.

7. Consolidation (ASTM D-2435)

Performed on compressible soils. Provides data for computation of consolidation characteristics. Parameters which can be estimated include Preconsolidation Pressure, P_c and Compression Index, C_c. These are used to estimate foundation and fill settlements.

8. Compaction (ASTM D-1557)

Generates a "Compaction Curve" (unit weight vs. moisture content) from which maximum unit weight and optimum moisture content may be estimated. These are used for field testing of engineered fill, and for approximating shrinkage factors in preliminary quantity estimates for grading.

9. R-Value (ASTM D-2844)

Performed on subgrade soils to compute the resistance (R) value which is used in design of roadway pavement sections.

ENGEO INCORPORATED

TABLE III
SUMMARY OF LABORATORY TEST RESULTS

		In-Place		Atterberg Limits			Shear Test			
Boring and Sample Number	Depth Feet	Dry Unit Weight Pcf	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	Angle of Internal Friction	Unit Cohesion psf	Unconfined Compressive Strength psf	Gradation (Percent Passing No. 200 Sieve)
1-2	6	98.8	25.6	39	17	22			3,900	
1-3	11	100.2	24.3	48	18	30				
1-4	16									35
1-7	31	103.0	24.4						5,600	
1-10	46	105.8	22.9							
1-12	56		19.4							31
1-13	60		12.7							
2-1	3	113.5	13.2							
2-3	11	98.9	24.3							
2-5	21		25.8							
3-2	6	103.1	21.7							
3-4	16	96.2	26.5						1,450	
3-6	26		28.4							
4-1	3	106.8	15.8							
4-2	6	99.0	11.4							
4-4	16	90.4	31.3							
4-6	26		28.8							

ENGEO INCORPORATED

TABLE III

SUMMARY OF LABORATORY TEST RESULTS

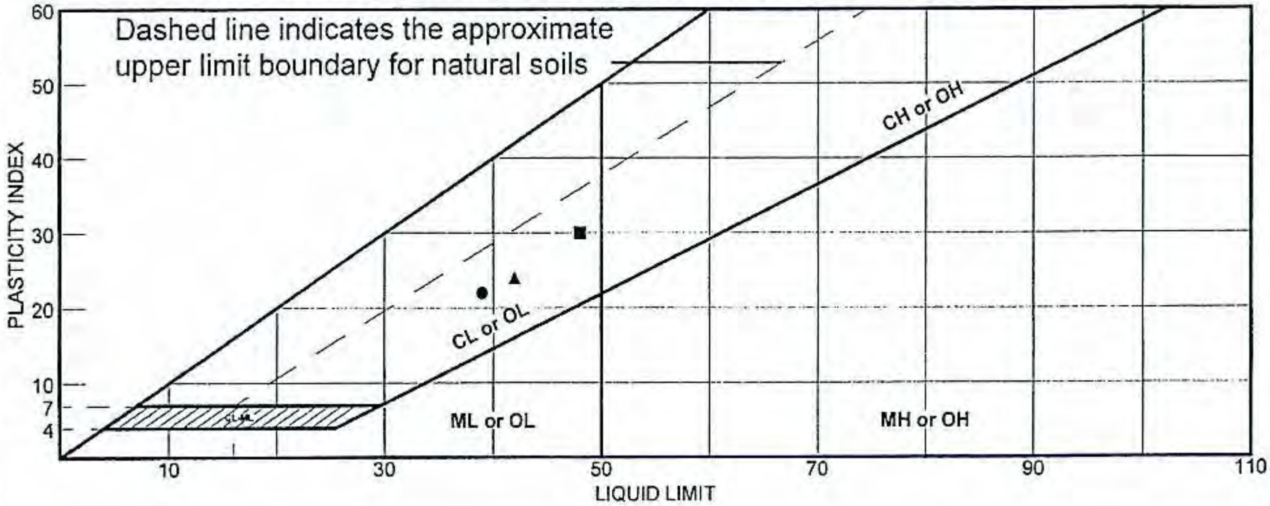
		In-Place		Atterberg Limits			Shear Test			
Boring and Sample Number	Depth Feet	Dry Unit Weight Pcf	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	Angle of Internal Friction	Unit. Cohesion psf	Unconfined Compressive Strength psf	Gradation (Percent Passing No. 200 Sieve)
5-1	3	101.2	16.2	42	18	24				
5-3	11	112.0	15.5							
5-4	16	93.0	30.8							
5-6	26	94.0	29.9						3,900	
5-8	36	114.2	17.9							
5-10	46	100.7	25.6							
6-1	51	99.5	26.4							
6-2	55.5	126.1	12.6							

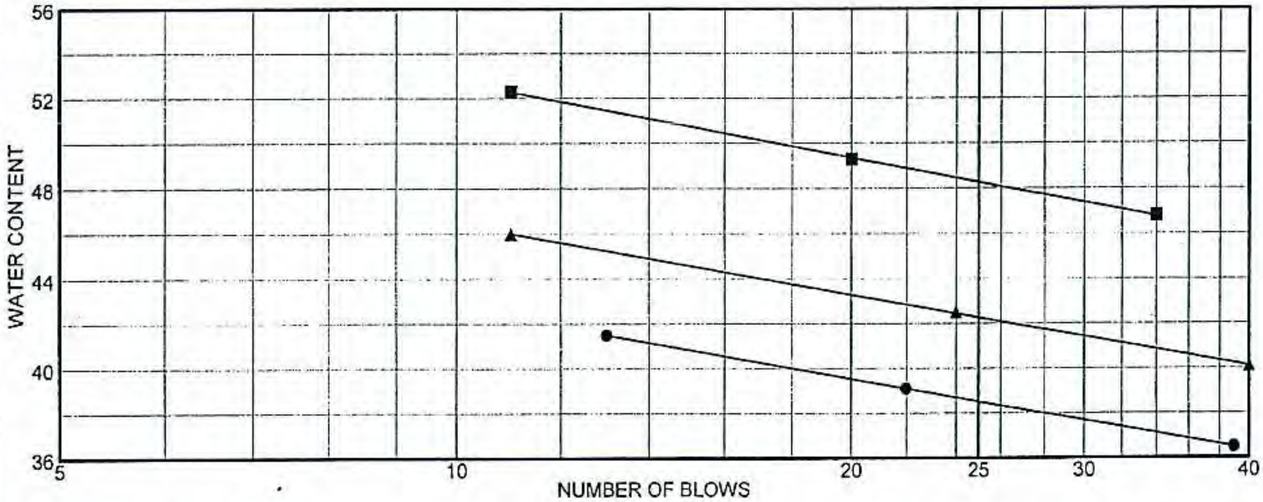
APPENDIX B

ENGEO INCORPORATED

Liquid and Plastic Limits Test Report
Particle Size Distribution Report
Unconfined Compression Test Reports
Consolidation Test Report

LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Black silty Clay with sand	39	17	22			CL
■	Grayish brown silty Clay to Clay with fine sand	48	18	30			CL-CH
▲	Black silty Clay with fine sand	42	18	24			CL

Project No. 5172.5.001.01 **Client:**

Project: San Ramon City Center, San Ramon, California

● **Source:** PI **Sample No.:** 1-1 Date:02-10-01

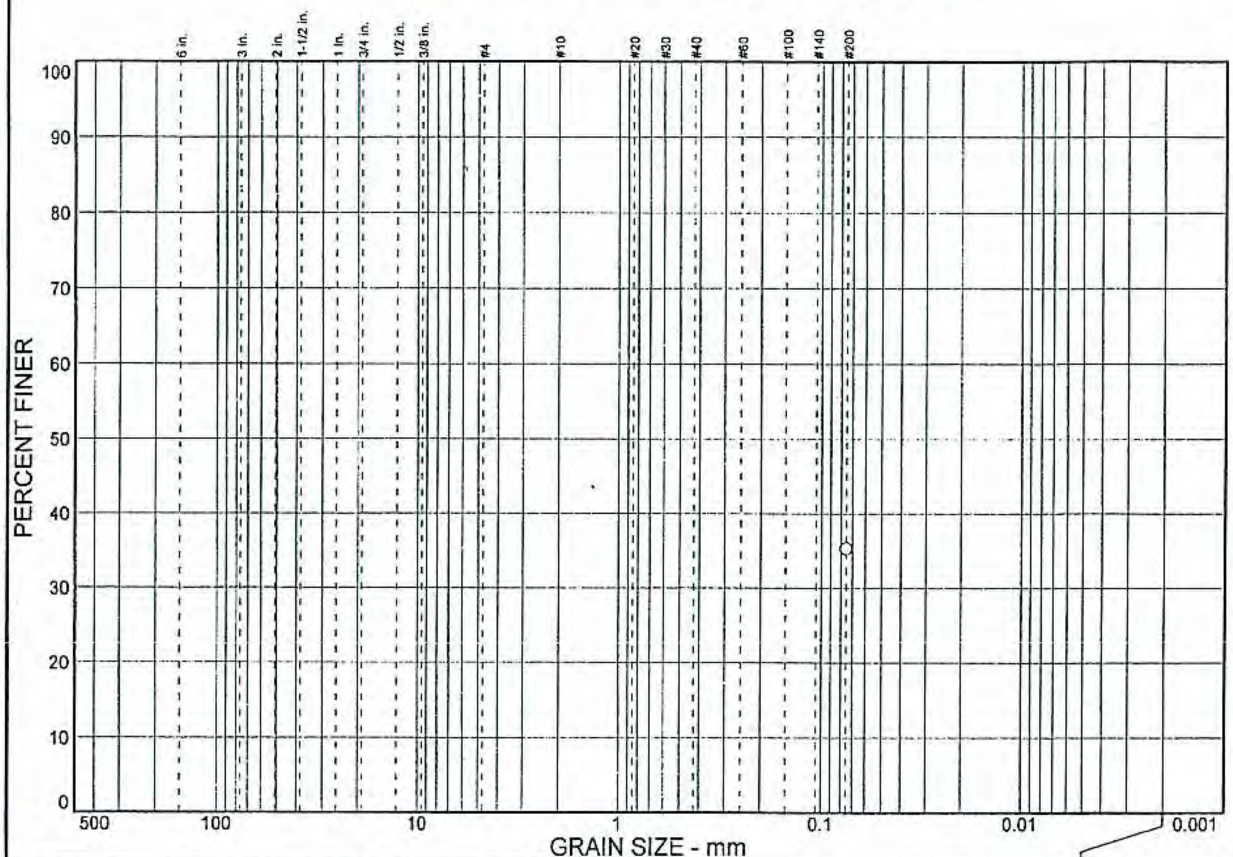
■ **Source:** PI **Sample No.:** 1-3

▲ **Source:** PI **Sample No.:** 5-1

Remarks:
● 1-1 (3')
■ 1-3 (11')
▲ 5-1 (3')

ENGEO INCORPORATED GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS MATERIALS TESTING

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
						35.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	35.3		

Soil Description

Grayish brown silty Sand

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

* (no specification provided)

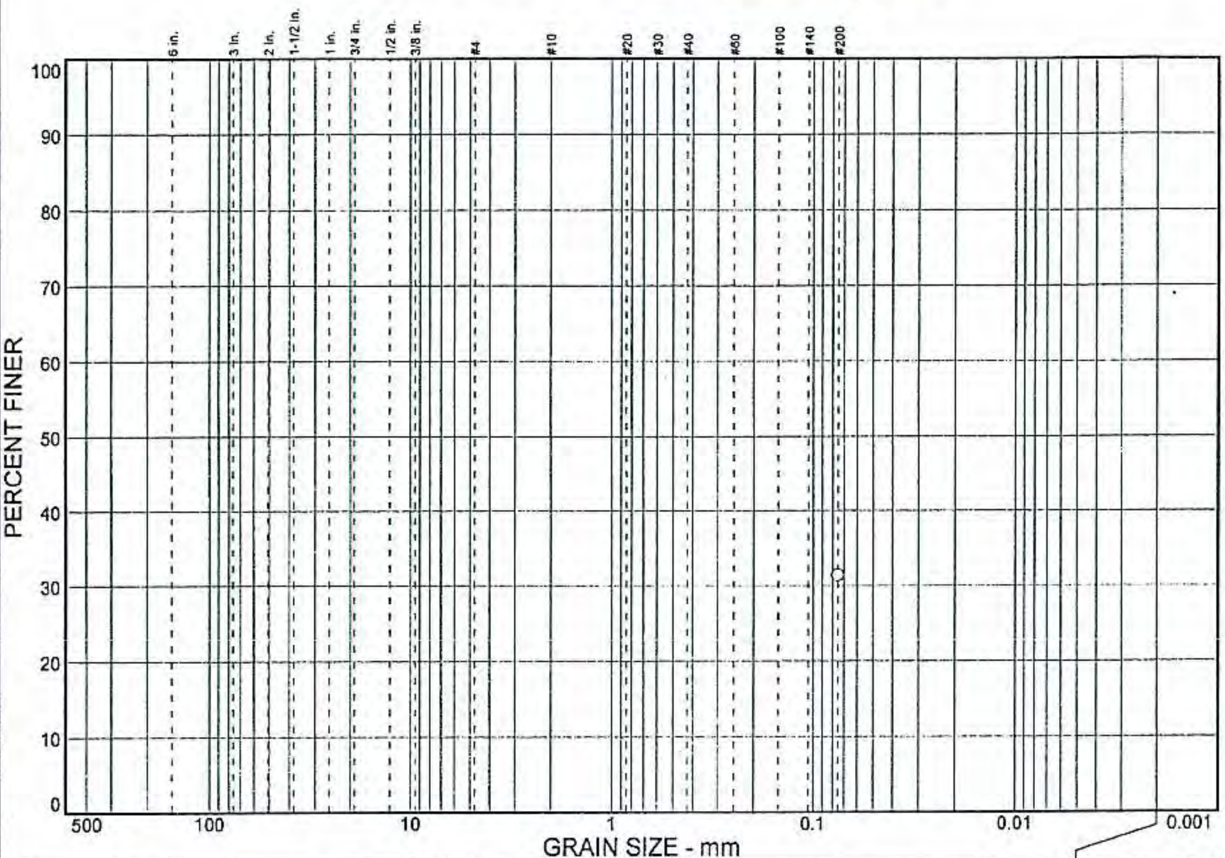
Sample No.: 1-4 **Source of Sample:** %200 **Date:** 02-06-01
Location: **Elev./Depth:**

ENGEO INCORPORATED GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS MATERIALS TESTING

Client:
Project: San Ramon City Center, San Ramon, California

Project No: 5172.5.001.01

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
						31.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	31.4		

* (no specification provided)

Soil Description

Grayish brown clayey Sand

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= SC AASHTO=

Remarks

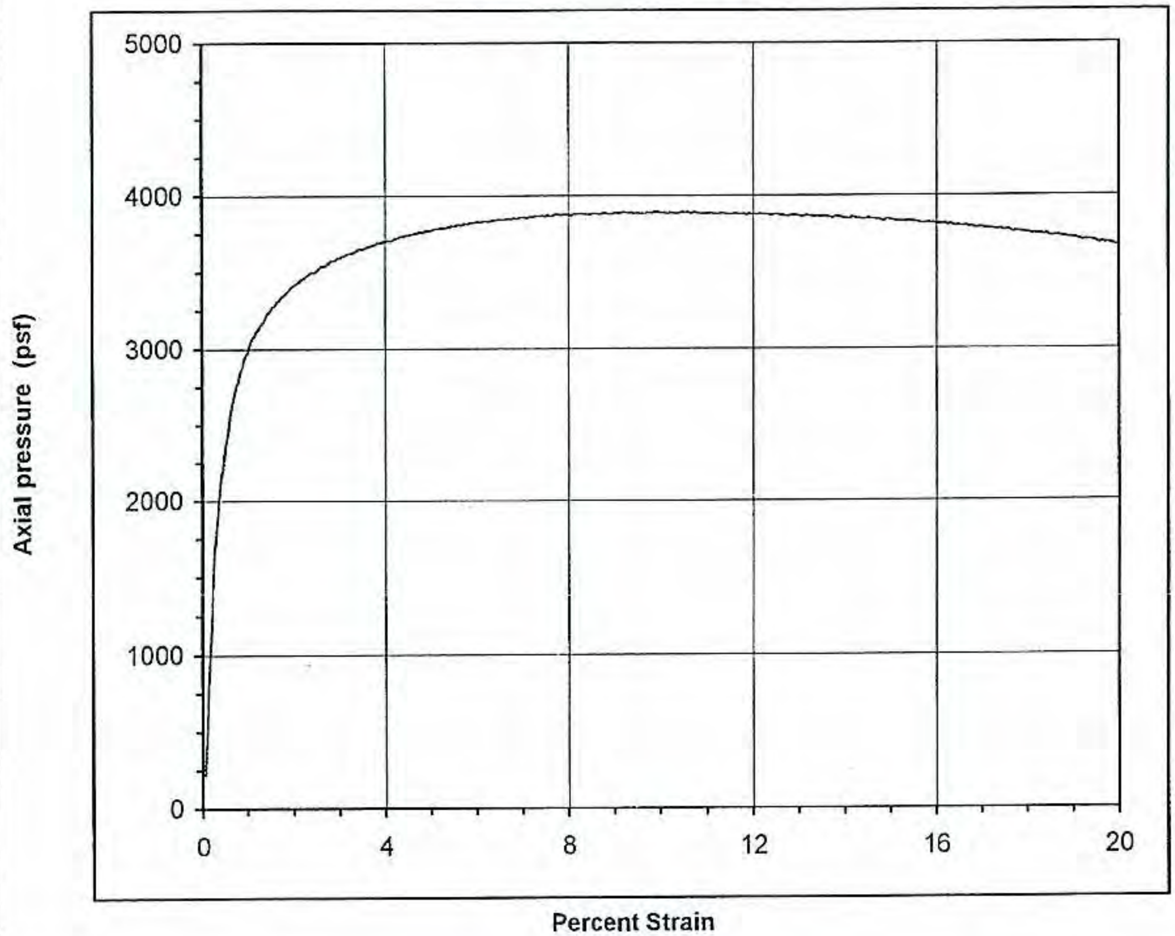
Sample No.: 1-12 **Source of Sample:** %200 **Date:** 02-06-01
Location: **Elev./Depth:**

ENGEO INCORPORATED GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS MATERIALS TESTING

Client:
Project: San Ramon City Center, San Ramon, California

Project No: 5172.5.001.01

Unconfined Compression Test
ASTM Test Method D2166



Unconfined Compressive Strength: 3890 psf 1.9 tsf

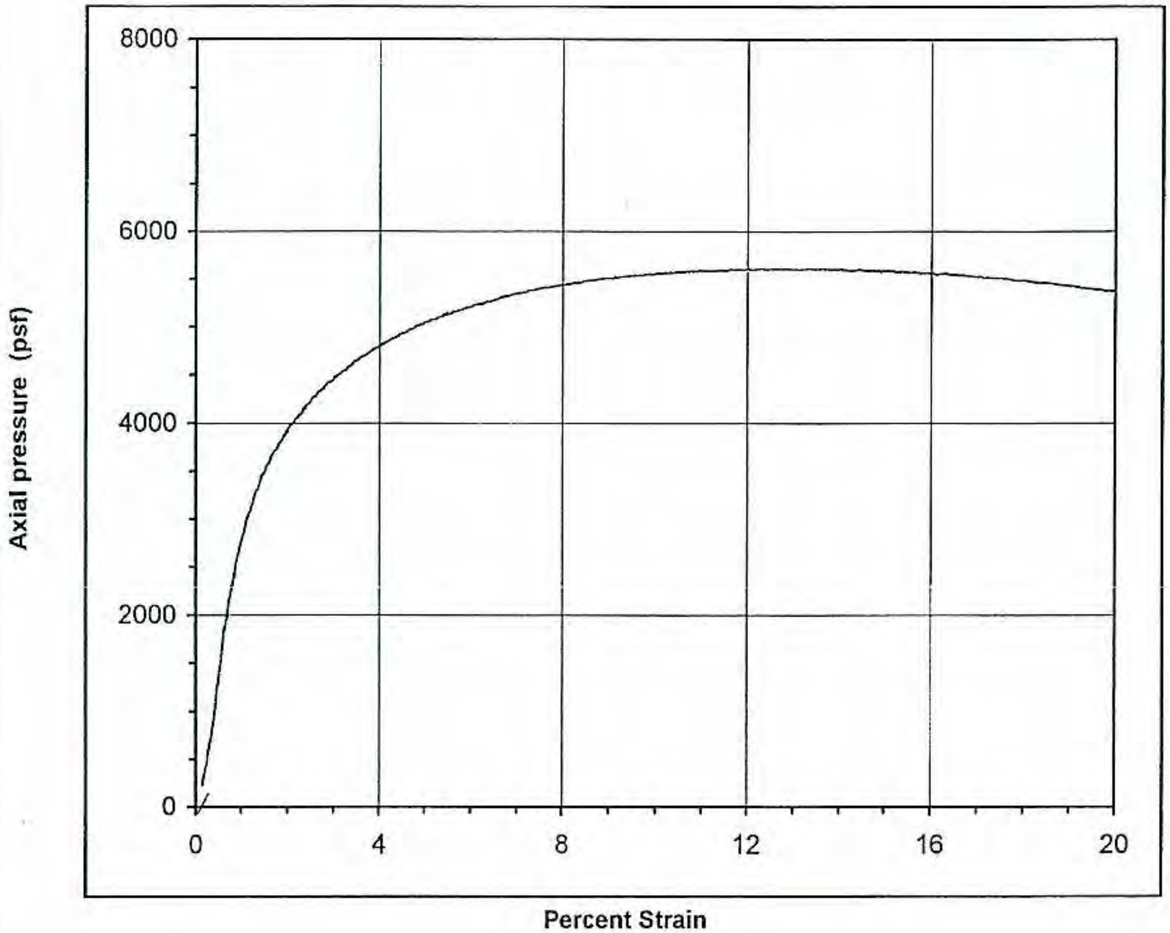
Sample Description: Black Clay with fine sand

Initial Diameter:	2.420	in.
Initial Height:	5.46	in.
Strain Rate:	1.371	%/min
Total Strain:	20.01	%

Sample Number:	1-2	
Dry Unit Weight:	98.8	pcf
Moisture Content:	25.6	%
Depth of Sample:	6.0	ft.

ENGEO INCORPORATED	SAN RAMON CITY CENTER San Ramon, California	Job No.:	5172.5.001.01
		Sample Number:	1-2
		Date:	2/2/01

Unconfined Compression Test
ASTM Test Method D2166



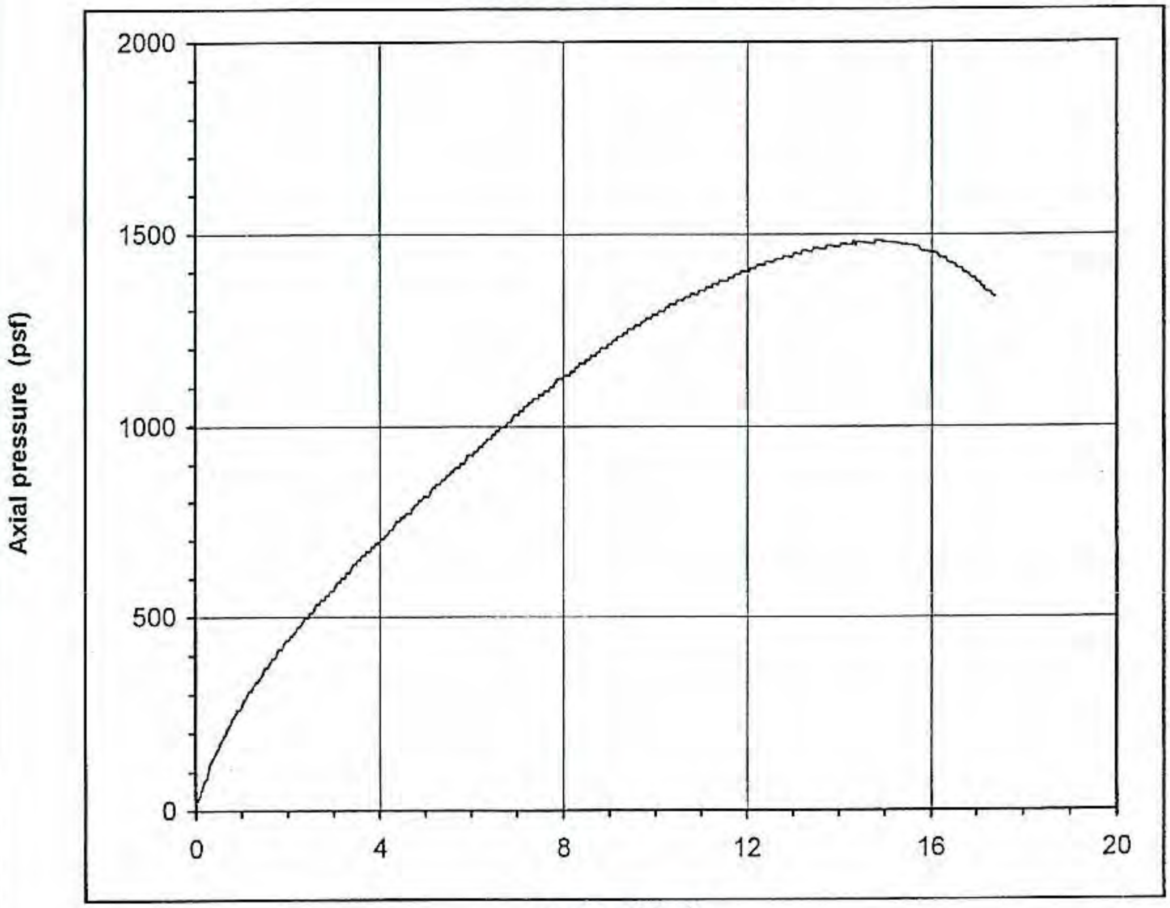
Unconfined Compressive Strength: **5600 psf** **2.8 tsf**

Sample Description: Dark grayish brown Clay with fine sand

Initial Diameter:	2.420 in.				
Initial Height:	5.00 in.	Sample Number:	1-7		
Strain Rate:	1.549 %/min	Dry Unit Weight:	103.0 pcf		
Total Strain:	20.02 %	Moisture Content:	24.4 %		
		Depth of Sample:	31.0 ft.		

ENGEO INCORPORATED	SAN RAMON CITY CENTER San Ramon, California	Job No.:	5172.5.001.01
		Sample Number:	1-7
		Date:	2/2/01

Unconfined Compression Test
ASTM Test Method D2166



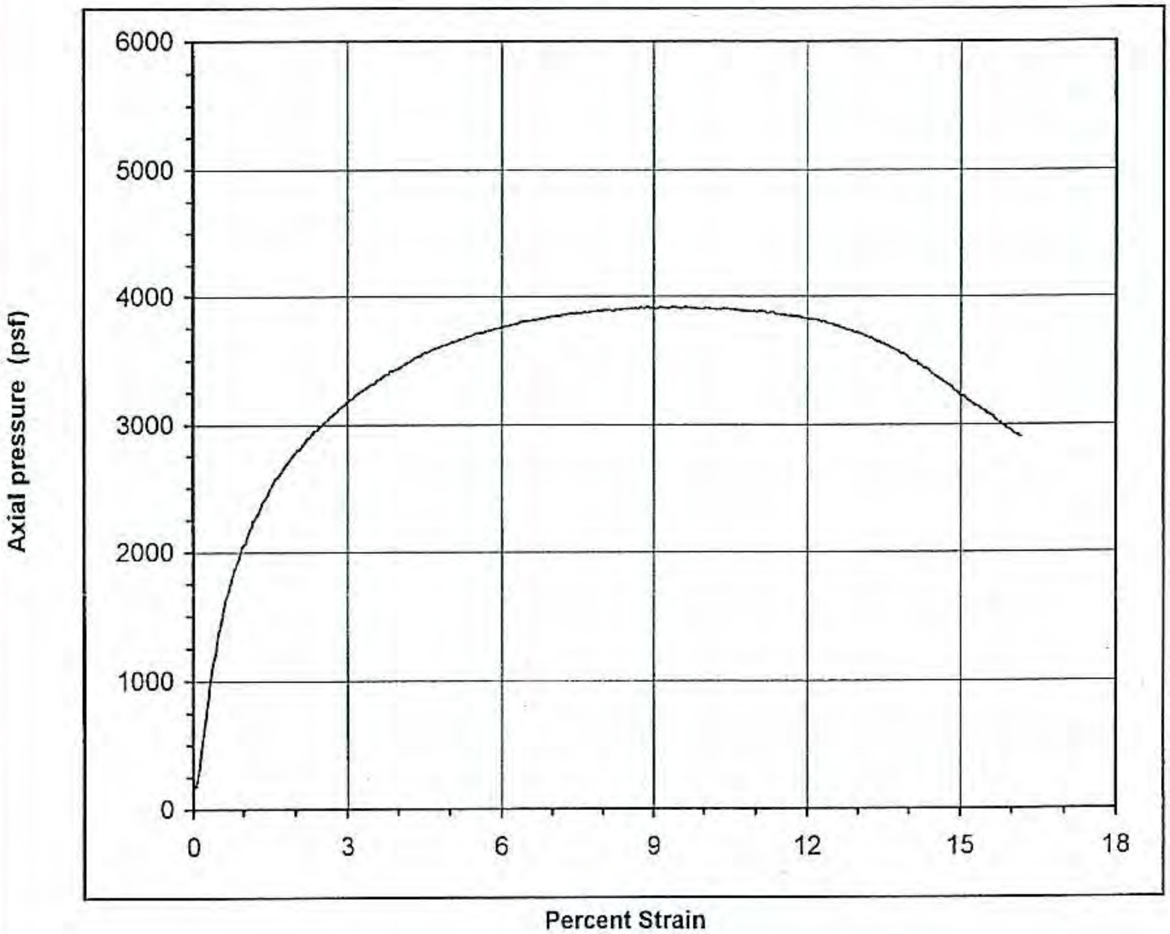
Unconfined Compressive Strength: **1450 psf** **0.7 tsf**

Sample Description: Light olive brown silty Clay with very fine sand

Initial Diameter:	2.420 in.				
Initial Height:	5.05 in.	Sample Number:	3-4	
Strain Rate:	1.468 %/min	Dry Unit Weight:	96.2	pcf
Total Strain:	17.40 %	Moisture Content:	26.5	%
		Depth of Sample:	16.0	ft.

ENGEO INCORPORATED	SAN RAMON CITY CENTER San Ramon, California	Job No.:	5172.5.001.01
		Sample Number:	3-4
		Date:	2/2/01

Unconfined Compression Test
ASTM Test Method D2166



Unconfined Compressive Strength: 3920 psf 2.0 tsf

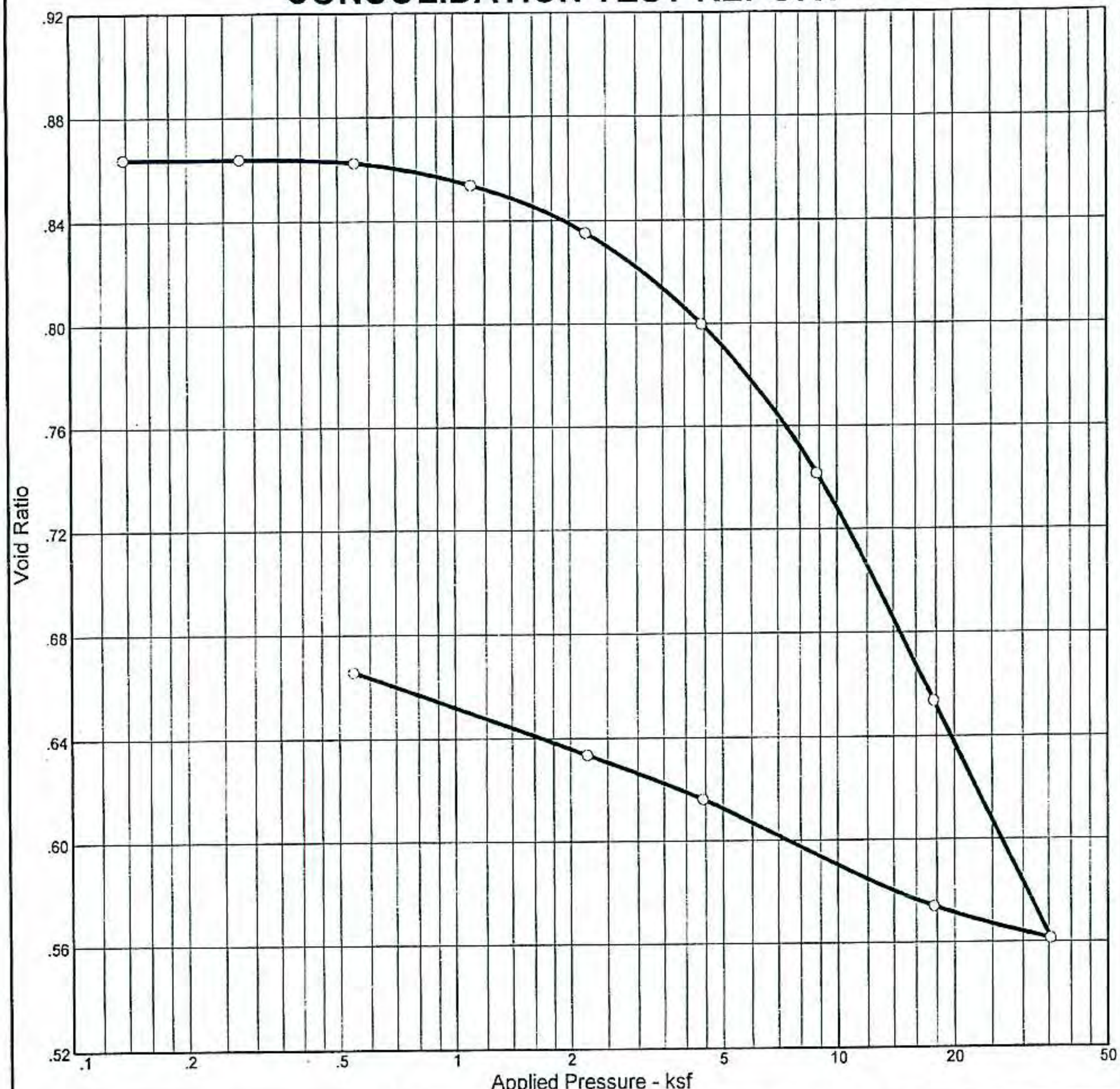
Sample Description: Dark gray Clay

Initial Diameter:	2.420	in.
Initial Height:	5.18	in.
Strain Rate:	1.363	%/min
Total Strain:	16.18	%

Sample Number:	5-6	
Dry Unit Weight:	94.0	pcf
Moisture Content:	29.9	%
Depth of Sample:	26.0	ft.

ENGEO INCORPORATED	SAN RAMON CITY CENTER San Ramon, California	Job No.:	5172.5.001.01
		Sample Number:	5-6
		Date:	2/2/01

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	USCS	AASHTO	Initial Void Ratio
Saturation	Moisture							
97.9 %	31.3 %	90.4			2.70	CL		0.864

MATERIAL DESCRIPTION

Olive brown silty Clay

Project No. 5172.5.001.01 **Client:**

Project: San Ramon City Center, San Ramon, California

Source: Consol **Sample No.:** 4-4 **Elev./Depth:** 16'

Remarks:

ENGEO INCORPORATED GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS MATERIALS TESTING

Geotechnical Investigation, Bishop Ranch 1 Development, San Ramon, California, prepared for Sunset Development Company, prepared by Harding Lawson Associates (HLA), HLA Project 50044.1, dated May 15, 2000

SIERRA TESTING LABORATORIES, INC.
GEOTECHNICAL AND MATERIALS TESTING SERVICES

Project No. 00-166
25 April 2000

Harding Lawson Associates
383-4th Street, 3rd Floor
Oakland, California 94607

Attention: Mr. Ryan Shafer

Subject: **Bishop Ranch 50 Acre Property**
HLA Job # 5044.1

LABORATORY TEST RESULTS

Dear Mr. Shafer:

As requested, Sierra Testing Laboratories, Inc. has performed laboratory testing on 9 samples of material from the subject site. The samples were identified as 0.5-1.0' South Parking A, 0.5-1.0' South Parking B, 0.5-1.0' North Parking A, 0.5-1.0 North Parking B, 0.5-1.0' East Parking A, 0.5-1.0' East Parking B, .0-1.0' HLA-1, 1.0'-1.5' HLA-3 and 1.0'-1.5' HLA-6 . The samples were received by our laboratory on 16 April 2000. The tests performed on the submitted samples were as follows:

1) Soil Chemistry for Corrosion (pH, Chloride, Sulfate, Resistivity) (CA DOT 643, 417, 422)
2) Atterberg Limit (ASTM D4318)
3) R-Value (ASTM D2844) (CAL 301)
4) Modified Proctor Compaction (ASTM D1557)

The results of the Modified Proctor Compaction tests are presented on Figures 1 thru 3, attached. The results of the R-Value tests are presented on Figures 4 thru 6, attached. The results of the Atterberg Limit tests are presented on Figures 7 thru 9, attached. The results of the Soil Chemistry for Corrosion tests are presented on Table 1, attached. We appreciate the opportunity to be of service to you on this project and look forward to providing additional service, as needed, in the future.

Should you have any questions or require additional information, please contact our office at your convenience.

Very truly yours,

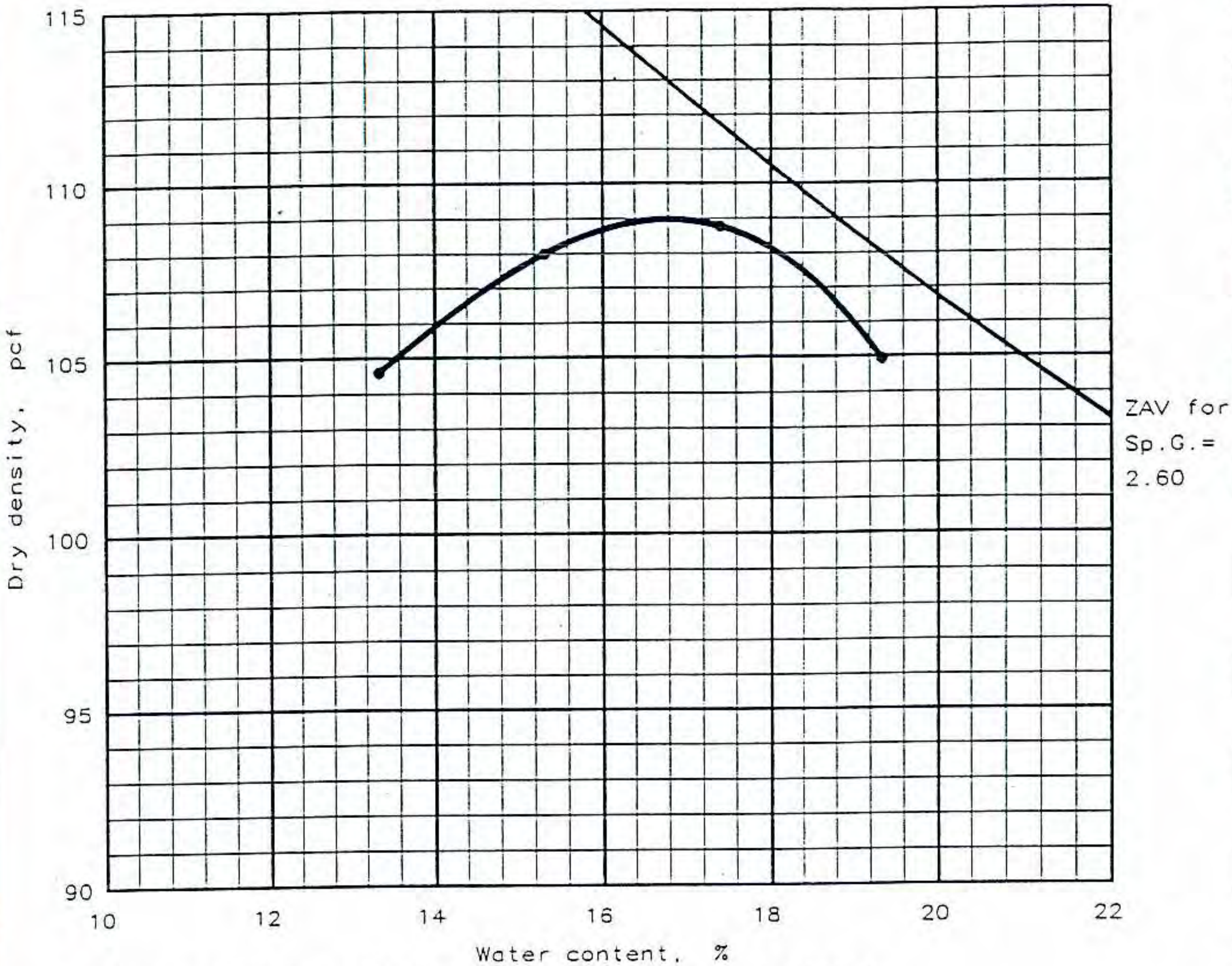
Chad M. Walker
Project Manager

Enclosures: Table 1 and Figures 1 thru 9 .

Table 1

Corrosion Analysis (CA DOT 643, 417, & 422)
Bishop Ranch 50 – Acre Property
HLA Job #50044.1
STL Job #00-166

Sample Name	pH	Minimum Resistivity (ohm-cm)	Chloride (ppm)	Sulfate (ppm)
HLA-1 0.0'-1.0'	7.32	1470	13.8	7.4
HLA-3 1.0'-1.5'	7.00	960	12.7	29.4
HLA-6 1.0'-1.5'	6.93	830	11.3	54.3



Test specification: ASTM D 1557-91 Procedure A, Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No.4	% < No.200
	USCS	AASHTO						
-	-	-	- %	2.70	-	-		

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 109.0 pcf Optimum moisture = 16.8 %	Gray brown sandy CLAY

Project No.: 00-166

Project: Bishop Ranch 50 - Acre Property

Location: 0.5'-1.0' South Parking A

Date: 4-10-2000

Remarks:

HLa Job #50044.1

MOISTURE-DENSITY RELATIONSHIP TEST

SIERRA TESTING LABORATORIES, INC.

Fig. No. 1

PROJECT DATA

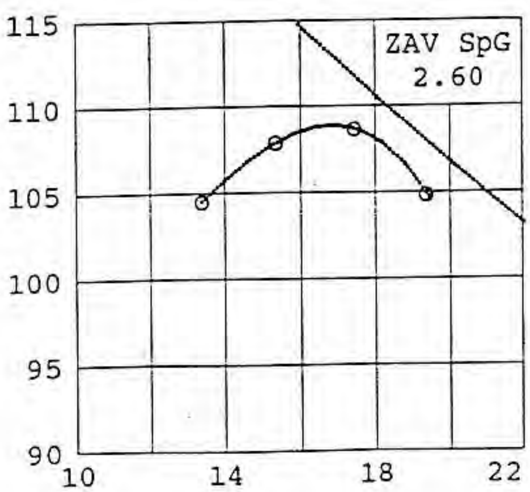
)ate: 4-10-2000
Project no.: 00-166
Project: Bishop Ranch 50 - Acre Property
Location 1: 0.5'-1.0' South Parking A
2:
Remarks 1: HLa Job #50044.1
2:
3:
Material 1: Gray brown sandy CLAY
Description 2:
Elevation or depth: -
Fig no: 1

SPECIMEN DATA

USCS classification: -
Natural moisture: -
AASHTO classification: -
Specific gravity: 2.70
Percent retained on No.4 sieve:
Percent passing No. 200 sieve:
Liquid limit: - Plastic limit: Plasticity index: -

TEST DATA AND RESULTS FOR CURVE 3

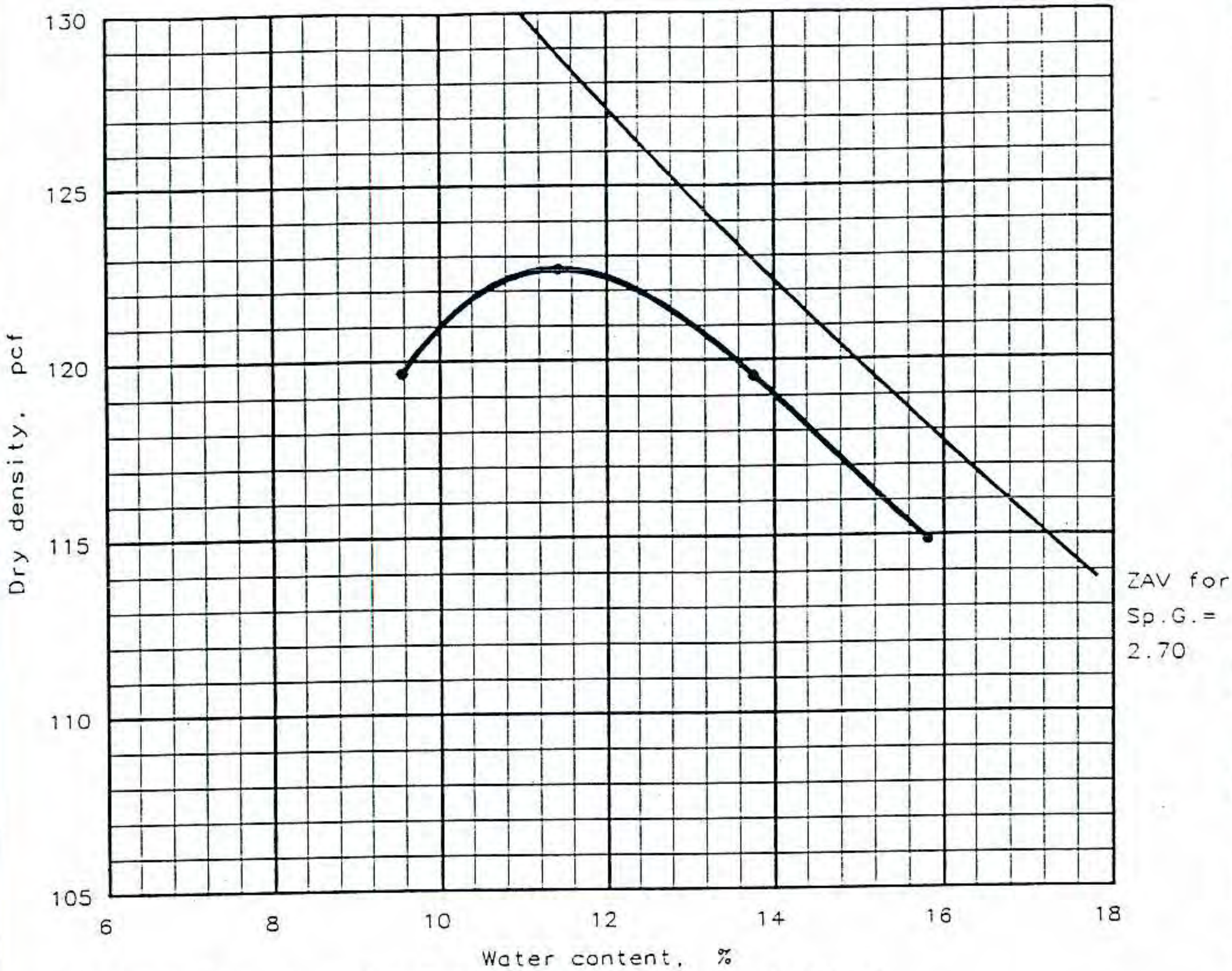
Type of test: Modified, ASTM D 1557-91 Procedure A



POINT NO.	1	2	3	4
WM + WS	3675	3765	3813	3776
WM	1882	1882	1882	1882
WW+T #1	380.50	396.00	411.50	530.00
WD+T #1	341.80	350.30	358.20	452.60
TARE #1	52.00	52.00	52.00	52.50
MOIST #1	13.4	15.3	17.4	19.3
MOISTURE	13.4	15.3	17.4	19.3
DRY DEN	104.6	108.0	108.8	105.0

Max dry den= 109.0 pcf, Opt moisture= 16.8 %

Oversize Correction Not Applied



Test specification: ASTM D 1557-91 Procedure A, Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No.4	% < No.200
	USCS	AASHTO						
-	-	-	- %	2.70	-	-		

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 122.6 pcf Optimum moisture = 11.4 %	Gray brown sandy CLAY

Project No.: 00-166

Project: Bishop Ranch 50 - Acre Property

Location: 0.5'-1.0' North Parking A

Date: 4-11-2000

Remarks:

HLA Job #50044.1

MOISTURE-DENSITY RELATIONSHIP TEST

SIERRA TESTING LABORATORIES, INC.

Fig. No. 2

PROJECT DATA

ate:	4-11-2000
?roject no.:	00-166
Project:	Bishop Ranch 50 - Acre Property
.ocation 1:	0.5'-1.0' North Parking A
:	
Remarks 1:	HLA Job #50044.1
:	
:	
Material 1:	Gray brown sandy CLAY
escription 2:	
levation or depth:	-
ig no:	2

SPECIMEN DATA

SCS classification: -
atural moisture: -
Percent retained on No.4 sieve:
Percent passing No. 200 sieve:
iquid limit: -

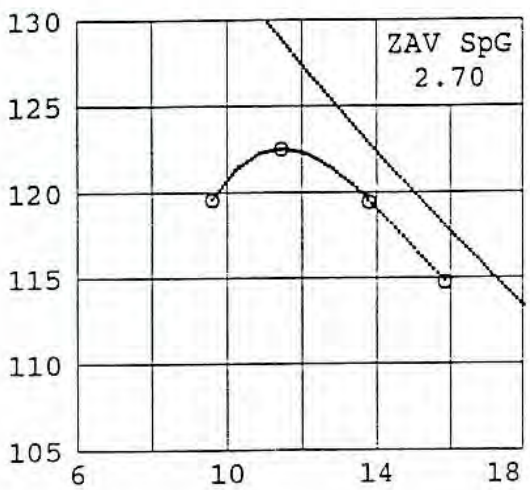
AASHTO classification: -
Specific gravity: 2.70

Plastic limit:

Plasticity index: -

TEST DATA AND RESULTS FOR CURVE 2

Type of test: Modified, ASTM D 1557-91 Procedure A

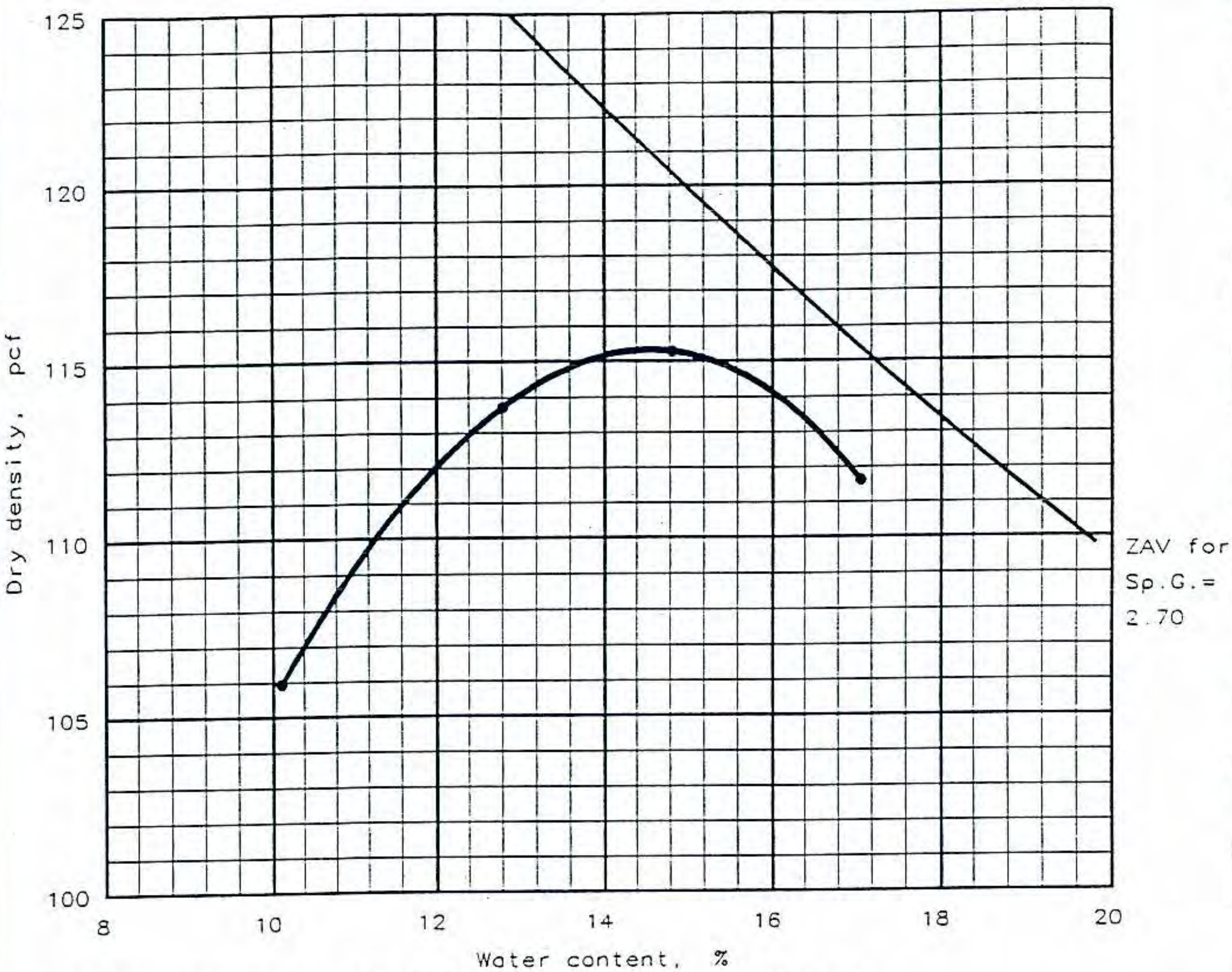


POINT NO.	1	2	3	4
WM + WS	3865	3948	3939	3894
WM	1882	1882	1882	1882
WW+T #1	407.70	388.70	425.50	355.60
WD+T #1	376.60	354.00	380.30	312.60
TARE #1	51.70	50.30	52.10	40.80
MOIST #1	9.6	11.4	13.8	15.8
MOISTURE	9.6	11.4	13.8	15.8
DRY DEN	119.7	122.6	119.6	114.9

Max dry den= 122.6 pcf, Opt moisture= 11.4 %

versize Correction Not Applied

=================== SIERRA TESTING LABORATORIES, INC. ===================



Test specification: ASTM D 1557-91 Procedure A, Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No.4	% < No.200
	USCS	AASHTO						
	-	-	- %	2.70	-	-		

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 115.4 pcf Optimum moisture = 14.6 %	Dark gray sandy CLAY

Project No.: 00-166

Project: Bishop Ranch 50 - Acre Property

Location: 0.5'-1.0' East Parking A

Date: 4-12-2000

Remarks:

HLA Job #50044.1

MOISTURE-DENSITY RELATIONSHIP TEST

SIERRA TESTING LABORATORIES, INC.

Fig. No. 3

PROJECT DATA

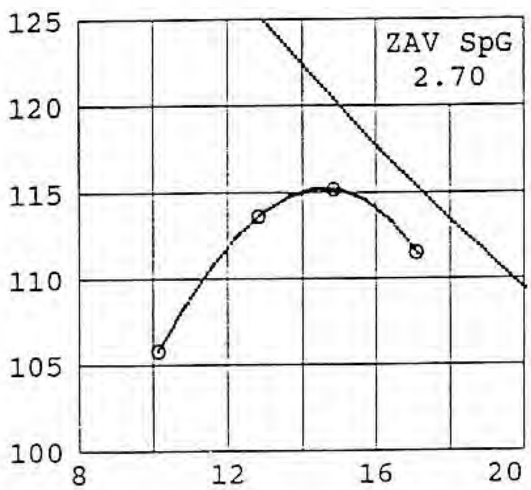
ate:	4-12-2000
?roject no.:	00-166
Project:	Bishop Ranch 50 - Acre Property
ocation 1:	0.5'-1.0' East Parking A
.:	
Remarks 1:	HLA Job #50044.1
:	
:	
Material 1:	Dark gray sandy CLAY
escription 2:	
levation or depth:	
Fig no:	3

SPECIMEN DATA

SCS classification: - AASHTO classification: -
atural moisture: - Specific gravity: 2.70
Percent retained on No.4 sieve:
Percent passing No. 200 sieve:
Liquid limit: - Plastic limit: Plasticity index: -

TEST DATA AND RESULTS FOR CURVE 1

Type of test: Modified, ASTM D 1557-91 Procedure A



POINT NO.	1	2	3	4
WM + WS	3646	3822	3884	3858
WM	1882	1882	1882	1882
WW+T #1	382.40	394.70	430.60	398.80
WD+T #1	351.90	354.70	381.70	348.20
TARE #1	50.50	42.30	51.90	51.70
MOIST #1	10.1	12.8	14.8	17.1
MOISTURE	10.1	12.8	14.8	17.1
DRY DEN	105.9	113.7	115.3	111.6

Max dry den= 115.4 pcf, Opt moisture= 14.6 %

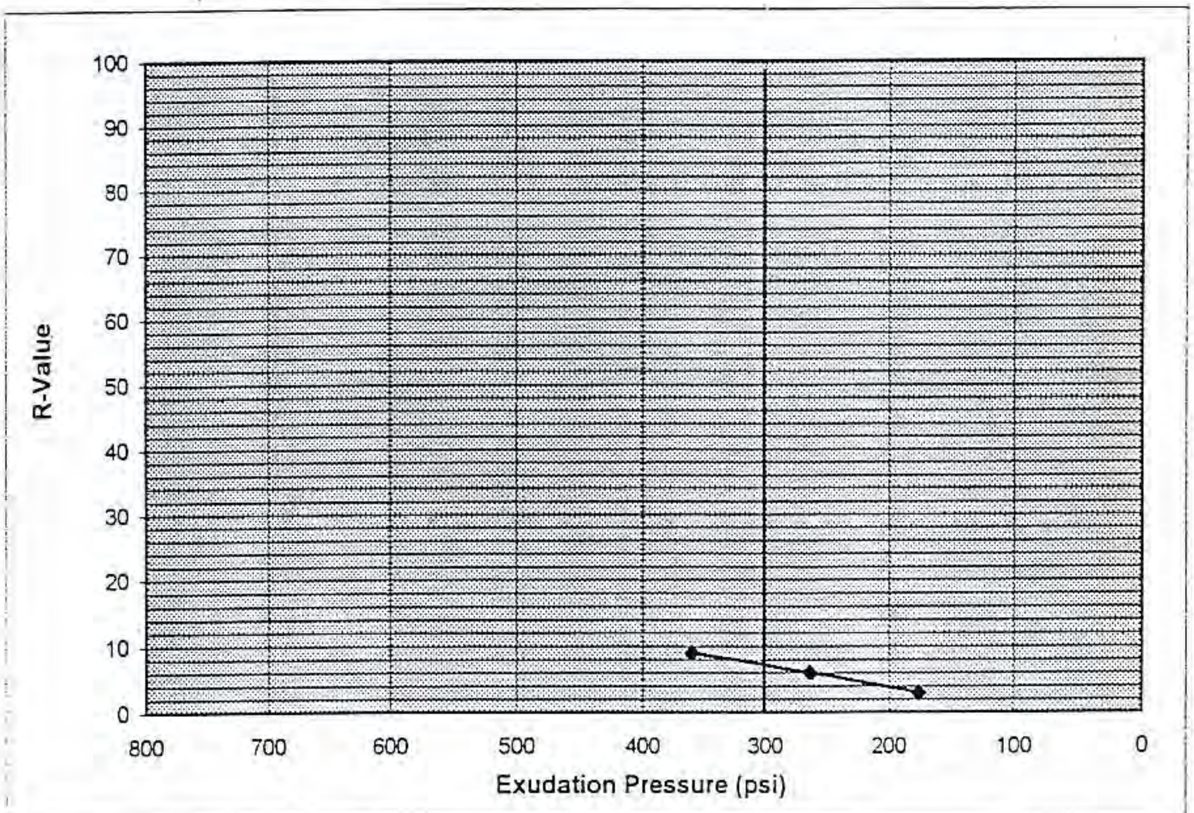
versize Correction Not Applied

Figure 4

Resistance Value

Test Procedure: California Test No. 301

Project Name:	Bishop Ranch 50 Acre
STL Project Number:	00-166
Client Project Number:	50044.1
Sample Number:	South Parking B @ 0.5'-1.0'
Material Description:	Gray brown sandy CLAY



Specimen Number:	*A*	*B*	*C*	*D*
Moisture at Test (%)	23.4	24.4	25.4	-
Dry Unit Weight at Test (pcf)	96.5	95.1	93.9	-
Expansion Pressure (psf)	43	35	22	-
Exudation Pressure (psi)	360	264	176	-
Resistance Value	9	6	3	-

R-Value at 300 psi Exudation Pressure	7

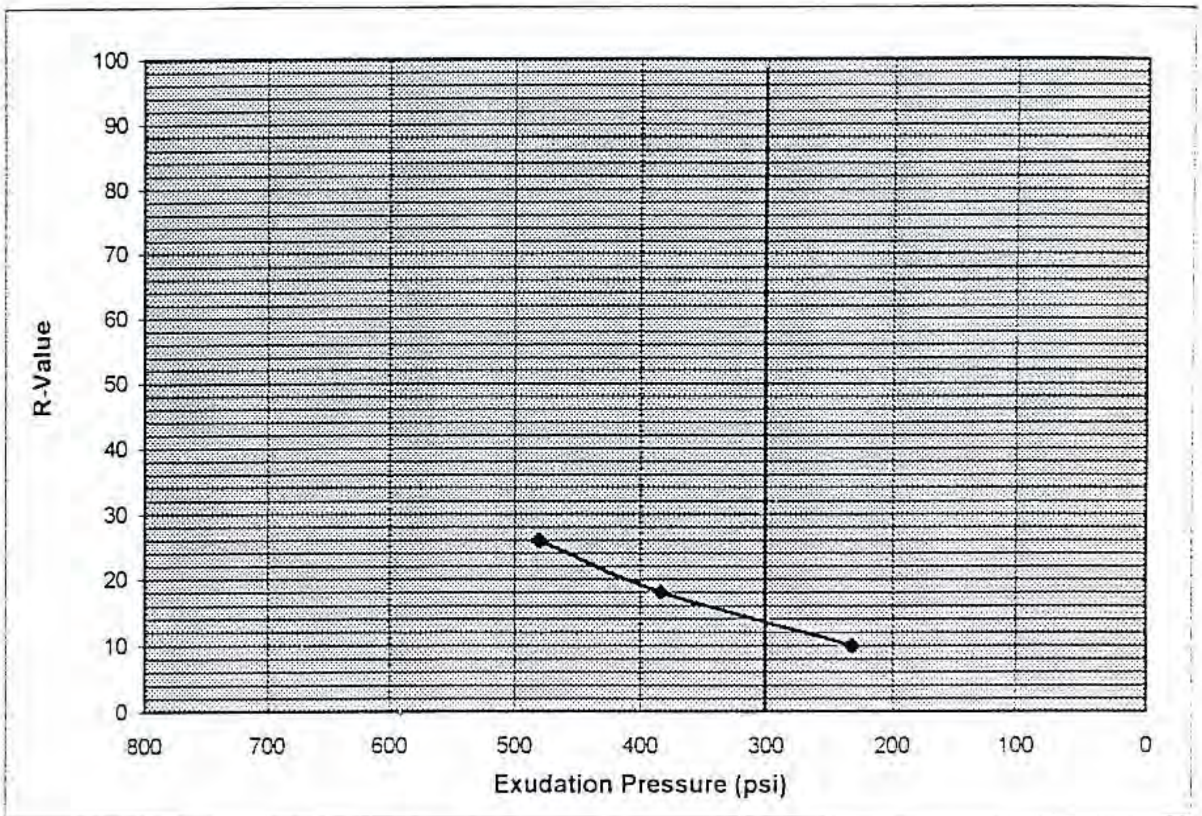
Sierra Testing Laboratories, Inc.

Figure 5

Resistance Value

Test Procedure: California Test No. 301

Project Name:	Bishop Ranch 50 Acre
STL Project Number:	00-166
Client Project Number:	50044.1
Sample Number:	North Parking B @ 0.5'-1.0'
Material Description:	Gray brown sandy CLAY



Specimen Number:	*A*	*B*	*C*	*D*
Moisture at Test (%)	20.1	19.1	18.2	-
Dry Unit Weight at Test (pcf)	105	107.7	102	-
Expansion Pressure (psf)	43	65	87	-
Exudation Pressure (psi)	232	384	480	-
Resistance Value	10	18	26	-

R-Value at 300 psi Exudation Pressure	13

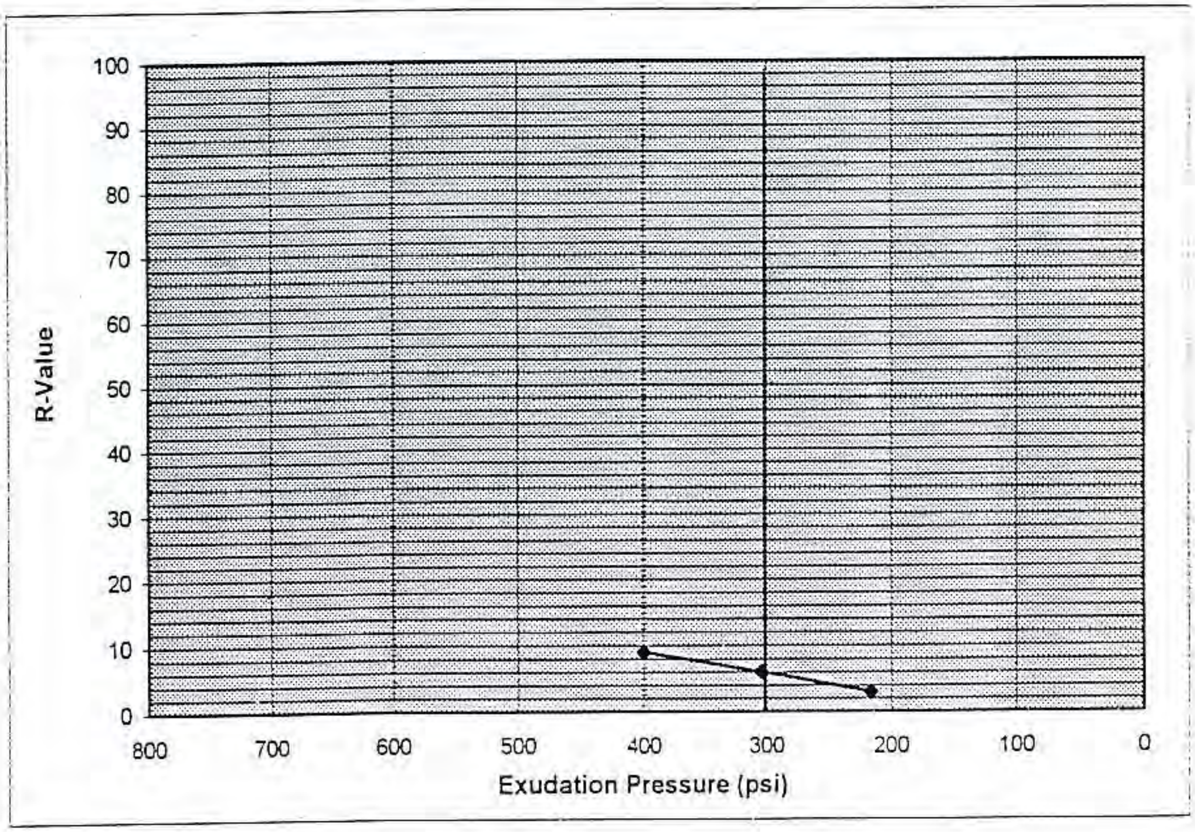
Sierra Testing Laboratories, Inc.

Figure 6

Resistance Value

Test Procedure: California Test No. 301

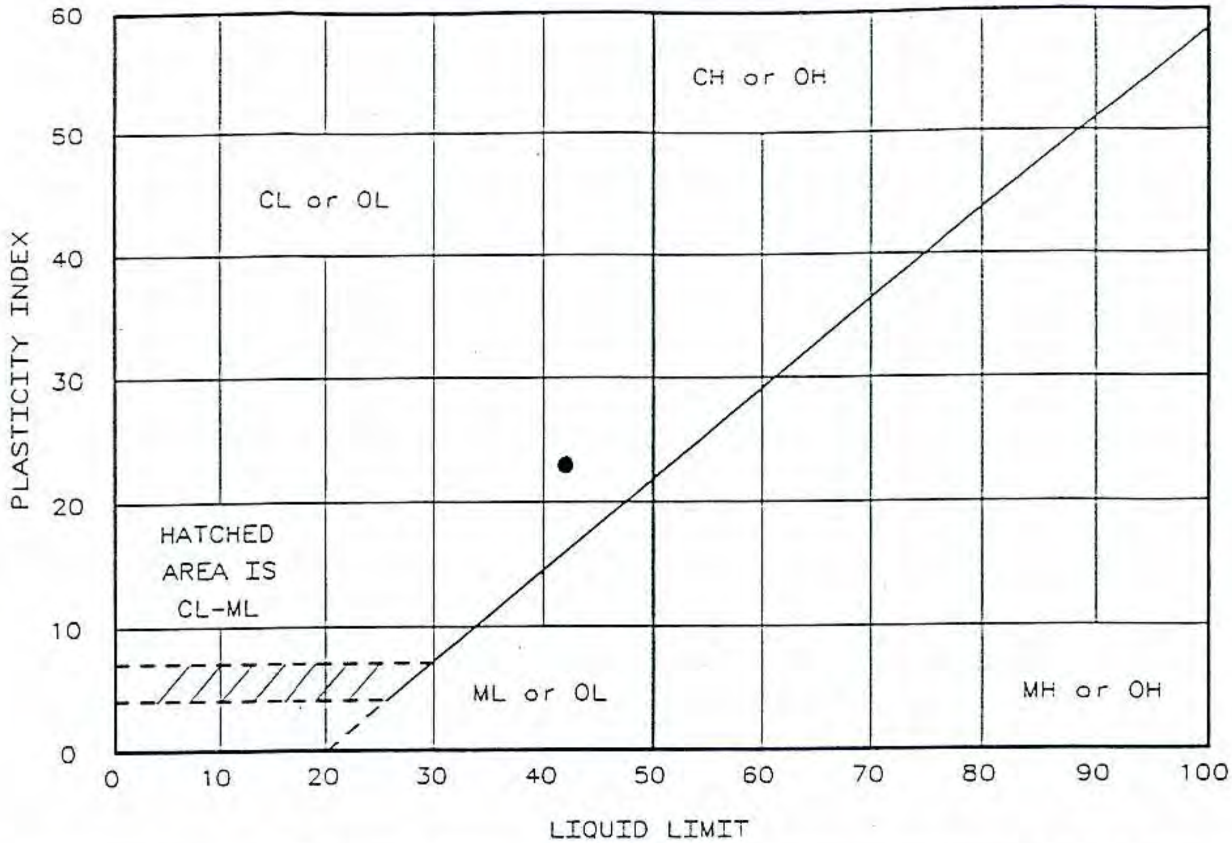
Project Name:	Bishop Ranch 50 Acre
STL Project Number:	00-166
Client Project Number:	50044.1
Sample Number:	East Parking B @ 0.5'-1.0'
Material Description:	Dark gray sandy CLAY



Specimen Number:	*A*	*B*	*C*	*D*
Moisture at Test (%)	22.6	23.7	24.8	-
Dry Unit Weight at Test (pcf)	100	97.3	95.9	-
Expansion Pressure (psf)	134	82	65	-
Exudation Pressure (psi)	400	304	216	-
Resistance Value	9	6	3	-

R-Value at 300 psi Exudation Pressure	6

Sierra Testing Laboratories, Inc.



Location + Description	LL	PL	PI	-200	ASTM D 2487-90
● 0.5'-1.0' S. Parking B Gray brn sandy CLAY	42	19	23		

Project No.: 00-166
Project: Bishop Ranch 50 - Acre Property

Client: Harding Lawson Associates
Location: South Parking B

Date: 4-7-2000

Remarks:

HLA Job #50044.1

LIQUID AND PLASTIC LIMITS TEST REPORT

SIERRA TESTING LABORATORIES, INC.

Fig. No. 7

LIQUID & PLASTIC LIMIT TEST DATA

PROJECT DATA

Project No.: 00-166 Date: 4-7-2000
Client: Harding Lawson Associates
Project: Bishop Ranch 50 - Acre Property

Project location: South Parking B

Remarks: HLA Job #50044.1

Figure Number: 7

TEST DATA - Test number 1

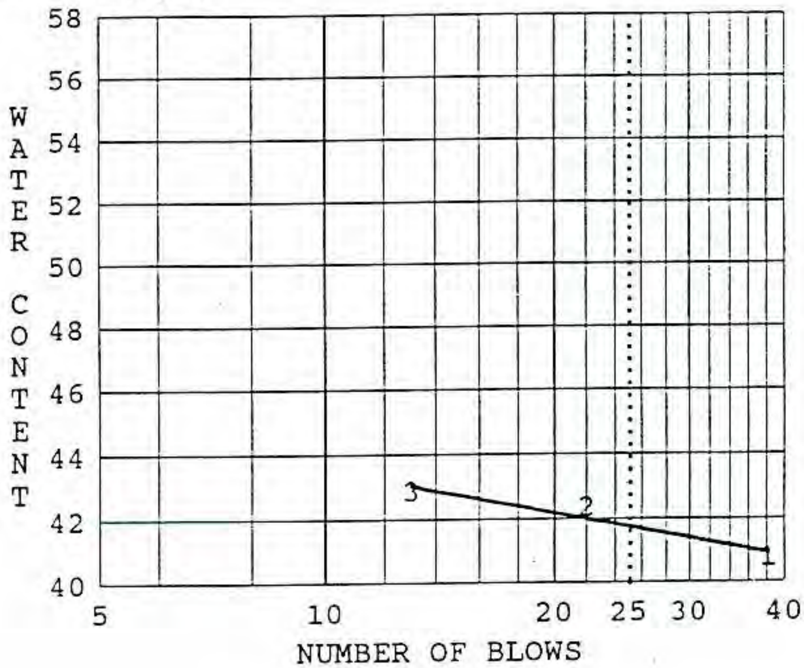
Location and description: 0.5'-1.0' S. Parking B
Gray brn sandy CLAY

LIQUID LIMITS

Run No.	1	2	3	4
WT w+t	31.01	34.91	27.38	
WT d+t	22.44	24.95	19.59	
WT tare	1.45	1.44	1.44	
# Blows	38	22	13	
Moisture	40.8	42.4	42.9	

PLASTIC LIMITS

Run No.	1	2	3
WT w+t	8.76	8.90	
WT d+t	7.58	7.69	
WT tare	1.45	1.44	
Moisture	19.2	19.4	

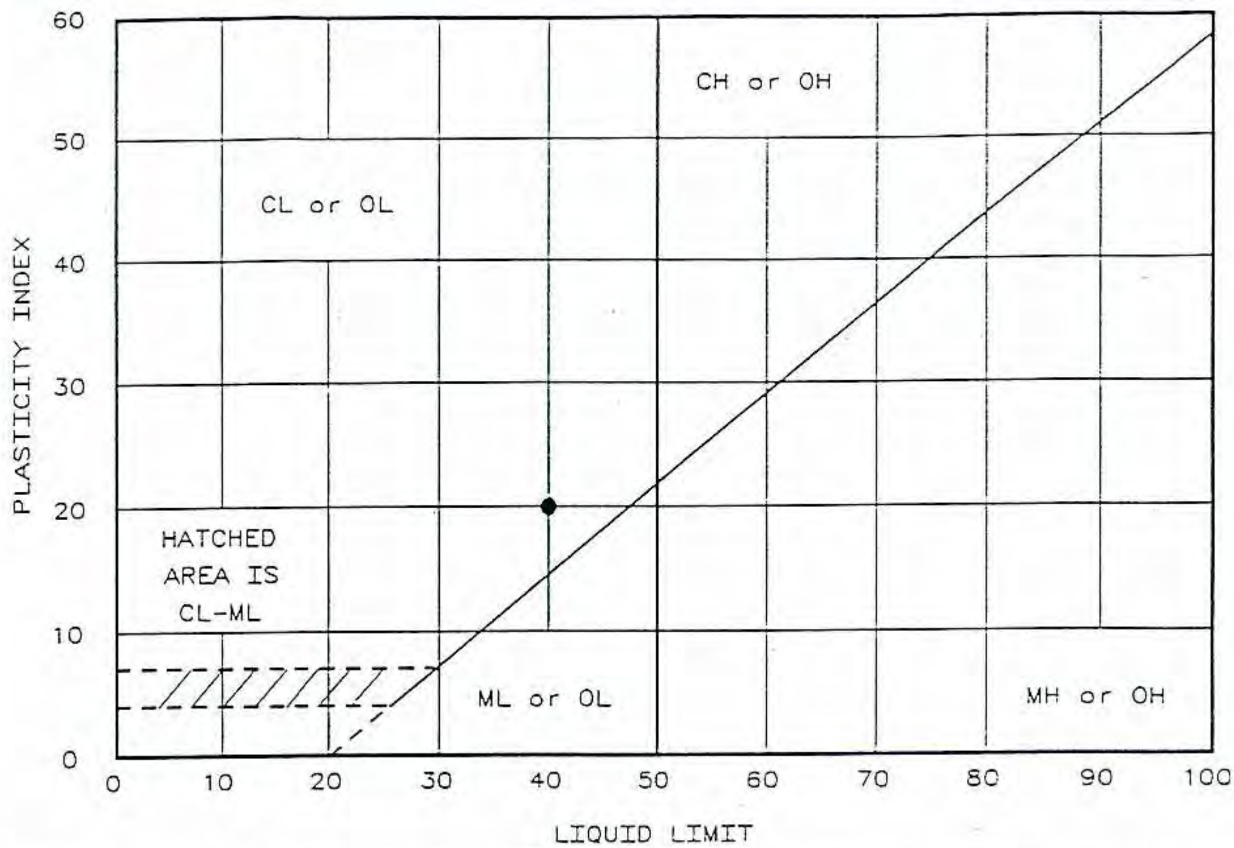


Liquid Limit = 42
Plastic Limit = 19
Plasticity Index = 23

CLASSIFICATION DATA

%-4 = %-10 = %-40 = %-200 =
Uniformity Coefficient = Curvature Coefficient =
LL = 42 PL = 19 PI = 23 LL (oven dry) =
ASTM =
AASHTO =

SIERRA TESTING LABORATORIES, INC.



Location + Description	LL	PL	PI	-200	ASTM D 2487-90
● 0.5'-1.0' N. Parking B Gray brown sandy CLAY	40	20	20		

Project No.: 00-166
Project: Bishop Ranch 50 - Acre Property

Client: Harding Lwson Associates
Location: North Parking B

Date: 4-7-2000

LIQUID AND PLASTIC LIMITS TEST REPORT

SIERRA TESTING LABORATORIES, INC.

Remarks:

HLA Job #50044.1

Fig. No. 8

LIQUID & PLASTIC LIMIT TEST DATA

PROJECT DATA

Project No.: 00-166 Date: 4-7-2000
Client: Harding Lwson Associates
Project: Bishop Ranch 50 - Acre Property

Project location: North Parking B

Remarks: HLA Job #50044.1

Figure Number: 8

TEST DATA - Test number 1

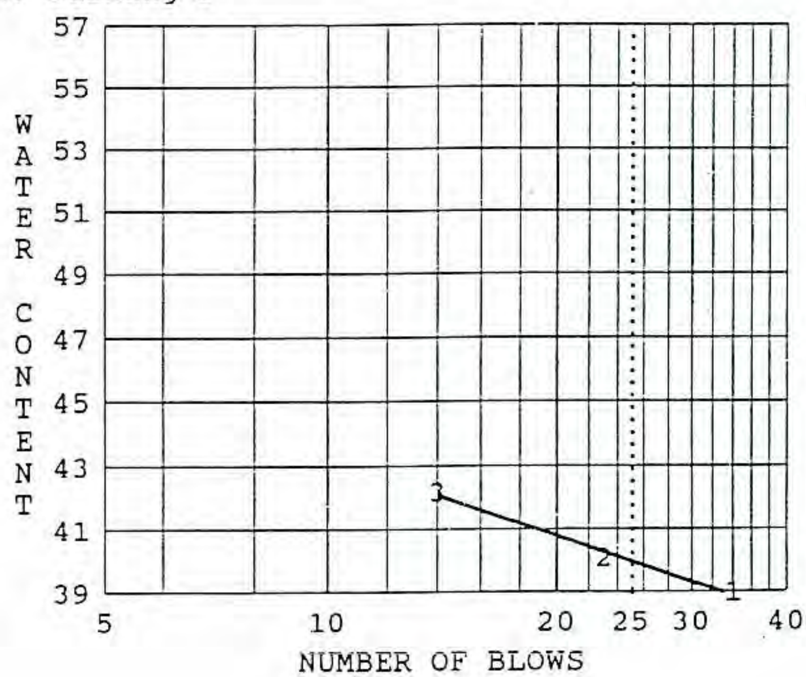
Location and description: 0.5'-1.0' N. Parking B
Gray brown sandy CLAY

LIQUID LIMITS

Run No.	1	2	3	4
WT w+t	32.75	34.99	30.48	
WT d+t	23.96	25.39	21.87	
WT tare	1.44	1.44	1.45	
# Blows	34	23	14	
Moisture	39.0	40.1	42.2	

PLASTIC LIMITS

Run No.	1	2	3
WT w+t	8.69	9.26	
WT d+t	7.49	7.99	
WT tare	1.44	1.44	
Moisture	19.8	19.4	



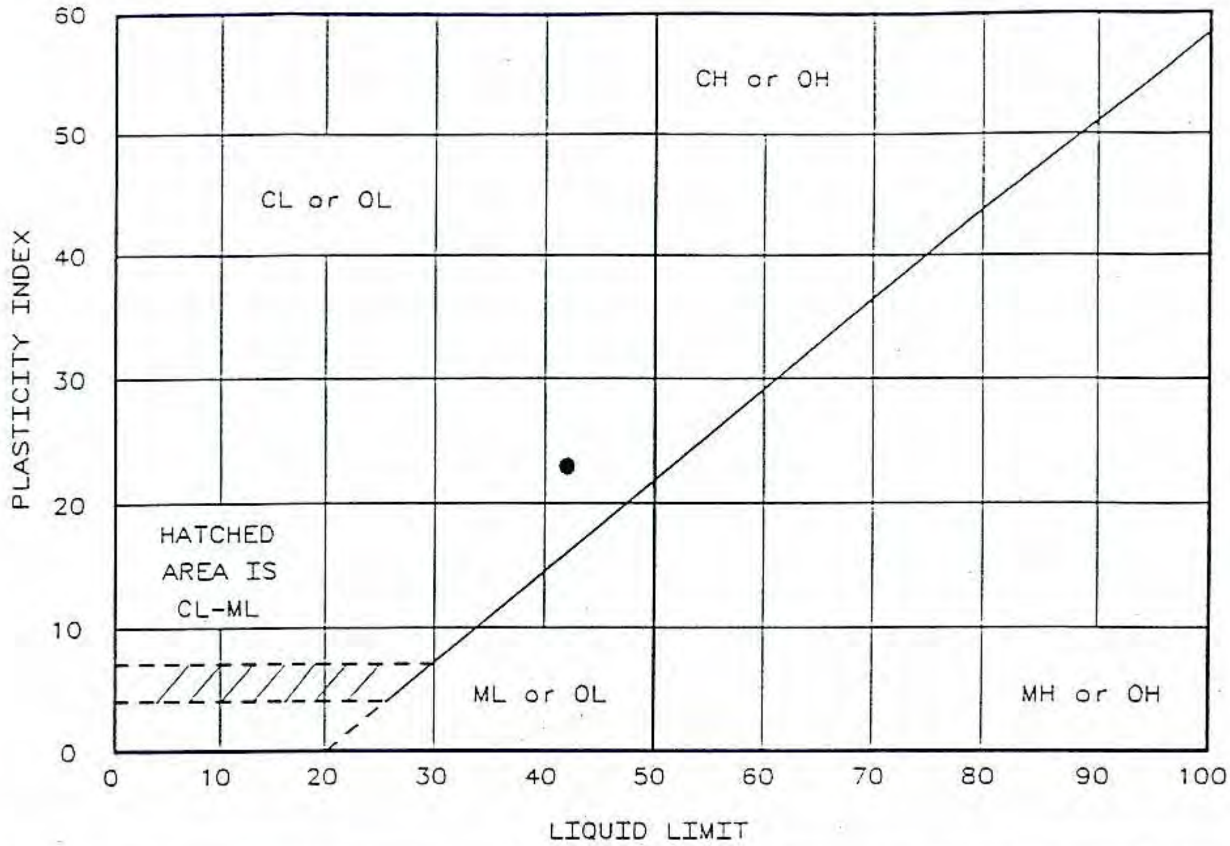
Liquid Limit = 40
Plastic Limit = 20
Plasticity Index = 20

CLASSIFICATION DATA

%-4 = %-10 = %-40 = %-200 =
Uniformity Coefficient = Curvature Coefficient =
LL = 40 PL = 20 PI = 20 LL (oven dry) =

ASTM =
AASHTO =

SIERRA TESTING LABORATORIES, INC.



	Location + Description	LL	PL	PI	-200	ASTM D 2487-90
●	0.5'-1.0' E. Parking B Dark gray sandy CLAY	42	19	23		

Project No.: 00-166
Project: Bishop Ranch 50 - Acre Property

Client: Harding Lawson Associates
Location: East Parking B

Date: 4-7-2000

LIQUID AND PLASTIC LIMITS TEST REPORT

SIERRA TESTING LABORATORIES, INC.

Remarks:

HLA Job #50044.1

Fig. No. 9

LIQUID & PLASTIC LIMIT TEST DATA

PROJECT DATA

Project No.: 00-166 Date: 4-7-2000
lient: Harding Lawson Associates
roject: Bishop Ranch 50 - Acre Property

roject location: East Parking B

Remarks: HLA Job #50044.1

igure Number: 9

TEST DATA - Test number 1

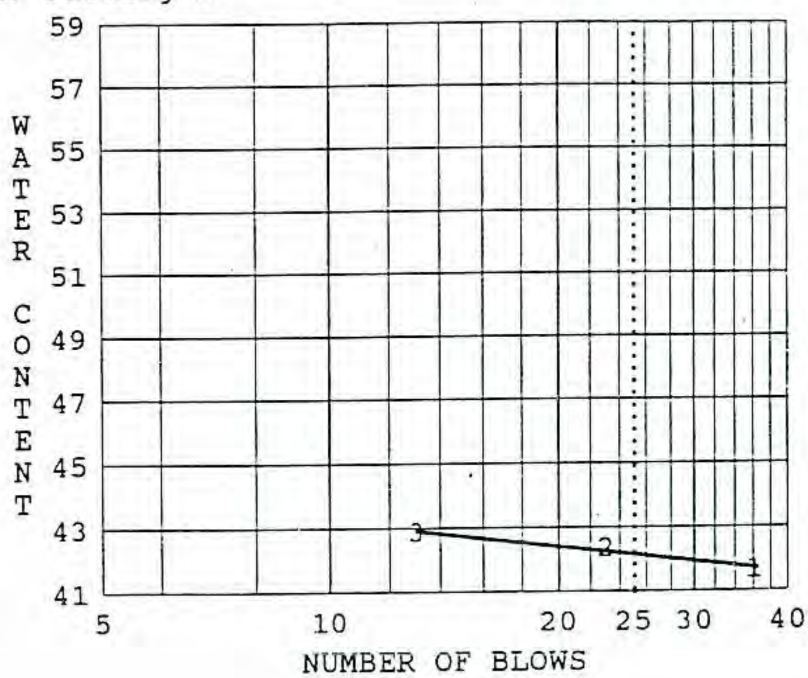
Location and description: 0.5'-1.0' E. Parking B
Dark gray sandy CLAY

LIQUID LIMITS

un No.	1	2	3	4
T w+t	32.31	32.90	30.26	
T d+t	23.23	23.53	21.61	
WT tare	1.44	1.45	1.45	
Blows	36	23	13	
oisture	41.7	42.4	42.9	

PLASTIC LIMITS

un No.	1	2	3
WT w+t	9.09	9.86	
T d+t	7.89	8.53	
WT tare	1.46	1.44	
Moisture	18.7	18.8	



Liquid Limit = 42
Plastic Limit = 19
Plasticity Index = 23

CLASSIFICATION DATA

%-4 = %-10 = %-40 = %-200 =
Uniformity Coefficient = Curvature Coefficient =
LL = 42 PL = 19 PI = 23 LL (oven dry) =

ASTM =
AASHTO =

SIERRA TESTING LABORATORIES, INC.

December 22, 1999

34769.15

Mr. Alex Mehran, President
Sunset Development Company
P.O. Box 640
San Ramon, California 94583

Geotechnical Consultation
Soil Corrosivity
Bishop Ranch 3 South Garage
San Ramon, California

Dear Mr. Mehran:

Harding Lawson Associates (HLA) has been providing geotechnical services during design and construction for the Bishop Ranch 3 project. We recently performed corrosivity testing on near-surface samples of native clay near the south parking garage. Test results are attached. The following paragraphs present our evaluation of corrosion mitigation for planned water lines consisting of PVC pipe with cast-iron fittings and valves coated with fusion-bonded epoxy.

Soil Resistivity and Corrosion

Many factors influence underground soil corrosion. Soil resistivity is the most important factor and is readily measured. Resistance of a corrosive electrical circuit is predominantly governed by soil resistivity. The greater the resistance of a soil to electric current flow, the lower the probability of corrosion while the lower the resistance of soil to electric current, the greater the probability of corrosion. The following table relates soil resistivity to the probable rate of corrosion:

Resistivity (ohm cm)	Corrosion Probability
0 – 1,000	Extremely High
1,000 - 2,000	Very High
2,000 – 5,000	High
5,000 – 10,000	Medium
10,000 – 25,000	Low
Above 25,000	Very Low

The attached test results indicate that the native clays are very corrosive, with resistivity values of about 1100 to 1300 ohm cm.

Corrosion, as applied to pipelines, is the electrochemical deterioration of iron and steel by galvanic or electrolytic action. PVC pipes with ductile iron fittings are commonly used for water distribution piping systems. PVC pipe material is essentially free from corrosion. Ductile iron pipe and fittings are sometimes provided with cement lining and fused bond epoxy or petroleum-asphaltic coating in accordance with ANSI A21.4/AWWA C104 for corrosion protection.

Also, buried ductile iron piping, fittings, and associated valves are often wrapped with polyethylene bagging, 8 mils minimum thickness, manufactured in accordance with the latest specifications. Cement mortar coating on the pipes and fittings is another alternative to provide protection by shielding steel from the soil and providing a highly alkaline environment at the steel-mortar interface, which tends to passivate the steel. However, cement mortar coating is normally provided for steel pipe and fittings, and is not commercially available for ductile iron pipe and fittings.

Coating on the pipe is used to inhibit the corrosion process. Cathodic protection is often used to complete the corrosion protection (true for most water agencies in the Bay Area). Sacrificial anode material such as zinc or magnesium is used to create a galvanic cell and is connected directly to metal pipe for protection. The pipe joints are provided with electrical bonds for ensuring electrical current continuity for effective cathodic protection.

With PVC piping and ductile iron fittings, it is impossible to provide electrical bonding connection for current continuity. Completely encasing the buried ductile iron fittings and valves (with appropriate coatings) in the 8 mils minimum polyethylene sheet or bagging is an effective way to provide adequate corrosion protection in corrosive soils. This polyethylene bagging prevents the encased metal from directly contacting the surrounding soil.

Conclusions and Recommendations

Based on our testing and evaluation, HLA concludes that the planned coated metal fittings and valves should be wrapped with polyethylene bagging. The bagging should be 8 mils minimum thickness, manufactured in accordance with the latest edition of ASTM D1248, Type I, Class C, Grade E1 and installed in accordance with AWWA C105 and the manufacturer's recommendations. Bare metals should not be allowed to contact directly with soil. Care should be taken during installation and trench backfilling to avoid any damage to the bagging.

We trust this provides the required information. If there are questions, please call the undersigned at 510-628-3203.

Yours very truly,

HARDING LAWSON ASSOCIATES

Christian P. Muller
Geotechnical Engineer

REGISTERED PROFESSIONAL ENGINEER
CHRISTIAN P. MULLER
002036
Exp. 6-30-2002
GEOTECHNICAL
STATE OF CALIFORNIA

CPM/HL gwpdrop/chrism/brcorrosion.doc

Attachment: Corrosivity Test Results

cc: Mr. Gabe Ciccone
Via Fax - 925/866-1330

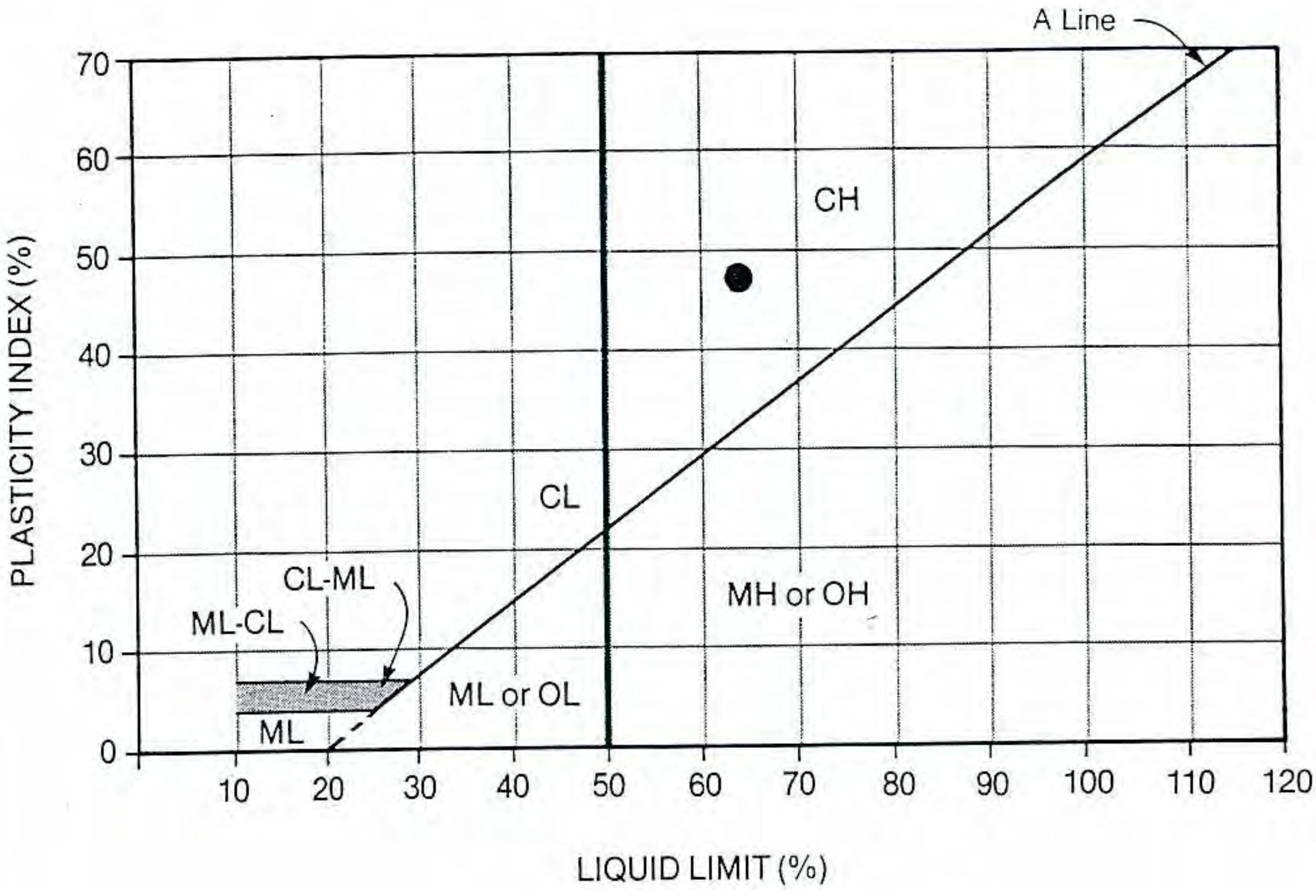
Table 1

Corrosion Analysis (CA DOT 643, 417, & 422)
Bishop Ranch South Parking Garage
HLA Job #34769.15
STL Job #99-331

Sample Name	pH	Minimum Resistivity (ohm-cm)	Chloride (ppm)	Sulfate (ppm)
SE Corner South Parking Garage Sample #1 2.0"-6.0"	6.48	1340	11.7	13.7
NE Corner South Parking Garage Sample #2 2.0"-6.0"	6.79	1150	16.3	16.7

Geotechnical Investigation, Bishop Ranch 1 Development, Bishop Ranch Business Park, San Ramon, California, prepared for Sunset Development Company, prepared by Harding Lawson Associates (HLA), HLA Project 8294,019.03, dated October 6, 1986

Reference: ASTM D 423, 424



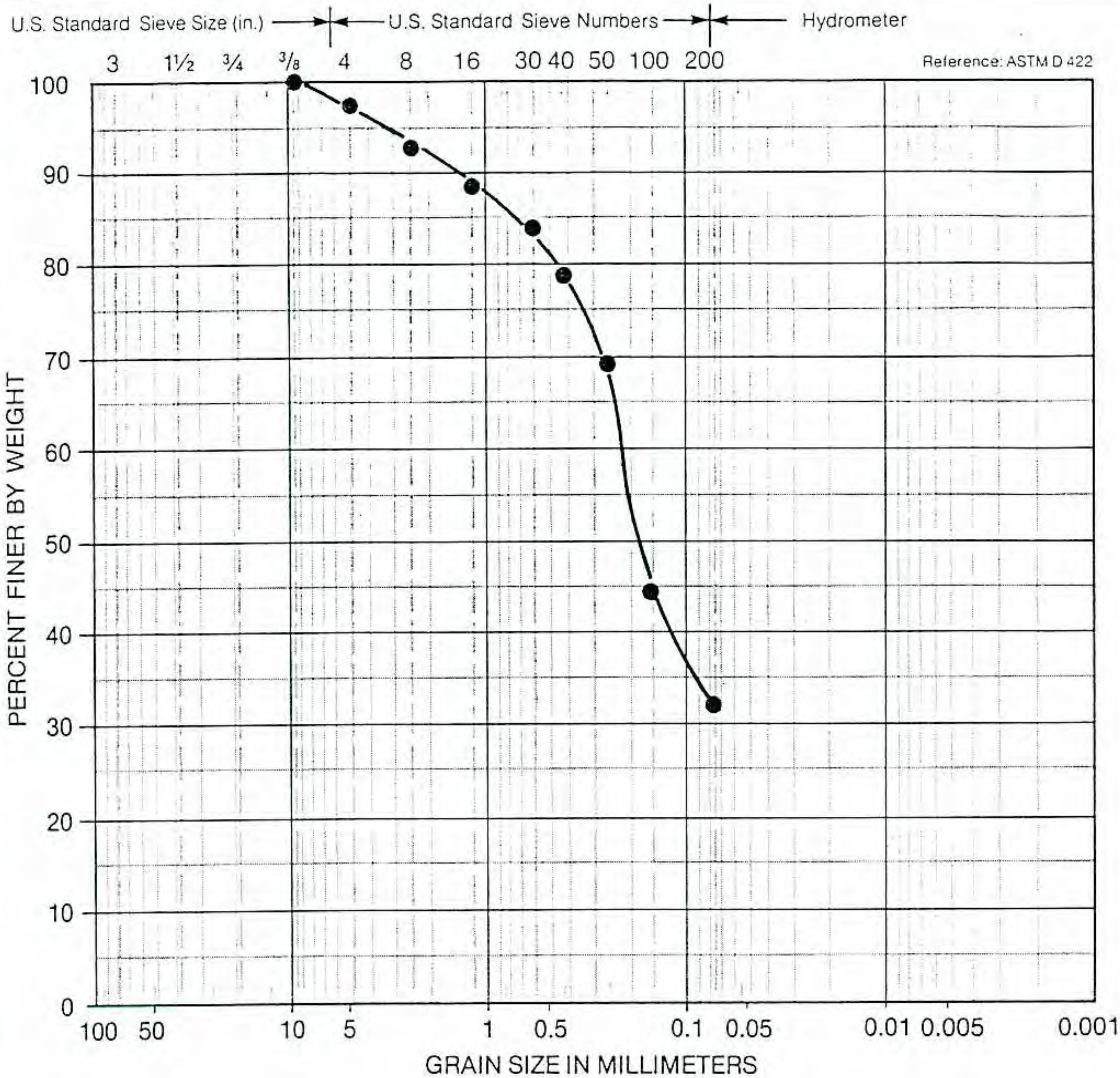
Symbol	Source	Classification	Natural M.C. (%)	Liquid Limit (%)	Plasticity Index (%)	% Passing #200 Sieve
●	Boring 2 at 0.5 to 2.0 Feet	Black Silty Clay (CH)		64	47	

Harding Lawson Associates
Engineers, Geologists
& Geophysicists

Plasticity Chart
Bishop Ranch 1
San Ramon, California

PLATE
10

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
AC	8294,019.03	Khn	8/86		



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Symbol	Sample Source	Classification
●	Boring 3 at 7 Feet	Brown Clayey Sand (SC)

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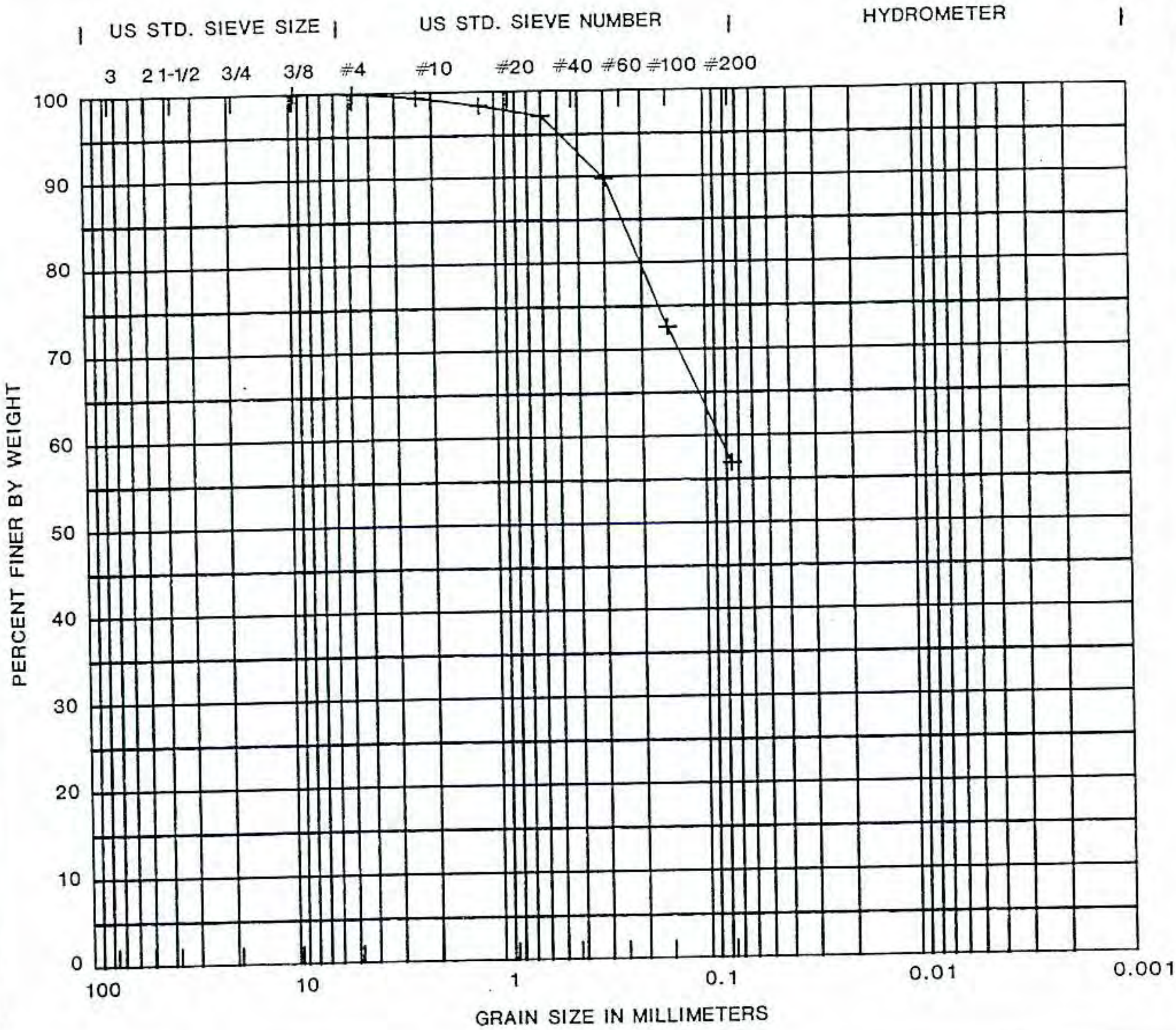
Engineers, Geologists
& Geophysicists

Particle Size Analysis
Bishop Ranch 1
San Ramon, California

PLATE **11**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
AC	8294,019.03	[signature]	8/86		



COBBLES	GRAVEL		SAND			SILT or CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

SYMBOL	BORING NUMBER	DEPTH (feet)	CLASSIFICATION
+	8	10-12	BROWN SANDY CLAY (CL*)

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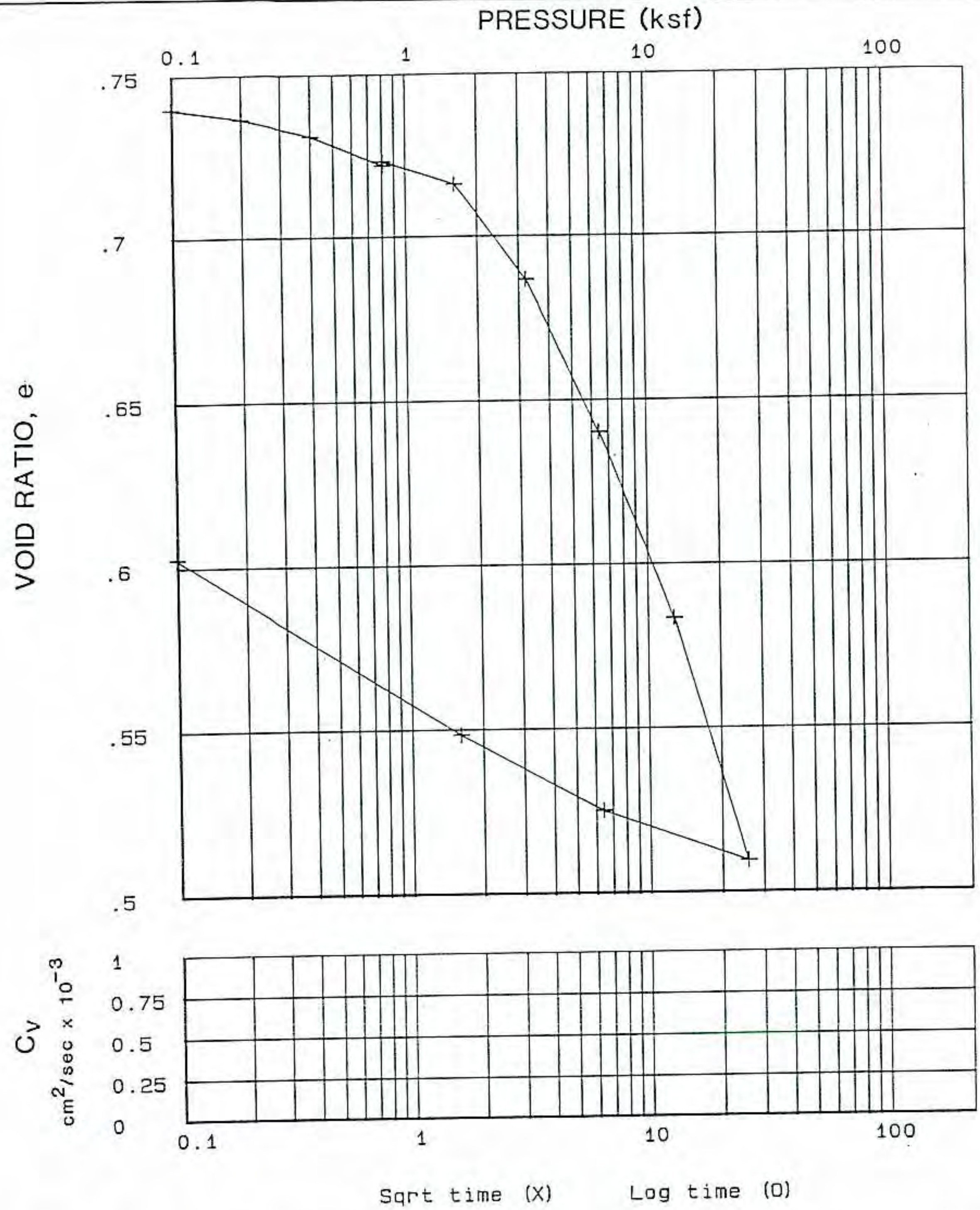
& Geophysicists

Particle Size Analysis
Bishop Ranch 1
San Ramon, California

PLATE **12**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
[signature]	08294,019.03	DMS	08/86		



SPECIMEN TYPE UNDISTURBED		BEFORE TEST			AFTER TEST		
DIAMETER (in) 2.43	HEIGHT (in) 0.80	MOISTURE CONTENT	w_o	28.5 %	w_f	23.0 %	
OVERBURDEN PRESSURE, σ_{vo}' 1300 psf		VOID RATIO	e_o	.747	e_f	.603	
PRECONSOL PRESSURE, $(\sigma_{vo}')_{max}$ 3500 psf		SATURATION	S_o	100 %	S_f	100 %	
COMPRESSION INDEX, C_c		DRY DENSITY	γ_d	94 pcf	γ_d	102 pcf	
LIQUID LIMIT --	PLASTIC LIMIT --	PLASTICITY INDEX	--	SPECIFIC GRAVITY 2.62			
CLASSIFICATION BROWN SANDY CLAY (CL)		SOURCE B @ 10-12 ft					

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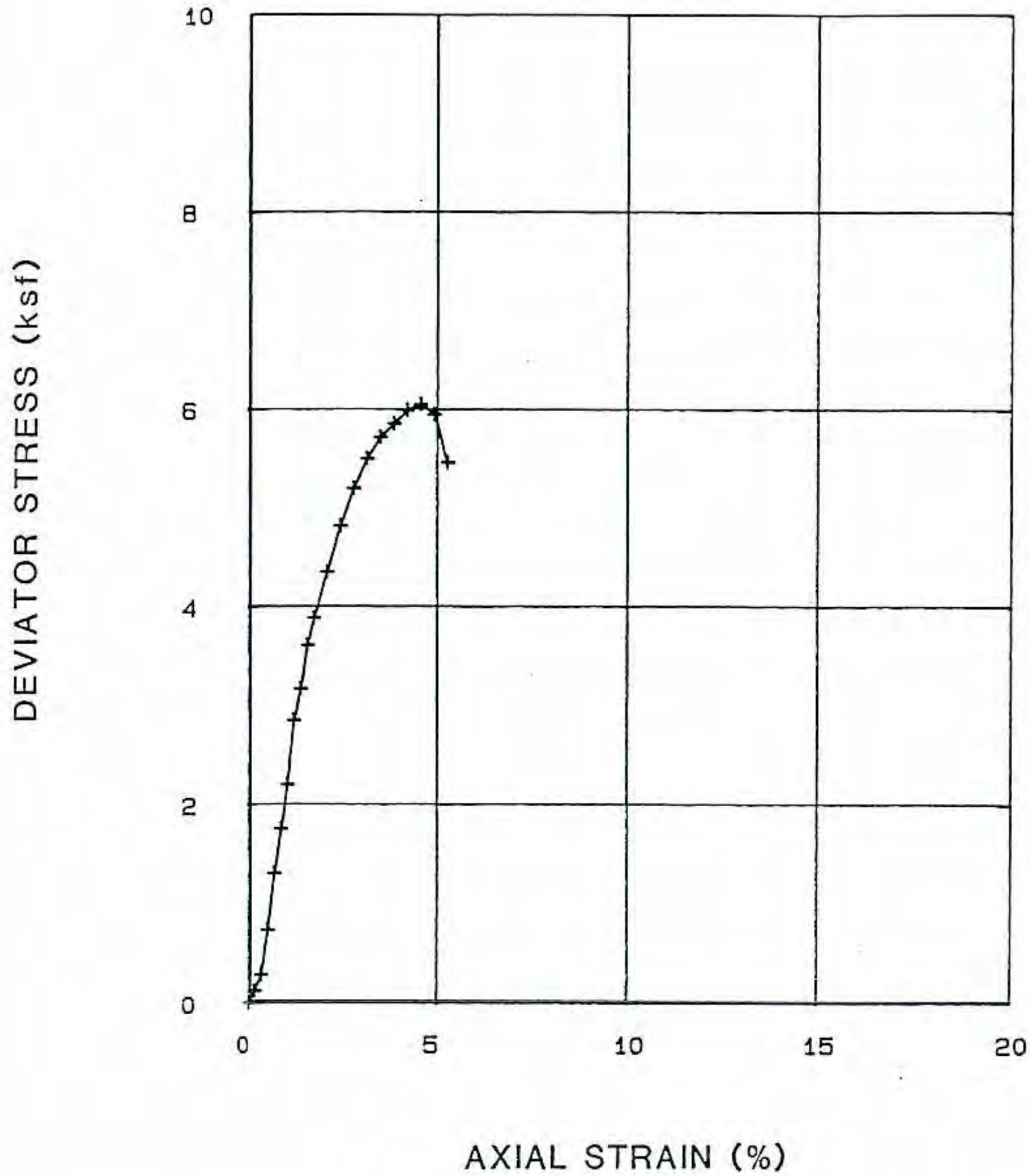
Consolidation Test Report
Bishop Ranch 1
San Ramon, California

PLATE
13

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
	08294.019.03	[signature]	08/86		



SPECIMEN TYPE UNDISTURBED			SHEAR STRENGTH	3025	psf
DIAMETER (in) 2.43	HEIGHT (in) 5.7		STRAIN AT FAILURE	4.56	%
MOISTURE CONTENT	21.4	%	CONFINING PRESSURE	420	psf
DRY DENSITY	103	pcf	STRAIN RATE	.6	%/min
CLASSIFICATION LIGHT BROWN CLAYEY SILT (ML)			SOURCE 1 @ 6 ft		

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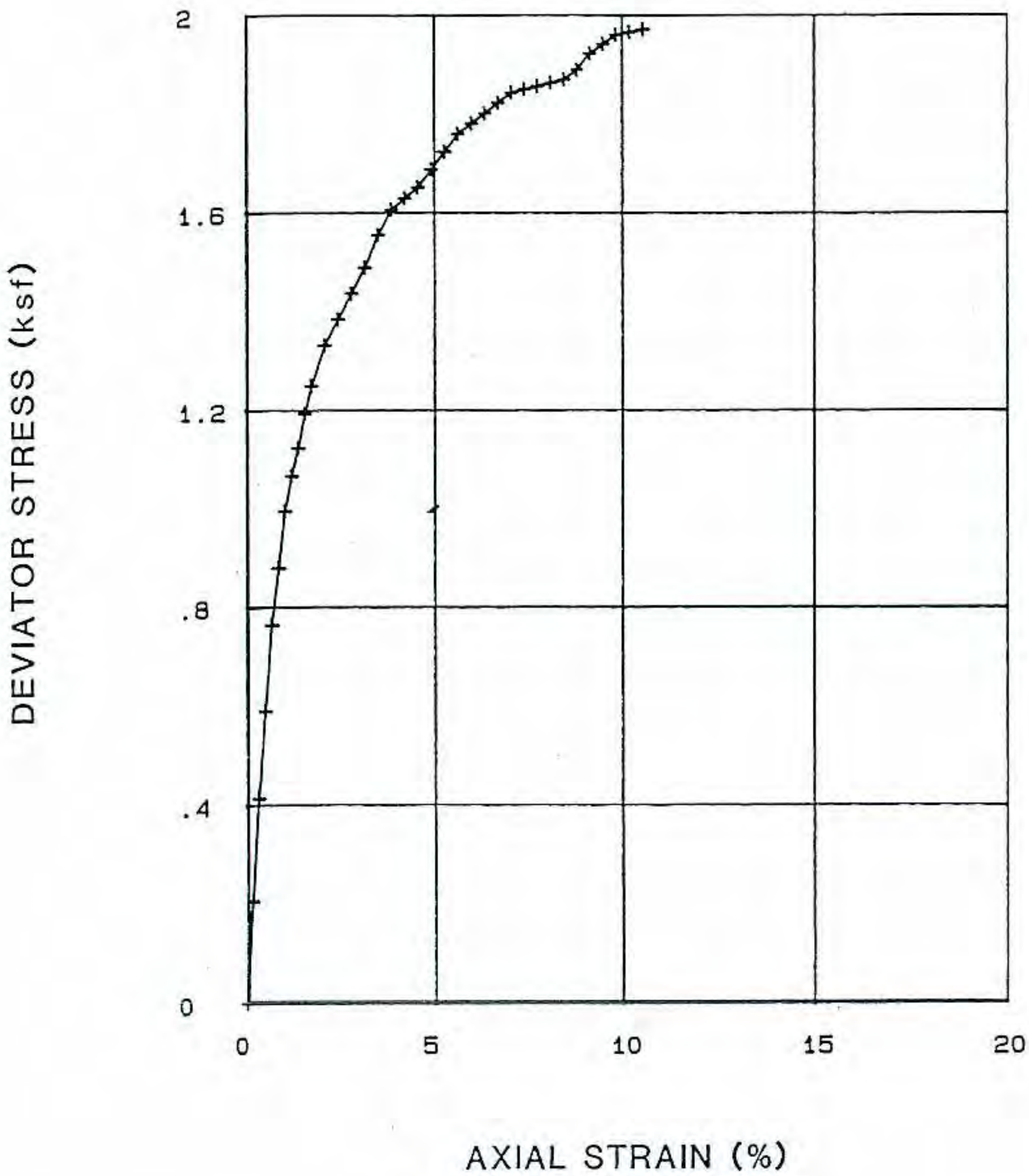
Unconsolidated-Undrained
Triaxial Compression Test Report
Bishop Ranch 1
San Ramon, California

PLATE
14

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
	08294, 019.03	DMS	08/86		



SPECIMEN TYPE	UNDISTURBED			SHEAR STRENGTH	986	psf
DIAMETER (in)	2.43	HEIGHT (in)	5.7	STRAIN AT FAILURE	10.53	%
MOISTURE CONTENT	34.8		%	CONFINING PRESSURE	750	psf
DRY DENSITY	88		pcf	STRAIN RATE	.6	%/min
CLASSIFICATION	BROWN SILTY CLAY (CL)			SOURCE	4 at 15 FEET	

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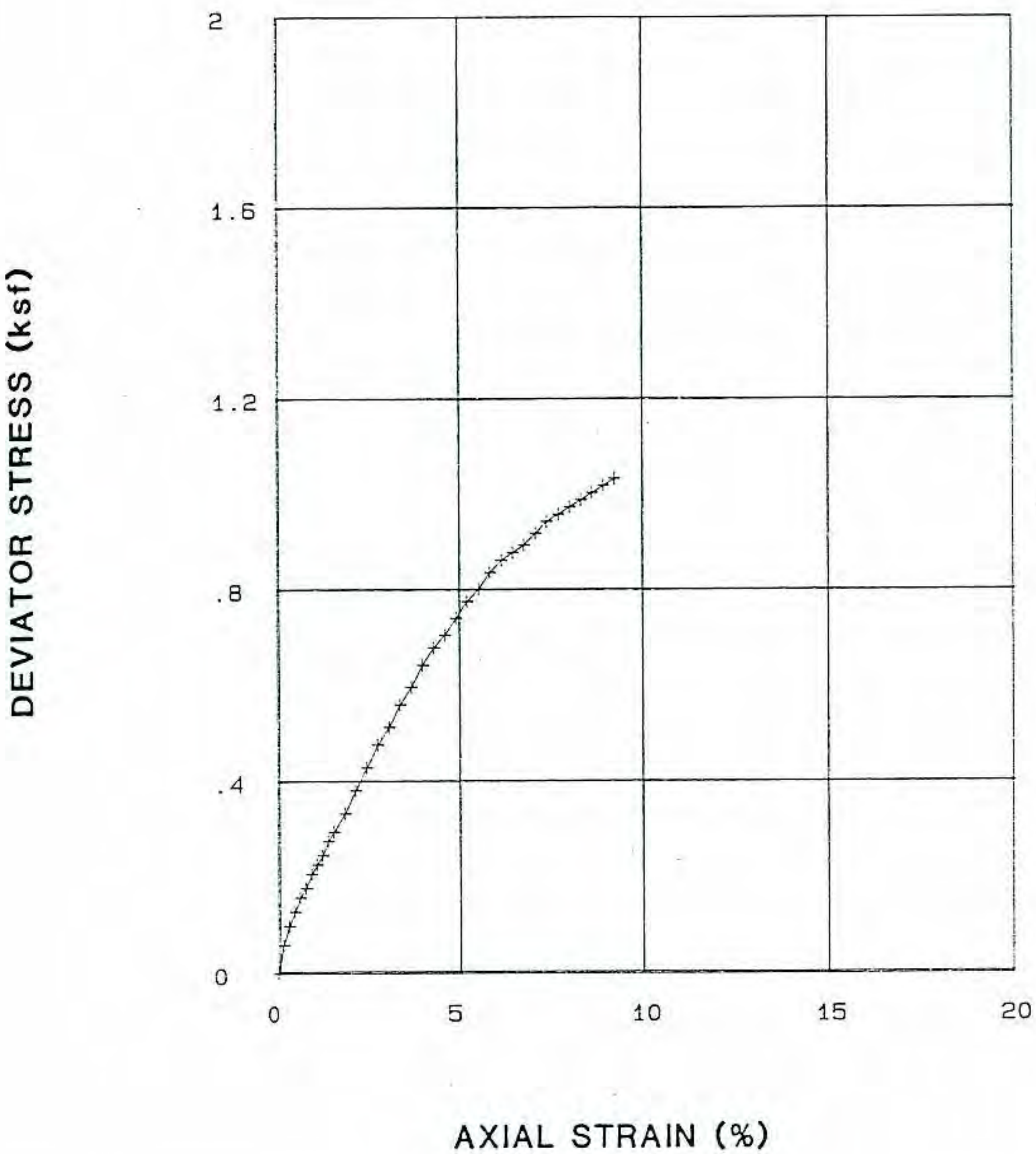
Unconsolidated-Undrained
Triaxial Compression Test Report
Bishop Ranch 1
San Ramon, California

PLATE
15

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
	08294,019.03		08/86		



SPECIMEN TYPE	UNDISTURBED		SHEAR STRENGTH	516	psf
DIAMETER (in)	2.87	HEIGHT (in) 6.5	STRAIN AT FAILURE	9.23	%
MOISTURE CONTENT	20.4	%	CONFINING PRESSURE	420	psf
DRY DENSITY	104	pcf	STRAIN RATE	.6	%/min
CLASSIFICATION	BROWN SANDY CLAY (CL)		SOURCE	8 @ 6 ft	

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Engineers, Geologists
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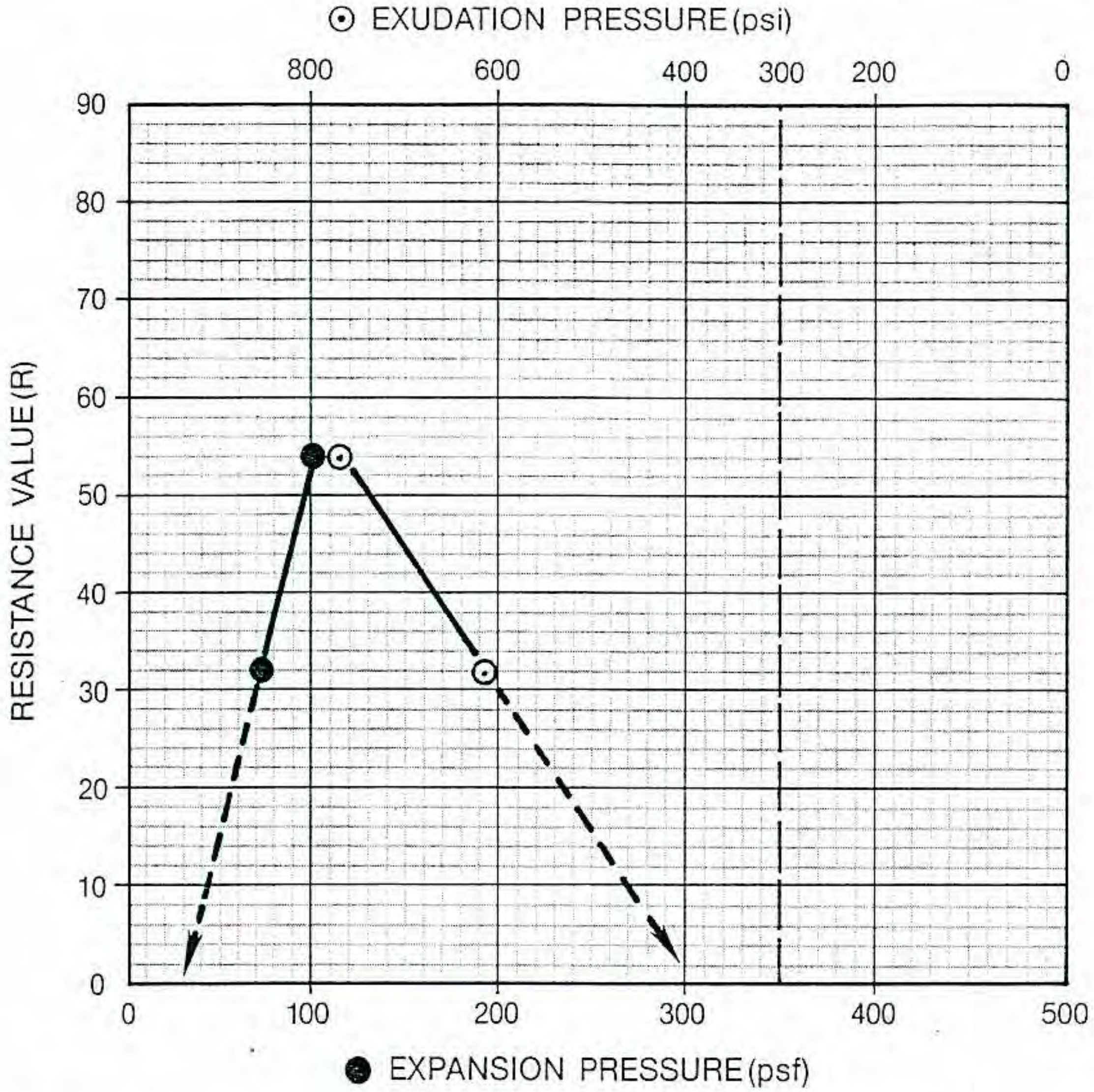
Unconsolidated-Undrained Triaxial Compression Test Report
Bishop Ranch 1
San Ramon, California

PLATE **16**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
	08294, 019.03	DMS	08/86		

Reference: State of California 301, ASTM D 2844



Specimen No.	1	2		
Water Content (%)	22.7	20.6		
Dry Density (pcf)	100.8	104.0		
Exudation Pressure (psi)	610	765		
Expansion Pressure (psf)	74.1	104.6		
Resistance Value (R)	32	54		

Sample Source	Classification	Sand Equivalent	Expansion Pressure	R value
Boring 2 at 0.5 to 2.0 Feet	Black Silty Clay (CH)	3	0	<5

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Engineers, Geologists
& Geophysicists

Resistance Value Test Data
Bishop Ranch 1
San Ramon, California

PLATE
17

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
AC	8294,019.03	[signature]	8/86		

DISTRIBUTION

Preliminary Geotechnical Investigation Report
San Ramon City Center Project
Bishop Ranch
San Ramon, California

July 24, 2007

Copies 1-3:	Sunset Development Company One Annabel Lane PO Box 640 San Ramon, California 94583 Attention: Mr. Peter Oswald, Vice President, Director – Government Affairs
Copy 4:	MACTEC files

P:\Secretarial\MBarker\Geotech\MB62210_Bishop Ranch.doc

Appendix E: Phase I Environmental Site Assessment

Phase I Environmental Site Assessment
San Ramon City Center Project
City of San Ramon, Contra Costa County, California

Diablo, California, USGS 7.5-minute Topographic Quadrangle Map
Section 15, Township 2 South, Range 1 West MDBM
Longitude 121°57’25” West, Latitude 37°45’46” North

Prepared for:

City of San Ramon
Planning/Community Development Department
2226 Camino Ramon
San Ramon, CA 94583

Contact: Mr. Phil Wong, Director

Prepared by:

Michael Brandman Associates
2444 Main Street, Suite 215
Fresno, CA 93721
559.497.0310

Contact: Dale Stanton, P.E., Director of Water Resources

June 7, 2007

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LIST OF TABLES

LIST OF EXHIBITS

SECTION 1: EXECUTIVE SUMMARY

Michael Brandman Associates (MBA) has conducted a Phase I Environmental Site Assessment (ESA) of the 39.09-acre property located in the City of San Ramon in Contra Costa County, California (project site). This ESA conforms to the American Society for Testing and Materials (ASTM) E1527-05, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process. This Phase I ESA constitutes appropriate inquiry designed to identify Recognized Environment Conditions (RECs) in connection with the historical and current ownership and uses of the subject site as defined by ASTM E 1527-05.

> ASTM E 1527 Section 1.1.1 Recognized Environmental Conditions - The term recognized environmental conditions (RECs) means the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include *de minimis* conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be *de minimis* are not recognized environmental conditions.

This Phase I ESA was also conducted, prepared, and reviewed in accordance with 40 Code of Federal Regulations (CFR) Part 312 - Standards and Practices for All Appropriate Inquiries rule, which establishes specific regulatory requirements for conducting an inquiry into previous ownership, uses, and environmental conditions of a property.

Based on interviews; a visual inspection of the property; review of available records; and reviews of historical aerial photographs, Sanborn Maps, and United States Geological Survey (USGS) maps, the project site appears to have been used for agriculture from around 1939 to 1981. After 1981, the project site was developed with office complexes, parking lots, and irrigated grass fields, as it currently exists. MBAs research found no evidence suggesting improper use, storage, or application of hazardous chemicals or petroleum products at the project site, and, therefore, no likely environmental concerns such as RECs exist at the time of this assessment. MBA's project site observations, interviews, review of available information, and communication with contacts from State and local regulatory agencies indicate a low potential for adverse environmental impacts to the project site associated with past and current site uses.

SECTION 2: INTRODUCTION

As requested, MBA has completed a Phase I ESA of the approximately 44-acre project site. The property consists of four individual parcels collectively referred to as the project site. This report identifies each parcel by its Assessor Parcel Number (APN), when necessary. The project site is located in the City of San Ramon, Contra Costa County, California. MBA conducted the ESA to document the existing conditions and historical uses on the project site and to determine if potential environmental hazards exist.

This Phase I ESA identifies RECs relative to the project site through MBA's research of previous and current ownership and uses, and analysis of available regulatory data on nearby properties. Additionally, the purpose of the Phase I ESA is to permit the user to satisfy one of the requirements to qualify for what is commonly known as the "innocent landowner" defense to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) liability as described by 42 United States Code (U.S.C.) Section 9601 (35)(B).

2.1 - Purpose

MBA prepared this Phase I ESA in accordance with general guidelines contained in the following sections. The descriptions included below are intended to provide a comprehensive description of MBA's standard Phase I ESA work product. Such investigations are limited to the amount of information reasonably available, and the scope of work specifically excludes invasive sampling. This scope of work is intended to comply with the ASTM E 1527-05 Standard Practice for Environmental Site Assessments; Phase I Environmental Site Assessment Process. This Phase I ESA was also conducted, prepared, and reviewed in accordance with the 40 CFR Part 312 - Standards and Practices for All Appropriate Inquiries rule, which establishes specific regulatory requirements for conducting an inquiry into previous ownership, uses, and environmental conditions of a property.

Phase I ESA services are intended to provide an "all appropriate inquiry" into the changes and uses of the project site consistent with customary practices, and to determine whether there has been a release or threatened release of hazardous materials or chemical constituents, at levels that would be classified as recognized environmental concerns.

2.2 - Scope of Work

MBA staff conducted a site reconnaissance of the project site on April 19, 2007. The site reconnaissance included an evaluation of any chemical use, storage, treatment, and disposal practices and a limited visual evaluation of adjoining properties. The Phase I ESA also includes a review of local, State, and federal regulatory agency lists as compiled by Environmental Data Resources, Inc. (EDR).

The current landowner, Sunset Development, and the City of San Ramon were questioned regarding any known conditions related to hazardous materials in, on, or around the project site. They were also questioned about their knowledge of notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous materials. Relevant information is discussed later in this report.

This report further documents pertinent conditions observed on properties in the vicinity that might indicate an adverse environmental impact to the project site or that were identified during interviews or records reviews. MBA was provided authorization to conduct the Phase I ESA by Debbie Chamberlain, Senior Planner with the City of San Ramon, in February of 2007.

2.3 - Limitations

The site reconnaissance and research of the project site has been limited in scope. This type of assessment is undertaken with the calculated risk that the presence, full nature, and the extent of contamination would not be revealed by visual observation alone. Although a thorough site reconnaissance was conducted in accordance with ASTM Guidelines and employed a professional standard of care, no warranty is given, either expressed or implied, that hazardous material contamination or buried structures, which would not have been disclosed through this investigation, do not exist at the project site. Therefore, the data obtained are clear and accurate only to the degree implied by the sources and methods used.

The findings presented in this report were based upon field observations during one project site visit, review of available data, and discussions with local regulatory and advisory agencies. Observations describe only the conditions present at the time of this investigation. The data reviewed and observations made are limited to accessible areas and currently available records searched. MBA cannot guarantee the completeness or accuracy of the regulatory agency records reviewed.

Additionally, in evaluating the site, MBA has relied on good faith upon representations and information provided by individuals noted in the report concerning present operations, existing conditions, and the historic uses of the project site. In addition, changing circumstances in usage, proposed purpose, subject site zoning, and changes in the environmental statutes of other nearby properties can alter the validity of conclusions and information contained within this report. Therefore, the data obtained are clear and accurate only to the degree implied by the sources and methods used.

This report is provided for the exclusive use of the client noted on the cover page and shall be subject to the terms and conditions in the applicable contract between the client and MBA. Any third-party use of this report shall also be subject to the terms and conditions governing the work in the contract between the client and MBA. The unauthorized use of, reliance on, or release of the information contained in this report without the expressed written consent of MBA is strictly prohibited and will be without risk or liability to MBA.

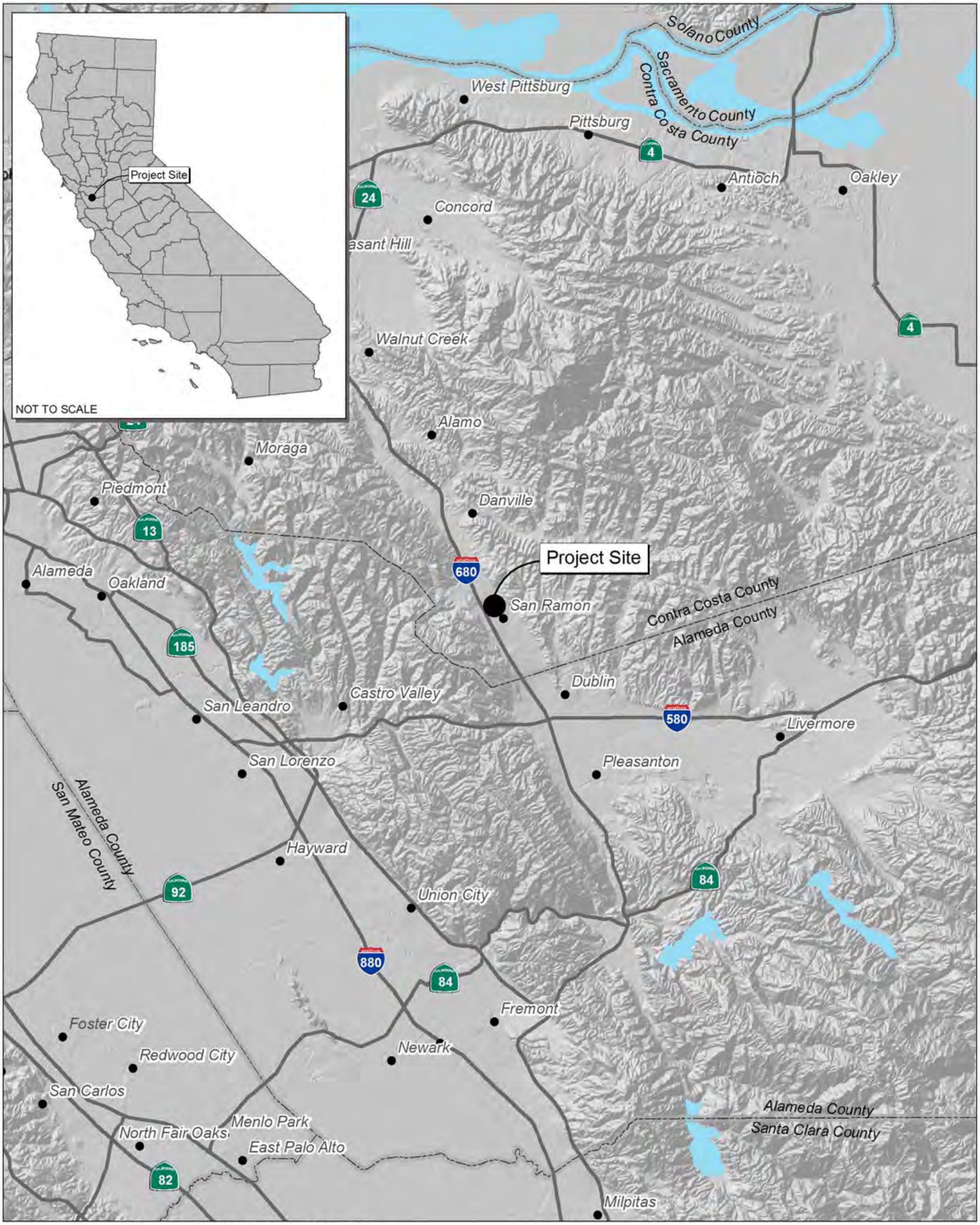
SECTION 3: CURRENT CONDITIONS

The project site is generally located in the City of San Ramon in central Contra Costa County (Exhibit 1). The project site consists of four parcels totaling 43.65 acres, located on all four quadrants of the intersection Bollinger Canyon Road and Camino Ramon (Exhibit 2). The four parcels and their characteristics are summarized in Table 1.

Table 1: Parcel Summary

Parcel No.	APN	Acreage	Existing Uses	Parcel Boundaries
1A	213-133-063	14.27	Undeveloped land; Surface parking area for Bishop Ranch 1	Bishop Ranch 1 entrance road (west), Bollinger Canyon Road (north); Bishop Ranch 1 perimeter roadway (east and south)
1B	213-120-009	3.52	Surface parking area for Bishop Ranch 1	Chevron Park (west), Bollinger Canyon Road (north); Bishop Ranch 1 entrance road; Bishop Ranch 1 structure (south)
2	213-133-086	14.57	Bishop Ranch 2	Sunset Drive (west); Bishop Drive (north); Camino Ramon (east); Bollinger Canyon Road (south)
3A	213-120-013	11.29	Undeveloped land	Camino Ramon (west); Bishop Ranch 3 parking structure (north); Iron Horse Trail (east); Bollinger Canyon Road (south)
Total		**43.65**		
Source: Sunset Development Company. 2007.				

Land use surrounding the project site consists mainly of business complexes and some light industrial, commercial, and residential uses. Land use surrounding the project site consists of professional offices, commercial retail, public facilities (park), and residential. This report defines the extent of significant environmental hazards, if any, associated with the project site. Table 2 summarizes current property information.



Source: Census 2000 Data, The CaSIL, MBA GIS 2007.

Michael Brandman Associates

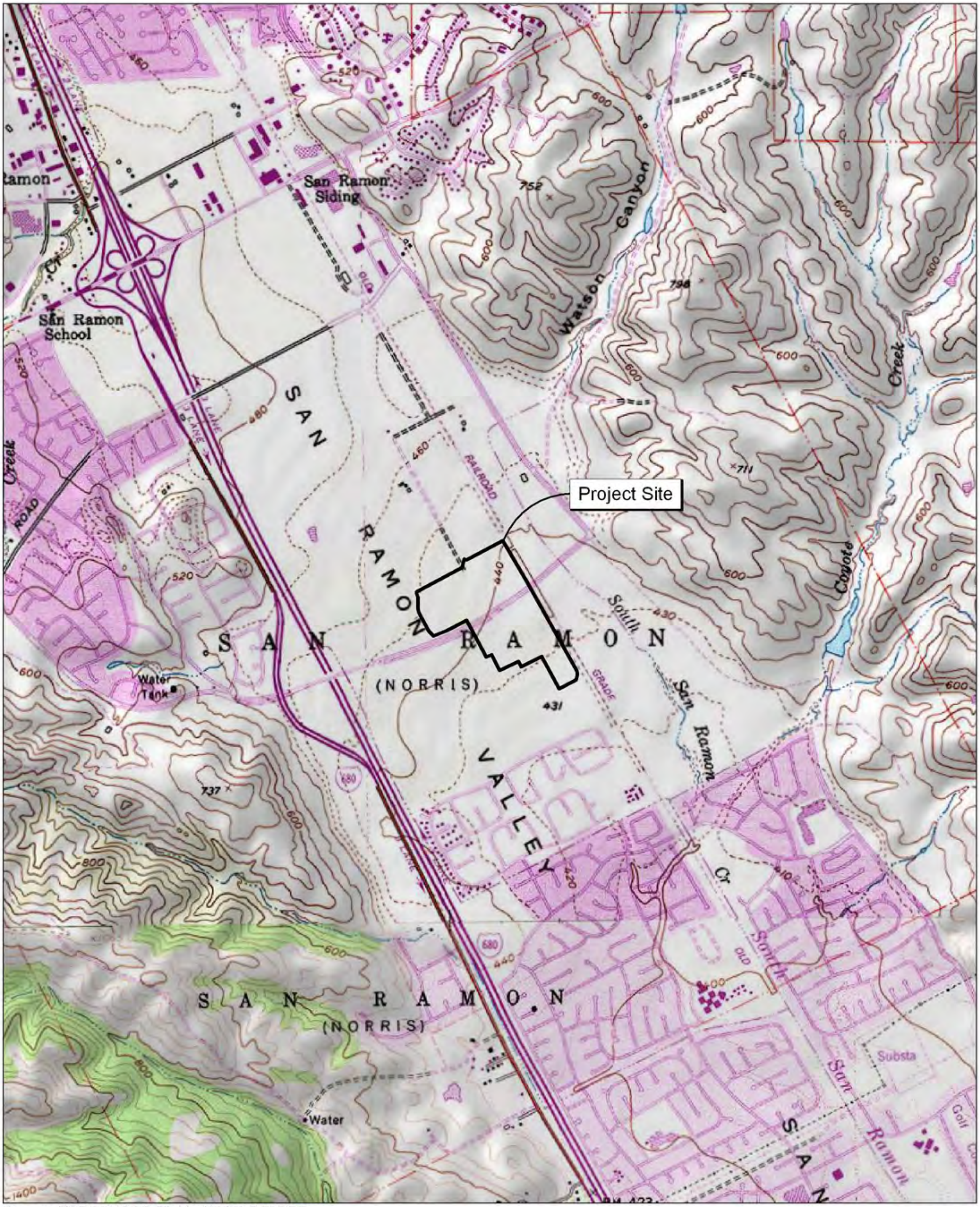
NORTH

5 2.5 0 5 Miles

24910007 • 06/2007 | 1_regional.mxd

Exhibit 1
Regional Location Map

CITY OF SAN RAMON • SAN RAMON CITY CENTER PROJECT
PHASE I ENVIRONMENTAL SITE ASSESSMENT



Source: TOPO! USGS Diablo (1980) 7.5' DRG.

Michael Brandman Associates

NORTH

2,000 1,000 0 2,000 Feet

Exhibit 2
Local Vicinity Map
Topographic Base

Table 2: Summary of Property Information

General	Specific
Topographic Map	Diablo, California, USGS 7.5-minute topographic quadrangle maps, Section 15, Township 2 South, Range 1 West MDBM (1968)
Topographic Map Location	Longitude 121°57'25" West, Latitude 37°45'46" North
Topography	Relatively flat at an elevation of approximately 422 feet above mean sea level
General Location	East of SR-680, north of SR-580, and surrounding the intersection of Bollinger Canyon Road and Camino Ramon
Assessor's Parcel Numbers	213-120-009, 213-120-013, 213-133-063, 213-133-086
Depth to Groundwater (GW)	Approximately 35 feet below ground surface, based on EDR groundwater level information, 1981
Regional GW Flow Direction	Assumed southeast
Existing Use	Business complex, parking lots, and undeveloped land
Source: Michael Brandman Associates. 2007; Environmental Data Resources, Inc. Groundwater levels from 1981, 2007; USGS. 1968; Contra Costa County Assessor. 2007.	

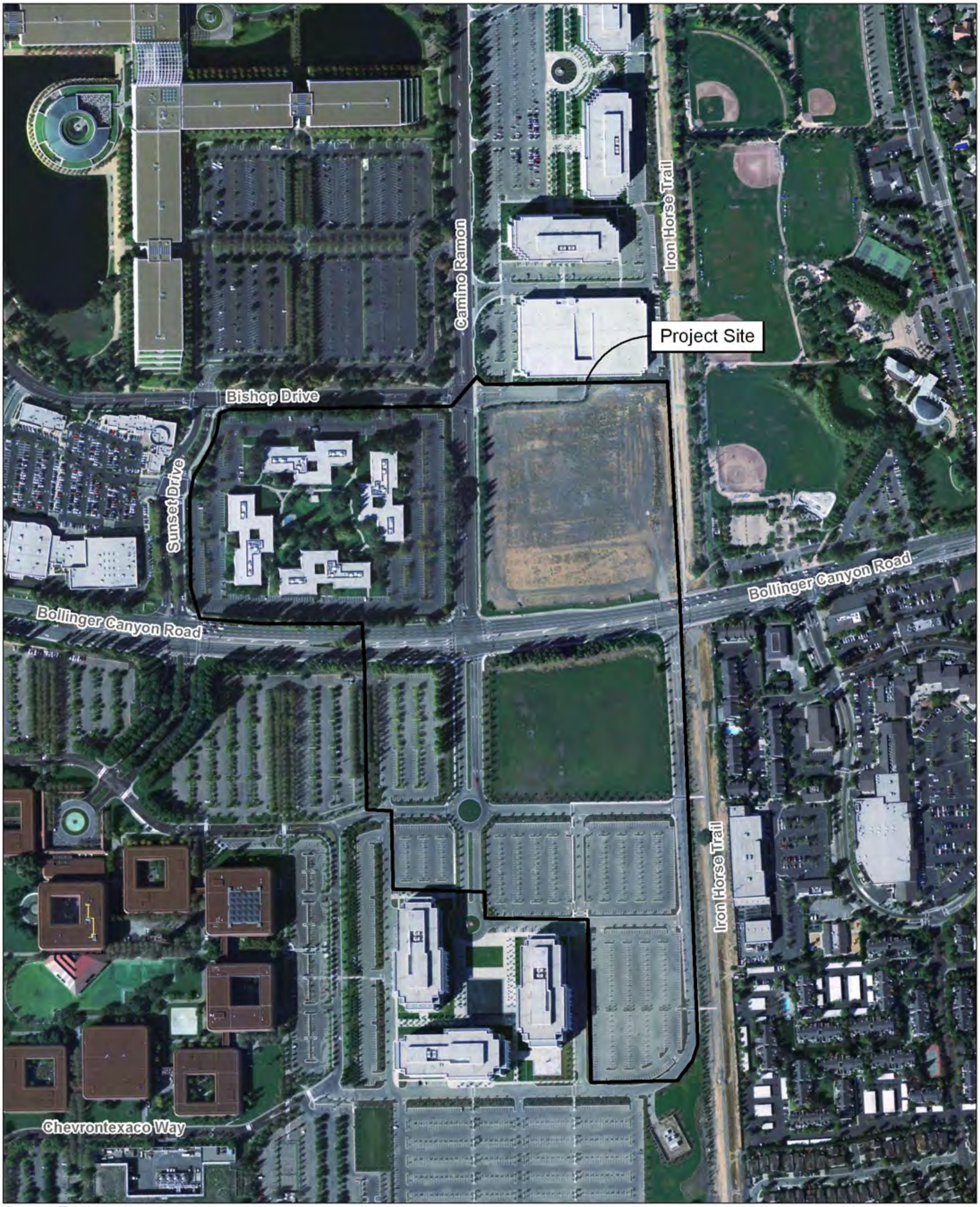
3.1 - Site Description

The project site is depicted on the Diablo, California, USGS 7.5-minute topographic quadrangle maps, Section 15, Township 2 South, Range 1 West (Exhibit 2), at an average elevation of approximately 422 feet above mean sea level. The surrounding vicinity is mostly businesses with a sports complex, light industrial, commercial, and scattered residential land use (Exhibit 3). An office complex, parking lots, and vacant grass fields currently occupy the site. The project site's near-surface soil consists of Botella Clay Loam, Clear Lake Clay, Conejo Clay Loam, and Pescadero (Exhibit 4).

3.2 - Hydrogeology

The San Ramon Valley Groundwater Basin occupies a structural trough in the central Coast Range east of the San Francisco Bay. The basin is located in southern Contra Costa County and is nearly 30 miles east of San Francisco. It is bounded on the north by Stone Valley, on the west by Las Trampas Ridge, on the east by the foothills of Mt. Diablo, and on the south by the Livermore Valley Groundwater Basin. The Town of Danville and the City of San Ramon overlie the basin, while Sycamore Creek and San Ramon Creek are the principal waterways flowing through it.

Mean annual precipitation in the basin ranges from 17 to 20 inches.



Source: Terraserver.

Exhibit 3
Local Vicinity Map
Aerial Base

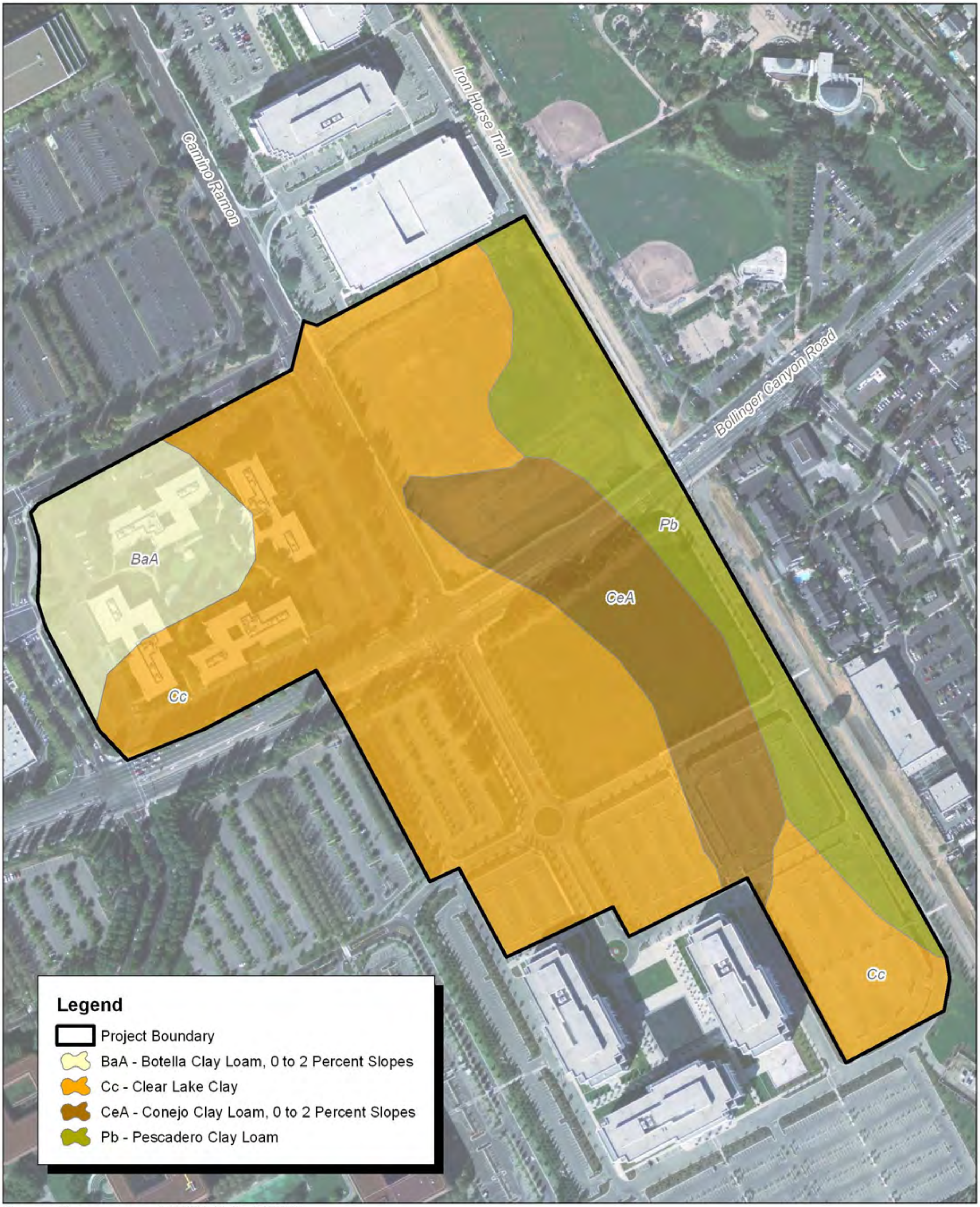
Michael Brandman Associates

NORTH

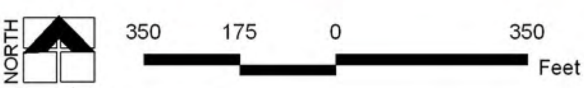
450 225 0 450 Feet

24910007 • 06/2007 | 3_local_aerial.mxd

CITY OF SAN RAMON • SAN RAMON CITY CENTER PROJECT
PHASE I ENVIRONMENTAL SITE ASSESSMENT



Source: Terraserver and USDA Soils (NRCS).



Michael Brandman Associates

24910007 • 06/2007 | 4_soils.mxd

Exhibit 4
USDA Soils Map

CITY OF SAN RAMON • SAN RAMON CITY CENTER PROJECT
PHASE I ENVIRONMENTAL SITE ASSESSMENT

3.3 - Water Supply

The East Bay Municipal Utility District (EBMUD) is the local water purveyor providing potable water to the residents and businesses in this region, including the developed portions of the subject property.

SECTION 4: SITE RECONNAISSANCE

4.1 - Site Reconnaissance

MBA staff conducted a site reconnaissance on April 19, 2007, to evaluate the presence or potential for recognizable environmental concerns. Easily identified potential concerns are listed on the checklist in Table 3, below. Site photographs are included in Appendix A.

Table 3: Summary of Site Reconnaissance

Feature	Observed	Not Observed
Existing structures (Were any power line towers onsite?)	●	
Evidence of past uses (foundations, debris, roads)		●
Hazardous substances and/or petroleum products (including containers)		●
Aboveground storage tanks (ASTs) or evidence of ASTs		●
Underground storage tanks (USTs) or evidence of USTs		●
Strong, pungent, or noxious odors		●
Pools of liquid likely to be hazardous materials or petroleum products		●
Drums		●
Unidentified substance containers		●
PCB-containing equipment	●	
Subsurface hydraulic equipment		●
Heating/ventilation/air conditioning (HVAC)	●	
Stains or corrosion on floors, walls, or ceilings		●
Floor drains and sumps		●
Pits, ponds, or lagoons		●
Stained soil and/or pavement		●
Stressed vegetation		●
Waste or wastewater discharges to surface or surface waters on subject site (including stormwater)		●
Wells (irrigation, domestic, dry, injection, abandoned, monitoring)		●
Septic systems		●
Source: Michael Brandman Associates. 2007.		

The following list provides details of the observed items identified in the above table with photographs included in Appendix A:

- Four two-story buildings (Bishop Ranch 2) occupy Parcel 2. These buildings are currently used as professional offices. No chemicals, petroleum products, stains, or floor drains were observed in this area. MBA understands that demolition is planned for these buildings as redevelopment of the project site takes place. This will be discussed later in the report.

- PCB-containing electrical equipment may be near the project site; however, this was not confirmed by MBA. PCBs will be discussed later in this report.
- HVAC equipment was observed on the project site in conjunction with the Bishop Ranch 2 structures. The age and types of materials used with this equipment was undetermined and should be thoroughly inspected prior to any remodeling or demolition.

4.2 - Adjacent Streets and Property Usage

Table 4 presents a summary of adjacent streets and property uses. In general, the surrounding lands consist of fully developed commercial and residential uses.

Table 4: Summary of Adjacent Streets and Property Usage

Direction	Adjacent Street or Feature	Adjacent Property Use
North	Bishop Drive	Bishop Ranch 3 parking structure and offices; AT&T campus
South	Bishop Ranch 1 Perimeter Roadway	Bishop Ranch 1 offices and surface parking areas
East	Iron Horse Trail	Central Park, Market Place, Reflections Condominiums
West	Sunset Drive	The Shops at Bishop Ranch, Chevron Park
Source: Michael Brandman Associates. 2007.		

4.3 - Petroleum Products

Petroleum products were not observed on the four parcels comprising the project site during the site reconnaissance.

4.4 - Agricultural Chemicals

The project site does not contain any active agricultural uses. Agricultural chemicals were not observed on the four parcels comprising the project site during the site reconnaissance.

4.5 - Polychlorinated Biphenyls (PCBS)

Polychlorinated biphenyls (PCBs) are fluids that were commonly used as an insulating liquid in transformers prior to 1979. They belong to a highly toxic class of environmentally persistent compounds. Transformers or other equipment possibly containing PCBs were not observed on the four parcels comprising the project site but may be near the southern portion of Parcel 1A.

4.6 - Asbestos-Containing Materials (ACMS)

Asbestos is a mineral fiber that has been commonly used in a variety of building construction materials and household products for insulation and as a fire retardant. The Environmental Protection Agency (EPA) and the Consumer Product Safety Commission (CPSC) have banned most asbestos products. Today, asbestos is most commonly found in older homes in pipe and furnace insulation materials, asbestos shingles, millboard, textured paints and other coating materials, and floor tiles. The Bishop Ranch 2 structures, the only buildings on the four parcels comprising the project site, were constructed in 1982. Because of the age of the buildings, the potential for ACMs is low. Asbestos sampling was not included within the scope of this assessment.

4.7 - Lead

According to the United States Department of Housing and Urban Development, after 1978, lead-based paints and plumbing products became less prevalent in building materials, and lead-based paints no longer were sold. Because of the age of the Bishop Ranch 2 structures, the potential for lead to be present in paint and plumbing fixtures is low. Lead sampling was not included within the scope of this assessment.

4.8 - Storage Tanks

No storage tanks were observed on the four parcels comprising the project site during the site reconnaissance.

SECTION 5: PHASE I ESA QUESTIONNAIRES

5.1 - Questionnaires

The current landowners, Sunset Development Company, and the City of San Ramon completed MBA's standardized ESA questions through questionnaires and personal correspondence regarding any known conditions related to hazardous materials in, on, or around the project site. The questions also pertained to their knowledge of notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous materials. Relevant information is summarized below.

Sunset Development Company owns the entirety of APN 213-120-009 (Parcel 1B) and 213-133-086 (Parcel 2), and 6.71 acres of APN 213-133-063 (Parcel 1A). The City of San Ramon owns the entirety of APN 213-120-013 (Parcel 3A) and 7.56 acres of APN 213-133-063 (Parcel 1A).

Mr. Peter Oswald of Sunset Development Company responded to questions about the parcels owned by his firm. Mr. Oswald indicated that he had no recollection of hazardous substances or petroleum products on the site. In addition, the uses of the property and nearby properties do not suggest the presence of these substances. Mr. Oswald mentioned a 96-inch underground storm drain, which MBA later confirmed to be aligned under Camino Ramon, the Bishop Ranch 1 entrance road, and the Bishop Ranch 1 surface parking areas. He also stated that there are no water wells, clarifiers, or underground irrigation systems on the site. Mr. Oswald also stated that there are no records of previous Phase I ESAs performed on the site.

Ms. Joye Fukuda of the City of San Ramon responded to questions about the parcels owned by the City. Ms. Fukuda indicated that to the best of her knowledge, these parcels have always been undeveloped, with the exception of intermittent special use permits for events such as the annual Art and Wind Festival. She made no indication of hazardous or petroleum substances onsite. She also gave no indication of current or past releases of the preceding items. Previous Phase I ESAs have not been documented for this property.

Based on information provided by representatives of the landowners, there are no known notices from governmental entities or known violations of environmental laws against this project site.

SECTION 6: RECORDS REVIEW

The usage survey included assessing project site history, and reviewing local, State, and federal regulatory agency records. Regulatory agencies were contacted to help determine if hazardous materials have been handled, stored, or generated on the project site or on the adjacent properties and businesses.

6.1 - Site History

Agency databases, an agency review report prepared by EDR, and personal correspondences were used to assess the project site's history. No previous Phase I ESA reports were discovered or reviewed. Historic aerial photographs have been reviewed and are included in the EDR report (Appendix C). The project site's uses differ only in that it had been agricultural prior to the first signs of development in 1982. Uses prior to agricultural could not be determined.

6.2 - Regulatory Agency Lists Review

Searches of available environmental records were conducted by EDR and are displayed in Appendices B, C, D, and E. Their research and report assist parties seeking to meet the search requirements of Environmental Protection Agency's (EPA's) Standards and Practices for All Appropriate Inquiries per 40 CFR Part 312, the ASTM Standard Practice for ESAs (E-1527-05), or custom requirements developed for the evaluation of environmental risks associated with a parcel of real estate. EDR's search of available "reasonably ascertainable" government records identified several mapped sites near the project site.

Several agencies have published documents that list businesses or properties that have handled hazardous materials or waste or that may have experienced site contamination. The lists consulted in the course of MBA's assessment were compiled by EDR and MBA on April 18, 2007 and represent reasonably ascertainable, current listings. MBA did not verify the locations and distances of every EDR-listed property, but MBA did verify locations and distances of properties deemed to have the potential to have an adverse affect on the project site. The actual location of the listed properties may differ from the EDR listing. The EDR report summarizes the listed properties located within the ASTM search radii. (See their report in Appendix B.) No EDR unmapped, or orphaned, sites were determined to be located on or adjacent to the project site.

MBA has reviewed the EDR report, conducted a site reconnaissance, and researched regulatory agency databases for properties within the specified search radius of the project site appearing on local, State, or federally published lists of sites that use or have had releases of hazardous materials. The Leaking Underground Storage Tank (LUST) incident reports provided by EDR contain an inventory of reported storage tank incidents. A review of the LUST list has revealed that there are three LUST sites within approximately 0.5 mile of the project site. These sites include San Ramon

Valley Fire Station #34, Exxon, and Jehovah's Witness Hall, and they have been given the status of "Case Closed" by the local regulatory agencies. Further, Contra Costa County has identified these sites as clean. The remainder of identified sites are of sufficient distance, are situated cross- or down-gradient to the project site, or have been certified closed by the residing agency, so no impacts to the project site are likely.

In general, only potentially hazardous materials released from facilities located approximately up-gradient and within a few hundred feet of the project site, or in a cross-gradient direction close to the project site, are judged to have a reasonable potential of migrating onsite. This opinion is based on the assumption that materials generally do not migrate large distances laterally within the soil but, rather, tend to migrate with groundwater in the general direction of groundwater flow. The EDR Report is included in this report as Appendices B, C, and D.

Local regulatory agency interface included the following entities.

6.2.1 - San Francisco Bay Regional Water Quality Control Board

No additional relevant information was obtained for the project site.

6.2.2 - Contra Costa County Fire Department

No additional relevant information was obtained for the project site.

6.2.3 - Contra Costa County Hazardous Materials Program

According to personnel with the Contra Costa Hazardous Materials program and a review of their records, no major violations, spills, or other occurrences have been documented that could have caused contamination of the site or nearby properties. Minor violations have occurred in the vicinity but did not involve soil contamination. The two outstanding violations are as follows:

- Chevron Park. 6001 Bollinger Canyon Road. Chevron Real Estate Management Co. ID # 770089. Violation: tank violation; sensor alarms, no designated operator records available.
- Target. 2610 Bishop Drive. ID# 772068. Violation: Photo Lab training procedures and records.

6.3 - Aerial Photography

Historic aerial photographs received from EDR were reviewed to identify land uses and to note land use changes over time. A summary of these photographs follows in Table 5.

Table 5: Aerial Photography Summary

Year	Source	Property Observation
1939	Fairchild	The project site contains orchards. A residential structure associated with the orchards is visible north of the project site, near the present-day location of Bishop Ranch 3. An east-west dirt road connects the structure with a two-lane north-south road that follows the general alignment of present-day San Ramon Valley Boulevard. A single-track rail line is visible along the present-day Iron Horse Trail corridor.
1946	Jack Ammann	More structures are visible near the residential north of the site. No other notable changes have occurred.
1959	Cartwright	No notable changes have occurred.
1965	Cartwright	Portions of the project site have been cleared of orchards. Interstate 680 is under construction west of the project site.
1982	WSA	Bishop Ranch 2 is under construction. Orchards are still visible on Parcels 1A and 1B, but have been removed from Parcel 3A. Interstate 680, Bollinger Canyon Road, and Alcosta Boulevard are visible. San Ramon Valley Boulevard has been re-routed around the west side of the Bollinger Canyon Road over crossing of the freeway. Streets following the present-day alignment of Bishop Drive, Camino Ramon, and Executive Parkway are being constructed. The AT&T campus is under construction. Chevron Park is under construction and road linking the east side of the campus with the intersection of Bollinger Canyon Road and Camino Ramon is visible. Residential construction is visible south of Chevron Park, west of Interstate 680, and east of Alcosta Boulevard. The railroad line has been abandoned and the rails have been removed.
1993	USGS	Bishop Ranch 2, the AT&T campus, Chevron Park, Sunset Drive, Bishop Drive, Camino Ramon have been completed. Parcels 1A, 1B, and 3A are vacant. Central Park, the Market Place, and the Reflections Condominiums, are visible. More residential development is visible east of Alcosta Boulevard, south of Chevron Park, and west of Interstate 680. The Marriot Hotel is visible. The Bollinger Canyon Road interchange with Interstate 680 is visible.
1998	USGS	Parcels 1A and 1B have been graded and the road linking the east side of Chevron Park with the intersection of Bollinger Canyon Road and Camino Ramon is no longer visible. The Bishop Ranch 1 perimeter road is under construction. Parcel 3A is undeveloped. Bishop Ranch 3 is under construction. Iron Horse Middle School is visible.
Source: Michael Brandman Associates. 2007.		

6.4 - Historic Topography

Historic topographic maps were received from EDR and reviewed for land use changes and facilities. A summary of these maps is provided in Table 6.

Table 6: Historic Topography Summary

Year	USGS Map Name	Property Observation
1912	Mt. Diablo	The San Ramon branch line is visible. A road following the present-day alignment of San Ramon Valley Boulevard is visible. San Ramon Creek is shown as a blue line stream.
1947	Mt. Diablo	The project site is shown as being in agricultural use. The road following the present-day alignment of San Ramon Valley Boulevard is noted as “21.” Roadways following the present-day alignments of Norris Canyon Road, Crow Canyon Road are visible, as well as several minor east-west farm roads.
1953	Diablo	No notable changes to project site. An airstrip is shown on the west side of San Ramon Valley Boulevard. A water tank and structures are noted at a location labeled “San Ramon Siding” at the present-day Crow Canyon Road and the Iron Horse Trail.
1968	Diablo	No notable changes to project site. Interstate 680 is visible and noted as being “3 lane.” An over crossing of the freeway is noted at the present-day location of the Bollinger Canyon Road interchange; however, the road terminates immediately east of the freeway. The Crow Canyon Road interchange with Interstate 680 is visible. More development is shown at San Ramon Siding.
1973	Diablo	No notable changes to project site. The Twin Creeks neighborhood is shown.
1980	Diablo	No notable changes to project site. The railroad is shown as abandoned and labeled as “Old Railroad Grade.” Bollinger Canyon Road and Alcosta Boulevard are visible; both roads terminate at their intersection. Residential development is visible west of Interstate 680 and south of present-day Chevron Park.
Source: Michael Brandman Associates. 2007.		

6.5 - Sanborn Map Report

No coverage

SECTION 7: FINDINGS

Based on questionnaires and review of historic photography, the four parcels comprising the project site were in agricultural use until the early 1980s, after which they were either developed into office complexes and parking lots or graded and left undeveloped. Based on MBA's research, no evidence was found that suggests improper use, storage, or application of agricultural chemicals, petroleum products, or other potentially hazardous materials at the project site; therefore, none of the hazardous materials mentioned above are likely to be considered an REC. The EDR search revealed records of three leaking underground storage tank sites within 0.5-mile of the project site. These sites have been cleaned and are considered "closed" by the residing regulatory agencies. The City of San Ramon and the County of Contra Costa made no indication of environmental or hazardous material issues onsite. MBAs site observations, and interviews and review/contacts with State and local regulatory agencies indicate the potential is low for adverse environmental impacts to the project site associated with past and current uses.

MBA's findings of this Phase I ESA revealed no evidence of RECs in connection with the project site. A small utility corridor, which is owned by Chevron Corporation and contains electrical transformers, was observed south of Parcel 1A on the opposite side of the Bishop Ranch 1 perimeter roadway. Transformers historically contained PCB fluids, classified as highly toxic materials. It is unknown if the transformers near the site contain PCB fluids. It is the opinion of MBA that the proper authorities be contacted regarding the possibility that PCBs are in the area.

Testing for lead and asbestos onsite was not included as part of this Phase I scope of work. Because plans involve demolition of existing buildings, though the potential is low, it is the opinion of MBA that lead and asbestos testing be conducted prior to any remodeling of the buildings.

SECTION 8: CONCLUSIONS

MBA has conducted a Phase I ESA of the project site in compliance with the scope and limitation of ASTM E1527-05 Standard Practice for ESA: Phase I ESA Process and the available data. This Phase I ESA was also conducted, prepared, and reviewed in accordance with the 40 CFR Part 312 - Standards and Practices for All Appropriate Inquiries rule, which establishes specific regulatory requirements for conducting an inquiry into previous ownership, uses, and the environmental condition of a property. Any deviations from this regulation were described in this report.

The site reconnaissance of the project site did not reveal the presence of any hazardous materials or wastes within the project site; however, on the basis of the interviews and analysis of historic photos, it was found that the project site was historically used for the production of agriculture and is currently being used for businesses and parking purposes.

It is the opinion of MBA that an appropriate level of inquiry has been made into the current and previous ownership and uses of the project site, consistent with good commercial and customary practices in an effort to minimize liability, and no evidence or indication of RECs has been identified. In MBA's opinion, no further investigation is deemed necessary at this time.

SECTION 9: QUALIFICATIONS

MBA's undersigned environmental professional, under the supervision of the undersigned registered engineer, conducted this Phase I ESA. The work was conducted in accordance with ASTM 1527-05 and generally accepted industry standards for environmental due diligence in place, at the time of the preparation of this report. We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in § 312.10 of 40 CFR 312, and we have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

If you have any questions or if we can be of further assistance, please do not hesitate to contact our office at 559.497.0310.

Respectfully submitted,

Jason A. Higginbotham
Environmental Analyst, MBA Fresno

Dale S. Stanton

Dale Stanton, P.E.
Director of Water Resources, MBA Fresno

REGISTERED PROFESSIONAL ENGINEER
DALE S. STANTON
NO. C 46924
Exp. 6/30/2007
CIVIL
STATE OF CALIFORNIA

SECTION 10: LITERATURE REVIEW

American Society for Testing and Materials (ASTM) Standards on Environmental Site Assessments for Commercial Real Estate Standard E 1527-94 and E 1528-93. 2006.

California Code of Regulations, Title 8, Section 1529. 2006.

California Department of Water Resources. *California's Groundwater Bulletin 118 - Update 2003.*

California Department of Water Resources. 2005. Groundwater Level Data Library http://wdl.water.ca.gov/gw/admin/main_menu_gw.asp.

Department of Housing and Urban Development (DHUD). 2004. Website: www.hud.gov/offices/lead/leadsaferule/index.cfm.

Environmental Data Resources Inc., (EDR). 2006.

State Water Resources Control Board (SWRCB). 2005. GeoTracker Database.

Appendix A: Site Photographs

Photograph 1: Looking south at the utility corridor located just east of the southeast corner of the project site

Photograph 2: Looking north from the southern boundary of the non-native grassland located south of Bollinger Canyon Road

Source: Michael Brandman Associates, 2007.

Michael Brandman Associates

Appendix A
Site Photographs 1 & 2

Photograph 3: Looking west from the intersection of Camino Ramon and Bishop Drive at the office complex onsite

Photograph 4: Looking north from the southern boundary of the non-native grassland located north of Bollinger Canyon Road

Source: Michael Brandman Associates, 2007.

Michael Brandman Associates

Appendix A
Site Photographs 3 & 4

Photograph 5: Looking south east from the intersection of Bollinger Canyon Road and Iron Horse Trail at the residential development east of the project site

Photograph 6: Looking north from Bollinger Canyon Road at Iron Horse Trail and the San Ramon Creek

Source: Michael Brandman Associates, 2007.

Michael Brandman Associates

Appendix A
Site Photographs 5 & 6

Photograph 7: Closer look at San Ramon Creek

Source: Michael Brandman Associates, 2007.

Michael Brandman Associates

Appendix A
Site Photograph 7

Appendix B: EDR Radius Map with GeoCheck®

The EDR Radius Map
with GeoCheck®

San Ramon City Center Project
Bollinger Canyon Road
San Ramon, CA 94583

Inquiry Number: 1906270.2s

April 18, 2007

EDR® Environmental
Data Resources Inc

The Standard in Environmental Risk Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-05) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

BOLLINGER CANYON ROAD
SAN RAMON, CA 94583

COORDINATES

Latitude (North):	37.761800 - 37˚ 45' 42.5''
Longitude (West):	121.959300 - 121˚ 57' 33.5''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	591669.0
UTM Y (Meters):	4179691.5
Elevation:	447 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	37121-G8 DIABLO, CA
Most Recent Revision:	1980
South Map:	37121-F8 DUBLIN, CA
Most Recent Revision:	1980

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

FEDERAL RECORDS

NPL - National Priority List
Proposed NPL - Proposed National Priority List Sites
Delisted NPL - National Priority List Deletions
NPL RECOVERY - Federal Superfund Liens
CERCLIS - Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP - CERCLIS No Further Remedial Action Planned

EXECUTIVE SUMMARY

CORRACTS Corrective Action Report
RCRA-TSDF Resource Conservation and Recovery Act Information
RCRA-LQG Resource Conservation and Recovery Act Information
ERNS Emergency Response Notification System
HMIRS Hazardous Materials Information Reporting System
US ENG CONTROLS Engineering Controls Sites List
US INST CONTROL Sites with Institutional Controls
DOD Department of Defense Sites
FUDS Formerly Used Defense Sites
US BROWNFIELDS A Listing of Brownfields Sites
CONSENT Superfund (CERCLA) Consent Decrees
ROD Records Of Decision
UMTRA Uranium Mill Tailings Sites
ODI Open Dump Inventory
TRIS Toxic Chemical Release Inventory System
TSCA Toxic Substances Control Act
FTTS FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
SSTS Section 7 Tracking Systems
ICIS Integrated Compliance Information System
RADINFO Radiation Information Database
HIST FTTS FIFRA/TSCA Tracking System Administrative Case Listing
US CDL Clandestine Drug Labs
LUCIS Land Use Control Information System
DOT OPS Incident and Accident Data
PADS PCB Activity Database System
MLTS Material Licensing Tracking System
MINES Mines Master Index File
FINDS Facility Index System/Facility Registry System
RAATS RCRA Administrative Action Tracking System

STATE AND LOCAL RECORDS

HIST Cal-Sites Historical Calsites Database
CA BOND EXP. PLAN Bond Expenditure Plan
SCH School Property Evaluation Program
Toxic Pits Toxic Pits Cleanup Act Sites
SWF/LF Solid Waste Information System
CA WDS Waste Discharge System
WMUDS/SWAT Waste Management Unit Database
SWRCY Recycler Database
CA FID UST Facility Inventory Database
SLIC Statewide SLIC Cases
AST Aboveground Petroleum Storage Tank Facilities
CHMIRS California Hazardous Material Incident Report System
Notify 65 Proposition 65 Records
DEED Deed Restriction Listing
VCP Voluntary Cleanup Program Properties
WIP Well Investigation Program Case List
CDL Clandestine Drug Labs
RESPONSE State Response Sites
HAZNET Facility and Manifest Data
EMI Emissions Inventory Data
SAN DIEGO CO. SAM Environmental Case Listing

TRIBAL RECORDS

INDIAN RESERV Indian Reservations

EXECUTIVE SUMMARY

INDIAN LUST Leaking Underground Storage Tanks on Indian Land
INDIAN UST Underground Storage Tanks on Indian Land

EDR PROPRIETARY RECORDS

Manufactured Gas Plants EDR Proprietary Manufactured Gas Plants

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

FEDERAL RECORDS

RCRAInfo: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System(RCRIS). The database includes selective information on sites which generate, transport, store , treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month Large quantity generators generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

A review of the RCRA-SQG list, as provided by EDR, and dated 06/13/2006 has revealed that there are 3 RCRA-SQG sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
PACIFIC BELL	***2600 CAMINO RAMON RM 2E***	***1/8 - 1/4 NNW***	***C14***	***23***

Lower Elevation	Address	Dist / Dir	Map ID	Page
CHEVRONTEXACO PARK SAN RAMON	6001 BOLLINGER CANYON R	0 - 1/8	A1	6
CHEVRON PARK GEOTECHNICAL CTR	***6001 BOLINGER CANYON RD***	***0 - 1/8***	***A2***	***6***

EXECUTIVE SUMMARY

STATE AND LOCAL RECORDS

CORTESE: This database identifies public drinking water wells with detectable levels of contamination, hazardous substance sites selected for remedial action, sites with known toxic material identified through the abandoned site assessment program, sites with USTs having a reportable release and all solid waste disposal facilities from which there is known migration. The source is the California Environmental Protection Agency/Office of Emergency Information.

A review of the Cortese list, as provided by EDR, and dated 04/01/2001 has revealed that there are 3 Cortese sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
SAN RAMON VALLEY FIRE STA	***12599 ALCOSTA***	***1/4 - 1/2 N***	***E20***	***34***

Lower Elevation	Address	Dist / Dir	Map ID	Page
EXXON	***1091 MARKET PL***	***0 - 1/8 ENE***	***B6***	***14***
JEHOVAH'S WITNESSES HALL	***19453 SAN RAMON VALLEY***	***1/4 - 1/2 SSW***	***22***	***36***

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the State Water Resources Control Board Leaking Underground Storage Tank Information System.

A review of the LUST list, as provided by EDR, and dated 01/09/2007 has revealed that there are 3 LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
SAN RAMON VALLEY FIRE STA #34 Facility Status: Case Closed	***12599 ALCOSTA BLVD***	***1/4 - 1/2 N***	***E21***	***35***

Lower Elevation	Address	Dist / Dir	Map ID	Page
EXXON Facility Status: Case Closed	***1091 MARKET PL***	***0 - 1/8 ENE***	***B6***	***14***
JEHOVAH'S WITNESSES HALL Facility Status: Case Closed	***19453 SAN RAMON VALLEY***	***1/4 - 1/2 SSW***	***22***	***36***

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the UST list, as provided by EDR, and dated 01/09/2007 has revealed that there are 4 UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
PACIFIC BELL/SAN RAMON W1245	***2600 CAMINO RAMON***	***1/8 - 1/4 NNW***	***C12***	***22***
PACIFIC BELL	2600 CAMION RAMON, RM 2	1/8 - 1/4 NNW	C13	22
SAN RAMON MARRIOTT HOTEL	***2600 BISHOP DR***	***1/8 - 1/4 W***	***D18***	***31***

Lower Elevation	Address	Dist / Dir	Map ID	Page
VALERO #7-033	1091 MARKET PL	0 - 1/8 ENE	B5	14

EXECUTIVE SUMMARY

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there is 1 HIST UST site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
PACIFIC BELL	***2600 CAMINO RAMON RM 2E***	***1/8 - 1/4 NNW***	***C14***	***23***

SL: Lists includes sites from the Underground Tank Program, Hazardous Waste Generator Program & Business Plan 12185 Program

A review of the CONTRA COSTA CO. SITE LIST list, as provided by EDR, and dated 02/27/2007 has revealed that there are 12 CONTRA COSTA CO. SITE LIST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
AT&T INTERNET SERVICES (W19AJ)	2623 CAMINO RAMON	0 - 1/8 NNW	11	22
PACIFIC BELL/SAN RAMON W1245	***2600 CAMINO RAMON***	***1/8 - 1/4 NNW***	***C12***	***22***
TARGET #949	***2610 BISHOP DR***	***1/8 - 1/4 W***	***15***	***28***
BISHOP RANCH 3	2603 CAMINO RAMON #100	1/8 - 1/4 NNW	16	30
SAN RAMON MARRIOTT HOTEL	***2600 BISHOP DR***	***1/8 - 1/4 W***	***D18***	***31***

Lower Elevation	Address	Dist / Dir	Map ID	Page
CHEVRON PARK	***6001 BOLLINGER CANYON R***	***0 - 1/8***	***A3***	***7***
AUTOMATIC DATA PROCESSING-ADP	6111 BOLLINGER CANYON R	0 - 1/8	4	14
VALERO #3800	1091 MARKET PL	0 - 1/8 ENE	B7	17
ORCHARD SUPPLY HARDWARE #390	1041 MARKET PL	0 - 1/8 ENE	8	17
GREEN VALLEY CLEANERS	1021 MARKET PL SHOP B	0 - 1/8 ENE	9	17
GREEN VALLY CLEANERS	***1021 MARKET PLACE***	***0 - 1/8 E***	***10***	***18***
LONGS DRUG STORE #536	490 MARKET PL	1/8 - 1/4 ENE	17	30

SWEEPS: Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1980's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

A review of the SWEEPS UST list, as provided by EDR, and dated 06/01/1994 has revealed that there are 4 SWEEPS UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
PACIFIC BELL	***2600 CAMINO RAMON RM 2E***	***1/8 - 1/4 NNW***	***C14***	***23***
MARRIOT HOTEL	***2600 BISHOP DR***	***1/8 - 1/4 W***	***D19***	***31***

Lower Elevation	Address	Dist / Dir	Map ID	Page
CHEVRON PARK	***6001 BOLLINGER CANYON R***	***0 - 1/8***	***A3***	***7***
EXXON	***1091 MARKET PL***	***0 - 1/8 ENE***	***B6***	***14***

EXECUTIVE SUMMARY

DRYCLEANERS: A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaners' agents; linen supply; coin-operated laundries and cleaning; drycleaning plants except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

A review of the CLEANERS list, as provided by EDR, and dated 04/18/2005 has revealed that there is 1 CLEANERS site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Dist / Dir	Map ID	Page
GREEN VALLY CLEANERS	*1021 MARKET PLACE*	*0 - 1/8 E*	*10*	*18*

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 02/27/2007 has revealed that there is 1 ENVIROSTOR site within approximately 1 mile of the target property.

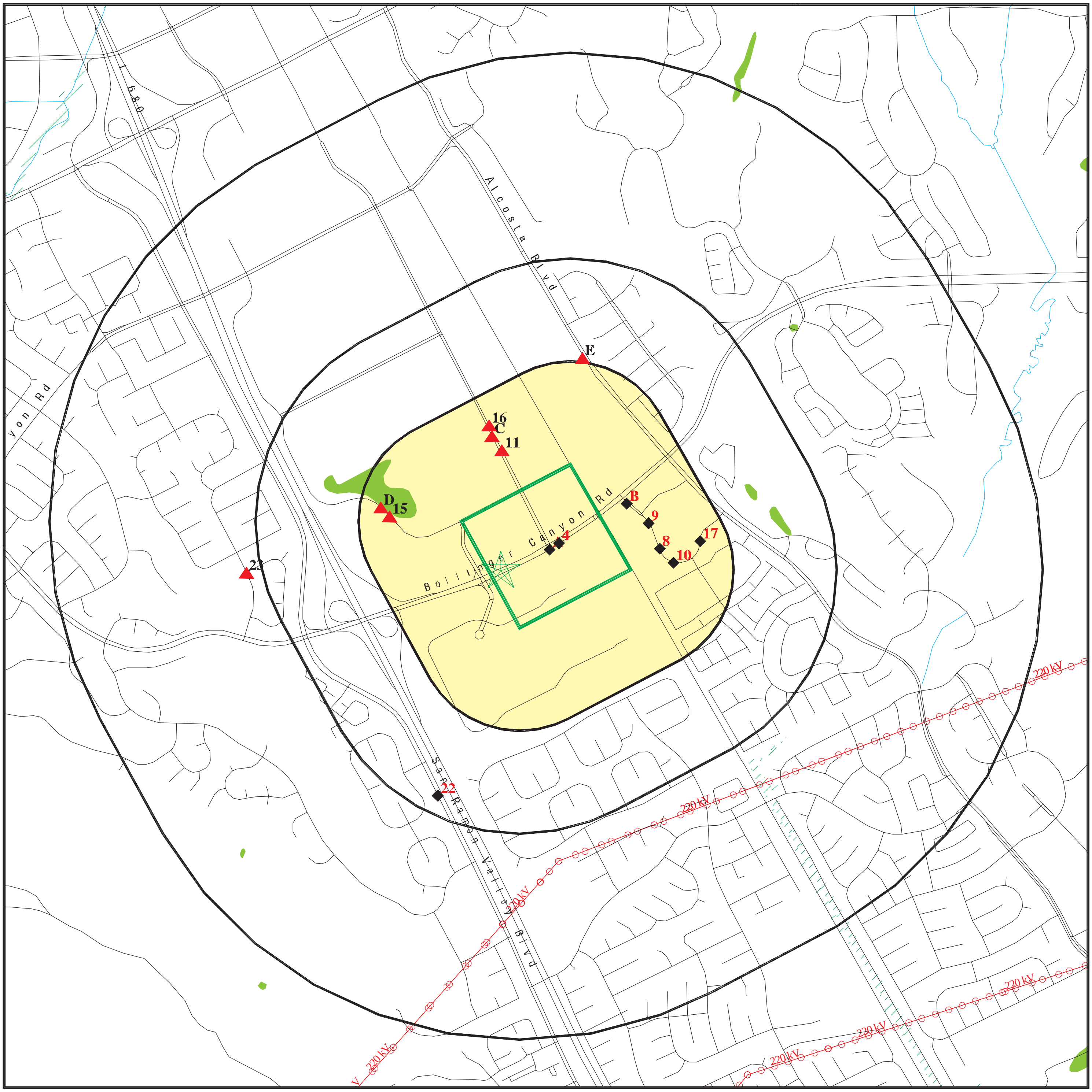
Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
BOLLINGER CANYON ELEMENTARY SC Facility Status: Inactive - Needs Evaluation	*2300 TALAVERA DRIVE*	*1/2 - 1 WSW*	*23*	*38*

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

Site Name	Database(s)
SAN RAMON REGINAL MEDICAL CENT	SWEEPS UST
TRACOR AEROSPACE, ADV SYS OPER	SWEEPS UST
SAN RAMON UNIFIED SCHOOL	Cortese
CHEVRON REAL ESTATE MGT CO	UST
TRACOR MBA-SAN RAMON OPERATION	HIST UST
SAN RAMON PUMPING STATION	HIST UST
SAN RAMON VALLEY UNIFIED SCHOOL DIST. SERV. CENTER	AST
COOKS COLLISION OF SAN RAMON	HAZNET
ALLIANCE MRI/SAN RAMON	HAZNET
EAST HAMPTON-SAN RAMON LTD. PARTNERSHIP	HAZNET
PG&E SAN RAMON LABORATORIES	HAZNET
1X CITY OF SAN RAMON/ENGINEERING DEPT	HAZNET
PACIFIC GAS & ELECTRIC CO (SAN RAMON SUBSTATION)	HAZNET
PG & E, SAN RAMON SUB	HAZNET
COUNTRY CLUB DENTAL CENTER	HAZNET
PACIFIC BELL	RCRA-SQG, FINDS
CAMINO RAMON STREET	ERNS
CANYON RD NR:HWY 680/IN SAN RAMON	ERNS
CITY OF SAN RAMON - STORM WATR	CA WDS
SAFEWAY FUEL CENTER #2712	CONTRA COSTA CO. SITE LIST
INDEPENDENT CONSTRUCTION CO	CONTRA COSTA CO. SITE LIST
AMERICAN TOWER CORP #8239/ROCKY RIDGE	CONTRA COSTA CO. SITE LIST
PG&E SAN RAMON SUBSTATION	CONTRA COSTA CO. SITE LIST
SAN RAMON VALLEY FIRE STA #30	CONTRA COSTA CO. SITE LIST
BISHOP RANCH VETERINARY CENTER	EMI

OVERVIEW MAP - 1906270.2s



0 1/4 1/2 1 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	San Ramon City Center Project	CLIENT:	Michael Brandman Associates
ADDRESS:	Bollinger Canyon Road San Ramon CA 94583	CONTACT:	Jason Higginbotham
		INQUIRY #:	1906270.2s
LAT/LONG:	37.7618 / 121.9593	DATE:	April 18, 2007 4:46 pm

DETAIL MAP - 1906270.2s

Target Property
Sites at elevations higher than or equal to the target property
Sites at elevations lower than the target property
Manufactured Gas Plants
Sensitive Receptors
National Priority List Sites
Landfill Sites
Dept. Defense Sites

0 1/16 1/8 1/4 Miles

Indian Reservations BIA
Oil & Gas pipelines
100-year flood zone
500-year flood zone
National Wetland Inventory

Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	San Ramon City Center Project	CLIENT:	Michael Brandman Associates
ADDRESS:	Bollinger Canyon Road San Ramon CA 94583	CONTACT:	Jason Higginbotham
		INQUIRY #:	1906270.2s
LAT/LONG:	37.7618 / 121.9593	DATE:	April 18, 2007 4:46 pm

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
FEDERAL RECORDS								
NPL		1.000	0	0	0	0	NR	0
Proposed NPL		1.000	0	0	0	0	NR	0
Delisted NPL		1.000	0	0	0	0	NR	0
NPL RECOVERY		TP	NR	NR	NR	NR	NR	0
CERCLIS		0.500	0	0	0	NR	NR	0
CERC-NFRAP		0.500	0	0	0	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
RCRA TSD		0.500	0	0	0	NR	NR	0
RCRA Lg. Quan. Gen.		0.250	0	0	NR	NR	NR	0
RCRA Sm. Quan. Gen.		0.250	2	1	NR	NR	NR	3
ERNS		TP	NR	NR	NR	NR	NR	0
HMIRS		TP	NR	NR	NR	NR	NR	0
US ENG CONTROLS		0.500	0	0	0	NR	NR	0
US INST CONTROL		0.500	0	0	0	NR	NR	0
DOD		1.000	0	0	0	0	NR	0
FUDS		1.000	0	0	0	0	NR	0
US BROWNFIELDS		0.500	0	0	0	NR	NR	0
CONSENT		1.000	0	0	0	0	NR	0
ROD		1.000	0	0	0	0	NR	0
UMTRA		0.500	0	0	0	NR	NR	0
ODI		0.500	0	0	0	NR	NR	0
TRIS		TP	NR	NR	NR	NR	NR	0
TSCA		TP	NR	NR	NR	NR	NR	0
FTTS		TP	NR	NR	NR	NR	NR	0
SSTS		TP	NR	NR	NR	NR	NR	0
ICIS		TP	NR	NR	NR	NR	NR	0
RADINFO		TP	NR	NR	NR	NR	NR	0
HIST FTTS		TP	NR	NR	NR	NR	NR	0
CDL		TP	NR	NR	NR	NR	NR	0
LUCIS		0.500	0	0	0	NR	NR	0
DOT OPS		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
MINES		0.250	0	0	NR	NR	NR	0
FINDS		TP	NR	NR	NR	NR	NR	0
RAATS		TP	NR	NR	NR	NR	NR	0
STATE AND LOCAL RECORDS								
Hist Cal-Sites		1.000	0	0	0	0	NR	0
CA Bond Exp. Plan		1.000	0	0	0	0	NR	0
SCH		0.250	0	0	NR	NR	NR	0
Toxic Pits		1.000	0	0	0	0	NR	0
State Landfill		0.500	0	0	0	NR	NR	0
CA WDS		TP	NR	NR	NR	NR	NR	0
WMUDS/SWAT		0.500	0	0	0	NR	NR	0
Cortese		0.500	1	0	2	NR	NR	3
SWRCY		0.500	0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
LUST		0.500	1	0	2	NR	NR	3
CA FID UST		0.250	0	0	NR	NR	NR	0
SLIC		0.500	0	0	0	NR	NR	0
UST		0.250	1	3	NR	NR	NR	4
HIST UST		0.250	0	1	NR	NR	NR	1
AST		0.250	0	0	NR	NR	NR	0
Contra Costa Co. Site List		0.250	7	5	NR	NR	NR	12
SWEEPS UST		0.250	2	2	NR	NR	NR	4
CHMIRS		TP	NR	NR	NR	NR	NR	0
Notify 65		1.000	0	0	0	0	NR	0
DEED		0.500	0	0	0	NR	NR	0
VCP		0.500	0	0	0	NR	NR	0
DRYCLEANERS		0.250	1	0	NR	NR	NR	1
WIP		0.250	0	0	NR	NR	NR	0
CDL		TP	NR	NR	NR	NR	NR	0
RESPONSE		1.000	0	0	0	0	NR	0
HAZNET		TP	NR	NR	NR	NR	NR	0
EMI		TP	NR	NR	NR	NR	NR	0
ENVIROSTOR		1.000	0	0	0	1	NR	1
SAN DIEGO CO. SAM		0.500	0	0	0	NR	NR	0
TRIBAL RECORDS								
INDIAN RESERV		1.000	0	0	0	0	NR	0
INDIAN LUST		0.500	0	0	0	NR	NR	0
INDIAN UST		0.250	0	0	NR	NR	NR	0
EDR PROPRIETARY RECORDS								
Manufactured Gas Plants		1.000	0	0	0	0	NR	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1 **CHEVRONTEXACO PARK SAN RAMON** **RCRA-SQG** **1007199398**
6001 BOLLINGER CANYON RD **CAD981429731**
< 1/8 **SAN RAMON, CA 94583**
1 ft.

Site 1 of 3 in cluster A

Relative:
Lower

Actual:
442 ft.

RCRAInfo:
Owner: CHEVRON REAL ESTATE MGMT
(510) 842-2834
EPA ID: CAD981429731

Contact: Not reported

Classification: Small Quantity Generator
TSDF Activities: Not reported

Violation Status: No violations found

A2 **CHEVRON PARK GEOTECHNICAL CTR** **RCRA-SQG** **1000434442**
6001 BOLINGER CANYON RD **FINDS** **CAD981424492**
< 1/8 **SAN RAMON, CA 94583**
1 ft.

Site 2 of 3 in cluster A

Relative:
Lower

Actual:
442 ft.

RCRAInfo:
Owner: CHEVEON USA INC
(415) 555-1212
EPA ID: CAD981424492

Contact: RICHARD PAYNE
(415) 842-4040

Classification: Small Quantity Generator
TSDF Activities: Not reported

Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site

ICIS (Integrated Compliance Information System) is the Integrated Compliance Information System and provides a database that, when complete, will contain integrated Enforcement and Compliance information across most of EPA's programs. The vision for ICIS is to replace EPA's independent databases that contain Enforcement data with a single repository for that information. Currently, ICIS contains all Federal Administrative and Judicial enforcement actions. This information is maintained in ICIS by EPA in the Regional offices and its Headquarters. A future release of ICIS will replace the Permit Compliance System (PCS) which supports the NPDES and will integrate that information with Federal actions already in the system. ICIS also has the capability to track other activities occurring in the Region that support Compliance and Enforcement programs. These include; Incident Tracking, Compliance Assistance, and Compliance Monitoring.

NCDB (National Compliance Data Base) supports implementation of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Toxic Substances Control Act (TSCA). The system tracks inspections in regions and states with cooperative agreements, enforcement actions, and settlements.

RCRAInfo is a national information system that supports the Resource

CHEVRON PARK GEOTECHNICAL CTR (Continued) **1000434442**

Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

A3 **CHEVRON PARK**
6001 BOLLINGER CANYON RD
< 1/8 **SAN RAMON, CA 94583**
1 ft.

HAZNET **S100215876**
CHMIRS **N/A**
CONTRA COSTA CO. SITE LIST
SWEEPS UST

Site 3 of 3 in cluster A

Relative:
Lower

Actual:
442 ft.

HAZNET:

Gepaid:	CAD981424492
Contact:	CHEVRON USA
Telephone:	4158276550
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	PO BOX 5036
Mailing City,St,Zip:	SAN RAMON, CA 945830936
Gen County:	7
TSD EPA ID:	CAD009452657
TSD County:	San Mateo
Waste Category:	Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method:	Disposal, Other
Tons:	.1042
Facility County:	7

Gepaid:	CAD981424492
Contact:	CHEVRON USA
Telephone:	4158276550
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	PO BOX 5036
Mailing City,St,Zip:	SAN RAMON, CA 945830936
Gen County:	7
TSD EPA ID:	CAD009452657
TSD County:	San Mateo
Waste Category:	Hydrocarbon solvents (benzene, hexane, Stoddard, etc.)
Disposal Method:	Disposal, Other
Tons:	.2293
Facility County:	7

Gepaid:	CAD981424492
Contact:	CHEVRON USA
Telephone:	4158276550
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	PO BOX 5036
Mailing City,St,Zip:	SAN RAMON, CA 945830936
Gen County:	7
TSD EPA ID:	CAD981424732

CHEVRON PARK (Continued) **S100215876**

TSD County: San Mateo
Waste Category: Liquids with mercury > 20 mg/l
Disposal Method: Recycler
Tons: .0495
Facility County: 7

Gepaid: CAD981424492
Contact: CHEVRON USA
Telephone: 4158276550
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: PO BOX 5036
Mailing City,St,Zip: SAN RAMON, CA 945830936
Gen County: 7
TSD EPA ID: CAT080014079
TSD County: 7
Waste Category: Liquids with mercury > 20 mg/l
Disposal Method: Transfer Station
Tons: .0450
Facility County: 7

Gepaid: CAD981429731
Contact: A BELL/HAZARDOUS WASTE SPCLST
Telephone: 5102424385
Facility Addr2: Not reported
Mailing Name: CHEVRON TEXACO PARK - SAN RAMON
Mailing Address: 100 CHEVRON WAY BLDG 98-2137
Mailing City,St,Zip: RICHMOND, CA 948012016
Gen County: Contra Costa
TSD EPA ID: CA0000084517
TSD County: Contra Costa
Waste Category: Aqueous solution with less than 10% total organic residues
Disposal Method: Transfer Station
Tons: 0.3
Facility County: 7

Click this hyperlink while viewing on your computer to access
19 additional CA_HAZNET: record(s) in the EDR Site Report.

CHMIRS:
OES Incident Number: 8801081
OES notification: Not reported
OES Date: Not reported
OES Time: Not reported
Incident Date: 07-APR-88
Date Completed: 07-APR-88
Property Use: 500
Agency Id Number: 7713
Agency Incident Number: 0050
Time Notified: 1115
Time Completed: 1207
Surrounding Area: 500
Estimated Temperature: 69
Property Management: P
Special Studies 1: Not reported
Special Studies 2: Not reported
Special Studies 3: Not reported

CHEVRON PARK (Continued) **S100215876**

Special Studies 4: Not reported
Special Studies 5: Not reported
Special Studies 6: Not reported
More Than Two Substances Involved?: N
Resp Agncy Personel # Of Decontaminated: Not reported
Responding Agency Personel # Of Injuries: Not reported
Responding Agency Personel # Of Fatalities:Not reported
Others Number Of Decontaminated: Not reported
Others Number Of Injuries: Not reported
Others Number Of Fatalities: Not reported
Vehicle Make/year: Not reported
Vehicle License Number: Not reported
Vehicle State: Not reported
Vehicle Id Number: Not reported
CA/DOT/PUC/ICC Number: Not reported
Company Name: BAYOX
Reporting Officer Name/ID: KENNETH D AXE
Report Date: 15-APR-88
Comments: N
Facility Telephone: 415 646-2286
Waterway Involved: Not reported
Waterway: Not reported
Spill Site: Not reported
Cleanup By: Not reported
Containment: Not reported
What Happened: Not reported
Type: Not reported
Measure: Not reported
Other: Not reported
Date/Time: Not reported
Year: 88-92
Agency: Not reported
Incident Date: Not reported
Admin Agency: Not reported
Amount: Not reported
Contained: Not reported
Site Type: Not reported
E Date: Not reported
Substance: Not reported
Quantity Released: Not reported
BBLS: Not reported
Cups: Not reported
CUFT: Not reported
Gallons: Not reported
Grams: Not reported
Pounds: Not reported
Liters: Not reported
Ounces: Not reported
Pints: Not reported
Quarts: Not reported
Sheen: Not reported
Tons: Not reported
Unknown: Not reported
Description: Not reported
Evacuations: Not reported
Number of Injuries: Not reported
Number of Fatalities: Not reported

CHEVRON PARK (Continued) **S100215876**

Description: Not reported

OES Incident Number: 006808
OES notification: Not reported
OES Date: 2/15/1995
OES Time: 11:44:07 AM
Incident Date: Not reported
Date Completed: Not reported
Property Use: Not reported
Agency Id Number: Not reported
Agency Incident Number: Not reported
Time Notified: Not reported
Time Completed: Not reported
Surrounding Area: Not reported
Estimated Temperature: Not reported
Property Management: Not reported
Special Studies 1: Not reported
Special Studies 2: Not reported
Special Studies 3: Not reported
Special Studies 4: Not reported
Special Studies 5: Not reported
Special Studies 6: Not reported
More Than Two Substances Involved?: Not reported
Resp Agncy Personel # Of Decontaminated: Not reported
Responding Agency Personel # Of Injuries: Not reported
Responding Agency Personel # Of Fatalities:Not reported
Others Number Of Decontaminated: Not reported
Others Number Of Injuries: Not reported
Others Number Of Fatalities: Not reported
Vehicle Make/year: Not reported
Vehicle License Number: Not reported
Vehicle State: Not reported
Vehicle Id Number: Not reported
CA/DOT/PUC/ICC Number: Not reported
Company Name: Not reported
Reporting Officer Name/ID: Not reported
Report Date: Not reported
Comments: Not reported
Facility Telephone: Not reported
Waterway Involved: YES
Waterway: Not reported
Spill Site: Not reported
Cleanup By: contractor /chevron
Containment: Not reported
What Happened: Not reported
Type: CHEMICAL
Measure: Not reported
Other: Not reported
Date/Time: Not reported
Year: 1995
Agency: chevron
Incident Date: 2/14/95 1300
Admin Agency: Not reported
Amount: 1/3 lb +/-
Contained: NO
Site Type: IND PLT
E Date: Not reported

CHEVRON PARK (Continued) **S100215876**

Substance:	mercury
Quantity Released:	Not reported
BBLS:	Not reported
Cups:	Not reported
CUFT:	Not reported
Gallons:	Not reported
Grams:	Not reported
Pounds:	Not reported
Liters:	Not reported
Ounces:	Not reported
Pints:	Not reported
Quarts:	Not reported
Sheen:	Not reported
Tons:	Not reported
Unknown:	Not reported
Description:	well pump flash motor released product during transfer all visible product has been reclaiimed further clean up to be done by private contractor
Evacuations:	NO
Number of Injuries:	NO
Number of Fatalities:	NO
Description:	Not reported

CONTRA COSTA CO. SITE LIST:

Region:	CONTRA COSTA
Facility ID:	773557
Facility Status:	ACTIVE
Tier:	Not reported
Program Status:	Hmmp
Generator Fee Item:	No
Inactive Date:	Not reported

Region:	CONTRA COSTA
Facility ID:	773425
Facility Status:	ACTIVE
Tier:	Not reported
Program Status:	Hmmp
Generator Fee Item:	No
Inactive Date:	Not reported

SWEEPS UST:

Status:	A
Comp Number:	70089
Number:	1
Board Of Equalization:	44-002609
Ref Date:	10-29-91
Act Date:	10-29-91
Created Date:	07-22-88
Tank Status:	A
Owner Tank Id:	T-1SURGEWELLTK
Swrcb Tank Id:	07-000-070089-000001
Actv Date:	10-29-91
Capacity:	3500
Tank Use:	UNKNOWN
Stg:	W
Content:	WATER/SEDIME

CHEVRON PARK (Continued) **S100215876**

Number Of Tanks: 8

Status: A
Comp Number: 70089
Number: 1
Board Of Equalization: 44-002609
Ref Date: 10-29-91
Act Date: 10-29-91
Created Date: 07-22-88
Tank Status: A
Owner Tank Id: T-2PH-ADJUSTMT
Swrcb Tank Id: 07-000-070089-000002
Actv Date: 10-29-91
Capacity: 1720
Tank Use: UNKNOWN
Stg: W
Content: WATER REQUIR
Number Of Tanks: Not reported

Status: A
Comp Number: 70089
Number: 1
Board Of Equalization: 44-002609
Ref Date: 10-29-91
Act Date: 10-29-91
Created Date: 07-22-88
Tank Status: A
Owner Tank Id: T-3-SOD-HYDROX
Swrcb Tank Id: 07-000-070089-000003
Actv Date: 10-29-91
Capacity: 300
Tank Use: UNKNOWN
Stg: P
Content: SODIUM HYDRO
Number Of Tanks: Not reported

Status: A
Comp Number: 70089
Number: 1
Board Of Equalization: 44-002609
Ref Date: 10-29-91
Act Date: 10-29-91
Created Date: 07-22-88
Tank Status: A
Owner Tank Id: T-4
Swrcb Tank Id: 07-000-070089-000004
Actv Date: 10-29-91
Capacity: 300
Tank Use: UNKNOWN
Stg: P
Content: HYPNOCHLORIC
Number Of Tanks: Not reported

Status: A
Comp Number: 70089
Number: 1
Board Of Equalization: 44-002609

CHEVRON PARK (Continued) **S100215876**

Ref Date: 10-29-91
Act Date: 10-29-91
Created Date: 07-22-88
Tank Status: A
Owner Tank Id: T-5CONCENTRATR
Swrcb Tank Id: 07-000-070089-000005
Actv Date: 10-29-91
Capacity: 700
Tank Use: UNKNOWN
Stg: W
Content: SOLIDS FOR D
Number Of Tanks: Not reported

Status: A
Comp Number: 70089
Number: 1
Board Of Equalization: 44-002609
Ref Date: 10-29-91
Act Date: 10-29-91
Created Date: 07-22-88
Tank Status: A
Owner Tank Id: T6-WET-WELL
Swrcb Tank Id: 07-000-070089-000006
Actv Date: 10-29-91
Capacity: 1200
Tank Use: UNKNOWN
Stg: W
Content: Not reported
Number Of Tanks: Not reported

Status: A
Comp Number: 70089
Number: 1
Board Of Equalization: 44-002609
Ref Date: 10-29-91
Act Date: 10-29-91
Created Date: 07-22-88
Tank Status: A
Owner Tank Id: T-7-CLEAR-WELL
Swrcb Tank Id: 07-000-070089-000007
Actv Date: 10-29-91
Capacity: 900
Tank Use: UNKNOWN
Stg: W
Content: Not reported
Number Of Tanks: Not reported

Status: A
Comp Number: 70089
Number: 1
Board Of Equalization: 44-002609
Ref Date: 10-29-91
Act Date: 10-29-91
Created Date: 07-22-88
Tank Status: A
Owner Tank Id: SUMP
Swrcb Tank Id: 07-000-070089-000008

CHEVRON PARK (Continued) **S100215876**

Actv Date:	10-29-91
Capacity:	400
Tank Use:	UNKNOWN
Stg:	W
Content:	Not reported
Number Of Tanks:	Not reported

4
< 1/8
1 ft.

AUTOMATIC DATA PROCESSING-ADP
6111 BOLLINGER CANYON RD BLDG Y
SAN RAMON, CA 94583

CONTRA COSTA CO. SITE LIST **S105850414** **N/A**

Relative: **Lower**

Actual: **441 ft.**

CONTRA COSTA CO. SITE LIST:

Region:	CONTRA COSTA
Facility ID:	773228
Facility Status:	INACTIVE
Tier:	Not reported
Program Status:	Hmmp
Generator Fee Item:	No
Inactive Date:	2005-04-04 00:00:00

B5
ENE
< 1/8
378 ft.

VALERO #7-033
1091 MARKET PL
SAN RAMON, CA 94583

UST **U003942891** **N/A**

Site 1 of 3 in cluster B

Relative: **Lower**

Actual: **439 ft.**

UST:

Region:	STATE
Local Agency:	07000
Facility ID:	770928

B6
ENE
< 1/8
378 ft.

EXXON
1091 MARKET PL
SAN RAMON, CA 94583

LUST **Cortese** **SWEEPS UST** **S104890988** **N/A**

Site 2 of 3 in cluster B

Relative: **Lower**

Actual: **439 ft.**

LUST:

Region:	STATE
Case Type:	Other ground water affected
Cross Street:	Not reported
Enf Type:	Not reported
Funding:	Not reported
How Discovered:	Tank Closure
How Stopped:	Not reported
Leak Cause:	UNK
Leak Source:	UNK
Global Id:	T0601300725
Stop Date:	1999-06-01 00:00:00
Confirm Leak:	1998-12-22 00:00:00
Workplan:	Not reported
Prelim Assess:	1998-11-25 00:00:00
Pollution Char:	Not reported
Remed Plan:	Not reported

EXXON (Continued) **S104890988**

Remed Action: Not reported
Monitoring: Not reported
Close Date: 2000-02-16 00:00:00
Discover Date: 1999-09-01 00:00:00
Enforcement Dt: Not reported
Release Date: 1999-06-01 00:00:00
Review Date: 2000-02-15 00:00:00
Enter Date: 1999-06-01 00:00:00
MTBE Date: 1999-11-25 00:00:00
GW Qualifier: Not reported
Soil Qualifier: Not reported
Max MTBE GW ppb: 850
Max MTBE Soil ppb: Not reported
County: 07
Org Name: Not reported
Reg Board: San Francisco Bay Region
Status: Case Closed
Chemical: Gasoline
Contact Person: Not reported
Responsible Party: BLANK RP
RP Address: Not reported
Interim: Not reported
Oversight Prgm: LUST
MTBE Class: Not reported
MTBE Conc: 1
MTBE Fuel: 1
MTBE Tested: MTBE Detected. Site tested for MTBE and MTBE detected
Staff: GVL
Staff Initials: SL
Lead Agency: Regional Board
Local Agency: 07000
Hydr Basin #: Livermore Valley (2-
Beneficial: Not reported
Priority: Not reported
Cleanup Fund Id: Not reported
Work Suspended: No
Local Case #: 70928
Case Number: 07-0779
Qty Leaked: Not reported
Abate Method: Not reported
Operator: Not reported
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported
Summary: ARCHIVED 12/5/00 CONTROL NO 312-016 SRC 1085478

LUST:
Region: 2
Facility Status: Case Closed
Facility Id: 07-0779
Case Number: 70928
How Discovered: Tank Closure
Leak Cause: UNK
Leak Source: UNK
Date Leak Confirmed: 12/22/1998

EXXON (Continued) **S104890988**

Oversight Program: LUST
Prelim. Site Assesment Wokplan Submitted: Not reported
Preliminary Site Assesment Began: 11/25/1998
Pollution Characterization Began: Not reported
Pollution Remediation Plan Submitted: Not reported
Date Remediation Action Underway: Not reported
Date Post Remedial Action Monitoring Began: Not reported

Cortese:
Region: CORTESE
Facility Addr2: 1091 MARKET PL

SWEEPS UST:
Status: A
Comp Number: 70928
Number: 1
Board Of Equalization: Not reported
Ref Date: 05-17-91
Act Date: 05-17-91
Created Date: 05-17-91
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 07-000-070928-000001
Actv Date: 05-17-91
Capacity: 12000
Tank Use: M.V. FUEL
Stg: P
Content: REG UNLEADED
Number Of Tanks: 3

Status: A
Comp Number: 70928
Number: 1
Board Of Equalization: Not reported
Ref Date: 05-17-91
Act Date: 05-17-91
Created Date: 05-17-91
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 07-000-070928-000002
Actv Date: 05-17-91
Capacity: 12000
Tank Use: M.V. FUEL
Stg: P
Content: LEADED
Number Of Tanks: Not reported

Status: A
Comp Number: 70928
Number: 1
Board Of Equalization: Not reported
Ref Date: 05-17-91
Act Date: 05-17-91
Created Date: 05-17-91
Tank Status: A
Owner Tank Id: Not reported

EXXON (Continued) **S104890988**

Swrcb Tank Id:	07-000-070928-000003
Actv Date:	05-17-91
Capacity:	12000
Tank Use:	M.V. FUEL
Stg:	P
Content:	REG UNLEADED
Number Of Tanks:	Not reported

B7
ENE
< 1/8
378 ft.

VALERO #3800
1091 MARKET PL
SAN RAMON, CA

CONTRA COSTA CO. SITE LIST **S106176730**
N/A

Site 3 of 3 in cluster B

Relative:
Lower

Actual:
439 ft.

CONTRA COSTA CO. SITE LIST:

Region:	CONTRA COSTA
Facility ID:	770928
Facility Status:	ACTIVE
Tier:	Not reported
Program Status:	HWG, UST, Hmmp
Generator Fee Item:	No
Inactive Date:	Not reported

8
ENE
< 1/8
459 ft.

ORCHARD SUPPLY HARDWARE #390
1041 MARKET PL
SAN RAMON, CA

CONTRA COSTA CO. SITE LIST **S105455414**
N/A

Relative:
Lower

Actual:
433 ft.

CONTRA COSTA CO. SITE LIST:

Region:	CONTRA COSTA
Facility ID:	707805
Facility Status:	ACTIVE
Tier:	Not reported
Program Status:	HWG, Hmmp
Generator Fee Item:	No
Inactive Date:	Not reported

9
ENE
< 1/8
497 ft.

GREEN VALLEY CLEANERS
1021 MARKET PL SHOP B
SAN RAMON, CA 94583

CONTRA COSTA CO. SITE LIST **S103172465**
N/A

Relative:
Lower

Actual:
437 ft.

CONTRA COSTA CO. SITE LIST:

Region:	CONTRA COSTA
Facility ID:	772410
Facility Status:	INACTIVE
Tier:	Not reported
Program Status:	Not reported
Generator Fee Item:	Yes
Inactive Date:	2003-04-21 00:00:00

Map ID Direction Distance Distance (ft.) Elevation	Site	Database(s)	EDR ID Number EPA ID Number
10 **East** **< 1/8** **555 ft.**	**GREEN VALLY CLEANERS** **1021 MARKET PLACE** **SAN RAMON, CA 94583**	**HAZNET** **CHMIRS** **CONTRA COSTA CO. SITE LIST** **CLEANERS**	**S104310681** **N/A**

Relative:
Lower

Actual:
433 ft.

HAZNET:

Gepaid:	CAL000209060
Contact:	DON JARDINE-OWNER/PRESIDENT
Telephone:	9252449900
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	1021 MARKET PLACE
Mailing City,St,Zip:	SAN RAMON, CA 945830000
Gen County:	Contra Costa
TSD EPA ID:	Not reported
TSD County:	Sacramento
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Transfer Station
Tons:	0.06
Facility County:	Not reported

Gepaid:	CAL000209060
Contact:	DON JARDINE
Telephone:	9252449900
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	1021 MARKET PLACE
Mailing City,St,Zip:	SAN RAMON, CA 945830000
Gen County:	7
TSD EPA ID:	CA0000084517
TSD County:	Sacramento
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Not reported
Tons:	.0625
Facility County:	7

Gepaid:	CAL000209060
Contact:	DON JARDINE
Telephone:	9252449900
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	1021 MARKET PLACE
Mailing City,St,Zip:	SAN RAMON, CA 945830000
Gen County:	7
TSD EPA ID:	CA0000084517
TSD County:	Sacramento
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Transfer Station
Tons:	.1251
Facility County:	7

CHMIRS:

OES Incident Number:	01-1703
OES notification:	3/21/200104:23:51 PM
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported

GREEN VALLY CLEANERS (Continued) **S104310681**

Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Reporting Party
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2001
Agency:	PG&E
Incident Date:	3/21/200112:00:00 AM
Admin Agency:	Contra Costa County Health Services Dept.
Amount:	Not reported
Contained:	Yes
Site Type:	Other
E Date:	Not reported
Substance:	Transformer Oil
Quantity Released:	Not reported
BBLS:	0
Cups:	0
CUFT:	0
Gallons:	40
Grams:	0
Pounds:	0
Liters:	0

GREEN VALLY CLEANERS (Continued) **S104310681**

Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0.000000
Description:	Not reported
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
Description:	Private party in a vehicle hit a pad mounted transformer

CONTRA COSTA CO. SITE LIST:

Region:	CONTRA COSTA
Facility ID:	772876
Facility Status:	INACTIVE
Tier:	Not reported
Program Status:	Not reported
Generator Fee Item:	Yes
Inactive Date:	2006-01-04 00:00:00

CLEANERS:

EPA Id:	CAL000282818
NAICS Code:	81232
NAICS Description:	Drycleaning and Laundry Services (except Coin-Operated)
SIC Code:	7211
SIC Description:	Power Laundries, Family and Commercial
Create Date:	06/03/2004
Facility Active:	Yes
Inactive Date:	Not reported
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	1021 MARKET PLACE
Mailing Address 2:	Not reported
Mailing State:	CA
Mailing Zip:	94583
Region Code:	2
Owner Name:	KEVIN KIM
Owner Address:	1021 MARKET PLACE
Owner Address 2:	Not reported
Owner Telephone:	0000000000
Contact Name:	KEVIN KIM
Contact Address:	1021 MARKET PLACE
Contact Address 2:	Not reported
Contact Telephone:	9253551990

EPA Id:	CAL000282818
NAICS Code:	81232
NAICS Description:	Drycleaning and Laundry Services (except Coin-Operated)
SIC Code:	7212
SIC Description:	Garment Pressing, and Agents for Laundries and Drycleaners
Create Date:	06/03/2004
Facility Active:	Yes
Inactive Date:	Not reported
Facility Addr2:	Not reported
Mailing Name:	Not reported

GREEN VALLY CLEANERS (Continued) **S104310681**

Mailing Address:	1021 MARKET PLACE
Mailing Address 2:	Not reported
Mailing State:	CA
Mailing Zip:	94583
Region Code:	2
Owner Name:	KEVIN KIM
Owner Address:	1021 MARKET PLACE
Owner Address 2:	Not reported
Owner Telephone:	0000000000
Contact Name:	KEVIN KIM
Contact Address:	1021 MARKET PLACE
Contact Address 2:	Not reported
Contact Telephone:	9253551990

EPA Id:	CAL000282818
NAICS Code:	81232
NAICS Description:	Drycleaning and Laundry Services (except Coin-Operated)
SIC Code:	7216
SIC Description:	Drycleaning Plants, Except Rug Cleaning
Create Date:	06/03/2004
Facility Active:	Yes
Inactive Date:	Not reported
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	1021 MARKET PLACE
Mailing Address 2:	Not reported
Mailing State:	CA
Mailing Zip:	94583
Region Code:	2
Owner Name:	KEVIN KIM
Owner Address:	1021 MARKET PLACE
Owner Address 2:	Not reported
Owner Telephone:	0000000000
Contact Name:	KEVIN KIM
Contact Address:	1021 MARKET PLACE
Contact Address 2:	Not reported
Contact Telephone:	9253551990

EPA Id:	CAL000282818
NAICS Code:	81232
NAICS Description:	Drycleaning and Laundry Services (except Coin-Operated)
SIC Code:	7219
SIC Description:	Laundry and Garment Services, NEC (except diaper service and clothing alteration and repair)
Create Date:	06/03/2004
Facility Active:	Yes
Inactive Date:	Not reported
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	1021 MARKET PLACE
Mailing Address 2:	Not reported
Mailing State:	CA
Mailing Zip:	94583
Region Code:	2
Owner Name:	KEVIN KIM
Owner Address:	1021 MARKET PLACE
Owner Address 2:	Not reported
Owner Telephone:	0000000000

GREEN VALLY CLEANERS (Continued) — **S104310681**

Contact Name: KEVIN KIM
Contact Address: 1021 MARKET PLACE
Contact Address 2: Not reported
Contact Telephone: 9253551990

11
NNW
< 1/8
568 ft.

AT&T INTERNET SERVICES (W19AJ)
2623 CAMINO RAMON
SAN RAMON, CA

CONTRA COSTA CO. SITE LIST — **S105954613** / **N/A**

Relative: Higher

Actual: 452 ft.

CONTRA COSTA CO. SITE LIST:
Region: CONTRA COSTA
Facility ID: 773271
Facility Status: ACTIVE
Tier: Not reported
Program Status: Hmmp
Generator Fee Item: No
Inactive Date: Not reported

C12
NNW
1/8-1/4
789 ft.

PACIFIC BELL/SAN RAMON W1245
2600 CAMINO RAMON
SAN RAMON, CA 94583

UST — **U003784294**
CONTRA COSTA CO. SITE LIST — **N/A**

Site 1 of 3 in cluster C

Relative: Higher

Actual: 454 ft.

UST:
Region: STATE
Local Agency: 07000
Facility ID: 770104

CONTRA COSTA CO. SITE LIST:
Region: CONTRA COSTA
Facility ID: 770104
Facility Status: ACTIVE
Tier: Not reported
Program Status: HWG, UST, Hmmp, AGT
Generator Fee Item: No
Inactive Date: Not reported

C13
NNW
1/8-1/4
789 ft.

PACIFIC BELL
2600 CAMION RAMON, RM 2E150
SAN RAMON, CA 94583

UST — **U003782887** / **N/A**

Site 2 of 3 in cluster C

Relative: Higher

Actual: 454 ft.

UST:
Region: STATE
Local Agency: 45000
Facility ID: 45-000-005006

Map ID / Direction / Distance / Distance (ft.) / Elevation	Site	Database(s)	EDR ID Number / EPA ID Number
C14 **NNW** **1/8-1/4** **789 ft.** **Relative: Higher** **Actual: 454 ft.**	**PACIFIC BELL** **2600 CAMINO RAMON RM 2E050** **SAN RAMON, CA 94583** **Site 3 of 3 in cluster C**	**RCRA-SQG** **FINDS** **HAZNET** **CHMIRS** **HIST UST** **EMI** **SWEEPS UST**	**1000250738** **CAD982374217**

RCRAInfo:

Owner: PACIFIC TELESIS
(415) 542-9000
EPA ID: CAD982374217

Contact: ALAN BELLISTON
(510) 823-0632

Classification: Small Quantity Generator
TSDF Activities: Not reported

Violation Status: No violations found

FINDS:

Other Pertinent Environmental Activity Identified at Site

California - Hazardous Waste Tracking System - Datamart

The NEI (National Emissions Inventory) database contains information on stationary and mobile sources that emit criteria air pollutants and their precursors, as well as hazardous air pollutants (HAPs).

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:

Gepaid: CAD982374217
Contact: PACIFIC BELL
Telephone: 9258236161
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: PO BOX 5095 RM 3E000
Mailing City,St,Zip: SAN RAMON, CA 945830995
Gen County: 7
TSD EPA ID: CAD070148432
TSD County: 1
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Treatment, Incineration
Tons: .5421
Facility County: 7

Gepaid: CAD982374217
Contact: PACIFIC BELL
Telephone: 9258236161

PACIFIC BELL (Continued) **1000250738**

Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: PO BOX 5095 RM 3E000
Mailing City,St,Zip: SAN RAMON, CA 945830995
Gen County: 7
TSD EPA ID: CAD070148432
TSD County: 1
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Transfer Station
Tons: .1251
Facility County: 7

Gepaid: CAD982374217
Contact: PACIFIC BELL
Telephone: 9258236161
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: PO BOX 5095 RM 3E000
Mailing City,St,Zip: SAN RAMON, CA 945830995
Gen County: 7
TSD EPA ID: CAT000613976
TSD County: Orange
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Recycler
Tons: .2502
Facility County: 7

Gepaid: CAD982374217
Contact: PACIFIC BELL
Telephone: 9258236161
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: PO BOX 5095 RM 3E000
Mailing City,St,Zip: SAN RAMON, CA 945830995
Gen County: 7
TSD EPA ID: CAT080031628
TSD County: Kern
Waste Category: Waste oil and mixed oil
Disposal Method: Recycler
Tons: 3.5445
Facility County: 7

Gepaid: CAD982374217
Contact: PACIFIC BELL
Telephone: 9258236161
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: PO BOX 5095 RM 3E000
Mailing City,St,Zip: SAN RAMON, CA 945830995
Gen County: 7
TSD EPA ID: CAD044429835
TSD County: Los Angeles
Waste Category: Liquids with pH <UN-> 2
Disposal Method: Disposal, Other
Tons: .1668
Facility County: 7

PACIFIC BELL (Continued) **1000250738**

Click this hyperlink while viewing on your computer to access
37 additional CA_HAZNET: record(s) in the EDR Site Report.

CHMIRS:

OES Incident Number:	01-4614
OES notification:	8/13/200111:59:34 AM
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Unknown
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2001
Agency:	San Ramon Valley FD
Incident Date:	8/13/200112:00:00 AM
Admin Agency:	Contra Costa County Health Services Dept.
Amount:	Not reported
Contained:	Yes

PACIFIC BELL (Continued) **1000250738**

Site Type:	Merchant/Business
E Date:	Not reported
Substance:	gasoline odor
Quantity Released:	Not reported
BBLS:	0
Cups:	0
CUFT:	0
Gallons:	0
Grams:	0
Pounds:	0
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	unk
Description:	Not reported
Evacuations:	0
Number of Injuries:	7
Number of Fatalities:	0
Description:	7 employees at the Pacific Bell Office complained of light headedness, nauseous for a gasoline type smell. They are being examined at scene - unknown if they will be transported to a medical facility for further evaluations. An unknown number ofemployees have been evacuated. She will call back with the number of evacuees. There is an underground gasoline storage tank being removed near the building.

HIST UST:

Region:	STATE
Facility ID:	00000067829
Tank Num:	001
Container Num:	D85 10K
Year Installed:	1985
Tank Capacity:	00010000
Facility Type:	Other
Other Type:	SIC 4800
Total Tanks:	0002
Tank Used for:	WASTE
Type of Fuel:	4
Tank Construction:	/4 2 inches
Leak Detection:	Sensor Instrument
Contact Name:	Not reported
Telephone:	4158239821
Owner Name:	PACIFIC BELL-ENVIRONMENTAL MAN
Owner Address:	2600 CAMINO RAMON, ROOM 2E050
Owner City,St,Zip:	SAN RAMON, CA 94583

Region:	STATE
Facility ID:	00000067829
Tank Num:	002
Container Num:	G-85-11K
Year Installed:	1985
Tank Capacity:	00011763
Facility Type:	Other
Other Type:	SIC 4800
Total Tanks:	0002

PACIFIC BELL (Continued) **1000250738**

Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Tank Construction:	1/4 inches
Leak Detection:	Sensor Instrument
Contact Name:	Not reported
Telephone:	4158239821
Owner Name:	PACIFIC BELL-ENVIRONMENTAL MAN
Owner Address:	2600 CAMINO RAMON, ROOM 2E050
Owner City,St,Zip:	SAN RAMON, CA 94583

EMI:

Year:	2002
Carbon Monoxide Emissions Tons/Yr:	7
Air Basin:	SF
Facility ID:	10477
Air District Name:	BA
SIC Code:	4813
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2003
Carbon Monoxide Emissions Tons/Yr:	7
Air Basin:	SF
Facility ID:	10477
Air District Name:	BA
SIC Code:	4813
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2004
Carbon Monoxide Emissions Tons/Yr:	7
Air Basin:	SF
Facility ID:	10477
Air District Name:	BA
SIC Code:	4813
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.089
Reactive Organic Gases Tons/Yr:	0.0744663
Carbon Monoxide Emissions Tons/Yr:	0.245

PACIFIC BELL (Continued) **1000250738**

NOX - Oxides of Nitrogen Tons/Yr: 1.13
SOX - Oxides of Sulphur Tons/Yr: 0.017
Particulate Matter Tons/Yr: 0.081
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0.079056

SWEEPS UST:
Status: A
Comp Number: 70104
Number: 1
Board Of Equalization: 44-001027
Ref Date: 12-04-91
Act Date: 12-04-91
Created Date: 07-22-88
Tank Status: A
Owner Tank Id: 957
Swrcb Tank Id: 07-000-070104-000001
Actv Date: 12-04-91
Capacity: 12000
Tank Use: M.V. FUEL
Stg: P
Content: DIESEL
Number Of Tanks: 2

Status: A
Comp Number: 70104
Number: 1
Board Of Equalization: 44-001027
Ref Date: 12-04-91
Act Date: 12-04-91
Created Date: 07-22-88
Tank Status: A
Owner Tank Id: 11
Swrcb Tank Id: 07-000-070104-000002
Actv Date: 12-04-91
Capacity: 11681
Tank Use: M.V. FUEL
Stg: P
Content: REG UNLEADED
Number Of Tanks: Not reported

15
West
1/8-1/4
923 ft.

TARGET #949
2610 BISHOP DR
SAN RAMON, CA 94583

HAZNET **S102262604**
CONTRA COSTA CO. SITE LIST **N/A**

Relative:
Higher

Actual:
464 ft.

HAZNET:
Gepaid: CAL000232402
Contact: ALVIN SHOEMAKER
Telephone: 7606028677
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 1905 ASTON AVE STE 100
Mailing City,St,Zip: CARLSBAD, CA 920080000
Gen County: Contra Costa
TSD EPA ID: Not reported
TSD County: San Mateo
Waste Category: Laboratory waste chemicals

TARGET #949 (Continued) **S102262604**

Disposal Method: Recycler
Tons: 0.05
Facility County: Not reported

Gepaid: CAL000232402
Contact: ALVIN SHOEMAKER
Telephone: 7606028677
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 1905 ASTON AVE STE 100
Mailing City,St,Zip: CARLSBAD, CA 920080000
Gen County: Contra Costa
TSD EPA ID: Not reported
TSD County: San Mateo
Waste Category: Laboratory waste chemicals
Disposal Method: Treatment, Incineration
Tons: 0.41
Facility County: Not reported

Gepaid: CAL000232402
Contact: TARGET CORP ENVT'L SVCS
Telephone: 6127611417
Facility Addr2: Not reported
Mailing Name: ALVIN SHOEMAKER/3E CO
Mailing Address: 1000 NICOLLET MALL
Mailing City,St,Zip: MINNEAPOLIS, MN 554030000
Gen County: Contra Costa
TSD EPA ID: NVD980895338
TSD County: Contra Costa
Waste Category: Off-specification, aged, or surplus organics
Disposal Method: Treatment, Incineration
Tons: 0
Facility County: 7

Gepaid: CAL000232402
Contact: TARGET CORP ENVT'L SVCS
Telephone: 6127611417
Facility Addr2: Not reported
Mailing Name: ALVIN SHOEMAKER/3E CO
Mailing Address: 1000 NICOLLET MALL
Mailing City,St,Zip: MINNEAPOLIS, MN 554030000
Gen County: Contra Costa
TSD EPA ID: NVD980895338
TSD County: Contra Costa
Waste Category: Laboratory waste chemicals
Disposal Method: Disposal, Land Fill
Tons: 0.03
Facility County: 7

Gepaid: CAL000232402
Contact: TARGET CORP ENVT'L SVCS
Telephone: 6127611417
Facility Addr2: Not reported
Mailing Name: ALVIN SHOEMAKER/3E CO
Mailing Address: 1000 NICOLLET MALL
Mailing City,St,Zip: MINNEAPOLIS, MN 554030000
Gen County: Contra Costa

TARGET #949 (Continued) **S102262604**

TSD EPA ID:	NVD980895338
TSD County:	Contra Costa
Waste Category:	Laboratory waste chemicals
Disposal Method:	Recycler
Tons:	0
Facility County:	7

Click this hyperlink while viewing on your computer to access additional CA_HAZNET: detail in the EDR Site Report.

CONTRA COSTA CO. SITE LIST:

Region:	CONTRA COSTA
Facility ID:	772068
Facility Status:	ACTIVE
Tier:	Not reported
Program Status:	HWG, Hmmp
Generator Fee Item:	No
Inactive Date:	Not reported

---

16 **BISHOP RANCH 3** **CONTRA COSTA CO. SITE LIST** **S104532826**
NNW **2603 CAMINO RAMON #100** **N/A**
1/8-1/4 **SAN RAMON, CA 94583**
928 ft.

Relative:
Higher

Actual:
455 ft.

CONTRA COSTA CO. SITE LIST:

Region:	CONTRA COSTA
Facility ID:	772933
Facility Status:	INACTIVE
Tier:	Not reported
Program Status:	Hmmp
Generator Fee Item:	No
Inactive Date:	2001-12-17 00:00:00

---

17 **LONGS DRUG STORE #536** **CONTRA COSTA CO. SITE LIST** **S105455413**
ENE **490 MARKET PL** **N/A**
1/8-1/4 **SAN RAMON, CA**
965 ft.

Relative:
Lower

Actual:
433 ft.

CONTRA COSTA CO. SITE LIST:

Region:	CONTRA COSTA
Facility ID:	773101
Facility Status:	ACTIVE
Tier:	Not reported
Program Status:	HWG
Generator Fee Item:	No
Inactive Date:	Not reported

MAP FINDINGS

Map ID Direction Distance Distance (ft.) Elevation	Site	Database(s)	EDR ID Number EPA ID Number

D18 **West** **1/8-1/4** **1048 ft.**

SAN RAMON MARRIOTT HOTEL
2600 BISHOP DR
SAN RAMON, CA 94583

UST / **CONTRA COSTA CO. SITE LIST** — **U003784349** / **N/A**

Site 1 of 2 in cluster D

Relative: Higher

Actual: 465 ft.

UST:

Region:	STATE
Local Agency:	07000
Facility ID:	770745

CONTRA COSTA CO. SITE LIST:

Region:	CONTRA COSTA
Facility ID:	770745
Facility Status:	ACTIVE
Tier:	Not reported
Program Status:	HWG, Hmmp
Generator Fee Item:	No
Inactive Date:	Not reported

D19 **West** **1/8-1/4** **1048 ft.**

MARRIOT HOTEL
2600 BISHOP DR
SAN RAMON, CA 94583

HAZNET / **CHMIRS** / **SWEEPS UST** — **S100275372** / **N/A**

Site 2 of 2 in cluster D

Relative: Higher

Actual: 465 ft.

HAZNET:

Gepaid:	CAC000881984
Contact:	MARRIOTT HOTEL
Telephone:	0000000000
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	2600 BISHOP DR
Mailing City,St,Zip:	SAN RAMON, CA 945830000
Gen County:	7
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Hydrocarbon solvents (benzene, hexane, Stoddard, etc.)
Disposal Method:	Treatment, Tank
Tons:	.2293
Facility County:	7

Gepaid:	CAC000881984
Contact:	MARRIOTT HOTEL
Telephone:	0000000000
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	2600 BISHOP DR
Mailing City,St,Zip:	SAN RAMON, CA 945830000
Gen County:	7
TSD EPA ID:	CAT080022148
TSD County:	San Bernardino
Waste Category:	Hydrocarbon solvents (benzene, hexane, Stoddard, etc.)
Disposal Method:	Transfer Station
Tons:	.5004
Facility County:	7

Gepaid:	CAC000881984
Contact:	MARRIOTT HOTEL

MARRIOT HOTEL (Continued) **S100275372**

Telephone: 0000000000
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 2600 BISHOP DR
Mailing City,St,Zip: SAN RAMON, CA 945830000
Gen County: 7
TSD EPA ID: CAT080022148
TSD County: San Bernardino
Waste Category: Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method: Transfer Station
Tons: .1251
Facility County: 7

Gepaid: CAC000881984
Contact: MARRIOTT HOTEL
Telephone: 0000000000
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 2600 BISHOP DR
Mailing City,St,Zip: SAN RAMON, CA 945830000
Gen County: 7
TSD EPA ID: CAT080022148
TSD County: San Bernardino
Waste Category: Halogenated solvents (chloroform, methyl chloride, perchloroethylene, etc.)
Disposal Method: Transfer Station
Tons: .4170
Facility County: 7

Gepaid: CAC000881984
Contact: MARRIOTT HOTEL
Telephone: 0000000000
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 2600 BISHOP DR
Mailing City,St,Zip: SAN RAMON, CA 945830000
Gen County: 7
TSD EPA ID: CAT080022148
TSD County: San Bernardino
Waste Category: Off-specification, aged, or surplus organics
Disposal Method: Transfer Station
Tons: .1251
Facility County: 7

Click this hyperlink while viewing on your computer to access
7 additional CA_HAZNET: record(s) in the EDR Site Report.

CHMIRS:
OES Incident Number: 8910499
OES notification: Not reported
OES Date: Not reported
OES Time: Not reported
Incident Date: 24-JUN-89
Date Completed: 24-JUN-89
Property Use: 100
Agency Id Number: 7035
Agency Incident Number: 1724

MARRIOT HOTEL (Continued) **S100275372**

Time Notified:	1445
Time Completed:	1649
Surrounding Area:	099
Estimated Temperature:	78
Property Management:	P
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	N
Resp Agncy Personel # Of Decontaminated:	0
Responding Agency Personel # Of Injuries:	0
Responding Agency Personel # Of Fatalities:	0
Others Number Of Decontaminated:	0
Others Number Of Injuries:	0
Others Number Of Fatalities:	0
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	FAGUNDES
Report Date:	24-JUN-89
Comments:	Not reported
Facility Telephone:	415 837-4212
Waterway Involved:	Not reported
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Not reported
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	88-92
Agency:	Not reported
Incident Date:	Not reported
Admin Agency:	Not reported
Amount:	Not reported
Contained:	Not reported
Site Type:	Not reported
E Date:	15-MAY-90
Substance:	Not reported
Quantity Released:	Not reported
BBLS:	Not reported
Cups:	Not reported
CUFT:	Not reported
Gallons:	Not reported
Grams:	Not reported
Pounds:	Not reported
Liters:	Not reported
Ounces:	Not reported
Pints:	Not reported

MARRIOT HOTEL (Continued) **S100275372**

Quarts:	Not reported
Sheen:	Not reported
Tons:	Not reported
Unknown:	Not reported
Description:	Not reported
Evacuations:	Not reported
Number of Injuries:	Not reported
Number of Fatalities:	Not reported
Description:	Not reported

SWEEPS UST:

Status:	Not reported
Comp Number:	70745
Number:	Not reported
Board Of Equalization:	44-002692
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	07-000-070745-000001
Actv Date:	Not reported
Capacity:	5000
Tank Use:	M.V. FUEL
Stg:	PRODUCT
Content:	DIESEL
Number Of Tanks:	1

E20
North
1/4-1/2
1374 ft.

SAN RAMON VALLEY FIRE STA
12599 ALCOSTA
SAN RAMON, CA 94583

HAZNET **S103626920**
Cortese **N/A**

Site 1 of 2 in cluster E

Relative:
Higher

Actual:
454 ft.

HAZNET:

Gepaid:	CAC001259200
Contact:	SAN RAMON VALLEY FIRE DIST
Telephone:	0000000000
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	1500 BOLLINGER CANYON RD
Mailing City,St,Zip:	SAN RAMON, CA 945830000
Gen County:	7
TSD EPA ID:	CAD009466392
TSD County:	7
Waste Category:	Other empty containers 30 gallons or more
Disposal Method:	Disposal, Other
Tons:	.4000
Facility County:	7

Cortese:

Region:	CORTESE
Facility Addr2:	Not reported

E21 **SAN RAMON VALLEY FIRE STA #34** **LUST** **S104162330**
North **12599 ALCOSTA BLVD** **CONTRA COSTA CO. SITE LIST** **N/A**
1/4-1/2 **SAN RAMON, CA 94583**
1374 ft.

Site 2 of 2 in cluster E

Relative:
Higher

Actual:
454 ft.

LUST:

Region:	STATE
Case Type:	Soil only
Cross Street:	Not reported
Enf Type:	Not reported
Funding:	Not reported
How Discovered:	Tank Closure
How Stopped:	Not reported
Leak Cause:	UNK
Leak Source:	UNK
Global Id:	T0601300518
Stop Date:	1997-03-04 00:00:00
Confirm Leak:	1997-03-04 00:00:00
Workplan:	Not reported
Prelim Assess:	Not reported
Pollution Char:	Not reported
Remed Plan:	Not reported
Remed Action:	Not reported
Monitoring:	Not reported
Close Date:	1997-03-19 00:00:00
Discover Date:	1997-03-04 00:00:00
Enforcement Dt:	Not reported
Release Date:	1997-03-04 00:00:00
Review Date:	1997-04-16 00:00:00
Enter Date:	1997-03-14 00:00:00
MTBE Date:	Not reported
GW Qualifier:	Not reported
Soil Qualifier:	Not reported
Max MTBE GW ppb:	Not reported
Max MTBE Soil ppb:	Not reported
County:	07
Org Name:	Not reported
Reg Board:	San Francisco Bay Region
Status:	Case Closed
Chemical:	Gasoline
Contact Person:	Not reported
Responsible Party:	BLANK RP
RP Address:	Not reported
Interim:	Not reported
Oversight Prgm:	LUST
MTBE Class:	*
MTBE Conc:	0
MTBE Fuel:	1
MTBE Tested:	Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.
Staff:	GVL
Staff Initials:	SL
Lead Agency:	Regional Board
Local Agency:	07000
Hydr Basin #:	San Ramon Valley (2-
Beneficial:	Not reported
Priority:	Not reported
Cleanup Fund Id:	Not reported
Work Suspended:	No

SAN RAMON VALLEY FIRE STA #34 (Continued) **S104162330**

Local Case #: 32120
Case Number: 07-0561
Qty Leaked: Not reported
Abate Method: Not reported
Operator: Not reported
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported
Summary: ARCHIVED 4/15/97 CONTROL NO 120-133 SRC 0904783

LUST:
Region: 2
Facility Status: Case Closed
Facility Id: 07-0561
Case Number: 32120
How Discovered: Tank Closure
Leak Cause: UNK
Leak Source: UNK
Date Leak Confirmed: 3/4/1997
Oversight Program: LUST
Prelim. Site Assesment Wokplan Submitted: Not reported
Preliminary Site Assesment Began: Not reported
Pollution Characterization Began: Not reported
Pollution Remediation Plan Submitted: Not reported
Date Remediation Action Underway: Not reported
Date Post Remedial Action Monitoring Began: Not reported

CONTRA COSTA CO. SITE LIST:
Region: CONTRA COSTA
Facility ID: 732120
Facility Status: ACTIVE
Tier: Not reported
Program Status: HWG, Hmmp, AGT
Generator Fee Item: No
Inactive Date: Not reported

22
SSW
1/4-1/2
2393 ft.

JEHOVAH'S WITNESSES HALL
19453 SAN RAMON VALLEY BLVD
SAN RAMON, CA 94583

LUST **S102431894**
Cortese **N/A**

Relative:
Lower

Actual:
441 ft.

LUST:
Region: STATE
Case Type: Soil only
Cross Street: Not reported
Enf Type: Not reported
Funding: Not reported
How Discovered: OM
How Stopped: Not reported
Leak Cause: UNK
Leak Source: UNK
Global Id: T0601300587
Stop Date: 1992-07-15 00:00:00
Confirm Leak: 1994-10-18 00:00:00
Workplan: Not reported

JEHOVAH'S WITNESSES HALL (Continued) **S102431894**

Prelim Assess:	Not reported
Pollution Char:	Not reported
Remed Plan:	Not reported
Remed Action:	Not reported
Monitoring:	Not reported
Close Date:	1997-03-18 00:00:00
Discover Date:	1992-07-15 00:00:00
Enforcement Dt:	Not reported
Release Date:	1992-07-15 00:00:00
Review Date:	1997-04-16 00:00:00
Enter Date:	1994-10-19 00:00:00
MTBE Date:	Not reported
GW Qualifier:	Not reported
Soil Qualifier:	Not reported
Max MTBE GW ppb:	Not reported
Max MTBE Soil ppb:	Not reported
County:	07
Org Name:	Not reported
Reg Board:	San Francisco Bay Region
Status:	Case Closed
Chemical:	Gasoline
Contact Person:	Not reported
Responsible Party:	BLANK RP
RP Address:	Not reported
Interim:	Not reported
Oversight Prgm:	LUST
MTBE Class:	*
MTBE Conc:	0
MTBE Fuel:	1
MTBE Tested:	Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.
Staff:	GVL
Staff Initials:	SL
Lead Agency:	Regional Board
Local Agency:	07000
Hydr Basin #:	Livermore Valley (2-
Beneficial:	Not reported
Priority:	2A4
Cleanup Fund Id:	Not reported
Work Suspended:	No
Local Case #:	07-0634
Case Number:	07-0634
Qty Leaked:	Not reported
Abate Method:	Not reported
Operator:	Not reported
Water System Name:	Not reported
Well Name:	Not reported
Distance To Lust:	0
Waste Discharge Global ID:	Not reported
Waste Disch Assigned Name:	Not reported
Summary:	ARCHIVED 4/15/97 CONTROL NO 120-133 SRC 0904783

LUST:

Region:	2
Facility Status:	Case Closed
Facility Id:	07-0634
Case Number:	07-0634
How Discovered:	OM

JEHOVAH'S WITNESSES HALL (Continued) **S102431894**

Leak Cause: UNK
Leak Source: UNK
Date Leak Confirmed: 10/18/1994
Oversight Program: LUST
Prelim. Site Assesment Wokplan Submitted: Not reported
Preliminary Site Assesment Began: Not reported
Pollution Characterization Began: Not reported
Pollution Remediation Plan Submitted: Not reported
Date Remediation Action Underway: Not reported
Date Post Remedial Action Monitoring Began: Not reported

Cortese:
Region: CORTESE
Facility Addr2: 19453 SAN RAMON VALLEY BLVD

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23 **BOLLINGER CANYON ELEMENTARY SCHOOL** **SCH** **S106895119**
WSW **2300 TALAVERA DRIVE** **ENVIROSTOR** **N/A**
1/2-1 **SAN RAMON, CA 94583**
2831 ft.

Relative:
Higher

Actual:
472 ft.

SCH:
Facility ID: 07820013
Site Type: School Investigation
Site Type Detail: School
Acres: 10
National Priorities List: NO
Cleanup Oversight Agencies: SMBRP
Lead Agency: SMBRP
Lead Agency Description: Not reported
Project Manager: Not reported
Supervisor: Mark Malinowski
Division Branch: School Evaluation - Glendale / Sacramento
Site Code: 204149-11
Assembly: 15
Senate: 07
Special Program Status: Not reported
Status: Inactive - Needs Evaluation
Status Date: 2006-07-24 00:00:00
Restricted Use: NO
Funding: School District
Latitude: 37.7616
Longitude: -121.9706
Alias Name: Not reported
Alias Type: Not reported
APN: NONE SPECIFIED
APN Description: Not reported
Comments: Not reported
Completed Area Name: Not reported
Completed Sub Area Name: Not reported
Completed Document Type: Not reported
Completed Date: Not reported
Confirmed: NONE SPECIFIED
Confirmed Description: Not reported
Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported

BOLLINGER CANYON ELEMENTARY SCHOOL (Continued) **S106895119**

Media Affected:	NONE SPECIFIED
Media Affected Desc:	Not reported
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	NONE SPECIFIED
Potenital Description:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	* EDUCATIONAL SERVICES

ENVIROSTOR:

Site Type:	School Investigation
Site Type Detailed:	School
Acres:	10
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	SMBRP
Program Manager:	Not reported
Supervisor:	Mark Malinowski
Division Branch:	School Evaluation - Glendale / Sacramento
Facility ID:	07820013
Site Code:	204149-11
Assembly:	15
Senate:	07
Special Program:	Not reported
Status:	**Inactive - Needs Evaluation**
Status Date:	2006-07-24 00:00:00
Restricted Use:	NO
Funding:	School District
Latitude:	37.7616
Longitude:	-121.9706
Alias Name:	Not reported
Alias Type:	Not reported
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	Not reported
Completed Area Name:	Not reported
Completed Sub Area Name:	Not reported
Completed Document Type:	Not reported
Completed Date:	Not reported
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	NONE SPECIFIED
Media Affected Desc:	Not reported
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	NONE SPECIFIED
Potenital Description:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported

BOLLINGER CANYON ELEMENTARY SCHOOL (Continued) **S106895119**

Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	* EDUCATIONAL SERVICES

City	EDR ID	Site Name	Site Address	Zip	Database(s)
SAN RAMON	S106931853	SAN RAMON REGINAL MEDICAL CENT	12750 ALCOSTA BLVD A	94583	SWEEPS UST
SAN RAMON	S108203645	COOKS COLLISION OF SAN RAMON	38 BETA CT UNIT A-3	94583	HAZNET
SAN RAMON	S106920127	BISHOP RANCH VETERINARY CENTER	2000 BISHOP DRIVE	94583	EMI
SAN RAMON	S108195825	SAFEWAY FUEL CENTER #2712	11060 BOLLINGER CANYON RD		CONTRA COSTA CO. SITE LIST
SAN RAMON	U001598610	TRACOR MBA-SAN RAMON OPERATION	BOLLINGER CANYON ROAD	94583	HIST UST
SAN RAMON	S106933083	TRACOR AEROSPACE, ADV SYS OPER	BOLLINGER CANYON RD	94583	SWEEPS UST
SAN RAMON	U003938845	CHEVRON REAL ESTATE MGT CO	6001 BOLLINGER CANYON RD # V1300	94583	UST
SAN RAMON	S107022522	INDEPENDENT CONSTRUCTION CO	BOLLINGER CANYON RD/DOUGHERTY RD		CONTRA COSTA CO. SITE LIST
SAN RAMON	S102262613	AMERICAN TOWER CORP #8239/ROCKY RIDGE	BOLLINGER RD, END OF		CONTRA COSTA CO. SITE LIST
SAN RAMON	S105689233	CITY OF SAN RAMON - STORM WATR	P.O. BOX 5148	94583	CA WDS
SAN RAMON	99623401	CAMINO RAMON STREET	CAMINO RAMON STREET		ERNS
SAN RAMON	8713226	CANYON RD NR:HWY 680/IN SAN RAMON	CANYON RD NR:HWY 680/IN SAN RAMON		ERNS
SAN RAMON	S102821123	ALLIANCE MRI/SAN RAMON	6001 NORTH CANYON ROAD	94583	HAZNET
SAN RAMON	S102802622	EAST HAMPTON-SAN RAMON LTD. PARTNERSHIP	SW CORNER OF ALCOSTA BLVD /	94583	HAZNET
SAN RAMON	S105026384	SAN RAMON UNIFIED SCHOOL	3280 CROW CNYN	94583	Cortese
SAN RAMON	S103678557	PG&E SAN RAMON LABORATORIES	CROW CANYON RD	94583	HAZNET
SAN RAMON	A100226557	SAN RAMON VALLEY UNIFIED SCHOOL DIST. SERV. CENTER	3280 EAST CROW CANYON AVENUE	94583	AST
SAN RAMON	S102791910	1X CITY OF SAN RAMON/ENGINEERING DEPT	264 DEERWOOD	94583	HAZNET
SAN RAMON	S103172461	PG&E SAN RAMON SUBSTATION	1950 DEL MAR RD		CONTRA COSTA CO. SITE LIST
SAN RAMON	S108216027	PACIFIC GAS & ELECTRIC CO (SAN RAMON SUBSTATION)	1950 DEL MAR RD	94583	HAZNET
SAN RAMON	S107142490	PG & E, SAN RAMON SUB	1950 DELMAR RD	94583	HAZNET
SAN RAMON	S104581024	COUNTRY CLUB DENTAL CENTER	9130 A EAST ALCOSTA BLVD	94583	HAZNET
SAN RAMON	U001598605	SAN RAMON PUMPING STATION	MANGOS DRIVE	94583	HIST UST
SAN RAMON	1000251260	PACIFIC BELL	W/S OF HIGHWAY 21	94583	RCRA-SQG, FINDS
SAN RAMON	S106434283	SAN RAMON VALLEY FIRE STA #30	11445 WINDEMERE PKWY		CONTRA COSTA CO. SITE LIST

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

FEDERAL RECORDS

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 01/25/2007
Date Data Arrived at EDR: 01/31/2007
Date Made Active in Reports: 03/12/2007
Number of Days to Update: 40

Source: EPA
Telephone: N/A
Last EDR Contact: 01/31/2007
Next Scheduled EDR Contact: 04/30/2007
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 5
Telephone 312-886-6686

EPA Region 10
Telephone 206-553-8665

EPA Region 6
Telephone: 214-655-6659

EPA Region 7
Telephone: 913-551-7247

EPA Region 8
Telephone: 303-312-6774

EPA Region 9
Telephone: 415-947-4246

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 09/27/2006
Date Data Arrived at EDR: 11/01/2006
Date Made Active in Reports: 11/22/2006
Number of Days to Update: 21

Source: EPA
Telephone: N/A
Last EDR Contact: 02/23/2007
Next Scheduled EDR Contact: 04/30/2007
Data Release Frequency: Quarterly

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 12/28/2006
Date Data Arrived at EDR: 01/31/2007
Date Made Active in Reports: 03/12/2007
Number of Days to Update: 40

Source: EPA
Telephone: N/A
Last EDR Contact: 01/31/2007
Next Scheduled EDR Contact: 04/30/2007
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NPL RECOVERY: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991	Source: EPA
Date Data Arrived at EDR: 02/02/1994	Telephone: 202-564-4267
Date Made Active in Reports: 03/30/1994	Last EDR Contact: 03/26/2007
Number of Days to Update: 56	Next Scheduled EDR Contact: 05/21/2007
	Data Release Frequency: No Update Planned

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 11/28/2006	Source: EPA
Date Data Arrived at EDR: 12/19/2006	Telephone: 703-603-8960
Date Made Active in Reports: 01/29/2007	Last EDR Contact: 03/21/2007
Number of Days to Update: 41	Next Scheduled EDR Contact: 06/18/2007
	Data Release Frequency: Quarterly

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 12/20/2006	Source: EPA
Date Data Arrived at EDR: 01/29/2007	Telephone: 703-603-8960
Date Made Active in Reports: 02/27/2007	Last EDR Contact: 03/19/2007
Number of Days to Update: 29	Next Scheduled EDR Contact: 06/18/2007
	Data Release Frequency: Quarterly

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 01/04/2007	Source: EPA
Date Data Arrived at EDR: 01/18/2007	Telephone: 800-424-9346
Date Made Active in Reports: 02/27/2007	Last EDR Contact: 03/05/2007
Number of Days to Update: 40	Next Scheduled EDR Contact: 06/04/2007
	Data Release Frequency: Quarterly

RCRA: Resource Conservation and Recovery Act Information

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS). The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month. Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator off-site to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 06/13/2006	Source: EPA
Date Data Arrived at EDR: 06/28/2006	Telephone: (415) 495-8895
Date Made Active in Reports: 08/23/2006	Last EDR Contact: 04/18/2007
Number of Days to Update: 56	Next Scheduled EDR Contact: 07/16/2007
	Data Release Frequency: Quarterly

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/2006	Source: National Response Center, United States Coast Guard
Date Data Arrived at EDR: 01/24/2007	Telephone: 202-267-2180
Date Made Active in Reports: 03/12/2007	Last EDR Contact: 01/24/2007
Number of Days to Update: 47	Next Scheduled EDR Contact: 04/23/2007
	Data Release Frequency: Annually

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 11/28/2006	Source: U.S. Department of Transportation
Date Data Arrived at EDR: 01/17/2007	Telephone: 202-366-4555
Date Made Active in Reports: 02/27/2007	Last EDR Contact: 04/17/2007
Number of Days to Update: 41	Next Scheduled EDR Contact: 07/16/2007
	Data Release Frequency: Annually

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 01/24/2007	Source: Environmental Protection Agency
Date Data Arrived at EDR: 01/31/2007	Telephone: 703-603-8905
Date Made Active in Reports: 04/04/2007	Last EDR Contact: 04/02/2007
Number of Days to Update: 63	Next Scheduled EDR Contact: 07/02/2007
	Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 01/24/2007	Source: Environmental Protection Agency
Date Data Arrived at EDR: 01/31/2007	Telephone: 703-603-8905
Date Made Active in Reports: 02/27/2007	Last EDR Contact: 04/02/2007
Number of Days to Update: 27	Next Scheduled EDR Contact: 07/02/2007
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 703-692-8801
Last EDR Contact: 02/08/2007
Next Scheduled EDR Contact: 05/07/2007
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 09/20/2006
Date Made Active in Reports: 11/22/2006
Number of Days to Update: 63

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 04/02/2007
Next Scheduled EDR Contact: 07/02/2007
Data Release Frequency: Varies

US BROWNFIELDS: A Listing of Brownfields Sites

Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become Brownfields Cleanup Revolving Loan Fund (BCRLF) cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 01/29/2007
Date Data Arrived at EDR: 01/31/2007
Date Made Active in Reports: 04/04/2007
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 03/12/2007
Next Scheduled EDR Contact: 06/11/2007
Data Release Frequency: Semi-Annually

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 08/23/2006
Date Data Arrived at EDR: 03/06/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 35

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 02/06/2007
Next Scheduled EDR Contact: 04/23/2007
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 01/10/2007
Date Data Arrived at EDR: 01/24/2007
Date Made Active in Reports: 02/27/2007
Number of Days to Update: 34

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 03/27/2007
Next Scheduled EDR Contact: 07/02/2007
Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UMTRA: Uranium Mill Tailings Sites
Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/08/2006
Date Made Active in Reports: 01/29/2007
Number of Days to Update: 82

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 03/20/2007
Next Scheduled EDR Contact: 06/18/2007
Data Release Frequency: Varies

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

TRIS: Toxic Chemical Release Inventory System
Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2004
Date Data Arrived at EDR: 06/22/2006
Date Made Active in Reports: 08/23/2006
Number of Days to Update: 62

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 03/20/2007
Next Scheduled EDR Contact: 06/18/2007
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act
Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2002
Date Data Arrived at EDR: 04/14/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 46

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 04/16/2007
Next Scheduled EDR Contact: 07/16/2007
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 02/26/2007
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 03/19/2007
Next Scheduled EDR Contact: 06/18/2007
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 02/26/2007
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 03/19/2007
Next Scheduled EDR Contact: 06/18/2007
Data Release Frequency: Quarterly

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2004
Date Data Arrived at EDR: 05/11/2006
Date Made Active in Reports: 05/22/2006
Number of Days to Update: 11

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 04/12/2007
Next Scheduled EDR Contact: 07/16/2007
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/06/2006
Date Data Arrived at EDR: 02/02/2007
Date Made Active in Reports: 04/04/2007
Number of Days to Update: 61

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 04/16/2007
Next Scheduled EDR Contact: 07/16/2007
Data Release Frequency: Quarterly

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/09/2005
Date Data Arrived at EDR: 12/11/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 31

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 03/26/2007
Next Scheduled EDR Contact: 06/11/2007
Data Release Frequency: Varies

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 02/14/2007
Date Data Arrived at EDR: 02/28/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 41

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 02/28/2007
Next Scheduled EDR Contact: 05/28/2007
Data Release Frequency: Varies

CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 12/01/2006
Date Data Arrived at EDR: 01/08/2007
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 3

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/29/2007
Next Scheduled EDR Contact: 06/25/2007
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 03/19/2007
Next Scheduled EDR Contact: 06/18/2007
Data Release Frequency: No Update Planned

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 01/30/2007
Date Data Arrived at EDR: 01/31/2007
Date Made Active in Reports: 02/27/2007
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 01/31/2007
Next Scheduled EDR Contact: 04/30/2007
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 10/17/2006
Date Data Arrived at EDR: 11/29/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 43

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 03/02/2007
Next Scheduled EDR Contact: 05/07/2007
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 01/11/2007
Date Data Arrived at EDR: 01/26/2007
Date Made Active in Reports: 02/27/2007
Number of Days to Update: 32

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 04/02/2007
Next Scheduled EDR Contact: 07/02/2007
Data Release Frequency: Quarterly

MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 11/15/2006
Date Data Arrived at EDR: 12/28/2006
Date Made Active in Reports: 01/29/2007
Number of Days to Update: 32

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 03/28/2007
Next Scheduled EDR Contact: 06/25/2007
Data Release Frequency: Semi-Annually

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 01/18/2007
Date Data Arrived at EDR: 01/23/2007
Date Made Active in Reports: 02/27/2007
Number of Days to Update: 35

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 04/02/2007
Next Scheduled EDR Contact: 07/02/2007
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 03/05/2007
Next Scheduled EDR Contact: 06/04/2007
Data Release Frequency: No Update Planned

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 03/06/2007
Date Made Active in Reports: 04/13/2007
Number of Days to Update: 38

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 03/06/2007
Next Scheduled EDR Contact: 06/11/2007
Data Release Frequency: Biennially

STATE AND LOCAL RECORDS

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/26/2007
Next Scheduled EDR Contact: 05/28/2007
Data Release Frequency: No Update Planned

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 02/27/2007
Date Data Arrived at EDR: 02/28/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 37

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/28/2007
Next Scheduled EDR Contact: 05/28/2007
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/29/2007
Next Scheduled EDR Contact: 04/30/2007
Data Release Frequency: No Update Planned

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 03/12/2007
Date Data Arrived at EDR: 03/15/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 22

Source: Integrated Waste Management Board
Telephone: 916-341-6320
Last EDR Contact: 03/15/2007
Next Scheduled EDR Contact: 06/11/2007
Data Release Frequency: Quarterly

CA WDS: Waste Discharge System

Sites which have been issued waste discharge requirements.

Date of Government Version: 12/19/2006
Date Data Arrived at EDR: 12/19/2006
Date Made Active in Reports: 01/24/2007
Number of Days to Update: 36

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 03/21/2007
Next Scheduled EDR Contact: 06/18/2007
Data Release Frequency: Quarterly

WMUDS/SWAT: Waste Management Unit Database

Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 03/05/2007
Next Scheduled EDR Contact: 06/04/2007
Data Release Frequency: Quarterly

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites). This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 05/29/2001
Date Made Active in Reports: 07/26/2001
Number of Days to Update: 58

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 01/22/2007
Next Scheduled EDR Contact: 04/23/2007
Data Release Frequency: No Update Planned

SWRCY: Recycler Database

A listing of recycling facilities in California.

Date of Government Version: 01/08/2007
Date Data Arrived at EDR: 01/09/2007
Date Made Active in Reports: 01/24/2007
Number of Days to Update: 15

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 04/11/2007
Next Scheduled EDR Contact: 07/09/2007
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LUST: Geotracker's Leaking Underground Fuel Tank Report
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 01/09/2007
Date Data Arrived at EDR: 01/09/2007
Date Made Active in Reports: 01/24/2007
Number of Days to Update: 15

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 04/11/2007
Next Scheduled EDR Contact: 07/09/2007
Data Release Frequency: Quarterly

LUST REG 5: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 01/01/2007
Date Data Arrived at EDR: 01/23/2007
Date Made Active in Reports: 02/27/2007
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 04/06/2007
Next Scheduled EDR Contact: 07/02/2007
Data Release Frequency: Quarterly

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 04/02/2007
Next Scheduled EDR Contact: 07/02/2007
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 02/05/2007
Next Scheduled EDR Contact: 05/07/2007
Data Release Frequency: Varies

LUST REG 9: Leaking Underground Storage Tank Report
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 04/12/2007
Next Scheduled EDR Contact: 07/16/2007
Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 02/19/2007
Next Scheduled EDR Contact: 05/21/2007
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 03/05/2007
Next Scheduled EDR Contact: 06/04/2007
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 03/27/2007
Next Scheduled EDR Contact: 06/25/2007
Data Release Frequency: No Update Planned

LUST REG 1: Active Toxic Site Investigation
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 02/19/2007
Next Scheduled EDR Contact: 05/21/2007
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List
Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 04/06/2007
Next Scheduled EDR Contact: 07/09/2007
Data Release Frequency: Quarterly

LUST REG 3: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 02/12/2007
Next Scheduled EDR Contact: 05/14/2007
Data Release Frequency: No Update Planned

CA FID UST: Facility Inventory Database
The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SLIC: Statewide SLIC Cases
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 01/09/2007
Date Data Arrived at EDR: 01/09/2007
Date Made Active in Reports: 01/24/2007
Number of Days to Update: 15

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 04/11/2007
Next Scheduled EDR Contact: 07/09/2007
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 02/19/2007
Next Scheduled EDR Contact: 05/21/2007
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 04/06/2007
Next Scheduled EDR Contact: 07/09/2007
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 02/12/2007
Next Scheduled EDR Contact: 05/14/2007
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 01/22/2007
Next Scheduled EDR Contact: 04/23/2007
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 04/05/2007
Next Scheduled EDR Contact: 07/02/2007
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 04/02/2007
Next Scheduled EDR Contact: 07/02/2007
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 03/05/2007
Next Scheduled EDR Contact: 06/04/2007
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 02/19/2007
Next Scheduled EDR Contact: 05/21/2007
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/06/2006
Date Data Arrived at EDR: 04/06/2006
Date Made Active in Reports: 05/11/2006
Number of Days to Update: 35

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 04/03/2007
Next Scheduled EDR Contact: 07/03/2007
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 03/13/2007
Date Data Arrived at EDR: 03/14/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 23

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 03/12/2007
Next Scheduled EDR Contact: 05/28/2007
Data Release Frequency: Annually

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 01/09/2007
Date Data Arrived at EDR: 01/09/2007
Date Made Active in Reports: 01/23/2007
Number of Days to Update: 14

Source: SWRCB
Telephone: 916-480-1028
Last EDR Contact: 04/11/2007
Next Scheduled EDR Contact: 07/09/2007
Data Release Frequency: Semi-Annually

UST MENDOCINO: Mendocino County UST Database
A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 02/05/2007
Date Data Arrived at EDR: 02/06/2007
Date Made Active in Reports: 03/21/2007
Number of Days to Update: 43

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 03/26/2007
Next Scheduled EDR Contact: 06/25/2007
Data Release Frequency: Varies

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

AST: Aboveground Petroleum Storage Tank Facilities

Registered Aboveground Storage Tanks.

Date of Government Version: 02/09/2007
Date Data Arrived at EDR: 02/09/2007
Date Made Active in Reports: 03/23/2007
Number of Days to Update: 42

Source: State Water Resources Control Board
Telephone: 916-341-5712
Last EDR Contact: 01/29/2007
Next Scheduled EDR Contact: 04/30/2007
Data Release Frequency: Quarterly

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1980's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/23/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 42

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 02/19/2007
Next Scheduled EDR Contact: 05/21/2007
Data Release Frequency: Varies

NOTIFY 65: Proposition 65 Records

Proposition 65 Notification Records. NOTIFY 65 contains facility notifications about any release which could impact drinking water and thereby expose the public to a potential health risk.

Date of Government Version: 10/21/1993
Date Data Arrived at EDR: 11/01/1993
Date Made Active in Reports: 11/19/1993
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 04/12/2007
Next Scheduled EDR Contact: 07/16/2007
Data Release Frequency: No Update Planned

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 01/15/2007
Date Data Arrived at EDR: 01/16/2007
Date Made Active in Reports: 02/27/2007
Number of Days to Update: 42

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 04/05/2007
Next Scheduled EDR Contact: 07/02/2007
Data Release Frequency: Semi-Annually

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 02/27/2007
Date Data Arrived at EDR: 02/28/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 37

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/28/2007
Next Scheduled EDR Contact: 05/28/2007
Data Release Frequency: Quarterly

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 04/18/2005
Date Data Arrived at EDR: 04/18/2005
Date Made Active in Reports: 05/06/2005
Number of Days to Update: 18

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 04/10/2007
Next Scheduled EDR Contact: 07/02/2007
Data Release Frequency: Annually

WIP: Well Investigation Program Case List

Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 03/01/2007
Date Data Arrived at EDR: 03/13/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 24

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 03/13/2007
Next Scheduled EDR Contact: 04/23/2007
Data Release Frequency: Varies

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 03/07/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 30

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 02/26/2007
Next Scheduled EDR Contact: 04/23/2007
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 02/27/2007
Date Data Arrived at EDR: 02/28/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 37

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/28/2007
Next Scheduled EDR Contact: 05/28/2007
Data Release Frequency: Quarterly

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/20/2006
Date Made Active in Reports: 01/03/2007
Number of Days to Update: 44

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 02/06/2007
Next Scheduled EDR Contact: 05/07/2007
Data Release Frequency: Annually

EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2004
Date Data Arrived at EDR: 04/14/2006
Date Made Active in Reports: 05/11/2006
Number of Days to Update: 27

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 04/17/2007
Next Scheduled EDR Contact: 07/16/2007
Data Release Frequency: Varies

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 02/27/2007
Date Data Arrived at EDR: 02/28/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 37

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/28/2007
Next Scheduled EDR Contact: 05/28/2007
Data Release Frequency: Quarterly

SAN DIEGO CO. SAM: Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 01/24/2007
Date Data Arrived at EDR: 02/27/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 38

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 04/04/2007
Next Scheduled EDR Contact: 07/02/2007
Data Release Frequency: Varies

TRIBAL RECORDS

INDIAN RESERV: Indian Reservations
This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 02/08/2007
Next Scheduled EDR Contact: 05/07/2007
Data Release Frequency: Semi-Annually

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 12/01/2006
Date Data Arrived at EDR: 12/01/2006
Date Made Active in Reports: 01/29/2007
Number of Days to Update: 59

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 02/19/2007
Next Scheduled EDR Contact: 05/21/2007
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 02/19/2007
Date Data Arrived at EDR: 02/27/2007
Date Made Active in Reports: 04/04/2007
Number of Days to Update: 36

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 02/19/2007
Next Scheduled EDR Contact: 05/21/2007
Data Release Frequency: Quarterly

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 03/01/2007
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/04/2007
Number of Days to Update: 34

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 02/19/2007
Next Scheduled EDR Contact: 02/21/2007
Data Release Frequency: Quarterly

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 12/19/2006
Date Data Arrived at EDR: 12/19/2006
Date Made Active in Reports: 01/29/2007
Number of Days to Update: 41

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 02/19/2007
Next Scheduled EDR Contact: 05/21/2007
Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 09/06/2006
Date Data Arrived at EDR: 10/04/2006
Date Made Active in Reports: 11/08/2006
Number of Days to Update: 35

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 02/19/2007
Next Scheduled EDR Contact: 05/21/2007
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Minnesota, Mississippi and North Carolina.

Date of Government Version: 08/24/2006
Date Data Arrived at EDR: 09/11/2006
Date Made Active in Reports: 11/08/2006
Number of Days to Update: 58

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 02/19/2007
Next Scheduled EDR Contact: 05/21/2007
Data Release Frequency: Semi-Annually

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 01/04/2005
Date Data Arrived at EDR: 01/21/2005
Date Made Active in Reports: 02/28/2005
Number of Days to Update: 38

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 02/19/2007
Next Scheduled EDR Contact: 05/21/2007
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

Date of Government Version: 08/24/2006
Date Data Arrived at EDR: 09/11/2006
Date Made Active in Reports: 11/08/2006
Number of Days to Update: 58

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 02/19/2007
Next Scheduled EDR Contact: 05/21/2007
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land

Date of Government Version: 12/02/2004
Date Data Arrived at EDR: 12/29/2004
Date Made Active in Reports: 02/04/2005
Number of Days to Update: 37

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 02/19/2007
Next Scheduled EDR Contact: 05/21/2007
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

Date of Government Version: 02/19/2007
Date Data Arrived at EDR: 02/27/2007
Date Made Active in Reports: 04/04/2007
Number of Days to Update: 36

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 02/19/2007
Next Scheduled EDR Contact: 05/21/2007
Data Release Frequency: Quarterly

INDIAN UST R10: Underground Storage Tanks on Indian Land

Date of Government Version: 03/01/2007
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/04/2007
Number of Days to Update: 34

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 02/19/2007
Next Scheduled EDR Contact: 05/21/2007
Data Release Frequency: Quarterly

INDIAN UST R1: Underground Storage Tanks on Indian Land
A listing of underground storage tank locations on Indian Land.

Date of Government Version: 12/01/2006
Date Data Arrived at EDR: 12/01/2006
Date Made Active in Reports: 01/29/2007
Number of Days to Update: 59

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 02/19/2007
Next Scheduled EDR Contact: 05/21/2007
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

Date of Government Version: 01/11/2007
Date Data Arrived at EDR: 01/12/2007
Date Made Active in Reports: 01/29/2007
Number of Days to Update: 17

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 02/19/2007
Next Scheduled EDR Contact: 05/21/2007
Data Release Frequency: Semi-Annually

INDIAN UST R9: Underground Storage Tanks on Indian Land

Date of Government Version: 12/19/2006
Date Data Arrived at EDR: 12/19/2006
Date Made Active in Reports: 01/29/2007
Number of Days to Update: 41

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 02/19/2007
Next Scheduled EDR Contact: 05/21/2007
Data Release Frequency: Quarterly

INDIAN UST R7: Underground Storage Tanks on Indian Land

Date of Government Version: 09/06/2006
Date Data Arrived at EDR: 10/04/2006
Date Made Active in Reports: 11/08/2006
Number of Days to Update: 35

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 02/19/2007
Next Scheduled EDR Contact: 05/21/2007
Data Release Frequency: Varies

EDR PROPRIETARY RECORDS

Manufactured Gas Plants: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

COUNTY RECORDS

ALAMEDA COUNTY:

Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/31/2007
Date Data Arrived at EDR: 02/02/2007
Date Made Active in Reports: 02/27/2007
Number of Days to Update: 25

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 01/22/2007
Next Scheduled EDR Contact: 04/23/2007
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 02/02/2007
Date Data Arrived at EDR: 02/02/2007
Date Made Active in Reports: 03/21/2007
Number of Days to Update: 47

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 01/22/2007
Next Scheduled EDR Contact: 04/23/2007
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Site List

List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 02/27/2007
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 36

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 02/26/2007
Next Scheduled EDR Contact: 05/28/2007
Data Release Frequency: Semi-Annually

FRESNO COUNTY:

CUPA Resources List

Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 01/13/2007
Date Data Arrived at EDR: 01/16/2007
Date Made Active in Reports: 02/27/2007
Number of Days to Update: 42

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 01/16/2007
Next Scheduled EDR Contact: 05/07/2007
Data Release Frequency: Semi-Annually

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing

Kern County Sites and Tanks Listing.

Date of Government Version: 12/06/2006
Date Data Arrived at EDR: 12/07/2006
Date Made Active in Reports: 01/04/2007
Number of Days to Update: 28

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 04/12/2007
Next Scheduled EDR Contact: 06/04/2007
Data Release Frequency: Quarterly

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern

San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 07/07/1999
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 05/16/2006
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HMS: Street Number List

Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 10/31/2006
Date Data Arrived at EDR: 12/29/2006
Date Made Active in Reports: 01/24/2007
Number of Days to Update: 26

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 11/13/2006
Next Scheduled EDR Contact: 02/12/2007
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities

Solid Waste Facilities in Los Angeles County.

Date of Government Version: 02/13/2007
Date Data Arrived at EDR: 03/09/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 28

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 02/13/2007
Next Scheduled EDR Contact: 05/14/2007
Data Release Frequency: Varies

City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 03/01/2006
Date Data Arrived at EDR: 04/06/2006
Date Made Active in Reports: 05/11/2006
Number of Days to Update: 35

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 03/14/2007
Next Scheduled EDR Contact: 06/11/2007
Data Release Frequency: Varies

Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 12/04/2006
Date Data Arrived at EDR: 01/09/2007
Date Made Active in Reports: 01/24/2007
Number of Days to Update: 15

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 02/12/2007
Next Scheduled EDR Contact: 05/14/2007
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 12/14/2006
Date Data Arrived at EDR: 12/15/2006
Date Made Active in Reports: 01/23/2007
Number of Days to Update: 39

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 03/19/2007
Next Scheduled EDR Contact: 05/14/2007
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/28/2003
Date Data Arrived at EDR: 10/23/2003
Date Made Active in Reports: 11/26/2003
Number of Days to Update: 34

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 02/19/2007
Next Scheduled EDR Contact: 05/21/2007
Data Release Frequency: Annually

City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 02/20/2007
Date Data Arrived at EDR: 02/21/2007
Date Made Active in Reports: 03/21/2007
Number of Days to Update: 28

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 02/12/2007
Next Scheduled EDR Contact: 05/14/2007
Data Release Frequency: Semi-Annually

MARIN COUNTY:

Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 01/26/2007
Date Data Arrived at EDR: 02/20/2007
Date Made Active in Reports: 03/21/2007
Number of Days to Update: 29

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 01/29/2007
Next Scheduled EDR Contact: 04/30/2007
Data Release Frequency: Semi-Annually

NAPA COUNTY:

Sites With Reported Contamination

A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2007
Date Data Arrived at EDR: 01/10/2007
Date Made Active in Reports: 01/24/2007
Number of Days to Update: 14

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 04/09/2007
Next Scheduled EDR Contact: 06/25/2007
Data Release Frequency: Semi-Annually

Closed and Operating Underground Storage Tank Sites

Underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2007
Date Data Arrived at EDR: 01/10/2007
Date Made Active in Reports: 01/23/2007
Number of Days to Update: 13

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 04/09/2007
Next Scheduled EDR Contact: 06/25/2007
Data Release Frequency: Annually

ORANGE COUNTY:

List of Industrial Site Cleanups

Petroleum and non-petroleum spills.

Date of Government Version: 03/01/2007
Date Data Arrived at EDR: 03/20/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 17

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 03/07/2007
Next Scheduled EDR Contact: 06/04/2007
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups

Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 03/01/2007
Date Data Arrived at EDR: 03/20/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 17

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 03/07/2007
Next Scheduled EDR Contact: 06/04/2007
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities

Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 03/01/2007
Date Data Arrived at EDR: 03/20/2007
Date Made Active in Reports: 04/12/2007
Number of Days to Update: 23

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 03/07/2007
Next Scheduled EDR Contact: 06/04/2007
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities

List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 01/17/2007
Date Data Arrived at EDR: 01/18/2007
Date Made Active in Reports: 02/27/2007
Number of Days to Update: 40

Source: Placer County Health and Human Services
Telephone: 530-889-7312
Last EDR Contact: 03/19/2007
Next Scheduled EDR Contact: 06/18/2007
Data Release Frequency: Semi-Annually

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites

Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 02/06/2007
Date Data Arrived at EDR: 02/07/2007
Date Made Active in Reports: 02/27/2007
Number of Days to Update: 20

Source: Department of Public Health
Telephone: 951-358-5055
Last EDR Contact: 04/16/2007
Next Scheduled EDR Contact: 07/16/2007
Data Release Frequency: Quarterly

Underground Storage Tank Tank List

Underground storage tank sites located in Riverside county.

Date of Government Version: 02/06/2007
Date Data Arrived at EDR: 02/07/2007
Date Made Active in Reports: 03/21/2007
Number of Days to Update: 42

Source: Health Services Agency
Telephone: 951-358-5055
Last EDR Contact: 04/16/2007
Next Scheduled EDR Contact: 07/16/2007
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Contaminated Sites

List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 01/31/2007
Date Data Arrived at EDR: 02/16/2007
Date Made Active in Reports: 02/27/2007
Number of Days to Update: 11

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 01/31/2007
Next Scheduled EDR Contact: 04/30/2007
Data Release Frequency: Quarterly

ML - Regulatory Compliance Master List

Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 01/31/2007
Date Data Arrived at EDR: 02/15/2007
Date Made Active in Reports: 02/27/2007
Number of Days to Update: 12

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 01/31/2007
Next Scheduled EDR Contact: 04/30/2007
Data Release Frequency: Quarterly

SAN BERNARDINO COUNTY:

Hazardous Material Permits

This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 01/04/2007
Date Data Arrived at EDR: 01/05/2007
Date Made Active in Reports: 01/24/2007
Number of Days to Update: 19

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 03/05/2007
Next Scheduled EDR Contact: 06/04/2007
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 05/16/2005
Date Data Arrived at EDR: 05/18/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 29

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 04/05/2007
Next Scheduled EDR Contact: 07/02/2007
Data Release Frequency: Quarterly

Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 11/01/2006
Date Data Arrived at EDR: 01/03/2007
Date Made Active in Reports: 01/24/2007
Number of Days to Update: 21

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 02/19/2007
Next Scheduled EDR Contact: 05/21/2007
Data Release Frequency: Varies

SAN FRANCISCO COUNTY:

Local Oversite Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 03/08/2007
Date Data Arrived at EDR: 03/13/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 24

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 03/05/2007
Next Scheduled EDR Contact: 06/04/2007
Data Release Frequency: Quarterly

Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 03/08/2007
Date Data Arrived at EDR: 03/13/2007
Date Made Active in Reports: 04/12/2007
Number of Days to Update: 30

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 03/05/2007
Next Scheduled EDR Contact: 06/04/2007
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST

A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 10/16/2006
Date Data Arrived at EDR: 12/13/2006
Date Made Active in Reports: 01/23/2007
Number of Days to Update: 41

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 04/02/2007
Next Scheduled EDR Contact: 04/16/2007
Data Release Frequency: Semi-Annually

SAN MATEO COUNTY:

Business Inventory

List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 01/24/2007
Date Data Arrived at EDR: 01/25/2007
Date Made Active in Reports: 02/27/2007
Number of Days to Update: 33

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 04/09/2007
Next Scheduled EDR Contact: 07/09/2007
Data Release Frequency: Annually

Fuel Leak List

A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 01/09/2007
Date Data Arrived at EDR: 01/09/2007
Date Made Active in Reports: 01/24/2007
Number of Days to Update: 15

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 04/09/2007
Next Scheduled EDR Contact: 07/09/2007
Data Release Frequency: Semi-Annually

SANTA CLARA COUNTY:

HIST LUST - Fuel Leak Site Activity Report

A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/26/2007
Next Scheduled EDR Contact: 06/25/2007
Data Release Frequency: No Update Planned

LOP Listing

A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 09/29/2006
Date Data Arrived at EDR: 10/02/2006
Date Made Active in Reports: 10/25/2006
Number of Days to Update: 23

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 03/26/2007
Next Scheduled EDR Contact: 06/25/2007
Data Release Frequency: Varies

Hazardous Material Facilities

Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 12/07/2006
Date Data Arrived at EDR: 12/07/2006
Date Made Active in Reports: 01/03/2007
Number of Days to Update: 27

Source: City of San Jose Fire Department
Telephone: 408-277-4659
Last EDR Contact: 03/19/2007
Next Scheduled EDR Contact: 06/04/2007
Data Release Frequency: Annually

SOLANO COUNTY:

Leaking Underground Storage Tanks

A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 01/08/2007
Date Data Arrived at EDR: 02/06/2007
Date Made Active in Reports: 02/27/2007
Number of Days to Update: 21

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 03/26/2007
Next Scheduled EDR Contact: 06/25/2007
Data Release Frequency: Quarterly

Underground Storage Tanks

Underground storage tank sites located in Solano county.

Date of Government Version: 01/02/2007
Date Data Arrived at EDR: 01/16/2007
Date Made Active in Reports: 01/23/2007
Number of Days to Update: 7

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 03/26/2007
Next Scheduled EDR Contact: 06/25/2007
Data Release Frequency: Quarterly

SONOMA COUNTY:

Leaking Underground Storage Tank Sites

A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 01/22/2007
Date Data Arrived at EDR: 01/23/2007
Date Made Active in Reports: 02/27/2007
Number of Days to Update: 35

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 01/22/2007
Next Scheduled EDR Contact: 04/23/2007
Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks

Underground storage tank sites located in Sutter county.

Date of Government Version: 12/31/0005
Date Data Arrived at EDR: 01/05/2006
Date Made Active in Reports: 01/31/2006
Number of Days to Update: 26

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 04/16/2007
Next Scheduled EDR Contact: 07/02/2007
Data Release Frequency: Semi-Annually

VENTURA COUNTY:

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks

The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 11/28/2006
Date Data Arrived at EDR: 01/09/2007
Date Made Active in Reports: 01/24/2007
Number of Days to Update: 15

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 04/11/2007
Next Scheduled EDR Contact: 06/11/2007
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites

Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 08/01/2006
Date Data Arrived at EDR: 09/05/2006
Date Made Active in Reports: 10/05/2006
Number of Days to Update: 30

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 02/19/2007
Next Scheduled EDR Contact: 05/21/2007
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites

Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 11/28/2006
Date Data Arrived at EDR: 01/09/2007
Date Made Active in Reports: 01/24/2007
Number of Days to Update: 15

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 03/14/2007
Next Scheduled EDR Contact: 06/11/2007
Data Release Frequency: Quarterly

Underground Tank Closed Sites List

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 12/28/2006
Date Data Arrived at EDR: 01/23/2007
Date Made Active in Reports: 03/21/2007
Number of Days to Update: 57

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 04/10/2007
Next Scheduled EDR Contact: 07/09/2007
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 02/05/2007
Date Data Arrived at EDR: 02/20/2007
Date Made Active in Reports: 03/21/2007
Number of Days to Update: 29

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 04/12/2007
Next Scheduled EDR Contact: 07/16/2007
Data Release Frequency: Annually

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 12/31/2004
Date Data Arrived at EDR: 02/17/2006
Date Made Active in Reports: 04/07/2006
Number of Days to Update: 49

Source: Department of Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 03/16/2007
Next Scheduled EDR Contact: 06/11/2007
Data Release Frequency: Annually

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 01/01/2007
Date Data Arrived at EDR: 01/04/2007
Date Made Active in Reports: 02/13/2007
Number of Days to Update: 40

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 04/05/2007
Next Scheduled EDR Contact: 07/02/2007
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 10/26/2006
Date Data Arrived at EDR: 11/29/2006
Date Made Active in Reports: 01/05/2007
Number of Days to Update: 37

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 03/02/2007
Next Scheduled EDR Contact: 05/28/2007
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 03/17/2006
Date Made Active in Reports: 06/06/2006
Number of Days to Update: 81

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 04/16/2007
Next Scheduled EDR Contact: 06/11/2007
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 04/11/2006
Date Data Arrived at EDR: 10/31/2006
Date Made Active in Reports: 12/18/2006
Number of Days to Update: 48

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 03/19/2007
Next Scheduled EDR Contact: 06/18/2007
Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 03/17/2006
Date Made Active in Reports: 05/02/2006
Number of Days to Update: 46

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 04/09/2007
Next Scheduled EDR Contact: 07/09/2007
Data Release Frequency: Annually

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data
Source: PennWell Corporation
Telephone: (800) 823-6277
This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

Scanned Digital USGS 7.5' Topographic Map (DRG)

Source: United States Geologic Survey

A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

STREET AND ADDRESS INFORMATION

GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

SAN RAMON CITY CENTER PROJECT
BOLLINGER CANYON ROAD
SAN RAMON, CA 94583

TARGET PROPERTY COORDINATES

Latitude (North):	37.76180 - 37˚ 45' 42.5''
Longitude (West):	121.9593 - 121˚ 57' 33.5''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	591669.0
UTM Y (Meters):	4179691.5
Elevation:	447 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	37121-G8 DIABLO, CA
Most Recent Revision:	1980
South Map:	37121-F8 DUBLIN, CA
Most Recent Revision:	1980

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

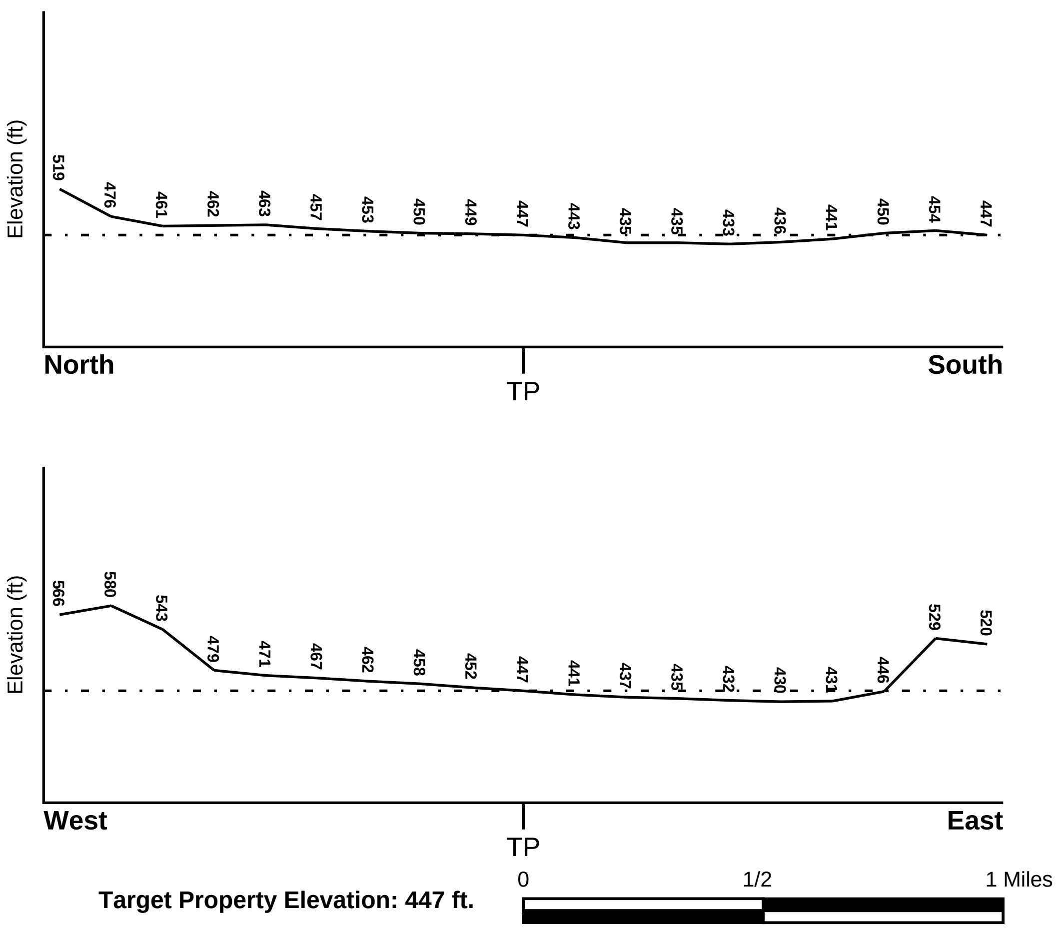
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General SE

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Target Property Elevation: 447 ft.

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
CONTRA COSTA, CA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 0607100001B

Additional Panels in search area: 0607100002B
0600250475B
0607100004B
0607100003B
0600250600B

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
DIABLO	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius: 1.25 miles
Status: Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
4	1/2 - 1 Mile NE	Not Reported
6	1/2 - 1 Mile NNW	Not Reported

For additional site information, refer to Physical Setting Source Map Findings.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

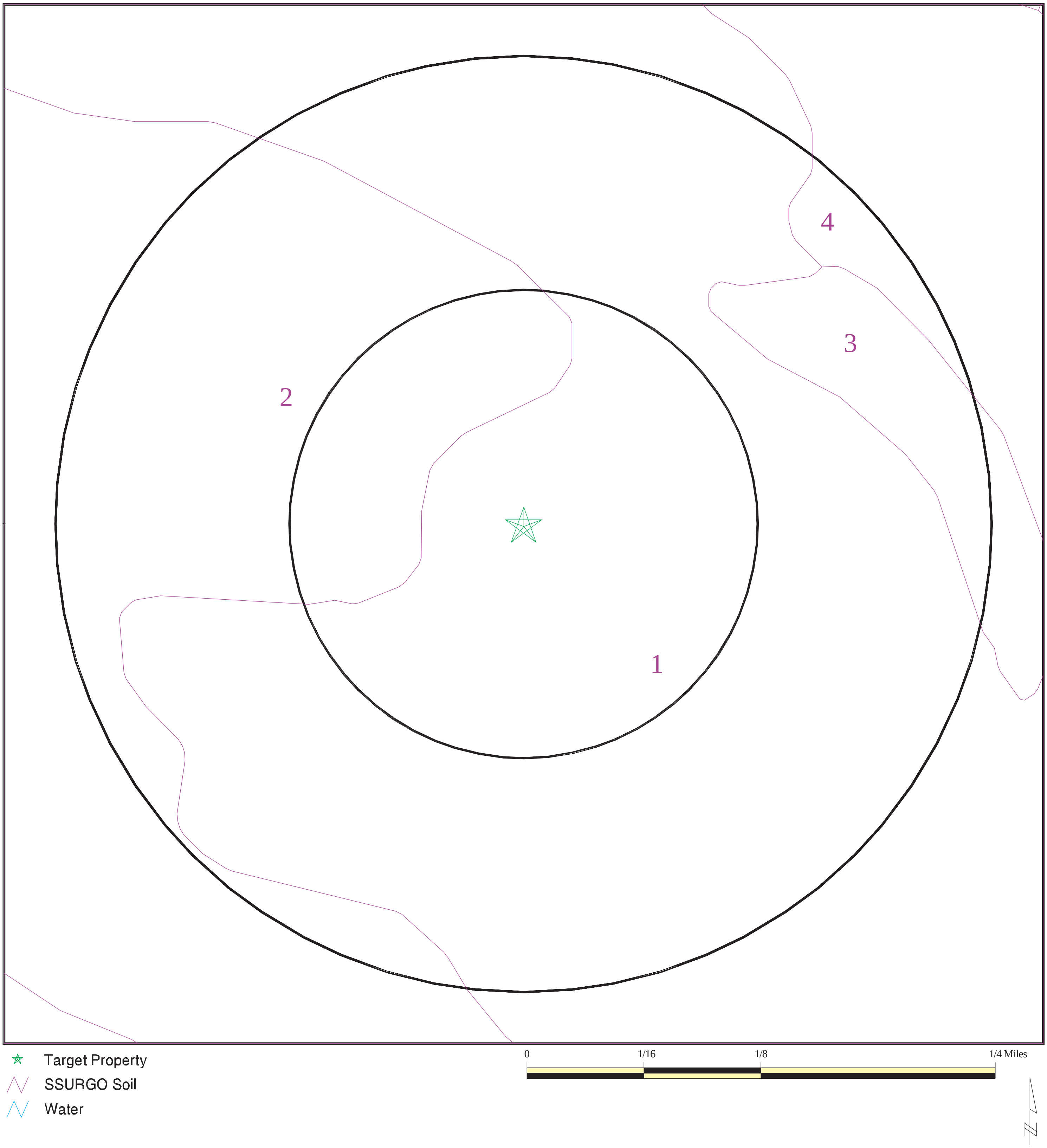
Era:	Cenozoic
System:	Tertiary
Series:	Pliocene
Code:	Tpc *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Continental Deposits

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 1906270.2s



SITE NAME:	San Ramon City Center Project	CLIENT:	Michael Brandman Associates
ADDRESS:	Bollinger Canyon Road	CONTACT:	Jason Higginbotham
	San Ramon CA 94583	INQUIRY #:	1906270.2s
LAT/LONG:	37.7618 / 121.9593	DATE:	April 18, 2007 4:46 pm

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: CLEAR LAKE

Soil Surface Texture: clay

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Poorly. Soils may have a saturated zone, a layer of low hydraulic conductivity, or seepage. Depth to water table is less than 1 foot.

Hydric Status: Soil meets the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: HIGH

Depth to Bedrock Min: > 0 inches

Depth to Bedrock Max: > 0 inches

Soil Layer Information							
	Boundary			Classification			
Layer	**Upper**	**Lower**	**Soil Texture Class**	**AASHTO Group**	**Unified Soil**	**Permeability Rate (in/hr)**	**Soil Reaction (pH)**
1	0 inches	30 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 0.20 Min: 0.06	Max: 8.40 Min: 6.10
1	0 inches	10 inches	mucky - silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Elastic silt.	Max: 2.00 Min: 0.60	Max: 7.80 Min: 5.60
2	30 inches	60 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 0.20 Min: 0.06	Max: 8.40 Min: 7.40

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
2	10 inches	45 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 0.60 Min: 0.10	Max: 7.80 Min: 6.10
3	45 inches	72 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 0.60 Min: 0.10	Max: 8.40 Min: 7.40

Soil Map ID: 2

Soil Component Name: BOTELLA

Soil Surface Texture: clay loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Moderately well drained. Soils have a layer of low hydraulic conductivity, wet state high in the profile. Depth to water table is 3 to 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: MODERATE

Depth to Bedrock Min: > 0 inches

Depth to Bedrock Max: > 0 inches

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	3 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 0.60 Min: 0.20	Max: 6.50 Min: 5.60

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
2	3 inches	68 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 0.60 Min: 0.20	Max: 7.30 Min: 6.10

Soil Map ID: 3

Soil Component Name: CONEJO

Soil Surface Texture: clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: MODERATE

Depth to Bedrock Min: > 0 inches

Depth to Bedrock Max: > 0 inches

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	27 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 0.60 Min: 0.20	Max: 7.30 Min: 6.10
2	27 inches	60 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 0.60 Min: 0.20	Max: 7.30 Min: 6.10

Soil Map ID: 4

Soil Component Name: PESCADERO

Soil Surface Texture: clay loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Poorly. Soils may have a saturated zone, a layer of low hydraulic conductivity, or seepage. Depth to water table is less than 1 foot.

Hydric Status: Soil meets the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: HIGH

Depth to Bedrock Min: > 0 inches

Depth to Bedrock Max: > 0 inches

Soil Layer Information

	Boundary			Classification			
Layer	**Upper**	**Lower**	**Soil Texture Class**	**AASHTO Group**	**Unified Soil**	**Permeability Rate (in/hr)**	**Soil Reaction (pH)**
1	0 inches	5 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 0.60 Min: 0.20	Max: 8.40 Min: 6.10
2	5 inches	43 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.06 Min: 0.00	Max: 9.00 Min: 7.90
3	43 inches	66 inches	stratified	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 0.60 Min: 0.20	Max: 9.00 Min: 7.90

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	USGS3222708	0 - 1/8 Mile ENE
2	USGS3222727	1/4 - 1/2 Mile NNW
3	USGS3222885	1/2 - 1 Mile SE
5	USGS3222883	1/2 - 1 Mile SE
7	USGS3222714	1/2 - 1 Mile East

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

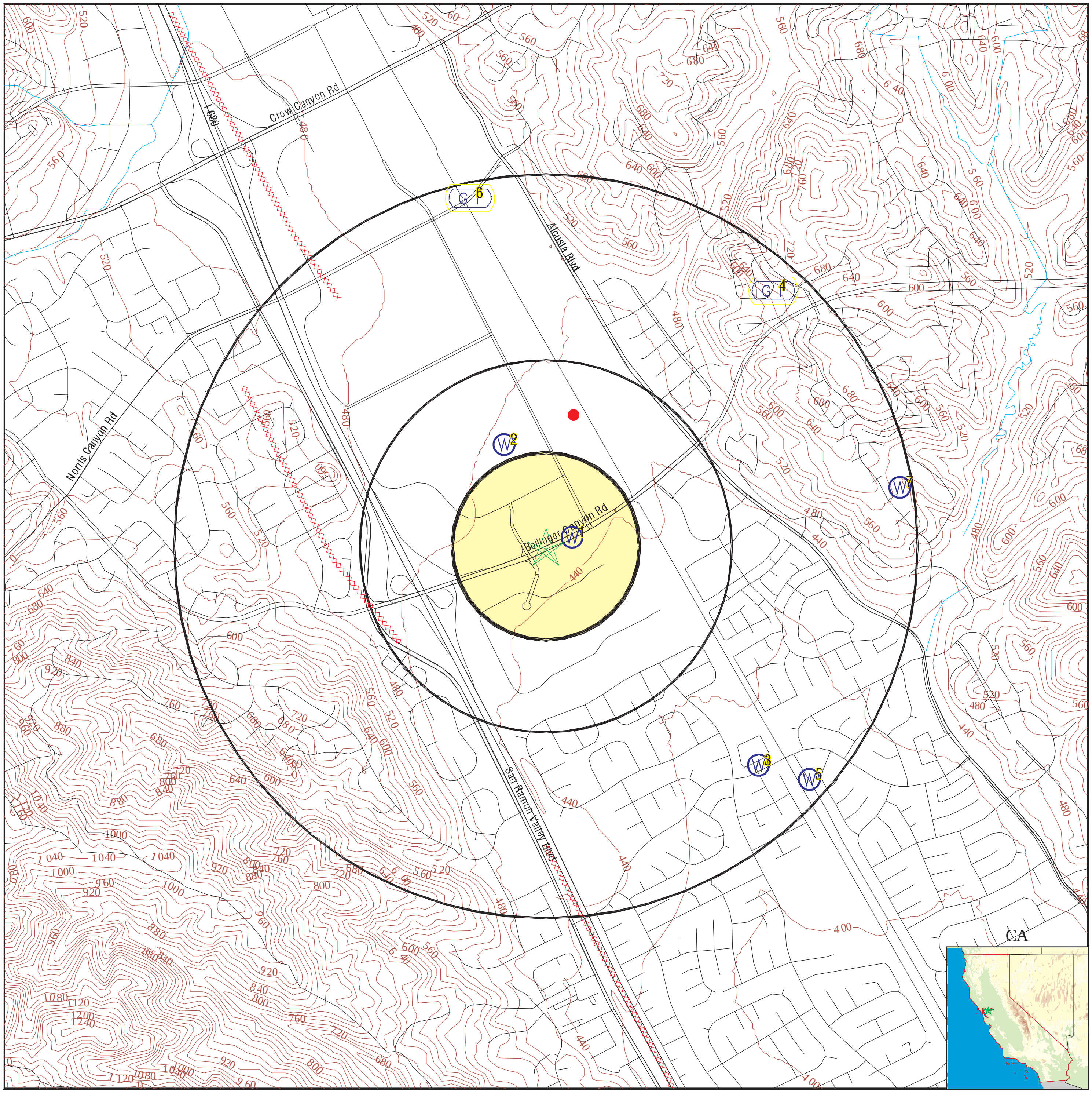
MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

OTHER STATE DATABASE INFORMATION

STATE OIL/GAS WELL INFORMATION

DISTANCE FROM TP (Miles)	DISTANCE FROM TP (Miles)
1/4 - 1/2 Mile NNE	

PHYSICAL SETTING SOURCE MAP - 1906270.2s



County Boundary
Major Roads
Contour Lines
Earthquake Fault Lines
Earthquake epicenter, Richter 5 or greater
Water Wells
Public Water Supply Wells
Cluster of Multiple Icons

0 1/4 1/2 1 Miles

Groundwater Flow Direction
GI Indeterminate Groundwater Flow at Location
GV Groundwater Flow Varies at Location
HD Closest Hydrogeological Data
Oil, gas or related wells

SITE NAME: San Ramon City Center Project ADDRESS: Bollinger Canyon Road San Ramon CA 94583 LAT/LONG: 37.7618 / 121.9593	CLIENT: Michael Brandman Associates CONTACT: Jason Higginbotham INQUIRY #: 1906270.2s DATE: April 18, 2007 4:46 pm

Map ID Direction Distance Elevation	Database	EDR ID Number
1 **ENE** **0 - 1/8 Mile** **Lower**	**FED USGS**	**USGS3222708**

Agency cd:	USGS	Site no:	374544121572501
Site name:	002S001W15F001M		
Latitude:	374544		
Longitude:	1215725	Dec lat:	37.76214998
Dec lon:	-121.95801467	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	013
Country:	US	Land net:	NESWNES15 T 2S R 1W M
Location map:	DIABLO	Map scale:	24000
Altitude:	437.40		
Altitude method:	Level or other surveying method		
Altitude accuracy:	.1		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	San Francisco Bay. California. Area = 1200 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19760622
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	ALLUVIUM		
Well depth:	60.3	Hole depth:	60.3
Source of depth data:	Not Reported		
Project number:	CA-9-358M		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1976-09-28
Water quality data end date:	1983-07-28	Water quality data count:	26
Ground water data begin date:	1976-07-12	Ground water data end date:	1980-01-08
Ground water data count:	32		

Ground-water levels, Number of Measurements: 32

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1980-01-08	27.0		1979-11-20	28.0	
1979-10-15	29.0		1979-06-29	28.4	
1979-06-12	28.5		1979-05-14	27.6	
1979-04-30	27.7		1979-04-26	27.7	
1979-04-09	27.8		1979-04-02	27.7	
1979-03-27	27.4		1979-03-21	27.4	
1979-03-19	27.3		1979-03-08	26.8	
1979-01-17	28.9		1978-10-06	33.1	
1978-07-17	33.2		1978-05-03	31.9	
1978-02-21	32.3		1977-10-25	38.6	
1977-09-12	38.3		1977-08-26	38.1	
1977-04-20	36.8		1977-03-28	36.0	
1977-02-15	36.8		1977-01-14	36.55	
1977-01-04	36.6		1976-12-27	37.5	
1976-11-10	37.4		1976-10-25	37.4	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1976-09-28	37.2		1976-07-12	36.90	

2
NNW
1/4 - 1/2 Mile
Higher

FED USGS USGS3222727

Agency cd:	USGS	Site no:	374557121573701
Site name:	002S001W15B001M		
Latitude:	374557		
Longitude:	1215737	Dec lat:	37.765761
Dec lon:	-121.96134811	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	001
Country:	US	Land net:	NENENWS15 T 2S R 1W M
Location map:	DIABLO	Map scale:	24000
Altitude:	453.80		
Altitude method:	Level or other surveying method		
Altitude accuracy:	.1		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	San Francisco Bay. California. Area = 1200 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	1948
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	ALLUVIUM		
Well depth:	821	Hole depth:	821
Source of depth data:	Not Reported		
Project number:	CA-9-358M		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1978-06-16
Water quality data end date:	1983-04-13	Water quality data count:	18
Ground water data begin date:	1949-01-14	Ground water data end date:	1981-09-03
Ground water data count:	25		

Ground-water levels, Number of Measurements: 25

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1981-09-03	35.9		1981-06-11	35.8	
1981-03-31	37.0		1980-11-21	39.1	
1980-08-21	38.6		1980-06-11	39.1	
1980-05-02	39.3		1980-03-13	41.1	
1979-11-15	45.2		1979-07-05	45.7	
1979-05-11	45.7		1979-03-21	46.8	
1979-01-26	49.2		1978-10-26	50.9	
1978-10-04	51.3		1978-07-17	53.5	
1978-06-15	55.0		1977-09-12	103.3	
1967-11-14	57.0		1967-11-09	56.6	
1958-03-04	88.5		1951-04-03	23.4	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1950-11-10	94.0		1949-03-30	115.0	
1949-01-14	92.8				

3
SE
1/2 - 1 Mile
Lower

FED USGS USGS3222885

Agency cd:	USGS	Site no:	374512121565201
Site name:	002S001W14N001M		
Latitude:	374512		
Longitude:	1215652	Dec lat:	37.75326133
Dec lon:	-121.94884769	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	001
Country:	US	Land net:	SWSWSWS14 T 2S R 1W M
Location map:	DIABLO	Map scale:	24000
Altitude:	412.60		
Altitude method:	Level or other surveying method		
Altitude accuracy:	.1		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	San Francisco Bay. California. Area = 1200 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	19760621
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	ALLUVIUM (QUATERNARY)		
Well depth:	48.0	Hole depth:	48.0
Source of depth data:	Not Reported		
Project number:	CA-9-358M		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1976-09-28
Water quality data end date:	1983-07-28	Water quality data count:	27
Ground water data begin date:	1976-07-12	Ground water data end date:	1981-07-20
Ground water data count:	33		

Ground-water levels, Number of Measurements: 33

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1981-07-20	13.0		1981-05-08	13.1	
1981-04-21	13.0		1981-01-12	14.2	
1980-10-02	14.0		1980-07-16	14.3	
1980-05-13	14.4		1980-05-02	14.3	
1980-01-08	16.0		1979-11-20	17.5	
1979-10-15	17.9		1979-06-29	18.3	
1979-05-29	18.3		1979-03-21	18.1	
1979-01-17	20.0		1979-01-08	10.0	
1978-10-06	21.7		1978-07-18	21.6	
1978-05-04	21.3		1978-02-21	23.1	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1977-10-25	27.0	
1977-08-29	26.9	
1977-03-28	26.7	
1977-01-14	27.25	
1976-12-27	27.0	
1976-10-25	27.9	
1976-07-12	28.20	

Date	Feet below Surface	Feet to Sealevel
1977-09-12	26.9	
1977-04-20	26.5	
1977-02-15	27.1	
1977-01-04	27.4	
1976-11-10	27.4	
1976-09-28	28.0	

4
NE
1/2 - 1 Mile
Higher

AQUIFLOW 66248

Site ID:	32910
Groundwater Flow:	Not Reported
Shallow Water Depth:	Not Reported
Deep Water Depth:	Not Reported
Average Water Depth:	50
Date:	04/12/1995

5
SE
1/2 - 1 Mile
Lower

FED USGS USGS3222883

Agency cd:	USGS	Site no:	374510121564301
Site name:	002S001W22A001M		
Latitude:	374510		
Longitude:	1215643	Dec lat:	37.75270579
Dec lon:	-121.94634761	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	001
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	Not Reported		
Altitude method:	Not Reported		
Altitude accuracy:	20		
Altitude datum:	Not Reported		
Hydrologic:	San Francisco Bay. California. Area = 1200 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	ALLUVIUM		
Well depth:	405	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1976-03-19
Water quality data end date:	1978-06-12	Water quality data count:	9
Ground water data begin date:	0000-00-00	Ground water data end date:	0000-00-00
Ground water data count:	0		

Ground-water levels, Number of Measurements: 0

Map ID Direction Distance Elevation			Database	EDR ID Number
6 **NNW** **1/2 - 1 Mile** **Higher**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	01101 Not Reported Not Reported Not Reported 9 05/26/1987	**AQUIFLOW**	**66250**
7 **East** **1/2 - 1 Mile** **Higher**			**FED USGS**	**USGS3222714**

Agency cd:	USGS	Site no:	374551121562701
Site name:	002S001W15B003M		
Latitude:	374551		
Longitude:	1215627	Dec lat:	37.76409438
Dec lon:	-121.94190308	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	013
Country:	US	Land net:	SWNWNES15 T02S R01W M
Location map:	DIABLO	Map scale:	24000
Altitude:	444.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	005		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	San Francisco Bay. California. Area = 1200 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	99.0	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	9479200205		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1979-04-19	Ground water data end date:	1980-05-07
Ground water data count:	3		

Ground-water levels, Number of Measurements: 3

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1980-05-07	34.12		1979-10-02	37.39	
1979-04-19	39.28				

Direction Distance	Database	EDR ID Number
NNE 1/4 - 1/2 Mile	**OIL_GAS**	**CA10177914**

Apinumber:	01300191	Operator:	TexCal Energy (GP) LLC
Lease:	Buttes-Wiedemann	Well no:	1
Field:	Not Reported	Cagaso m3 area:	Not Reported
Map:	W3-10	Status cod:	006
Source:	hud		
Latitude:	37.76699		
Longitude:	-121.95687		
Td:	9297	Sec:	10
Twn:	02S	Rge:	01W
Bm:	MD	X coord:	0
Y coord:	0	Zone:	Not Reported
Spuddate:	Not Reported	Abanddate:	Not Reported
Comments:	Not Reported	District:	6

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zip	Total Sites	> 4 Pci/L	Pct. > 4 Pci/L
94583	20	0	0.00

Federal EPA Radon Zone for CONTRA COSTA County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 94583

Number of sites tested: 4

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.700 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW[R] Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Health Services
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

EDR® Environmental Data Resources Inc

"Linking Technology with Tradition"®

Sanborn® Map Report

Ship To: Jason Higginbotham
Michael Brandman
220 Commerce
Irvine, CA 92602

Order Date: 4/18/2007 **Completion Date:** 4/18/2007
Inquiry #: 1906270.3s
P.O. #: 24910007
Site Name: San Ramon City Center Project
Address: Bollinger Canyon Road
City/State: San Ramon, CA 94583
Cross Streets:

Customer Project: Phase I ESA
1023971KEN 714-250-5555

This document reports that the largest and most complete collection of Sanborn fire insurance maps has been reviewed based on client supplied information, and fire insurance maps depicting the target property at the specified address were not identified.

NO COVERAGE

Appendix C: EDR Aerial Photograph Decade Package

The EDR Aerial Photo Decade Package

San Ramon City Center Project
Bollinger Canyon Road
San Ramon, CA 94583

Inquiry Number: 1906270.5

April 19, 2007

EDR® Environmental Data Resources Inc

The Standard in Environmental Risk Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

EDR Aerial Photo Decade Package

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDRs professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Date EDR Searched Historical Sources:

Aerial Photography April 19, 2007

Target Property:

Bollinger Canyon Road
San Ramon, CA 94583

Year	***Scale***	***Details***	***Source***
1939	Aerial Photograph. Scale: 1"=555'	Flight Year: 1939	Fairchild
1946	Aerial Photograph. Scale: 1"=655'	Flight Year: 1946	Jack Ammann
1959	Aerial Photograph. Scale: 1"=666'	Flight Year: 1959	Cartwright
1965	Aerial Photograph. Scale: 1"=666'	Flight Year: 1965	Cartwright
1982	Aerial Photograph. Scale: 1"=690'	Flight Year: 1982	WSA
1993	Aerial Photograph. Scale: 1"=666'	Flight Year: 1993	USGS
1998	Aerial Photograph. Scale: 1"=666'	Flight Year: 1998	USGS

INQUIRY #: 1906270.5

YEAR: 1939

= 555'

N

INQUIRY #: 1906270.5

YEAR: 1946

= 655'

N


INQUIRY #: 1906270.5
YEAR: 1959
= 666'
N

INQUIRY #: 1906270.5

YEAR: 1965

= 666'

N


INQUIRY #: 1906270.5
YEAR: 1982
N
= 690'


INQUIRY #: 1906270.5
YEAR: 1993
= 666'
N


INQUIRY #: 1906270.5
YEAR: 1998
= 666'
N

Appendix D: EDR Historic Topographical Map Report

EDR Historical Topographic Map Report

San Ramon City Center Project
Bollinger Canyon Road
San Ramon, CA 94583

Inquiry Number: 1906270.4

April 19, 2007

EDR® Environmental Data Resources Inc

The Standard in Environmental Risk Information

440 Wheelers Farms Rd
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

EDR Historical Topographic Map Report

Environmental Data Resources, Inc.s (EDR) Historical Topographic Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topographic Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the early 1900s.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

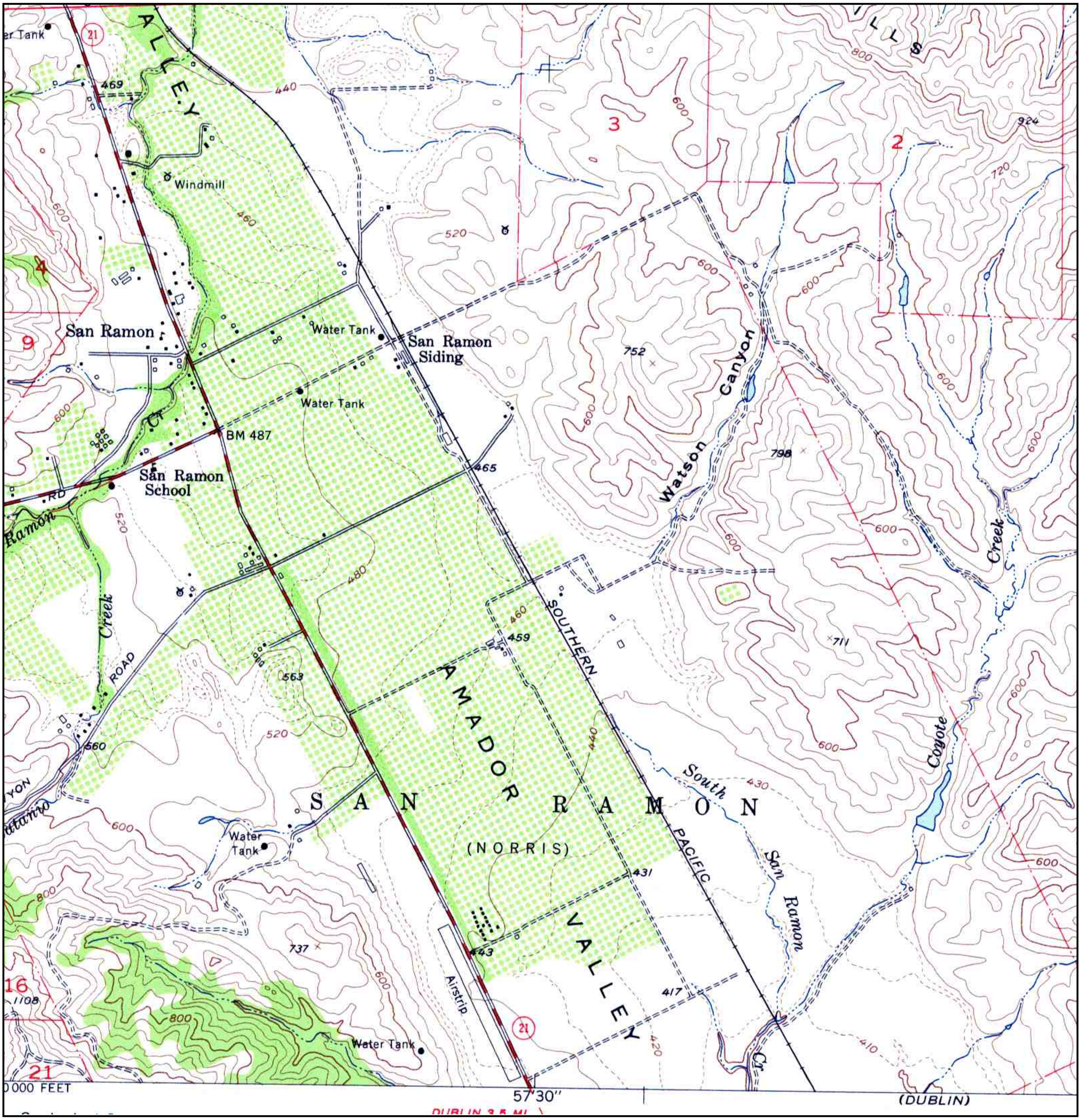
Historical Topographic Map

N	TARGET QUAD NAME: MT. DIABLO MAP YEAR: 1912 SERIES: 15 SCALE: 1:62500	SITE NAME: San Ramon City Center Project ADDRESS: Bollinger Canyon Road San Ramon, CA 94583 LAT/LONG: 37.7618 / 121.9593	CLIENT: Michael Brandman Associates CONTACT: Jason Higginbotham INQUIRY#: 1906270.4 RESEARCH DATE: 04/19/2007

Historical Topographic Map

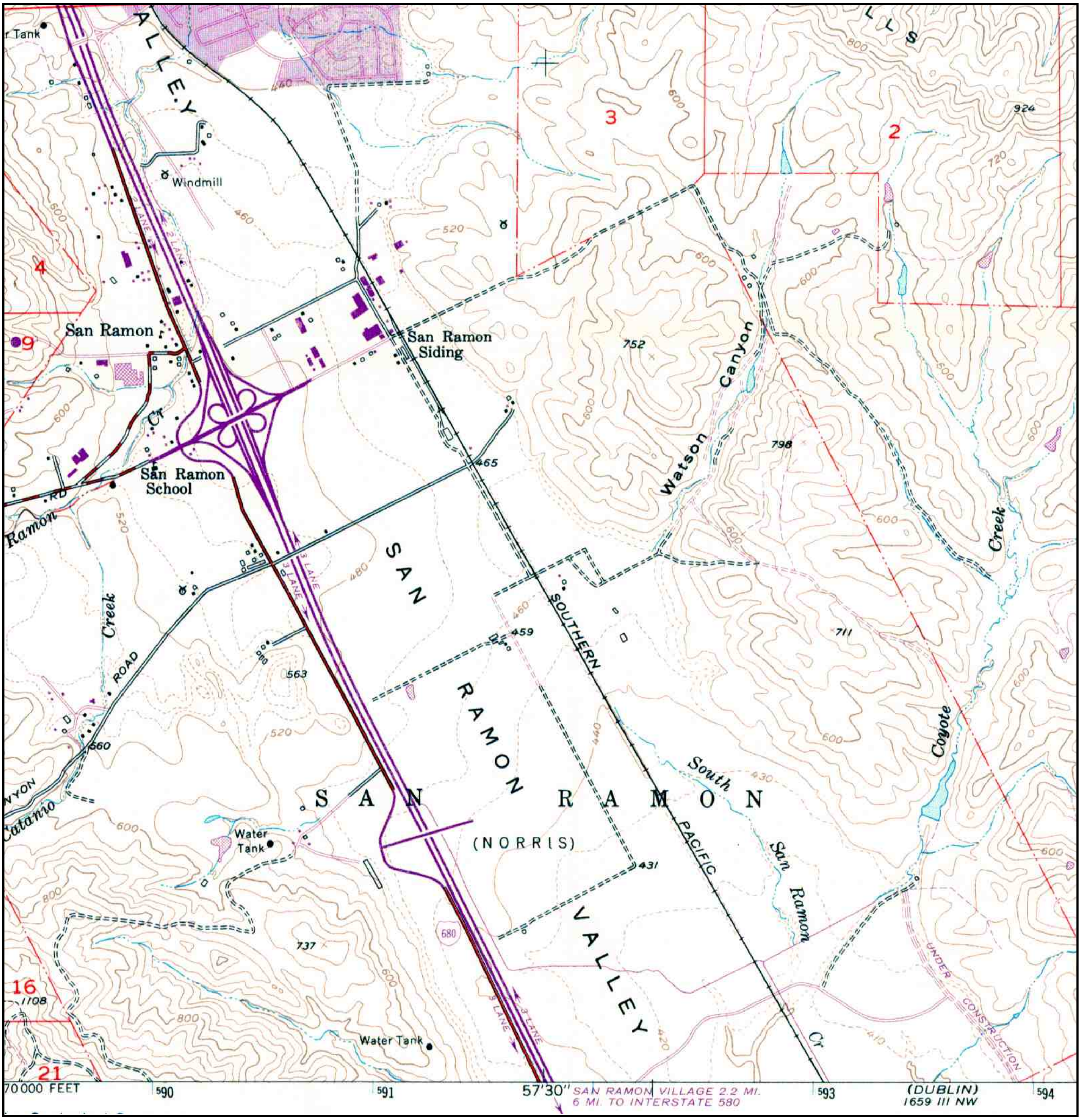
N	TARGET QUAD NAME: MT. DIABLO MAP YEAR: 1947 SERIES: 15 SCALE: 1:50000	SITE NAME: San Ramon City Center Project ADDRESS: Bollinger Canyon Road San Ramon, CA 94583 LAT/LONG: 37.7618 / 121.9593	CLIENT: Michael Brandman Associates CONTACT: Jason Higginbotham INQUIRY#: 1906270.4 RESEARCH DATE: 04/19/2007

Historical Topographic Map



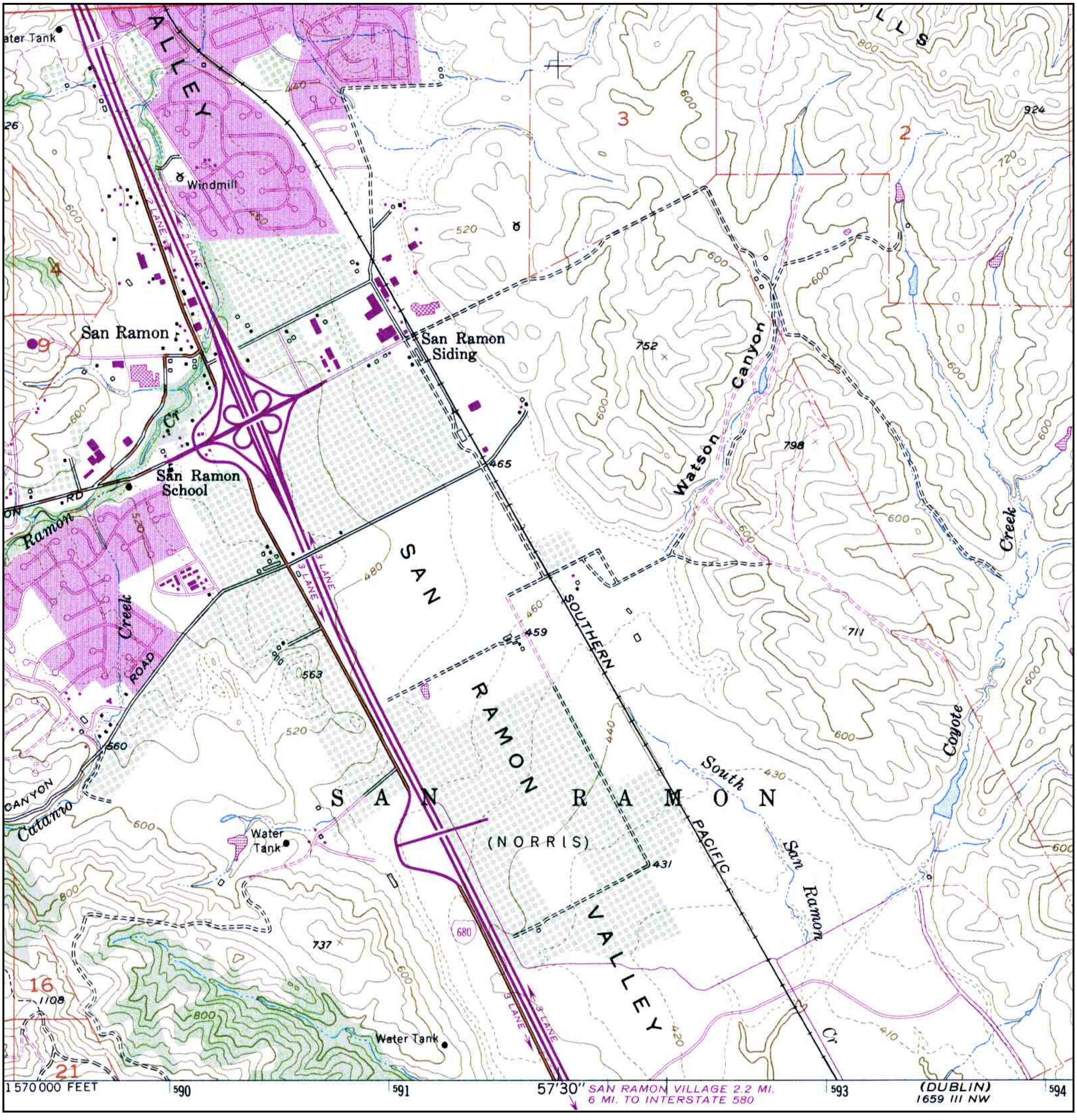
N	TARGET QUAD NAME:	DIABLO	SITE NAME:	San Ramon City Center Project	CLIENT:	Michael Brandman Associates
	MAP YEAR:	1953	ADDRESS:	Bollinger Canyon Road San Ramon, CA 94583	CONTACT:	Jason Higginbotham
	SERIES:	7.5	LAT/LONG:	37.7618 / 121.9593	INQUIRY#:	1906270.4
	SCALE:	1:24000			RESEARCH DATE:	04/19/2007

Historical Topographic Map



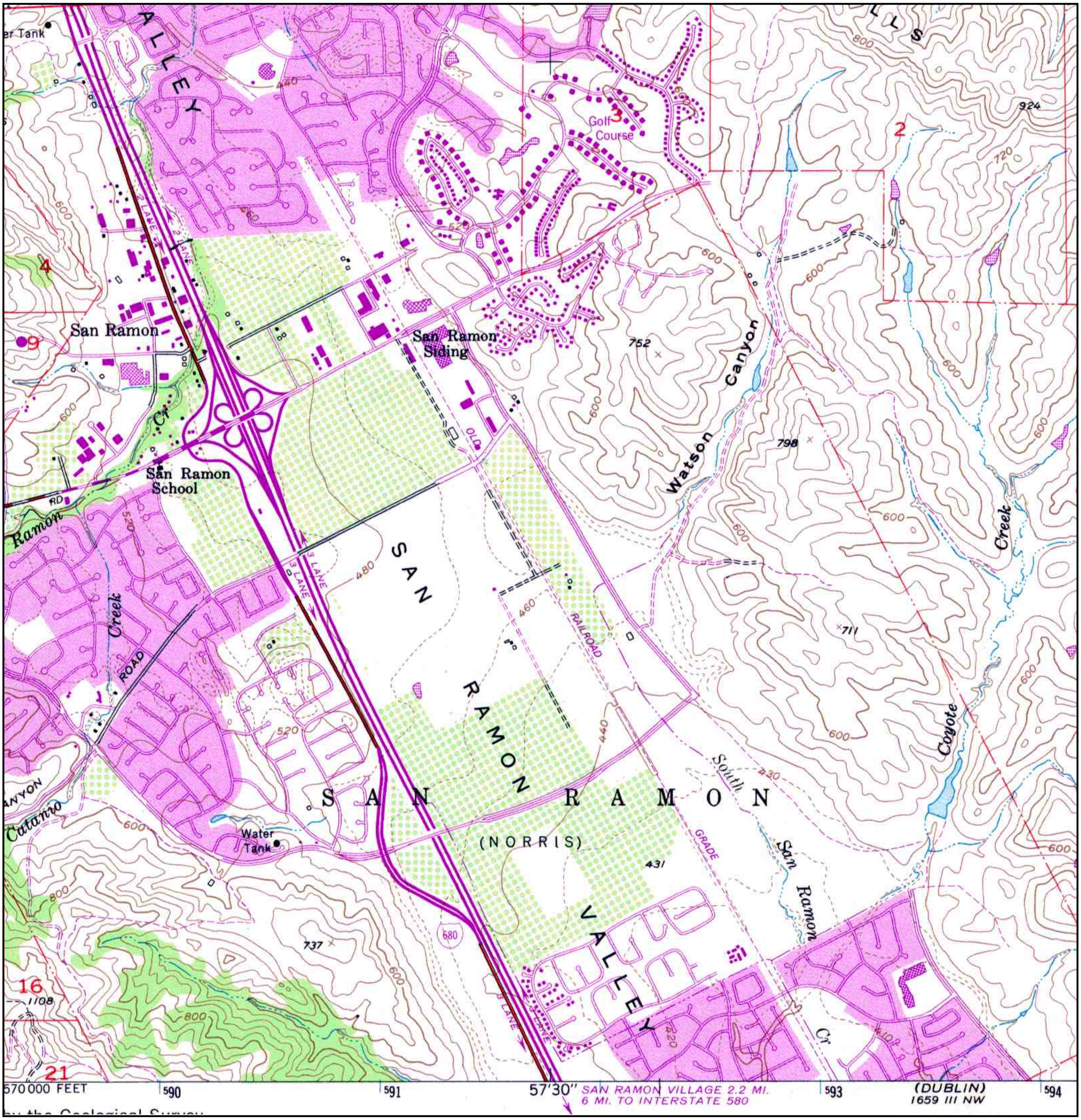
N ↑	TARGET QUAD NAME: DIABLO MAP YEAR: 1968 PHOTOREVISED FROM:1953 SERIES: 7.5 SCALE: 1:24000	SITE NAME: San Ramon City Center Project ADDRESS: Bollinger Canyon Road San Ramon, CA 94583 LAT/LONG: 37.7618 / 121.9593	CLIENT: Michael Brandman Associates CONTACT: Jason Higginbotham INQUIRY#: 1906270.4 RESEARCH DATE: 04/19/2007

Historical Topographic Map



N			
	TARGET QUAD NAME: DIABLO MAP YEAR: 1973 PHOTOREVISED FROM:1953 SERIES: 7.5 SCALE: 1:24000	SITE NAME: San Ramon City Center Project ADDRESS: Bollinger Canyon Road San Ramon, CA 94583 LAT/LONG: 37.7618 / 121.9593	CLIENT: Michael Brandman Associates CONTACT: Jason Higginbotham INQUIRY#: 1906270.4 RESEARCH DATE: 04/19/2007

Historical Topographic Map



N	TARGET QUAD NAME: DIABLO MAP YEAR: 1980 PHOTOREVISED FROM:1953 SERIES: 7.5 SCALE: 1:24000	SITE NAME: San Ramon City Center Project ADDRESS: Bollinger Canyon Road San Ramon, CA 94583 LAT/LONG: 37.7618 / 121.9593	CLIENT: Michael Brandman Associates CONTACT: Jason Higginbotham INQUIRY#: 1906270.4 RESEARCH DATE: 04/19/2007

Appendix E: EDR-City Directory Abstract

The EDR-City Directory
Abstract

San Ramon City Center Project
6001 Bollinger Canyon Road
San Ramon, CA 94583

Inquiry Number: 1906270.6

Thursday, April 19, 2007

EDR® Environmental Data Resources Inc

The Standard in Environmental Risk Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

EDR City Directory Abstract

Environmental Data Resources, Inc.'s (EDR) City Directory Abstract is a screening report designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Abstract includes a search and abstract of available city directory data. For each address, the directory lists the name of the corresponding occupant at five year intervals.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

SUMMARY

- ***City Directories:***

Business directories including city, cross reference and telephone directories were reviewed, if available, at approximately five year intervals for the years spanning 1975 through 2005. (These years are not necessarily inclusive.) A summary of the information obtained is provided in the text of this report.

Date EDR Searched Historical Sources: April 19, 2007

Target Property:
6001 Bollinger Canyon Road
San Ramon, CA 94583

Year	***Uses***	***Source***
1975	Address Not Listed in Research Source	Haines Criss-Cross Directory
1980	Address Not Listed in Research Source	Haines Criss-Cross Directory
1985	Chevron Co Chemical	Haines Criss-Cross Directory
1990	Chevron Co Chemical	Haines Criss-Cross Directory
1995	Chevron Co Chemical	Haines Criss-Cross Directory
2000	No Return	Haines Criss-Cross Directory
2005	Motient Corp	Haines Criss-Cross Directory

Adjoining Properties

SURROUNDING

Multiple Addresses
San Ramon, CA 94583

Year	***Uses***	***Source***
1975	Address Not Listed in Research Source	Haines Criss-Cross Directory
1980	Address Not Listed in Research Source	Haines Criss-Cross Directory
1985	Address Not Listed in Research Source	Haines Criss-Cross Directory
1990	Address Not Listed in Research Source	Haines Criss-Cross Directory
1995	Address Not Listed in Research Source	Haines Criss-Cross Directory
2000	****Bollinger Canyon Road****	Haines Criss-Cross Directory
	Office Building (31 Occupants) (6111)	Haines Criss-Cross Directory
	GE Consumer Finance (6121)	Haines Criss-Cross Directory
	No other addresses in 5900-6199 range	Haines Criss-Cross Directory
2005	****Bollinger Canyon Road****	Haines Criss-Cross Directory
	Office Building (31 Occupants) (6111)	Haines Criss-Cross Directory

Year	***Uses***	***Source***
2005	GE Consumer Finance (6121)	Haines Criss-Cross Directory
	No other addresses in 5900-6199 range	Haines Criss-Cross Directory

Appendix F: Preliminary Hydrology Report

SAN RAMON CITY CENTER

Preliminary Hydrology Report

Prepared for

Sunset Development Company

Sunset
DEVELOPMENT COMPANY
1951

Prepared by

RBF
CONSULTING

500 Ygnacio Valley Road, Ste 270
Walnut Creek, CA 94596-3847

April 02, 2007

TABLE OF CONTENTS

LIST OF TABLES

LIST OF EXHIBITS

1 INTRODUCTION

This report presents the preliminary hydrologic analysis for the stormwater management infrastructure proposed for the San Ramon City Center Project (Project) located in Contra Costa Country at the Bishop Ranch business park in San Ramon, California. The purpose of this report is to present an initial analysis of the Project's affects on the local and regional drainage basin. This report is meant to serve as a background for subsequent reports that are required during the development process such as a Stormwater Control Plan and a Stormwater Pollution Prevention Plan. These and other subsequent documents will detail the design recommendations for the control of stormwater for the Project site and be used to meet local and regional regulatory requirements.

The Project site is an approximately 44-acre mixed use civic, commercial, residential, and retail development located at the intersection of Bollinger Canyon Road and Camino Ramon, 0.5 miles east of Highway 680. A Vicinity and Proposed Site Map of the Project are presented as Exhibits 1 and 2. The nomenclature used in this report to reference the area within the Project and its surrounding areas may differ from the nomenclature used in other Project related reports. The correlation between the nomenclature used in this report and other Project reports is presented in Table 1.

Table 1: Reference Nomenclature in Report

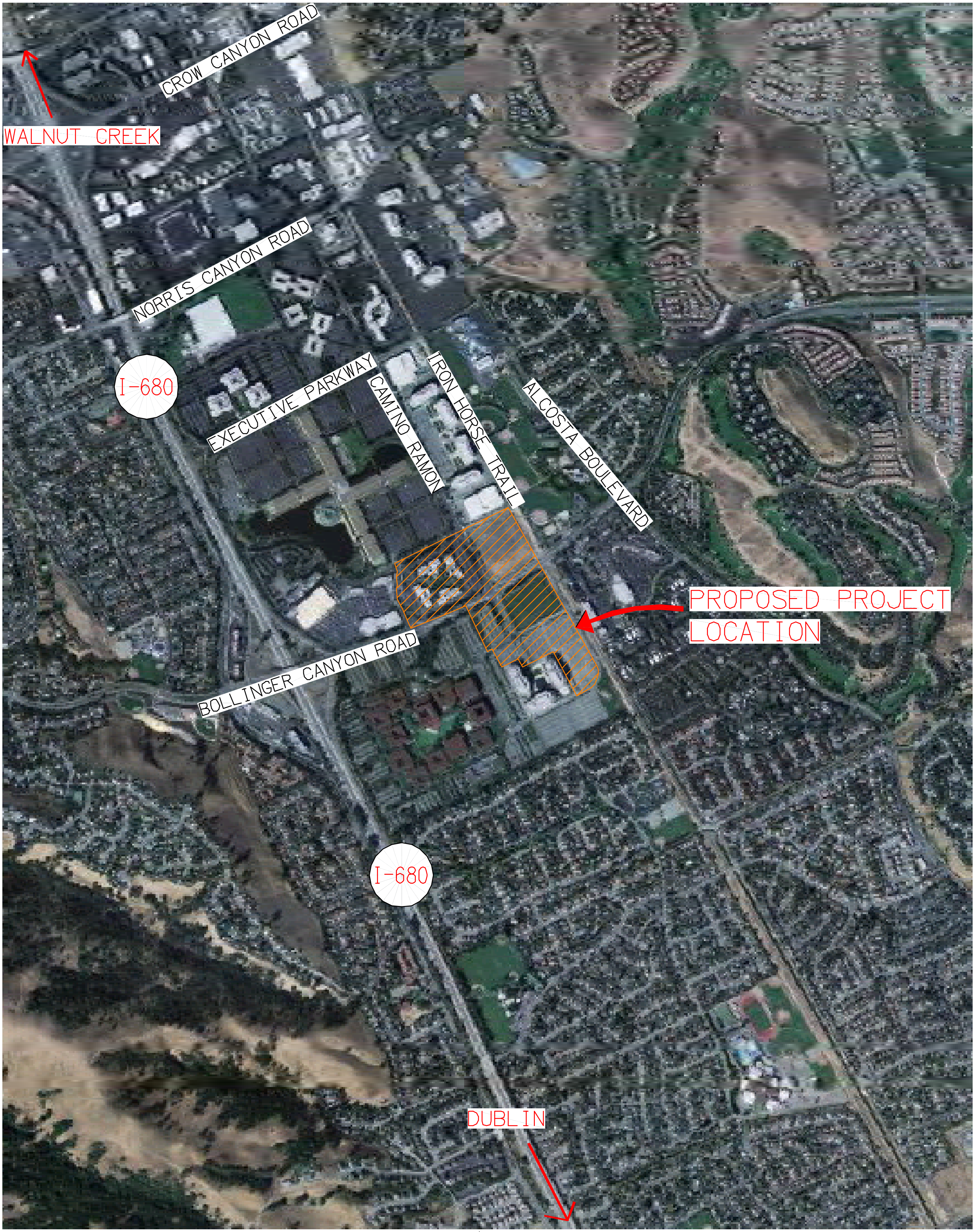
Report Nomenclature	Other Possible Designations
Bishop Ranch 1 (BR1)	BR 1, Existing BR1
Bishop Ranch 1A (BR1A)	BR 1A, Proposed Commercial Offices
Bishop Ranch 1B (BR1B)	BR 1B, Proposed Civil Center
Bishop Ranch 2 (BR2)	BR 2, Existing BR 2, Proposed Blocks A, B, C, D,
	Proposed Retail/ Residential
Bishop Ranch 3A (BR3A)	BR 3A, Proposed Blocks E, F, G, H
	Proposed Retail/ Residential
Bishop Ranch 3 (BR3)	BR 3, Existing BR3

The San Ramon City Center site is planned to incorporate four adjacent parcels of land that form the intersection of Bollinger Canyon Road and Camino Ramon. Parcels BR3A & BR1A of land to the immediate northeast and southeast of the intersection are currently undeveloped.

Parcels BR2, BR1B, and the south of BR1 are developed as commercial buildings and parking lots. There are several existing stormwater conveyance facilities on the site and throughout the surrounding area. This Project setting presents a number of considerations that will be addressed in the planning and design of the infrastructure to handle stormwater runoff. The planning process is fundamental to developing a stormwater management strategy that meets the broadest range of needs, both locally and regionally.

This report is intended to accomplish the following objectives:

- Identify key opportunities and constraints that will impact the stormwater management strategy to the site, including facilities for peak flow management and water quality management.
- Preliminarily evaluate on-site and off-site hydrologic conditions.
- Present the basis for, and preliminary calculations of, the initial sizing of stormwater basins to mitigate potential increases in peak flows.
- Identify opportunities for incorporating water-quality Best Management Practices (BMPs) for treatment of the runoff from the site.
- Set forth a preliminary drainage plan that is self-maintaining to the greatest extent practical and consistent with appropriate design guidelines of Contra Costa County and the City of San Ramon.



SAN RAMON CITY CENTER

PRELIMINARY HYDROLOGY REPORT

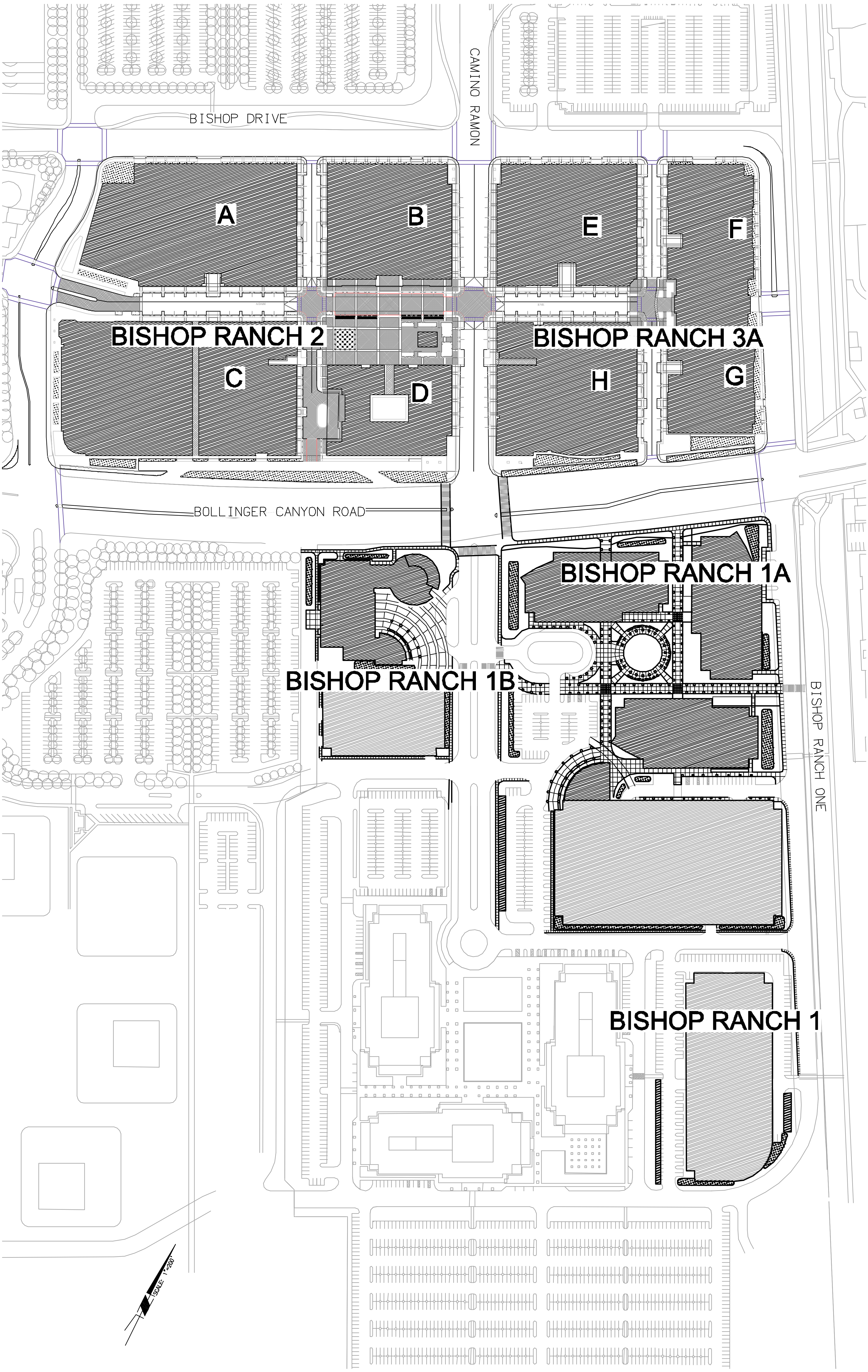
EXHIBIT 1: VICINITY MAP

RBF CONSULTING

PLANNING ■ DESIGN ■ CONSTRUCTION

[illegible] YGNACIO VALLEY ROAD, SUITE 270
WALNUT CREEK, CALIFORNIA [illegible]
[illegible] • FAX [illegible] • www.RBF.com

H:\PDATA\35100678\CADD\STRMWATER\EXHIBITS\001 – PRELIMINARY HYDROLOGY VICINITY MAP.DWG JMARSHALL 5/31/07 3:36 pm



SAN RAMON CITY CENTER

PRELIMINARY HYDROLOGY REPORT

EXHIBIT 2: PROPOSED SITE MAP

RBF CONSULTING

PLANNING ■ DESIGN ■ CONSTRUCTION

WALNUT CREEK, CALIFORNIA

H:\PDATA\35100678\CADD\STRMWATER\EXHIBITS\002 – PRELIMINARY HYDROLOGY SITEMAP.DWG JMARSHALL 5/31/07 3:37 pm

1.1 Site Description

This section presents a description of the Project location and surrounding areas. It also presents the existing and proposed land uses of the Project site.

1.1.1 Project Location and Description

The approximately 44-acre San Ramon City Center Project site is located in the Bishop Ranch business park in San Ramon, California, approximately at the intersection of Bollinger Canyon Road and Camino Ramon, 0.5 miles east of Highway 680. The San Ramon City Center site is planned to incorporate four adjacent parcels of land that form the intersection of Bollinger Canyon Road and Camino Ramon. Parcels BR3A & BR1A of land to the immediate northeast and southeast of the intersection are currently undeveloped. Parcels BR2, BR1B, and the south of BR1 are developed as commercial buildings and parking lots. BR3 houses AT&T's Western Regional Headquarters building and parking lots bounds the site to the north. The site is bounded to the west by The Shoppes at Bishop Ranch, to the south by Chevron corporate headquarters, and to the east by the Iron Horse Trail.

There are no dominating topographic characteristics of the site. The land is generally flat. The developed areas are graded to drain to local catch basins. The undeveloped parcels are roughly graded to drain off the parcel to a storm drain inlet. The high point of the Project site is approximately at elevation 450 feet at the northwest area of the site and the low point is approximately at elevation 427 feet at the southeast area of the site. The terrain naturally slopes at approximately 1% to the southeast. The site is located in a valley with hills approximately 1.5 miles to the east and west of the site. The hills rise to elevations of approximately 1,000 feet.

1.1.2 Existing Land Use

The Bishop Ranch business park is almost fully developed. The parcels BR3A and BR1A are the only two parcels on the Project site that have not been developed. They consist of almost completely pervious areas, and are mostly grass-covered lots. Most of the developed area consists of impervious surfaces developed to accommodate office buildings, parking lots, and roadways. The impervious area currently covers approximately 41% of the entire Project site.

The Project lies within the upper portion of South San Ramon Creek sub-watershed. South San Ramon Creek sub-watershed is the uppermost in its hydrologic unit and consists of an area of approximately 13.1 square miles. A large diameter cast-in-place concrete pipeline is located through the Project site in Camino Ramon. The pipeline ranges from 72-inches to 96-inches in diameter in the site. Most of the runoff in the Project area drains into this large diameter pipeline through a network of smaller storm drains. The large diameter pipeline continues off the Project site and discharges downstream to South San Ramon Creek. Areas to the east and west of the Project site drain to locations downstream of the Project site, and beyond the outlet of the existing large diameter pipeline. The regional hydrologic conditions are further discussed in Section 2.1 and presented in Exhibit 3.

1.1.3 Proposed Land Use

The San Ramon City Center Project is proposed to include a mixed-use redevelopment consisting of commercial, parking, residential, and retail. The Project development plan envisions a fairly high-density development, with several structures being multi-level. In fact, the Project plan reflects a density of development that is becoming increasingly common throughout California and high-density development is one of the key factors in the formulation of the stormwater management strategy for the site. Most of the development plan consists of impervious surface cover used as commercial, residential, and retail space. The impervious area is proposed to cover approximately 79% of the entire Project site.

SAN RAMON CITY CENTER
PRELIMINARY HYDROLOGY REPORT

EXHIBIT 3: REGIONAL HYDROLOGY

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2 HYDROLOGIC SETTING

This section presents the existing hydrologic conditions of the Project site and the immediate surrounding area. It describes aspects of the site pertinent to stormwater management including climate, soil, groundwater conditions, drainage patterns, and flooding potential.

2.1 Existing Regional Hydrologic Setting

The Project site is in the Upper South San Ramon Creek Watershed, which is part of the Upper Alameda Creek Watershed, which is in turn part of the South County Watershed. The Upper South San Ramon Creek Watershed has a drainage area of 13.1 square miles. The valley floor area of San Ramon, the western-most area of the watershed, is highly urbanized and continues the recent trend of urbanization of the Interstate 680 corridor from the Town of Danville to the north, to the City of Dublin to the south. Surface water of the South San Ramon Creek is channelized and often times runs underground to accommodate residential and commercial development areas.

An existing 72 to 96-inch diameter pipeline is located in the Project site, traveling from the north to southeast. This pipeline conveys stormwater from north of the Project site to a discharge point at South San Ramon Creek. The regional hydrology of the site is presented in Exhibit 3.

The following are general characteristics of the Upper South San Ramon Creek Sub-Watershed:

- Sub-Watershed Size - 8,357 acres
- Elevation of Headwaters - 1739 feet
- Total Length of Channels - 26.2 miles
- Longest Channel Reach - 4.7 miles
- Major Water Bodies: Watson Canyon Creek, Big Canyon Creek, Coyote Creek, Oak Creek, and Norris Creek.

2.2 Climate

The climate characteristics of the site reflect the general Mediterranean climate of eastern Bay Area region of California. This climate regime is characterized by cool, wet winters and hot, dry summers. The rainy season generally occurs from the beginning of October through the end of April. Rainfall ranges from approximately 18 to 21.25 inches per year. According the Contra Costa County hydrologic design standards, the average annual rainfall for the site is 21.0 inches per year. Actual rainfall totals vary strongly as a result of regional and global weather patterns such as periods of drought and the El Niño Southern Oscillation.

The Project site is located far enough inland to substantially reduce or eliminate the cooling effect and summer fog formation characteristic of the coastal margin to the west, resulting in a period from April to October when average evapotranspiration exceeds precipitation. According to the California Irrigation Management Information System (CIMIS), the total annual evapotranspiration for the site is approximately 46 inches, more than double the annual average precipitation. Table 2 presents a summary of monthly averages for temperature, precipitation, and evapotranspiration. These averages are combined from 20 years of data from a nearby CIMIS station number 65 located in Walnut Creek, CA.

Table 2: Climate Data for San Ramon

Monthly Average	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperature (°F)	47	51	54	58	63	68	72	72	70	64	53	47
Precipitation (in)	4.4	4.2	3.3	1.8	0.6	0.1	0	0	0.2	1	2.3	3.1
Evapotranspiration (in)	0.82	1.47	2.92	4.4	5.57	6.66	7.4	6.35	4.73	3.34	1.54	1.01

2.3 Soils

Harding Lawson Associates (HLA) conducted several geotechnical investigations throughout the Bishop Ranch business park, including the proposed Project site. The results of these geotechnical investigations were presented in several reports in 1986. These reports investigate, among other things, the soil conditions of the site.

The results of these investigations indicate that the soils have low hydraulic conductivity and that the surface permeability is very low. Therefore, using the soils as a means to percolate stormwater would likely be ineffective since clayey and silty soils tend to have very low permeability rates. While the geotechnical engineer did not perform a percolation test for the site, percolation rates for clayey and silty soils are typically in the range of 0.001 to 0.01 cm per second.

HLA's geotechnical investigations indicated that the soils in the upper 3 to 5 feet consist of hard, desiccated clays with a high expansion potential. This expansion potential means that the clays tend to swell with increased moisture content. Beneath this expansive clay are alluvial deposits to a depth of 73 feet, consisting of inter-bedded clays, silts, and sands with occasional gravelly layers. The clays and silts are generally very stiff to hard in the upper 6 to 9 feet, medium-stiff to stiff between 9 and 30 feet, and then very stiff to hard below 30 feet. Sands are generally medium dense in the upper 20 to 30 feet and become dense to very dense near the maximum depths explored. These sands occur generally in relatively thin (less than 3 feet thick) lenses, which appear to be discontinuous across the site.

2.4 Groundwater

Groundwater for the site is located in the San Ramon Valley Groundwater Basin as described by the San Francisco Regional Water Quality Control Board (RWQCB) Basin Plan Report. The Basin has limited existing municipal, domestic, and agricultural water supply use according to the RWQCB's Basin Plan Report. Similar to the Basin Plan Report, the Department of Water Resources published Bulletin 118 in 2003. Bulletin 118 details the groundwater basins throughout California. According to Bulletin 118, there are no historical records of groundwater elevations in the San Ramon Valley Groundwater Basin.

Results from HLA's geotechnical investigations indicate that groundwater across the site is approximately 11 feet below the surface. The extent of the existing and planned impervious surfaces, the limited planned percolation facilities, and the low hydraulic conductivity of the exiting soils would act as a barrier between the Project and the existing groundwater. Therefore post-development runoff conditions would not affect the local groundwater basin.

2.5 Existing Drainage Patterns

The Project site consists of both developed and undeveloped areas. The developed areas of the Project site use a stormwater collection system. This collection system consists of catch basins that collect stormwater from local areas. The stormwater is then conveyed through a series of pipes south and off of the Project site. The most prevalent of these pipelines is a large diameter pipeline that ranges in size from 72 to 96-inches in diameter. The pipeline enters the site from the north along Camino Ramon. The pipeline continues southeast in Camino Ramon, then east toward Bishop Ranch One East (road), then southeast in Bishop Ranch One East, and continues south off of the Project site adjacent to Iron Horse Trail. This large diameter pipeline eventually daylights to a large concrete lined channel (South San Ramon Creek) located approximately at Montevideo Drive and the Iron Horse Trail. All of the stormwater that flows from the Project site enters this stormwater pipeline and eventually to the South San Ramon Creek.

The undeveloped areas of the Project site do not have stormwater collection facilities. These areas consist of parcel BR3A and the northern part of parcel BR1A. Stormwater at these parcels travels overland and into storm drain inlets located at a corner of each property. From these inlets, the stormwater is conveyed to the large 72 to 96-inch diameter pipeline, and finally offsite.

The Project site has no significant existing infrastructure for stormwater detention. There is also limited infrastructure for the enhancement of stormwater quality. Parcel 2 has storm drain inlets surrounded by grassy areas, however much of the stormwater enters the collection system immediately after flowing over paved or other impermeable areas. There is no infrastructure for water infiltration.

2.6 Flooding

According to the most recent Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) for the Project site, the site is in a Zone X designation, meaning it is outside of the 100-year and 500-year floodplains. Any location has the potential to flood; however, the chance of occurrence within the Zone X designation is 0.2% each year as determined by FEMA. Appendix A contains a copy of the latest FEMA mapping taken from the currently effective FIRM panels 060710 0001A and 060710 0002B both dated revised on May 03, 1990. On these FIRM panels there have been additional areas removed from the floodplain by Letters of Map Revisions (LOMRs). These LOMRs have not affected the Project site. While the Project site may be outside of the floodplain, it should be noted that the maps do not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas.

3 STORMWATER MANAGEMENT SYSTEM

This section describes the requirements for managing stormwater on a flow basis and a water quality basis. It also describes some of the negative impacts that result from a lack of stormwater management. Included in this section is a description of the proposed stormwater management system.

3.1 Control of Peak Flows

Increases in peak stormwater flows are often a concern related to development. These concerns are often warranted if the development alters site hydrology to such an extent that peak flow rates are increased significantly and if the receiving waters are susceptible to impacts related to the increased flow. Increased impervious areas related to development often alter an area's natural hydrologic conditions.

Maintaining peak stormwater flows is the major criteria for the design of stormwater detention facilities. The Contra Costa Clean Water Program (CCCWP) requires that post-development peak flows not exceed pre-development peak flows. Specifically, provision C.3.f in the stormwater National Pollutant Discharge Elimination System (NPDES) permit requires Contra Costa municipalities to "manage increases in peak runoff flow and increased volume, where such increased flow or volume is likely to cause increased erosion of creek beds and banks, silt pollutant generation, or other waterbody impacts to beneficial uses due to increased erosive forces." Additionally, stormwater detention must not be allowed to idle for an extended period of time. Mosquito breeding habitat, algae growth, and other adverse conditions arise with stagnant water.

Controlling increases in peak flows and durations requires the implementation of hydrograph modification management to the maximum extent practicable. This requires advanced hydrologic analysis. The two applications that could be used with the Project are the implementation of Integrated Management Plan (IMP) or the use of a continuous hydrologic model.

The implementation of IMPs, such as planters, swales, and bioretention areas use the CCCWP low impact development site design procedures and sizing tools. This method is based more on a water quality standard approach. However, it can also be used to size facilities required for the control of peak flows.

A second application that could be used to control peak flows is the use of a continuous-simulation hydrologic computer model to simulate pre-development and post-development runoff. This could include the effect of proposed IMPs, detention basins, or other stormwater management facilities. Hourly rainfall data from 30 years of storm records must be simulated and the results used to compile flow statistics and produce a summary result of peak flow and flow duration information.

3.2 Stormwater Quality Management

There has recently been a growing awareness of the role played by urban stormwater runoff in the quality of receiving waters throughout the U.S. and California. This is reflected in the increasing attention being placed on the inclusion of stormwater quality Best Management Practices (BMPs) in all types and sizes of Projects throughout the state. Specifically, the state's Regional Water Quality Control Boards (RWQCBs) have progressively adopted more stringent guidelines on the application of BMPs with the overall goal of controlling the amount of non-point source pollutants that are discharged to the waters of the State.

The Project site would be required to incorporate a number of water quality control measures to control the amount of non-point source pollutants that would be discharged into receiving waters. Water quality control measures, such as bio-swales, green roofs, and permeable pavement would be incorporated into the Project design. Bio-swales would be used around the parking lots, where substantial automotive pollution is collected by the paving and then flushed by rain. The bio-swale wraps around the parking lot and treats the runoff before releasing it into the storm drain. Green roofs decrease the total amount of runoff and slow down the rate of runoff flowing off the roof. They also remove many pollutants before entering a stormdrain system. Permeable pavements would be used in areas with curbs and gutters. These would allow stormwater to enter an engineered layer of soil and filter fabric to remove sediments before entering a colletion pipeline that would convey it to the stormdrain system.

The South San Ramon Creek is tributary to Arroyo de la Laguna, which the State has identified as a Clean Water Act Section 303d Water Quality Limited Segment for diazinon from urban runoff. This strictly requires that the Project site not discharge stormwater containing diazinon. Diazinon is a pesticide that has been found to be harmful to humans. However, the United States outlawed the sale of diazinon on December 31, 2004. Since purchase of this substance is illegal, the Project would not use it and thus would not further contribute diazinon to Arroyo de la Laguna or any other water body.

As required by the Clean Water Ac, the RWQCB requires that the Project shall use controls that reduce the discharge of pollutants to the "maximum extent practicable." The term "maximum extend practicable" is not defined in Federal law or regulation. The CCCWP updates performance standards that establish, for various elements of the stormwater pollution prevention program, the level of effort that currently corresponds to the "maximum extent practicable." CCCWP's C.3 amendments have established numeric standards for sizing stormwater treatment and flow control facilities (BMPs). These treatment-sizing standards will be used during the final Stormwater Control Plan to ensure that the proposed BMPs are adequately sized to meet the "maximum extent practicable." Additionally, Appendices B to D contain data sheets on the proposed BMPs and list pollutant removal efficiencies based on previous installations of the BMPs.

3.2.1 Federal Water Quality Standards and Objectives

In 1972, the Federal Water Pollution Control Act [later referred to as the Clean Water Act (CWA)] was amended to require NPDES permits for the discharge of pollutants to waters of the United States from any point source. In 1987, the CWA was amended to require that the United States Environmental Protection Agency (EPA) establish regulations for permitting of municipal and industrial stormwater discharges under the NPDES permit program. The EPA published final regulations regarding stormwater discharges on November 16, 1990. The regulations require that municipal separate storm sewer system (MS4) discharges to surface waters be regulated by a NPDES permit. The NPDES stormwater program is described below.

3.2.2 State Water Quality Standards and Objectives

The Project would be required to comply with the statewide NPDES General Construction Activities Stormwater Permit. In California, the NPDES Stormwater Program is administered by the RWQCB. Pursuant to the Phase I NPDES Stormwater Program Phase II Final Rule, dated December 8, 1999, discharges of stormwater associated with construction activities that result in the disturbance of equal to or greater than one-half acre of land must apply for coverage under the statewide General Construction Activities Stormwater Permit (General Permit). Construction activities include, but are not limited to clearing, grading, demolition, excavation, construction of new structures, and reconstruction of existing facilities involving removal and replacement that results in soil disturbance. Landowners can obtain coverage under the General Permit by filing a Notice of Intent (NOI) with the State Water Resources Control Board's Division of Water Quality Stormwater Permit Unit. Generally, a site is considered to be covered by the General Permit upon filing the NOI and submitting the appropriate annual fee. The NOI must be submitted, and the permit obtained, before construction starts.

In addition to submitting the NOI, the discharger must develop and implement a Stormwater Pollution Prevention Plan (SWPPP) and develop and implement a monitoring and reporting plan. The SWPPP should be developed to meet the following objectives:

- Identify pollutant sources that may affect the quality of discharges of stormwater associated with construction activity from the construction site;
- Identify, construct, implement and maintain best management practices (BMPs) to reduce or eliminate pollutants in stormwater discharges from the construction site during construction; and
- Develop a maintenance schedule for BMPs installed during construction designed to reduce or eliminate pollutants after construction is completed (post-construction BMPs).

In February 2003, the California RWQCBs for the San Francisco Bay Region and the Central Valley Region revised Provision "C.3" in the NPDES general permit governing discharges from the municipal storm drain systems of Contra Costa County and cities and towns within the County.

The new "C.3" requirements are separate from, and in addition to, requirements for erosion and sediment control for pollution prevention measures during construction. Project site designs must minimize the area of new roofs and paving. As of August 15, 2006, all new development and significant redevelopment that create or replace 10,000 square feet or more of impervious surface must treat stormwater runoff on-site. Where feasible, pervious surfaces should be used instead of paving so that runoff can percolate to the underlying soil. A Hydrograph Modification Plan is required under these provisions.

3.2.3 Local Water Quality Standards and Objectives

The local water quality standards and objectives are the most stringent requirements for this Project. They require that measures be taken to control stormwater to the maximum extent practicable. Under these requirements, both volume based and flow based treatment criteria aim to ensure treatment of approximately 80% of the average annual runoff. A large portion of annual runoff is produced by small storms that occur many times a year. To achieve treatment of 80% of average annual runoff, treatment facilities can be sized to treat smaller, more frequent storms and therefore can be considerably smaller than flood control facilities. To meet this requirement, treatment facilities should be designed to accommodate runoff from the specified storm intensity of 0.2 inches per hour.

To comply with the CWA, RWQCB required Contra Costa County, 19 of its incorporated cities (including the City of San Ramon), and the Contra Costa County Flood Control and Water Conservation District to submit a joint application for a stormwater permit. As part of the joint permit application, the jurisdictions formed the Contra Costa Clean Water Program (CCCWP). The CCCWP initially obtained a Joint Municipal NPDES Permit from the San Francisco Bay and Central Valley RWQCB's in September 1993 and January 1994, respectively. These permits, valid only for a five-year period, were reissued in 1999 (San Francisco Bay RWQCB Permit) and 2000 (Central Valley RWQCB Permit), and have been extended through 2010. The permit includes a comprehensive plan to reduce the discharge of pollutants to the "maximum extent practicable."

The CCCWP provides guidance and training on the following:

- Adopting legal ordinances;
- Conducting public education programs such as installing informational signs like "No Dumping Drains to Bay" on storm drain covers;
- Instituting or enhancing programs such as street sweeping, storm drain maintenance, pesticide management, and trash management;
- Performing erosion control practices; and

- Identifying illicit pollutant discharges to the storm drain system, and requiring new development and industrial discharge controls. Typical stormwater protection measures are described below:

Best Management Practices. Contributors to non-point source pollution must establish BMPs to minimize the potential for pollution. A BMP program document may be prepared. Typical elements of such a program may include:

- Operational BMPs: Practices and procedures used to modify everyday behaviors that contribute to stormwater pollution.
- Permanent BMPs: Structural devices intended to last the life of the project. Structural devices include bio-swales, green roofs, permeable pavement, and trash control devices.
- Source Control BMPs: Measures used to stop pollutants from entering the stormwater system including street sweeping and litter removal/cleanup.

Source Control. Industrial and commercial entities may be required to demonstrate that the hazardous materials used on their sites cannot be easily mobilized and carried off by stormwater runoff. This involves confining some operations to roofed/covered areas and preventing on-site runoff from flowing through these areas. Hazardous material storage in uncovered areas requires the capability for full containment of the material during periods of rain. Uncovered parking areas are required to conduct street sweeping periodically to remove pollutants, oils, and greases before they are mobilized.

3.2.4 Stormwater Pollutants

According to the San Francisco Bay RWQCB Basin Plan Report, the overall goals of water quality regulation are to protect and maintain thriving aquatic ecosystems and the resources those systems provide to society. California's regulatory framework uses water quality objectives both to define appropriate levels of environmental quality and to control activities that can adversely affect aquatic systems.

There are two types of objectives: narrative and numerical. Narrative objectives present general descriptions of water quality that must be attained through pollutant control measures and watershed management. They also serve as the basis for the development of detailed numerical objectives. Numerical objectives typically describe pollutant concentrations, physical/chemical conditions of the water itself, and the toxicity of the water to aquatic organisms. Objectives include, but are not limited to, regulations for, bacteria bioaccumulation, biostimulatory substances, dissolved oxygen, floating materials, oil and grease. These objectives are designed to represent the maximum amount of pollutants that can remain in the water column without causing any adverse effect on organisms using the aquatic system as habitat, on people consuming those organisms or water, and on other current or potential beneficial uses. Together, the narrative and numerical objectives define the level of water quality that shall be maintained within the region. These objectives are considered necessary to protect the high quality waters of the state and will be achieved primarily through establishing and enforcing waste discharge requirements and by implementing the San Francisco Bay RWQCB water quality control plan. Some of the anticipated and potential pollutants of concern generated from this Project include:

- Pathogens
- Heavy Metals
- Nutrients
- Pesticides
- Organic Compounds
- Sediments
- Trash and Debris
- Oxygen Demanding Substances
- Oil and Grease

The Basin Plan Report categorizes several beneficial uses for the watershed. The following beneficial uses apply to the South San Ramon Creek sub-watershed:

- Agricultural Supply
- Groundwater Recharge
- Cold Freshwater Habitat
- Fish Migration
- Fish Spawning
- Warm Freshwater Habitat
- Wildlife Habitat
- Water Contact Recreation
- Noncontact Water Recreation

3.2.5 Hydromodification

Hydromodification is the alteration of streams and river channels, installation of dams and water impoundments, and streambank and shoreline erosion. The RWQCB, California Coastal Commission and other State agencies have identified seven management measures to address non-point sources of pollution through hydromodification. The three hydromodification management measures applicable to this Project are:

- Channelization and Channel Modification - Physical and Chemical Characterizations of Surface Waters;
- Channelization and Channel Modification - Instream and Riparian Habitat Restoration;
- Streambank and Shoreline Erosion - Eroding Streambanks and Shorelines.

Limited hydromodification would occur on the Project site since there is an existing extensive stormwater collection system. The outlet of the 96-inch diameter pipeline is to the South San Ramon Creek. The creek at this location is a lined trapezoidal channel, incapable of channelization or streambank erosion. Furthermore, since flow management practices would require post-development peak flows to not be more than the pre-development flows, hydromodification would not occur as a result of the Project.

3.3 Proposed Stormwater Management System

The proposed stormwater management system consists of an Integrated Management Practice (IMP) with several flow and water quality control devices. These devices include green roofs, bio-swales, permeable pavement, stormwater detention, and trash collection. While the final design of these facilities has not been determined as part of this report, preliminary locations for these facilities has been recommended. Once advanced hydrologic modeling has been performed, exact sizing and facility requirements will be selected.

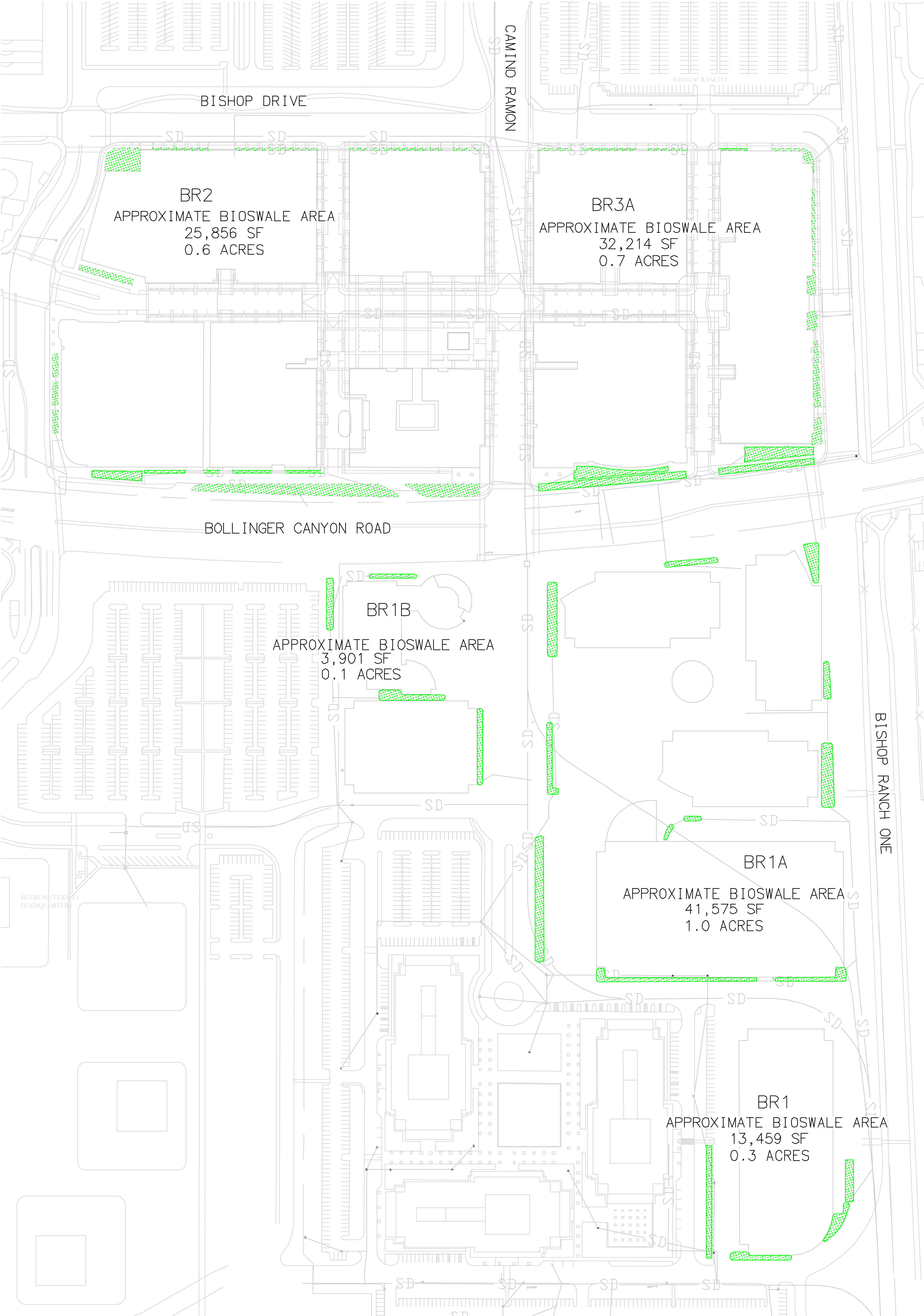
Several types of detention were considered for controlling peak stormwater runoff. These included use of the stormwater treatment facilities, underground detention, and pumping the stormwater to nearby fields for detention. However, results from the Preliminary Onsite Hydrologic Analysis (Section 4.2) indicate that sufficient detention was available in the stormwater treatment facilities. Thus, these facilities will serve as both the peak flow control and water quality treatment facilities for stormwater runoff.

The stormwater treatment facilities considered for this Project are bio-swales, green roofs, permeable pavement, and trash interception devices. The bio-swales and green roofs will be used as both stormwater treatment facilities and peak flow control facilities. Information from the California Stormwater BMP handbook and the CCCWP Stormwater C.3 Guidebook about these three stormwater treatment facilities is presented in Appendices B through D.

Bio-swales, or vegetated swales, are open, shallow channels with vegetation covers the side slopes and bottom that collect and slowly convey runoff flow to downstream discharge points. They are designed to treat runoff through filtering by the vegetation in the channel, filtering through a subsoil matrix, and/or infiltration into underlying soils. They trap particulate pollutants, promote infiltration, and reduce the flow velocity of stormwater runoff. Bio-swales would be used as water quality treatment devices and are planned in locations throughout the site. They will serve as the primary method for water quality treatment. The bio-swales will also be used as stormwater detention facilities. The swales will be approximately 3 to 4 feet deep, allowing for detention during 100-year rainfall events. The locations of the bio-swales are presented in Exhibit 4.

Green roofs consist of a series of layers that create an environment suitable for plant growth without damaging the underlying roof system. Two types of green roofs are typically created: extensive or intensive. Extensive roofs are typically 4 inches or less of growing medium, using drought tolerant vegetation. Intensive systems are heavier, have a greater soil depth, can support a wider range of plants, and can support increased pedestrian traffic. Intensive green roofs would be used with this Project. The green roofs would also be used to detain a portion of the stormwater. The locations for the green roofs are presented in Exhibit 5.

A combination or porous and permeable pavement would be used as an alternative to standard asphalt or concrete pavement. The final locations of porous and permeable pavement have not been determined. Porous pavement is a porous asphalt or concrete material that can infiltrate water across the entire surface. Porous pavement is suitable for installation in areas of high vehicular or pedestrian traffic. It is much like standard paving except it has a high percentage of void space. Water is allowed to pass through the void spaces very easily. Permeable pavement is a combination of impermeable modular blocks or grids separated by spaces or joints that water drains through. Permeable pavement is suitable for installation in locations with light vehicle loading or in parking areas. It is anticipated that porous and permeable pavements would primarily be installed along Bishop Ranch 2, between buildings B and D. The anticipated porous and permeable pavement areas are presented in Exhibit 6.



LEGEND:

PROPOSED BIO-SWALE

STORMDRAIN —— SD ——

SCALE: 1"=200'

SAN RAMON CITY CENTER

PRELIMINARY HYDROLOGY REPORT

EXHIBIT 4:
PROPOSED BMP
BIO-SWALE AREAS

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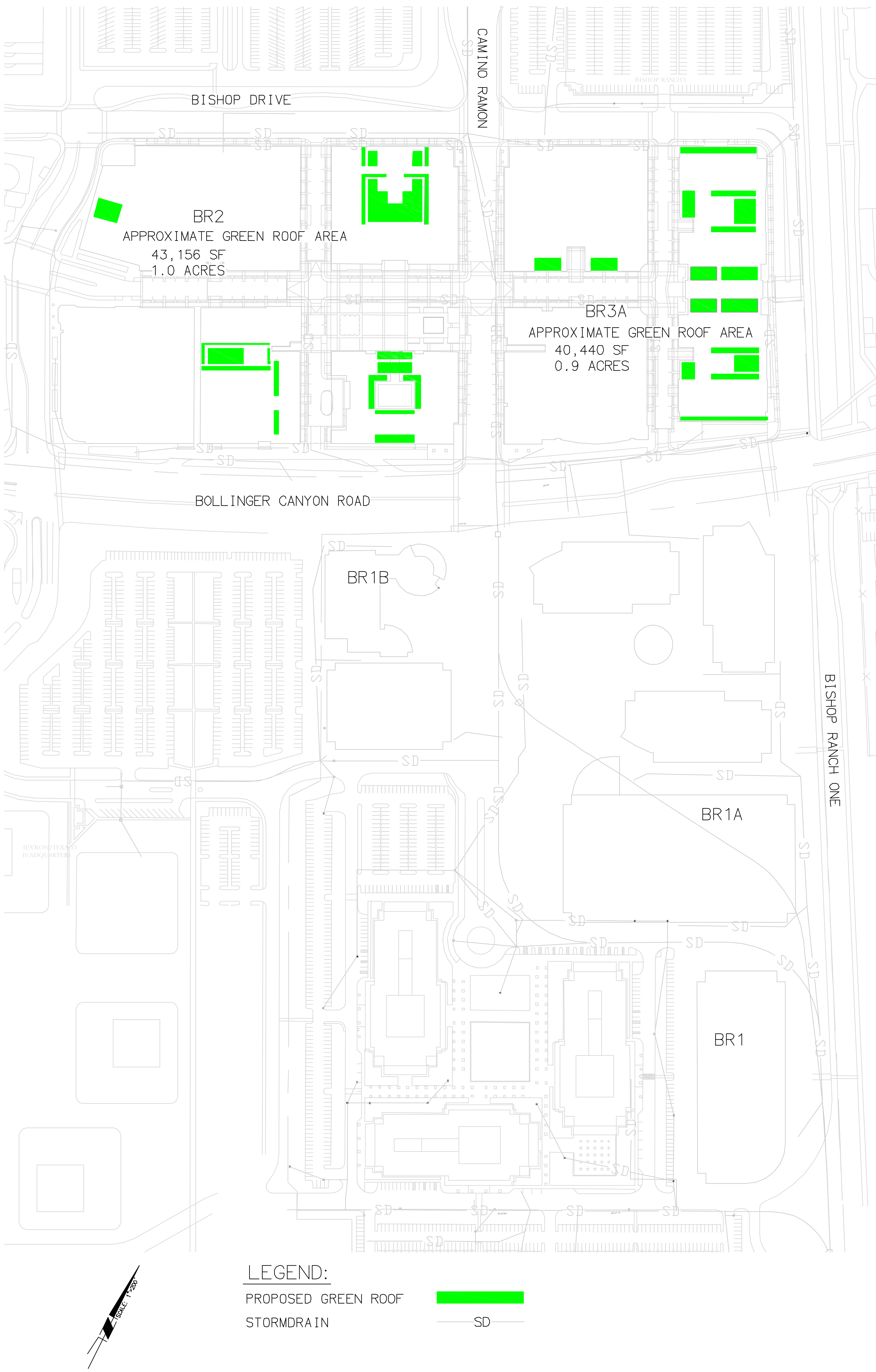

SAN RAMON CITY CENTER
PRELIMINARY HYDROLOGY REPORT

EXHIBIT 5:
PROPOSED BMP
GREEN ROOF AREAS

RBF CONSULTING

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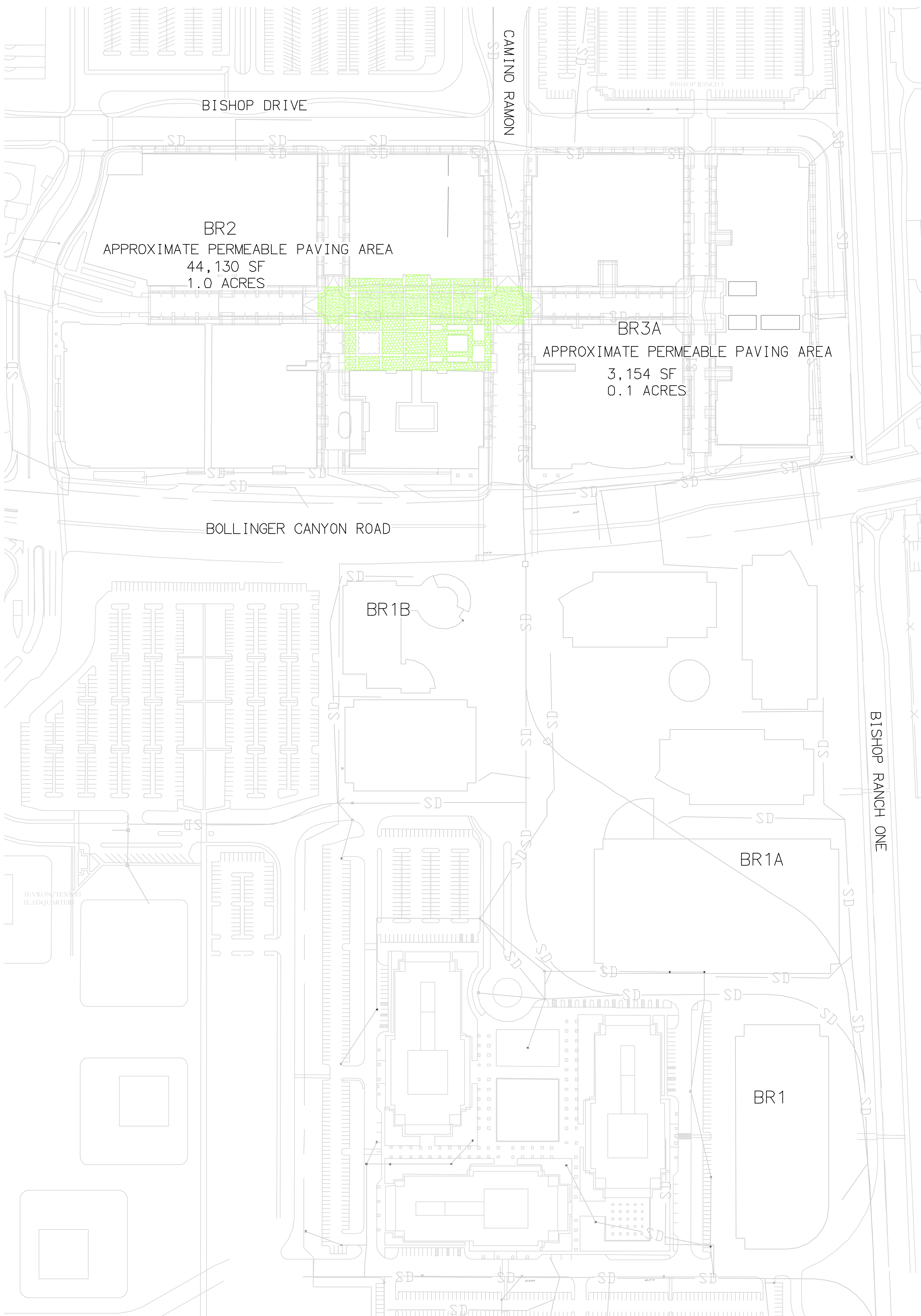

SCALE: 1"=200'

LEGEND:

ANTICIPATED POROUS PAVING	
ANTICIPATED PERMEABLE PAVING	
STORMDRAIN	SD

SAN RAMON CITY CENTER

PRELIMINARY HYDROLOGY REPORT

EXHIBIT 6:
ANTICIPATED BMP POROUS
& PERMEABLE PAVING AREAS

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4 PRELIMINARY HYDROLOGIC ANALYSIS

This section presents the preliminary hydrologic analysis for the San Ramon City Center. This analysis is not intended to be a final design recommendation. Rather, it is meant to serve as a guide in the planning process for development and a reference for the Stormwater Control Plan. Included in this section are the assumptions of the hydrologic analysis, the onsite hydrologic analysis, and the watershed hydrologic analysis.

4.1 Equations, Methodology, and Assumptions

The peak flows for pre-development and post development were calculated using the Rational Method. This equation was first employed in Ireland by Mulvaney in 1849 and was introduced into the U.S. by Kuichling in 1889. In basic concept, the Rational Method ensures that the peak rate of runoff from a small watershed occurs when the entire watershed is contributing, and that this rate of runoff equals a percentage C of the average rainfall rate *i*.

The Contra Costa County Flood Control District (District) defines the Rational Method formula as:

$$Q = C \cdot C_f \cdot i \cdot A$$

where Q = Peak flow rate in cubic feet per second (cfs)
C = Runoff Coefficient
C_f = Adjusting factor for 10, 25, 50, and 100-year storms
i = Rainfall intensity in inches per hour
A = Watershed area in acres

The Rational Method formula employs the following assumptions:

a) The rainfall intensity, *i*, is uniformly distributed over the entire watershed
b) The runoff rate, *Q*, resulting from any rainfall intensity, *i*, is a maximum when this rainfall intensity lasts as long or longer than the time of concentration, t_c.
c) The maximum runoff resulting from a rainfall intensity is a simple fraction of such rainfall intensity.
d) The frequency of peak runoff is the same as that of the rainfall intensity for a given time of concentration, t_c.
e) The runoff coefficient is the uniform within the watershed for various storm frequencies and durations.

The runoff coefficients, *C*, for this equation were chosen from a recommended range provided by District Standards. For example, the runoff coefficient for an open, undeveloped (grassy) area is estimated between 0.20 and 0.40 in the District's standards. In this analysis, the value to 0.40 was chosen for all undeveloped and existing pervious areas. The runoff coefficients anticipated for proposed green roofs and permeable pavements are considerably less than 0.40. However, to obtain a conservative estimate of post-development hydrologic conditions, the largest runoff coefficient of the range of values was used. This methodology of selecting runoff coefficients was employed with all runoff coefficients.

The rainfall intensity is related to its storm frequency and the time of concentration of the watershed. The time of concentration, t_c, is the time required for runoff to travel from the most remote point of a watershed to its outlet. Since the path from the most remote point of the watershed to the outlet is often across various surfaces, different methods were required to determine the incremental time of concentration. Based on District standards, the time of concentration from a rooftop to the gutter in a business land use ranges from 3 to 8 minutes. To be conservative in this preliminary analysis, the values attributed to the roof runoff times are estimated closer toward 3 minutes.

The time of concentration across a land surface often occurs as a sheet flow. To most accurately measure this time of concentration, the overland flow time was estimated using the Kerby Equation:

$$t_c^{2.14} = \frac{2 \cdot L \cdot n}{3 \cdot S^{1/2}}$$

where: t_c = Time of concentration in minutes
L = Length of flow in feet
n = Surface Retardance factor
S = Slope of flow path in ft/ft

Several assumptions were used in determining the factors of the Kerby Equation. The length of flow in feet was assumed to be linear feet. The flow was assumed to either travel across a smooth impervious surface such as a paved lot or an average grassy surface such as a lawn area. The surface retardance factors were then chosen based on one of these two surfaces. While the values for these surfaces might not exactly match actual conditions, they are close approximations and provide conservative estimates. Finally the slope of the flow path was assumed to be constant across the entire flow length.

The time of concentration required for water to travel in a street gutter was also conservatively assumed. District Standards provide a range of gutter flow velocities from 2.0 to 4.0 feet per second. For the analysis, all gutter flow velocities were assumed to be 2.0 feet per second.

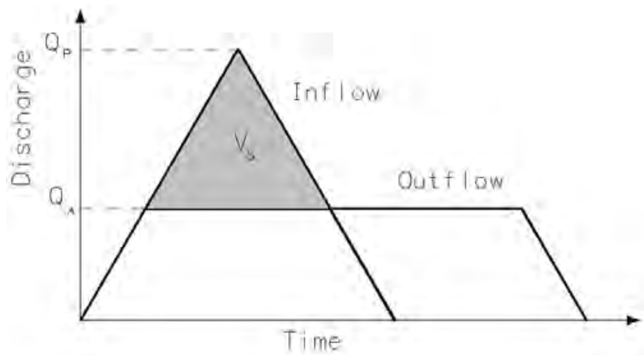
The rainfall intensities were determined from Contra Costa County standard mapping. The depths of rainfall for 10-year, 25-year, and 100-year storm events are determined using the time of concentration. Contra Costa County Flood Control and Water Conservation District has developed standardized rainfall figures. Figure B-166 depicts the mean seasonal isohyets from which the average precipitation of an area can be determined. The precipitation of the 10-year, 25-year, and 100-year storms are presented in the Precipitation Duration-Frequency-Depth Curves of figures B-159, B-160, and B-162 respectively. These figures are attached as Appendix E.

Stormwater detention requirements were also assumed using a simplified method developed by Abt and Grigg in 1978. Abt and Grigg considered a triangular inflow hydrograph and a trapezoidal outflow hydrograph to develop the following relationship to estimate the required storage volume, Vs, for detention using consistent units:

$$\frac{V_s}{V_r} = \left(1 - \frac{Q_A}{Q_P}\right)^2$$

where V_r = Runoff Volume
Q_A = Allowable peak outflow rate
Q_P = Peak inflow rate

This procedure assumes that the rising limbs of the inflow and outflow hydrograph coincide up to the allowable peak outflow rate, Q_P. This method is for approximating the volume of storage required for a system and can be applied to the storage necessary in post-development conditions to meet the pre-development outflow. Because many factors come into play in stormwater detention sizing that are not known until a detailed hydrologic study is performed, this methodology provides a sufficient estimation of the required stormwater detention to meet the C.3 requirements set for by the CCCWP. The methodology of this simplified detention approach can be seen in the following diagram.



In order to determine the retention volume, V_r, a triangular shaped inflow and outflow hydrograph is used to determine preliminary estimates. The retention volume is simply calculated using the following equation:

$$V_r = 0.5 \cdot t_b \left(Q_P - Q_A\right)$$

where t_b = Time base of the inflow hydrograph in hours
Q_P = Peak flow post-development
Q_A = Peak flow pre-development

It is assumed that since the inflow and outflow are triangular shaped, the time base of the inflow hydrograph, t_b, is equal to twice the time of concentration, t_c. This is a simplified assumption that provides a reasonable estimation of the results for this preliminary analysis.

Conservative assumptions were used in the preliminary hydrologic analysis that result in a high estimate of runoff. These assumptions were used for both pre-development and post-development runoff estimates. These assumptions provide good preliminary estimates for treatment and storage volumes of runoff, but may result in low estimates of increases if runoff. The final Stormwater Control Plan will include a more detailed analysis of both pre-development and post-development runoff and the required treatment and storage facilities.

4.2 Preliminary Onsite Hydrologic Analysis

An analysis was preformed to understand the onsite hydrologic characteristics as they relate the pre-development conditions to the post-development conditions. This analysis is not intended to be a final design based recommendation. Rather, it is meant to serve as a guide in the planning process and aid as a reference in the development of the Stormwater Control Plan. The final Stormwater Control Plan will include a more detailed hydrologic and hydraulic analysis.

The peak flow rates of both pre-development and post development conditions are crucial in determining the required storage and water quality treatment required for the Project. The

Rational Method was used to determine the peak flow rates of the pre-development conditions and the post development conditions. Pervious and impervious areas were sized with runoff coefficients to determine the increase in runoff as a result of development. The site consists of 5 sub-watershed areas. The delineation of these sub-watersheds and the existing pervious areas are presented as Exhibit 7. The locations of the proposed pervious areas of the post-development conditions are presented as Exhibit 8. Both Exhibit 7 and 8 shade the pervious areas for visual display and show the calculated quantities.

To determine the rainfall intensity, the time of concentration is required. The time of concentration was calculated based on the combination of incremental flow times. These times include the flow from the roof to the gutter, flow in the gutter, and overland flow. The time of concentration was calculated for both pre-development conditions and post-development conditions. The times of concentration are presented in Table 3.

Table 3: Estimated Time of Concentration

Site Name	**Roof to Gutter t_c (min)**	**Overland Flow - Kerby Equation**				**Gutter Flow t_c**		**Total t_c (min)**
		L (ft)	*n*	*S*	t_c (min)	L (ft)	t_c (min)	
PRE-DEVELOPMENT								
BR3A	0	760	0.40	0.012	33.9	0	0	33.9
BR2	3	295	0.40	0.020	19.1	0	0	22.1
BR1B	0	35	0.40	0.140	4.5	0	0	8.3
		175	0.02	0.018	3.8			
BR1A	0	665	0.40	0.017	29.1	0	0	29.1
BR1	0	10	0.40	0.130	2.5	0	0	8.1
		345	0.02	0.014	5.6			
POST-DEVELOPMENT (slopes estimated)								
BR3A	5	0	0	0	0	160	0.7	5.7
BR2	5	0	0	0	0	110	0.5	5.5
BR1B	0	158	0.02	0.02	3.5	125	0.5	4.1
BR1A	4	182	0.40	0.02	15.3	0	0	19.3
BR1	0	133	0.02	0.02	3.3	0	0	20.2
		226	0.40	0.02	16.9			

The runoff for the site was calculated using the Rational Method. Each sub-watershed in the site was evaluated for the 10-year, 25-year, and 100-year rainfall event for both pre-development and post-development conditions. The results of this analysis show that there is an increase in the post-development peak runoff in each of the sub-watersheds except sub-watershed BR1. This is because there is proposed to be more pervious area in this sub-watershed after development. The largest increase in post-development peak runoff flow is experienced in sub-watershed BR3A. The remaining sub-watersheds show a moderate increase in post-development peak runoff. These runoff calculations are presented as Table 4.

Table 4: Pre-Development and Post-Development Runoff Flows												
PRE-DEVELOPMENT RUNOFF												
Storm Recurrence Interval	**Site Name**	**Approximate Area (acre)** Total	Pervious	Impervious	**Runoff Coefficient, C** Pervious	Impervious	**ΣCA (acre)**	**Storm Adjustment Factor, Cf**	**Time of Concentration t_c (min)**	**Depth of Rainfall (in)**	**Rainfall Intensity *i* (in/hr)**	**Flow Rate Q (cfs)**
10-Year Storm	BR3A	11.2	10.7	0.5	0.40	0.95	4.73	1.00	33.9	0.66	1.17	5.52
	BR2	15.1	5.9	9.2	0.40	0.95	11.10	1.00	22.1	0.53	1.44	15.97
	BR1B	3.9	2.1	1.9	0.40	0.95	2.59	1.00	8.3	0.32	2.32	6.00
	BR1A	13.5	8.9	4.6	0.40	0.95	7.97	1.00	29.1	0.62	1.28	10.20
	BR1	4.1	0.6	3.5	0.40	0.95	3.55	1.00	8.1	0.31	2.29	8.14
25-Year Storm	BR3A	11.2	10.7	0.5	0.40	0.95	4.73	1.10	33.9	0.76	1.34	7.00
	BR2	15.1	5.9	9.2	0.40	0.95	11.10	1.10	22.1	0.63	1.71	20.89
	BR1B	3.9	2.1	1.9	0.40	0.95	2.59	1.10	8.3	0.37	2.68	7.64
	BR1A	13.5	8.9	4.6	0.40	0.95	7.97	1.10	29.1	0.70	1.44	12.67
	BR1	4.1	0.6	3.5	0.40	0.95	3.55	1.10	8.1	0.36	2.66	10.40
100-Year Storm	BR3A	11.2	10.7	0.5	0.40	0.95	4.73	1.25	33.9	0.95	1.68	9.94
	BR2	15.1	5.9	9.2	0.40	0.95	11.10	1.25	22.1	0.76	2.06	28.63
	BR1B	3.9	2.1	1.9	0.40	0.95	2.59	1.25	8.3	0.45	3.26	10.55
	BR1A	13.5	8.9	4.6	0.40	0.95	7.97	1.25	29.1	0.87	1.80	17.89
	BR1	4.1	0.6	3.5	0.40	0.95	3.55	1.25	8.1	0.44	3.25	14.45
POST-DEVELOPMENT RUNOFF												
Storm Recurrence Interval	**Site Name**	**Approximate Areas (acre)** Total	Pervious	Impervious	**Runoff Coefficient, C** Pervious	Impervious	**ΣCA (acre)**	**Storm Adjustment Factor, Cf**	**Time of Concentration t_c (min)**	**Depth of Rainfall (in)**	**Rainfall Intensity *i* (in/hr)**	**Flow Rate Q (cfs)**
10-Year Storm	BR3A	11.2	1.8	9.4	0.40	0.95	9.67	1.00	5.7	0.26	2.75	26.61
	BR2	15.1	2.6	12.5	0.40	0.95	12.91	1.00	5.5	0.26	2.86	36.90
	BR1B	3.9	0.7	3.2	0.40	0.95	3.31	1.00	4.1	0.23	3.40	11.26
	BR1A	13.5	3.5	10.1	0.40	0.95	10.96	1.00	19.3	0.50	1.55	17.03
	BR1	4.1	0.9	3.2	0.40	0.95	3.40	1.00	20.2	0.51	1.52	5.15
25-Year Storm	BR3A	11.2	1.8	9.4	0.40	0.95	9.67	1.10	5.7	0.30	3.18	33.78
	BR2	15.1	2.6	12.5	0.40	0.95	12.91	1.10	5.5	0.30	3.30	46.84
	BR1B	3.9	0.7	3.2	0.40	0.95	3.31	1.10	4.1	0.25	3.63	13.19
	BR1A	13.5	3.5	10.1	0.40	0.95	10.96	1.10	19.3	0.57	1.77	21.36
	BR1	4.1	0.9	3.2	0.40	0.95	3.40	1.10	20.2	0.58	1.72	6.44
100-Year Storm	BR3A	11.2	1.8	9.4	0.40	0.95	9.67	1.25	5.7	0.36	3.81	46.06
	BR2	15.1	2.6	12.5	0.40	0.95	12.91	1.25	5.5	0.36	3.96	63.87
	BR1B	3.9	0.7	3.2	0.40	0.95	3.31	1.25	4.1	0.31	4.59	18.97
	BR1A	13.5	3.5	10.1	0.40	0.95	10.96	1.25	19.3	0.71	2.21	30.23
	BR1	4.1	0.9	3.2	0.40	0.95	3.40	1.25	20.2	0.72	2.14	9.09

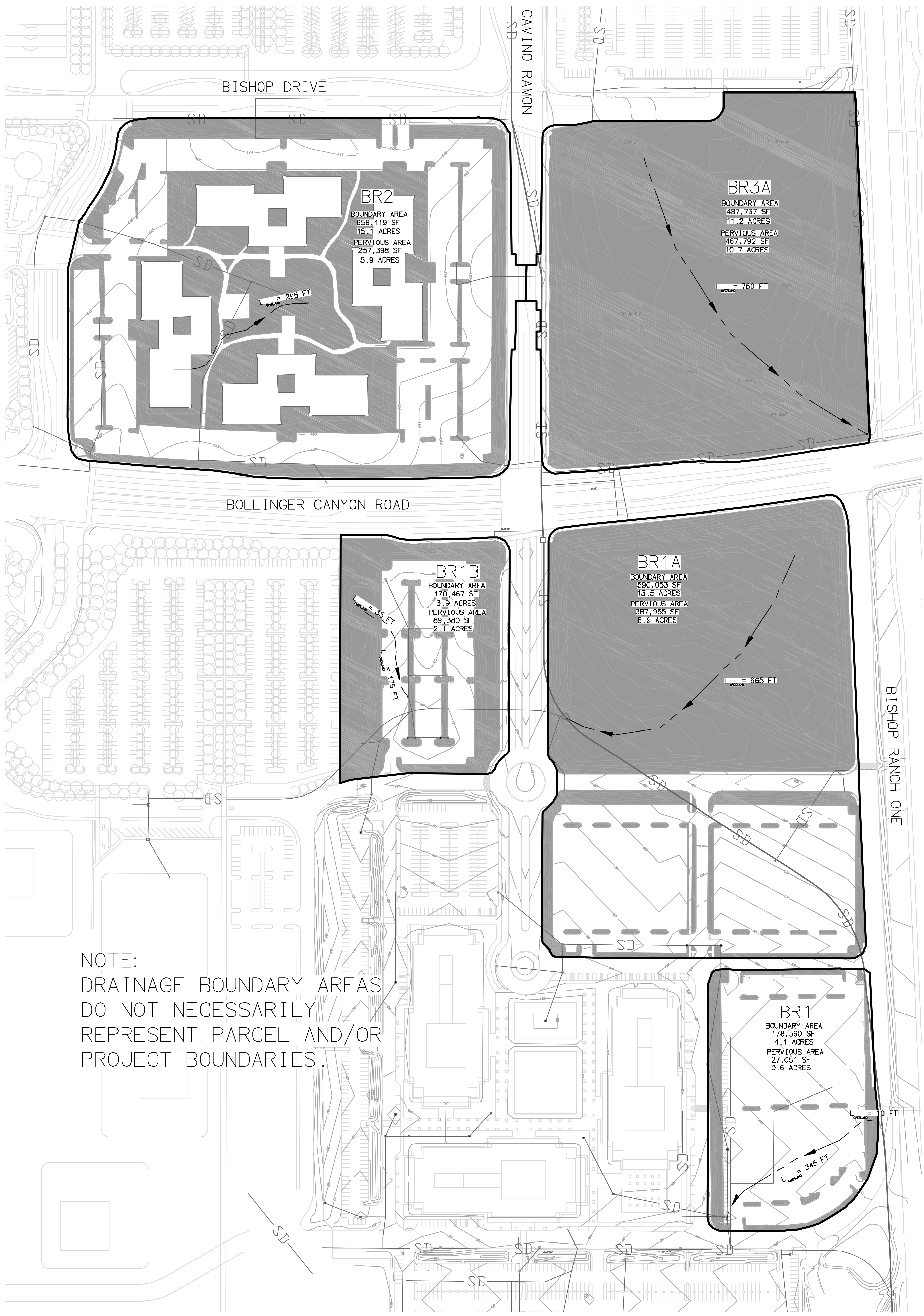
A certain volume of water must be detained by the Project to maintain the post-development peak flows at a level equal to or lesser than the pre-development peak flows. The Abt and Grigg equation was used for this computation. This calculation estimates the storage that is required by the Project, based on pre-development flows. The results show that only sub-watershed BR1 will not require some amount of detention time. This is because the Project proposes to increase the pervious area of the sub-watershed. The results show that sub-watershed BR3A would require the most detention at approximately 1.56 acre-ft of water during the 100-year event. The remaining sub-watersheds require less than 1/2 an acre of detention. The estimated storage volume required by development is presented as Table 5.

Table 5: Estimated Storage Volume for Peak Flow Control Required by Project Development

Site Name	Storm Recurrence	Pre-Development Peak Runoff (cfs)	Post-Development Peak Runoff (cfs)	Pre-Development Time of Concentration (min)	Time Base (min)	Retention Volume (acre-ft)	Storage Volume (acre-ft)	Storage + 50% Contingency (acre-ft)
BR3A	10-Year	5.52	26.61	33.9	67.8	0.99	0.62	0.93
	25-Year	7.00	33.78	33.9	67.8	1.25	0.79	1.18
	100-year	9.94	46.06	33.9	67.8	1.69	1.04	1.56
BR2	10-Year	15.97	36.90	22.1	44.2	0.64	0.20	0.31
	25-Year	20.89	46.84	22.1	44.2	0.79	0.24	0.36
	100-year	28.63	63.87	22.1	44.2	1.07	0.33	0.49
BR1B	10-Year	6.00	11.26	8.3	16.6	0.06	0.01	0.02
	25-Year	7.64	13.19	8.3	16.6	0.06	0.01	0.02
	100-year	10.55	18.97	8.3	16.6	0.10	0.02	0.03
BR1A	10-Year	10.20	17.03	29.1	58.1	0.27	0.04	0.07
	25-Year	12.67	21.36	29.1	58.1	0.35	0.06	0.09
	100-year	17.89	30.23	29.1	58.1	0.49	0.08	0.12
BR1	10-Year	8.14	5.15	8.1	16.2	-0.03	not required	not required
	25-Year	10.40	6.44	8.1	16.2	-0.04	not required	not required
	100-year	14.45	9.09	8.1	16.2	-0.06	not required	not required

It should be noted that these storage requirements are for flow control only. According to the CCCWP, flow based treatment aims to ensure approximately 80% of the average annual runoff is treated before entering the stormwater collection system. A large portion of annual runoff is produced by small storms that occur many times a year. To meet this requirement, treatment facilities should be designed to accommodate runoff from the specified storm intensity of 0.2 inches per hour. Treatment is planned to occur through three primary treatment BMPs: bio-swales, green roofs, and pervious pavements. As the Project develops from the planning stages and a more rigorous hydrologic analysis is performed final designs of the stormwater detention and treatment facilities will be recommended.

Based on the calculated detention area required, it appears that there is sufficient area in each sub-watershed for detention facilities. The use of the proposed bio-swale, green roof, and permeable pavement stormwater treatment techniques can also be used to detain stormwater for the period required to curb peak flows. For example, the bio-swales would be constructed at a depth of approximately 3 to 4 feet below the surrounding area to act as a temporary storage facility during design rainfall events. Green roofs are typically constructed at shallow depths such as 4 inches. These could be enlarged to depths of approximately 2 feet to act as a temporary water storage facility. Ultimately, based on the results of the preliminary storage requirements, it is anticipated that the site would be able to detain water in its water quality facilities.



NOTE:
DRAINAGE BOUNDARY AREAS
DO NOT NECESSARILY
REPRESENT PARCEL AND/OR
PROJECT BOUNDARIES.

SCALE: 1"=200'

LEGEND:

APPROXIMATE DRAINAGE BOUNDARIES		72 TO 96-INCH STORMDRAIN	——SD——
BUILDING OUTLINE		PERVIOUS AREA OUTLINE	
EXISTNIG STORMDRAIN	——SD——	LONGEST FLOW PATH	
		CALCULATED AREAS	658,119 SF 15.1 ACRES (EXAMPLE)

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PRELIMINARY HYDROLOGY REPORT

EXHIBIT 7: PRE-DEVELOPMENT PERVIOUS AND IMPERVIOUS AREAS

RBF CONSULTING
PLANNING ▪ DESIGN ▪ CONSTRUCTION

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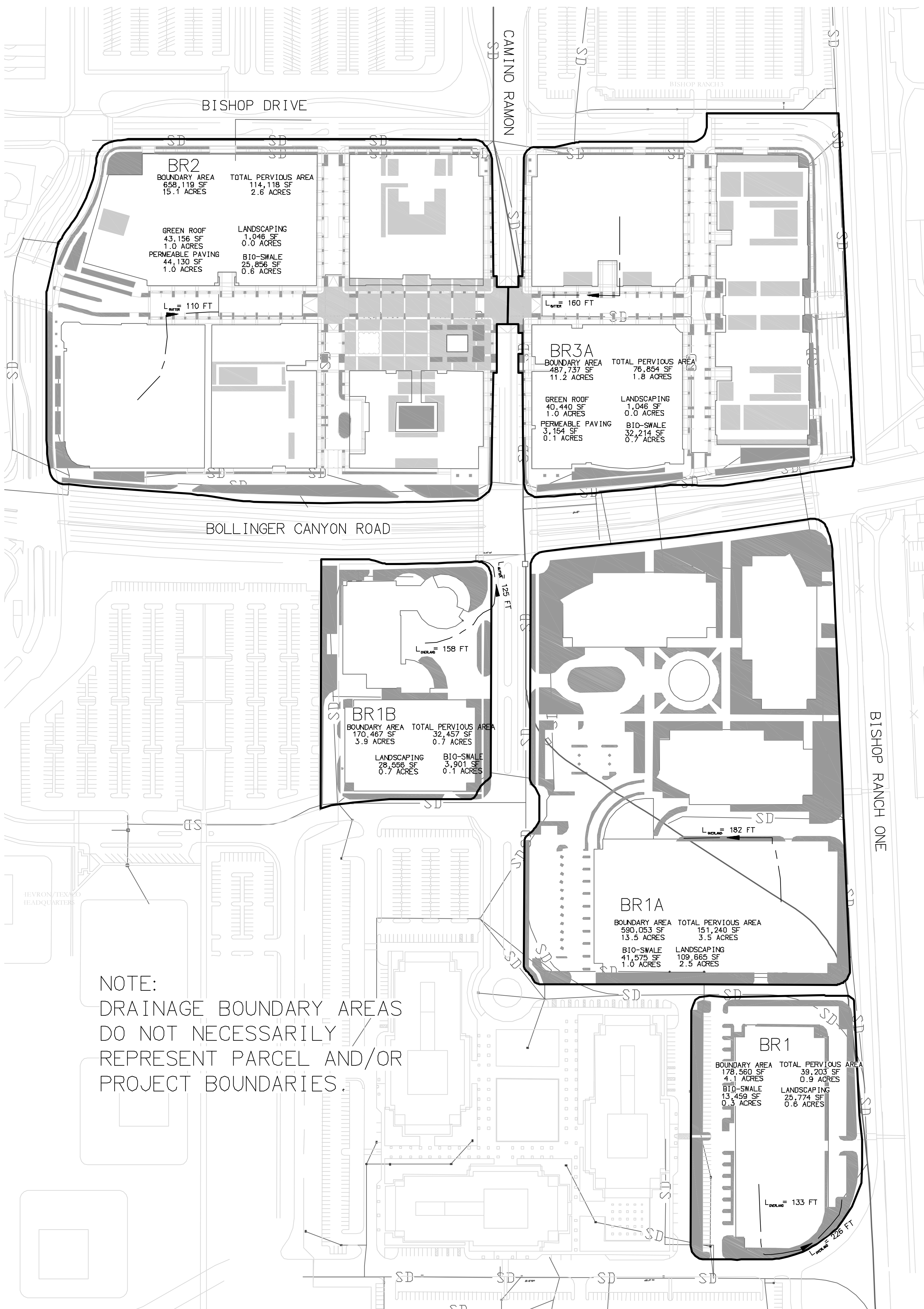

LEGEND:

APPROXIMATE DRAINAGE BOUNDARIES	PERVIOUS AREA OUTLINE
BUILDING OUTLINE	GREEN ROOF OUTLINE
LONGEST FLOW PATH	PERMEABLE PAVEMENT
	72 TO 96-INCH STORMDRAIN ——SD——
	CALCULATED AREAS 658,119 SF 15.1 ACRES (EXAMPLE)

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PRELIMINARY HYDROLOGY REPORT

EXHIBIT 8: PROPOSED POST-DEVELOPMENT PERVIOUS AND IMPERVIOUS AREAS

RBF CONSULTING

PLANNING ■ DESIGN ■ CONSTRUCTION

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4.3 Preliminary Watershed Hydrologic Analysis

The Project site would not cause any changes to the regional hydrologic conditions. The site would maintain peak flow requirement and water quality requirements set forth in the CCCWP. The peak flow from the Project site after the development would not exceed the peak flow of the Project site before the development. The stormwater would meet water quality requirements before entering the storm drain collection system. Flows would be routed through passive stormwater treatment facilities, such as bio-swales.

An extensive regional stormwater collection and conveyance system has been developed. This collection and conveyance system routes stormwater flows through a network of pipelines and channels to South San Ramon Creek. The areas above the Project site would not significantly influence the drainage patterns onsite.

The major drainage conveyance facility for the Project site is an existing 72 to 96-inch diameter storm drain. The approximate location of the storm drain pipeline is presented in Exhibit 3. This pipeline eventually discharges beyond the Project site to the South San Ramon Creek, which is a concrete lined trapezoidal channel. The storm drain pipelines were sized to convey stormwater flows from the drainage areas to the north of the project site and to the far northwest as depicted in Exhibit 3. Some stormwater is also conveyed from the drainage area in the vicinity around the southern portion of the Project site. The entire storm drain pipeline is a cast in place concrete and appears to be in adequate condition to effectively convey stormwater flows. Limited existing design information is available about this pipeline. Based on available information, the following is estimated for each pipeline within the Project site:

72-inch Diameter Pipeline

- Pipeline Slope = 0.0535
- Flow Capacity (90% full) = 905 cfs
- Buildout Flow = 450 cfs

84-inch Diameter Pipeline

- Pipeline Slope = 0.0090
- Flow Capacity (90% full) = 560 cfs
- Buildout Flow = 525 cfs

96-inch Diameter Pipeline

- Pipeline Slope = 0.0062
- Flow Capacity (90% full) = 663 cfs
- Buildout Flow = 620 cfs

The proposed building layout is in the same location as the existing pipeline alignment. Thus, several alternatives for rerouting the pipeline were considered. Modifying the pipeline alignment in the areas to the immediate north and south of the Project site would not be feasible. These areas are substantially developed and have many constraints such as existing utilities, traffic impacts, and building setbacks. Thus, three alternatives for pipeline locations within the Project site were considered: Alignment A, B, and C. These alignments are primarily located in streets or parking areas. They are also setback from the surrounding buildings so as not in interfere with the building foundations. The proposed alignments would all be 96-inches in diameter. They would all deviate from the existing pipeline alignment along Camino Ramon, approximately 250 feet south of Bollinger Canyon Road. Each proposed alignment returns to the existing pipeline alignment further downstream, along Bishop Ranch One (road). The proposed alignments are presented in Exhibit 9. The approximate lengths of the pipelines are presented in Table 6.

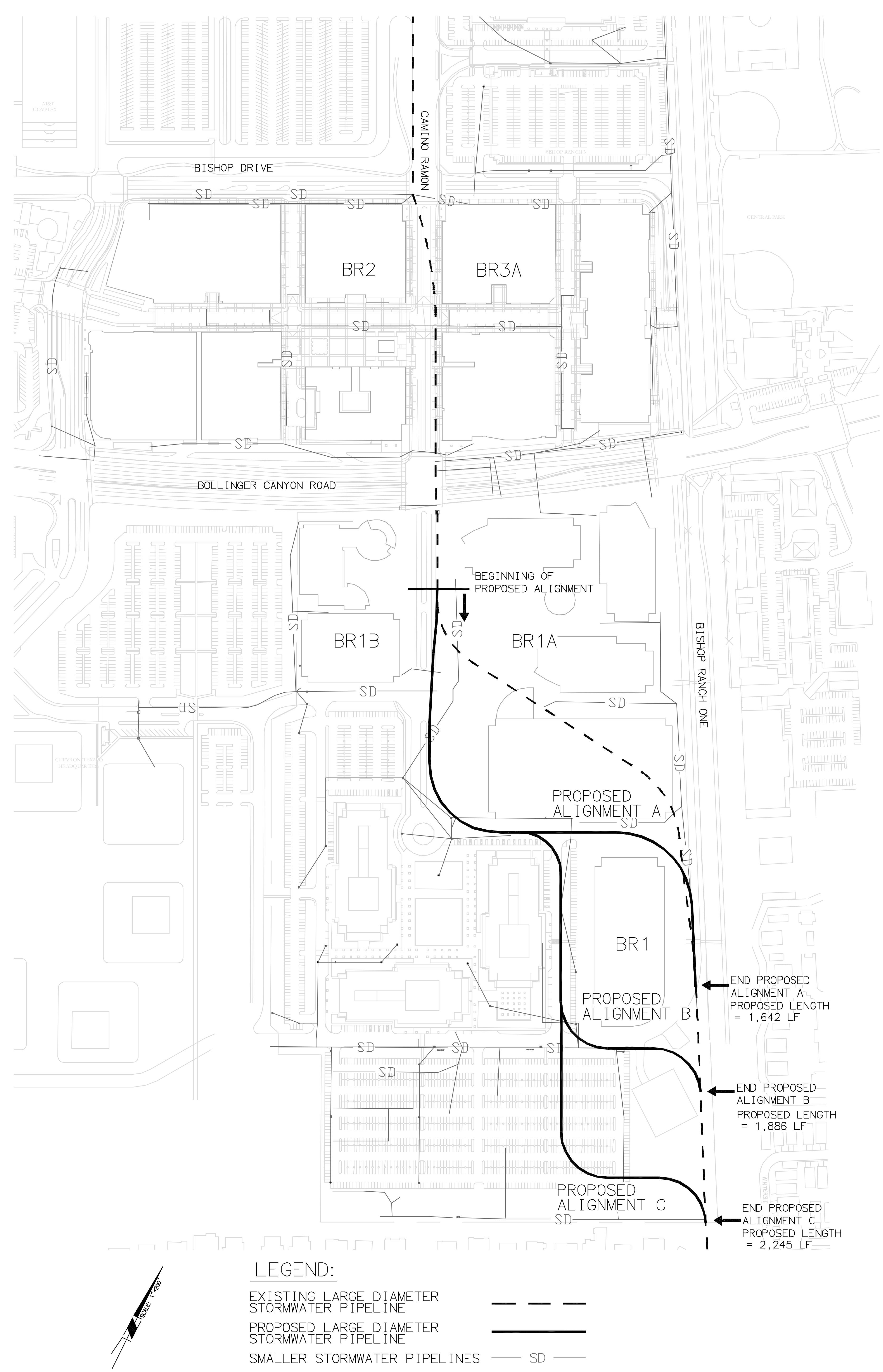
Table 6: Conceptual 96-Inch Pipeline Alignment Alternatives

Alternative	New Pipe Length (LF)	Abandoned Pipe Length (LF)
A	1,642	1,426
B	1,886	1,703
C	2,245	2,062

These alternatives should be evaluated by more than just their proposed size. The potential conflicts with existing utilities, setback requirements from all existing and proposed structures, the feasibility with the surrounding stormwater collection system, and the compatibility with the existing 96-inch diameter storm drain should be considered. For example, a proposed recycled water pump station owned by the Dublin San Ramon Services District / East Bay Municipal Utilities District Recycled Water Authority (DERWA) is planned to be located in near the south end of Alternative B. Any modifications to the existing pipeline alignment would need to ensure the hydraulic characteristics of the pipeline allow for the conveyance of stormwater during ultimate flow conditions.

Special attention will likely be required during the final design of the pipe curvature since the proposed pipeline alignments include curvatures of approximately 90 degrees to avoid proposed buildings. The angle of the pipeline's curves would need to be designed in coordination with the pipeline manufacturer. It is likely that precast concrete would be the applicable material for this pipeline since the existing pipe is cast in place concrete. The pipe in the curved alignment may require the use of radius pipe. Radius pipe, also referred to as beveled or mitered pipe, incorporates the deflection angle in the pipe joint. Radius pipe is manufactured by shortening one side of the pipe. This technique allows for sharper curves to be handled. Other options for tightening pipe curvature radii include using shortened pipe lengths or specially constructed pipes.

The final Stormwater Control Plan should address these alternatives and further investigate the benefits of each.



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PRELIMINARY HYDROLOGY REPORT

EXHIBIT 9:
96-INCH STORMDRAIN PIPELINE
CONCEPTUAL ALIGNMENT ALTERNTATIVES

RBF CONSULTING

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5 LIMITATIONS

This analysis is not intended to provide final design based recommendations or to serve as the final Stormwater Control Plan. Rather, it is intended to serve as a guide in the planning process in the development of the San Ramon City Center Project. Further, it is anticipated that the recommendations of this report will require coordination, review, and approval with representatives of the City and County prior to initiation of final design.

This report was prepared in general accordance with the accepted standards of practice in surface-water hydrology existing in Northern California for Projects of similar scale at the time the investigations were performed. No other warranties, expressed or implied, are made.

Concepts, findings, and interpretations contained in this report are intended for the exclusive use of Sunset Development Company, under the conditions presently prevailing except where noted otherwise. Their use beyond the boundaries of the site could lead to environmental or structural damage, and/or to noncompliance with policies, regulations, or permits. The assumptions and findings in this report were developed solely for initial recommendations for the planning of storm drainage infrastructure at the site as an aid to more detailed civil engineering work. They should not be used for other purposes without great care, updating, review of analytical methods used, and consultation with RBF staff familiar with the site.

6 REFERENCES

American Concrete Pipe Association, Concrete Pipe Design Manual, 2000.

California Department of Water Resources, California's Groundwater: Bulletin 118, 2003.

California Stormwater Quality Association, California Stormwater BMP Handbook: New Development and Redevelopment, January 2000.

Contra Costa Clean Water Program, Stormwater Quality Requirements for Development Applications: Stormwater C.3 Guidebook, October 2006.

Mays, Larry W., Water Resources Engineering, 2005.

San Francisco Regional Water Quality Control Board, Water Quality Control Plan (Basin Plan) for the San Francisco Bay Basin, December 22, 2006.

8 APPENDICES

Appendix A: FEMA FIRM Maps

Appendix B: BMP Bio-Swale Fact Sheets

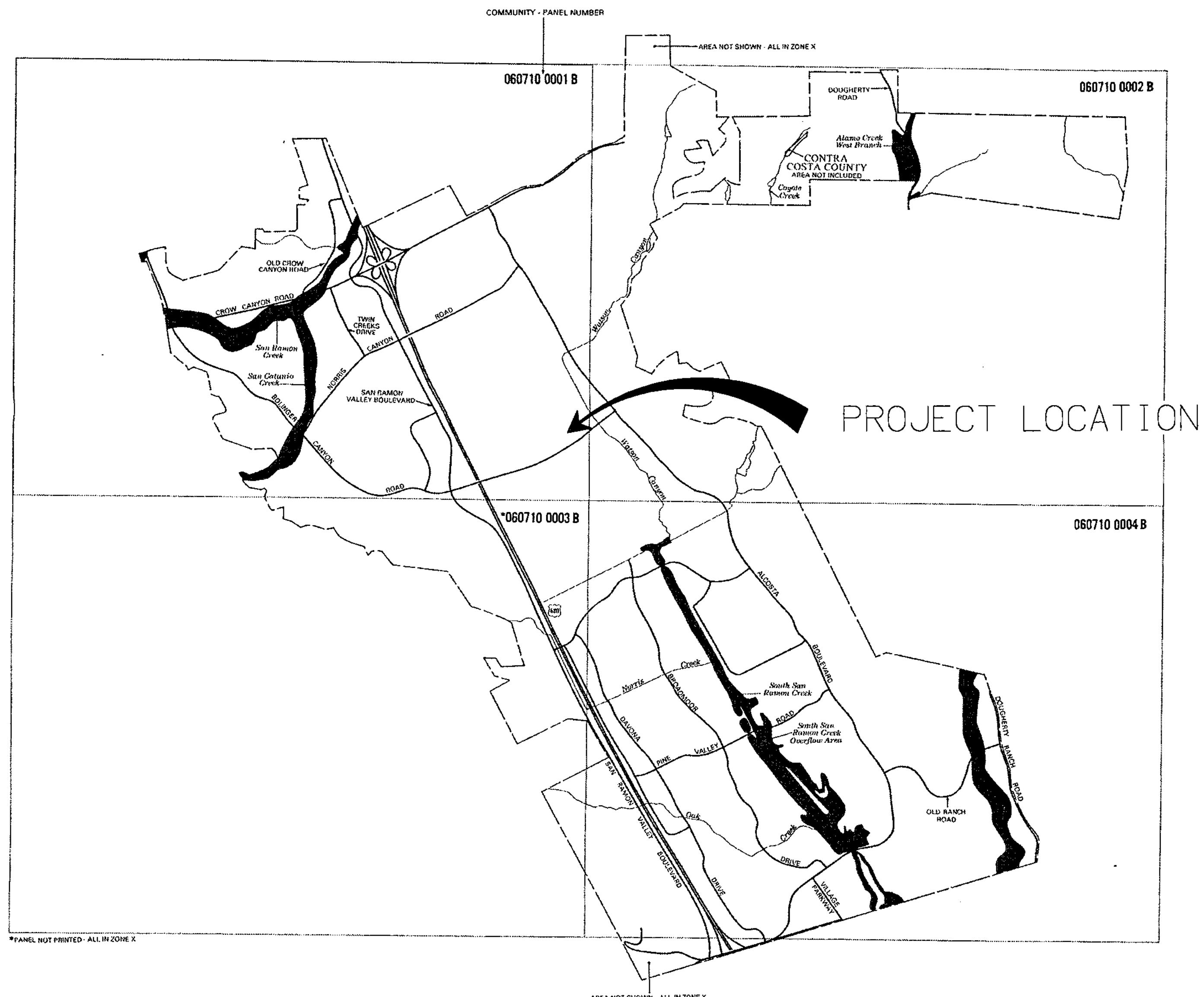
Appendix C: BMP Green Roof Fact Sheets

Appendix D: BMP Permeable Pavement Fact Sheets

Appendix E: Contra Costa County Rainfall Figures

APPENDIX A

FEMA FIRM Maps



LEGEND

FLOOD - PRONE AREAS; FOR ORIENTATION PURPOSES ONLY

FLOOD - PRONE STREET INDEX

NOTE TO USER

This index provides a list of all streets shown on the Flood Insurance Rate Map (FIRM) that are partially or totally within Special Flood Hazard Areas (SFHAs). This index should not be used as an authoritative source for determining whether specific streets, properties, or buildings are within an SFHA. The appropriate FIRM panel must be consulted for these purposes. This index is intended to be used only as a guide for determining which FIRM panel displays the street in question and the relative location of the street on the FIRM panel.

KEY

Riverview Drive 0015 (B6)

street name — panel number — grid location

NAMED STREETS

Alcosta Boulevard	0004 (E5)
Bolinger Canyon Road	0001 (C3, C4, E6)
Bronco Court	0001 (E6)
Canyon Creek Road	0001 (E4)
Corral Circle	0001 (E6)
Craydon Circle	0004 (E6)
Crow Canyon Road	0001 (C4, E4)
Del Mar Drive	0004 (C3)
Dogie Court	0001 (E6)
Dogwood Court	0004 (E6)
Dogwood Place	0004 (E6)
Dougherty Road	0002 (F2)
Fircrest Court	0004 (E5)
Fircrest Lane	0004 (E5)
Marsh Court	0001 (E5)
Marsh Drive	0001 (E5)
Marsh Place	0001 (E6)
Neptune Place	0004 (E6)
Norris Canyon Road	0001 (E6)
Norris Court	0001 (E5)
Old Crow Canyon Road	0001 (E4)
Old Ranch Road	0004 (G4)
Pebble Place	0004 (D4)
PG & E Road	0004 (C3)
Pinehurst Place	0004 (C4)
Pine Valley Road	0004 (C4)
Pony Court	0001 (E6)
San Ramon Valley Boulevard	0001 (F3)
Thunderbird Place	0004 (D4)
Winged Foot Court	0004 (E5)
Winged Foot Place	0004 (E5)
Winter Haven Court	0004 (E6)
Wisteria Street	0004 (E6)

MAP REPOSITORY

Public Works Department,
2228 Camino Ramon
San Ramon, California 94583
(Maps available for reference only, not for distribution)

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

CITY OF
SAN RAMON,
CALIFORNIA
CONTRA COSTA COUNTY

MAP INDEX
and
STREET INDEX
PANELS PRINTED: 1, 2, 4

COMMUNITY-PANEL NUMBERS
060710 0001 - 0004

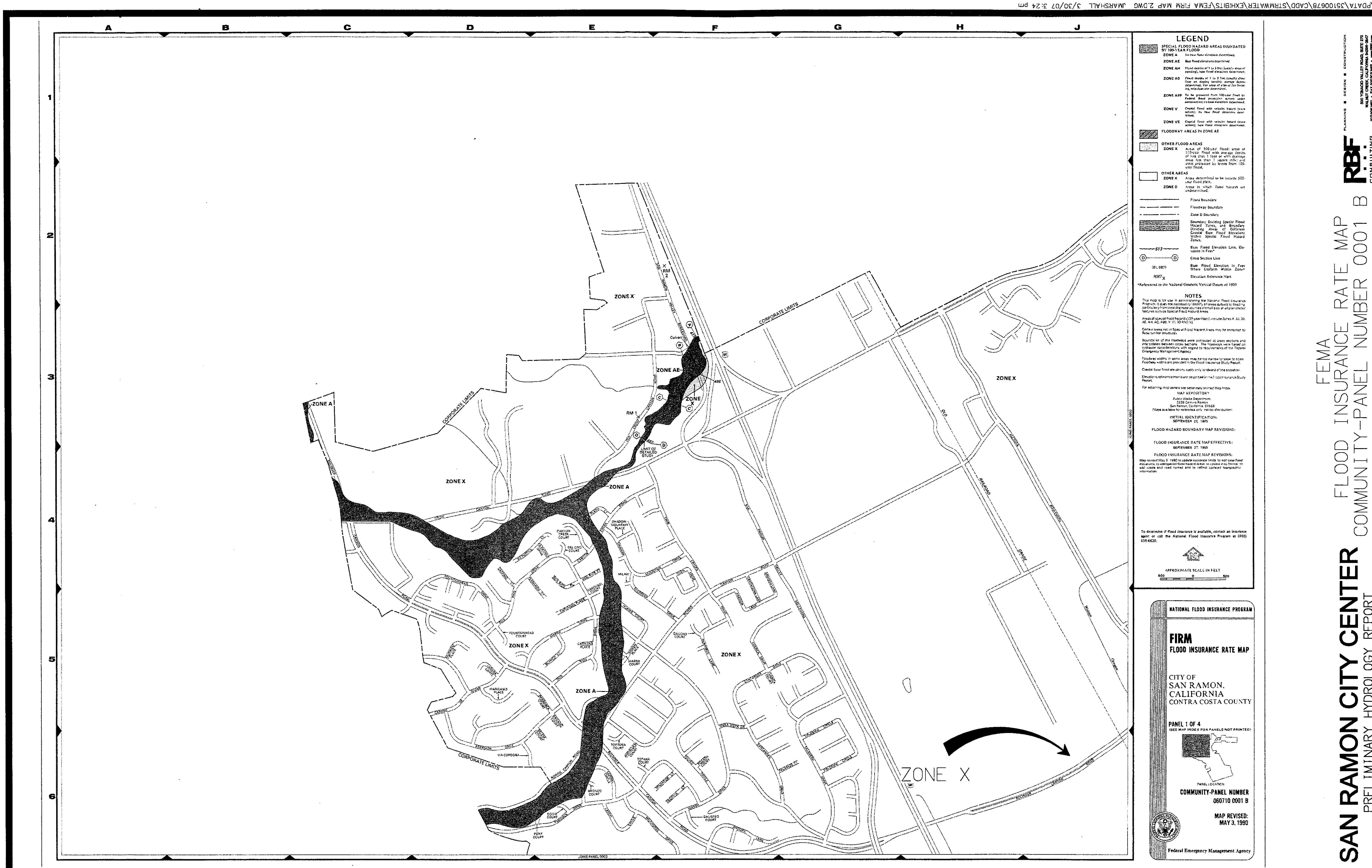
MAP REVISED:
MAY 3, 1990

Federal Emergency Management Agency

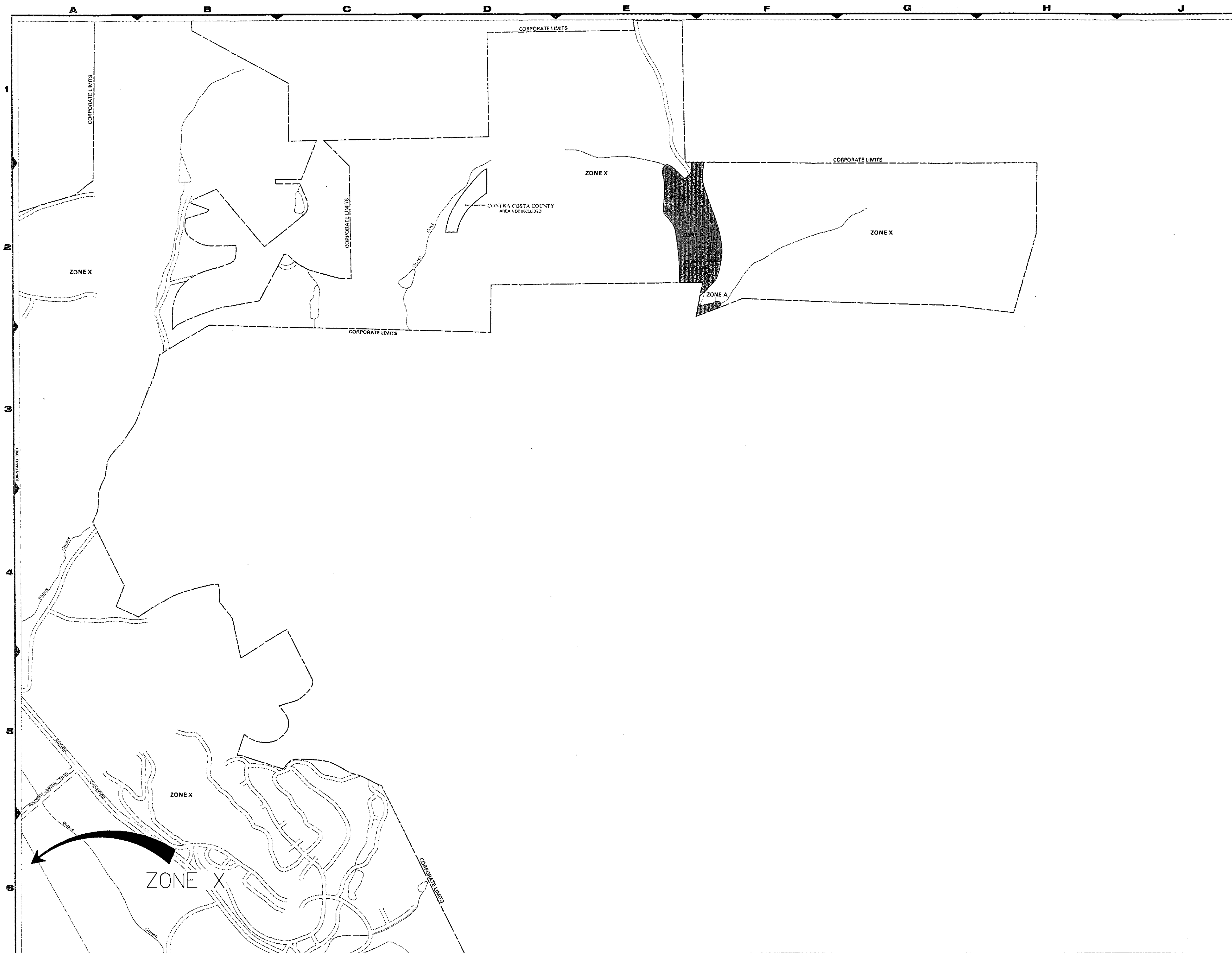
FEMA
FLOOD INSURANCE RATE MAP
MAP INDEX AND STREET INTDEX

RBF CONSULTING
PLANNING ■ DESIGN ■ CONSTRUCTION

SAN RAMON CITY CENTER
PRELIMINARY HYDROLOGY REPORT



A B C D E F G H J
1 2 3 4 5 6
ZONE A
ZONE X
ZONE AE
ZONE X
ZONE A
ZONE X
ZONE X
ZONE A
ZONE X
ZONE X
CORPORATE LIMITS
CORPORATE LIMITS
CORPORATE LIMITS
LEGEND
NOTES
NATIONAL FLOOD INSURANCE PROGRAM
FIRM
FLOOD INSURANCE RATE MAP
CITY OF
SAN RAMON,
CALIFORNIA
CONTRA COSTA COUNTY
PANEL 1 OF 4
COMMUNITY-PANEL NUMBER
060710 0001 B
MAP REVISED:
MAY 3, 1990
Federal Emergency Management Agency
SAN RAMON CITY CENTER
PRELIMINARY HYDROLOGY REPORT
FEMA
FLOOD INSURANCE RATE MAP
COMMUNITY-PANEL NUMBER 0001 B
RBF CONSULTING



LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

- ZONE A — No base flood elevations determined.
- ZONE AE — Base flood elevations determined.
- ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
- ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE A99 — To be protected from 100-year flood by Federal flood protection system under construction; no base elevations determined.
- ZONE V — Coastal flood with velocity hazard (wave action); no base flood elevations determined.
- ZONE VE — Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

- ZONE X — Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

- ZONE X — Areas determined to be outside 500-year flood plain.
- ZONE D — Areas in which flood hazards are undetermined.

Flood Boundary

Floodway Boundary

Zone D Boundary

Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.

513 — Base Flood Elevation Line; Elevation in Feet*

D — D — Cross Section Line

(EL 987) — Base Flood Elevation in Feet Where Uniform Within Zone*

RM7 X — Elevation Reference Mark

*Referenced to the National Geodetic Vertical Datum of 1929

NOTES

This map is for use in administering the National Flood Insurance Program; it does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas.

Areas of special flood hazard (100-year flood) include Zones A, A1-30, AE, AH, AO, A99, V, V1-30 AND VE.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the Federal Emergency Management Agency.

Floodway widths in some areas may be too narrow to show to scale. Floodway widths are provided in the Flood Insurance Study Report.

Coastal base flood elevations apply only landward of the shoreline.

Elevation reference marks are described in the Flood Insurance Study Report.

For adjoining map panels see separately printed Map Index.

MAP REPOSITORY
Public Works Department
2228 Camino Ramon
San Ramon, California 94583
(Maps available for reference only, not for distribution)

INITIAL IDENTIFICATION:
SEPTEMBER 27, 1985

FLOOD HAZARD BOUNDARY MAP REVISIONS:

FLOOD INSURANCE RATE MAP EFFECTIVE:
SEPTEMBER 27, 1985

FLOOD INSURANCE RATE MAP REVISIONS:
Map revised May 3, 1990 to update corporate limits, to add base flood elevations, to add special flood hazard areas, to update map format, to add roads and road names and to reflect updated topographic information.

To determine if flood insurance is available, contact an insurance agent or call the National Flood Insurance Program at (800) 638-6620.

APPROXIMATE SCALE IN FEET
500 0 500

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

CITY OF
SAN RAMON,
CALIFORNIA
CONTRA COSTA COUNTY

PANEL 2 OF 4
(SEE MAP INDEX FOR PANELS NOT PRINTED)

PANEL LOCATION

COMMUNITY-PANEL NUMBER
060710 0002 B

MAP REVISED:
MAY 3, 1990

Federal Emergency Management Agency

RBF CONSULTING
PLANNING ■ DESIGN ■ CONSTRUCTION

FEMA FLOOD INSURANCE RATE MAP COMMUNITY-PANEL NUMBER 0002 B

SAN RAMON CITY CENTER
PRELIMINARY HYDROLOGY REPORT

H:\PDATA\35100678\CADD\STRMWATER\EXHIBITS\FEMA FIRM MAP 4.DWG JMARSHALL 3/30/07 3:25 pm

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

CITY OF SAN RAMON, CALIFORNIA
CONTRA COSTA COUNTY

PANEL 4 OF 4

COMMUNITY-PANEL NUMBER
060710 0004 B

MAP REVISED:
MAY 3, 1990

Federal Emergency Management Agency

SAN RAMON CITY CENTER
PRELIMINARY HYDROLOGY REPORT

FEMA
FLOOD INSURANCE RATE MAP
COMMUNITY-PANEL NUMBER 0004 B

RBF CONSULTING

APPENDIX B

BMP Bio-Swale Fact Sheets

FORTHCOMING

APPENDIX C

BMP Green Roof Fact Sheets

Green Roofs

Gap Headquarters, San Bruno (*William McDonough & Partners*)

Green roofs can be either *extensive*, with a 3"-7" lightweight substrate and a few types of low-profile, low-maintenance plants, or *intensive* with a thicker (8" to 48") substrate, more varied plantings, and a more garden-like appearance.

The extensive installation pictured above, at Gap Headquarters in San Bruno, has experienced relatively few problems after nearly a decade in use.

Design and Construction. Extensive green roof systems contain several layers of protective materials to convey water away from the roof deck. Starting from the bottom up, a waterproof membrane is installed, followed by a root barrier, a layer of insulation (optional), a drainage layer, a filter fabric for fine soils, the engineered growing medium or soil substrate, and the plant material.

Design and installation is typically by an established vendor.

Maintenance. Installations require inspection at least semiannually and may or may not require irrigation in the Bay Area semi-arid climate.

See www.greenroofs.com for information about and more examples of green roofs.

Agilent Headquarters, Santa Clara (*Agilent*)

Best Uses

- New buildings with innovative architecture
- Urban centers

Advantages

- Minimize roof runoff
- Reduce "heat island" effect
- Absorb sound
- Provide bird habitat
- Structural requirements similar to other roofing options (for extensive green roofs).
- Maintenance costs similar to other roofing options

Limitations

- Sloped roofs require steps or cross-battens
- Non-traditional design

CONTRA COSTA CLEAN WATER PROGRAM

Integrated Management Practices Fact Sheets

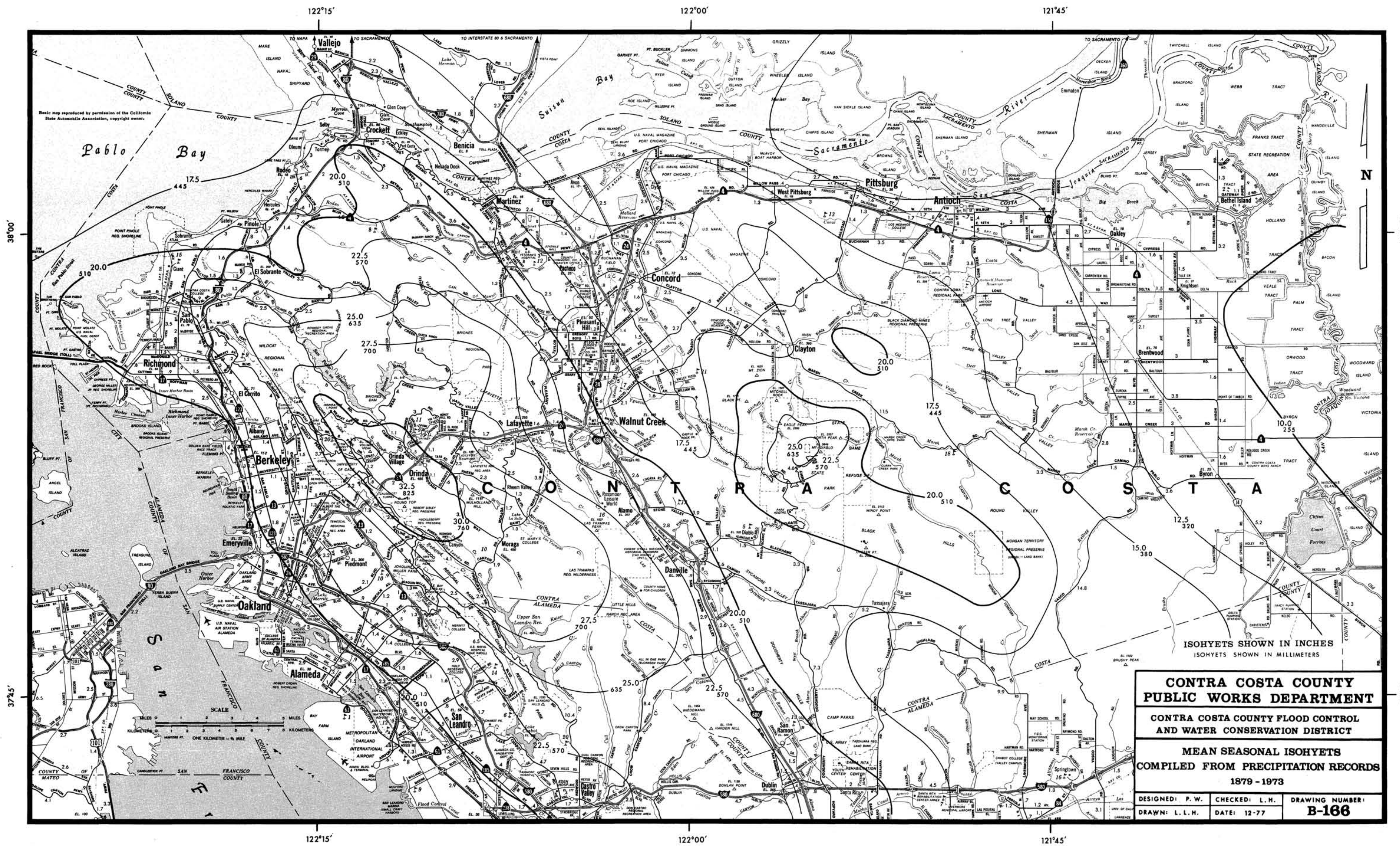
APPENDIX D

BMP Permeable Pavement Fact Sheets

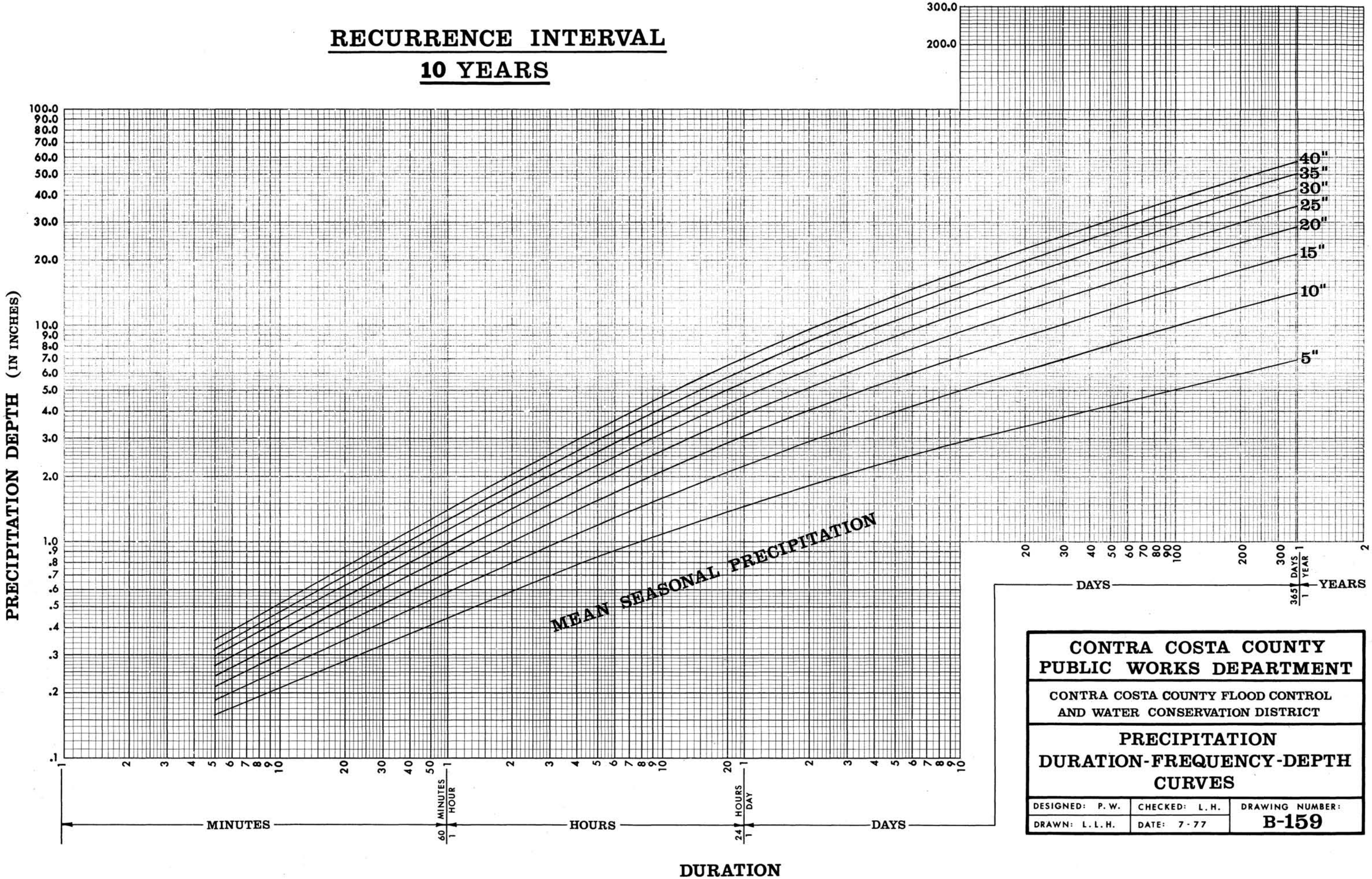
FORTHCOMING

APPENDIX E

Contra Costa County Rainfall Figures

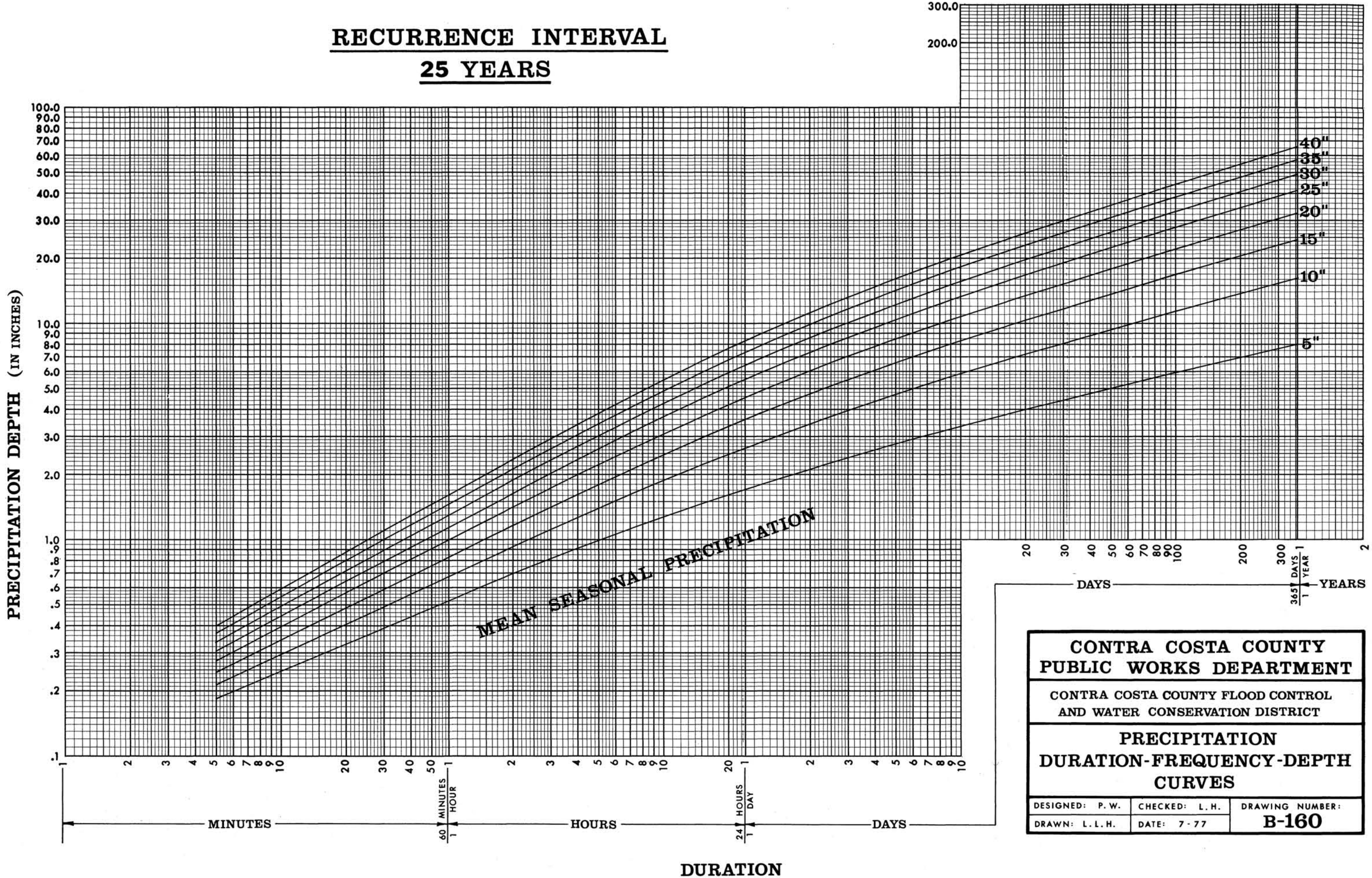

CONTRA COSTA COUNTY
PUBLIC WORKS DEPARTMENT
CONTRA COSTA COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT
MEAN SEASONAL ISOHYETS
COMPILED FROM PRECIPITATION RECORDS
1879 - 1973
DESIGNED: P. W.
CHECKED: L. H.
DRAWING NUMBER:
B-166
DRAWN: L. L. H.
DATE: 12-77
ISOHYETS SHOWN IN INCHES
ISOHYETS SHOWN IN MILLIMETERS
Basic map reproduced by permission of the California State Automobile Association, copyright owner.
122°15′
122°00′
121°45′
38°00′
37°45′
C O N T R A C O S T A
Pablo Bay
Suisun Bay
Richmond
Berkeley
Oakland
Alameda
Concord
Walnut Creek
Martinez
Pittsburg
Antioch
Danville
Clayton
Brentwood
Byron
Oakley
Lafayette
Orinda
San Ramon
Dublin
Crockett
Pinole
El Cerrito
Pleasant Hill
Moraga
Alamo
San Leandro
Castro Valley
Emeryville
Vallejo
Benicia
SCALE
MILES
KILOMETERS
N

RECURRENCE INTERVAL
10 YEARS



CONTRA COSTA COUNTY PUBLIC WORKS DEPARTMENT		
CONTRA COSTA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT		
PRECIPITATION DURATION-FREQUENCY-DEPTH CURVES		
DESIGNED: P. W.	CHECKED: L. H.	DRAWING NUMBER:
DRAWN: L. L. H.	DATE: 7-77	B-159

RECURRENCE INTERVAL
25 YEARS

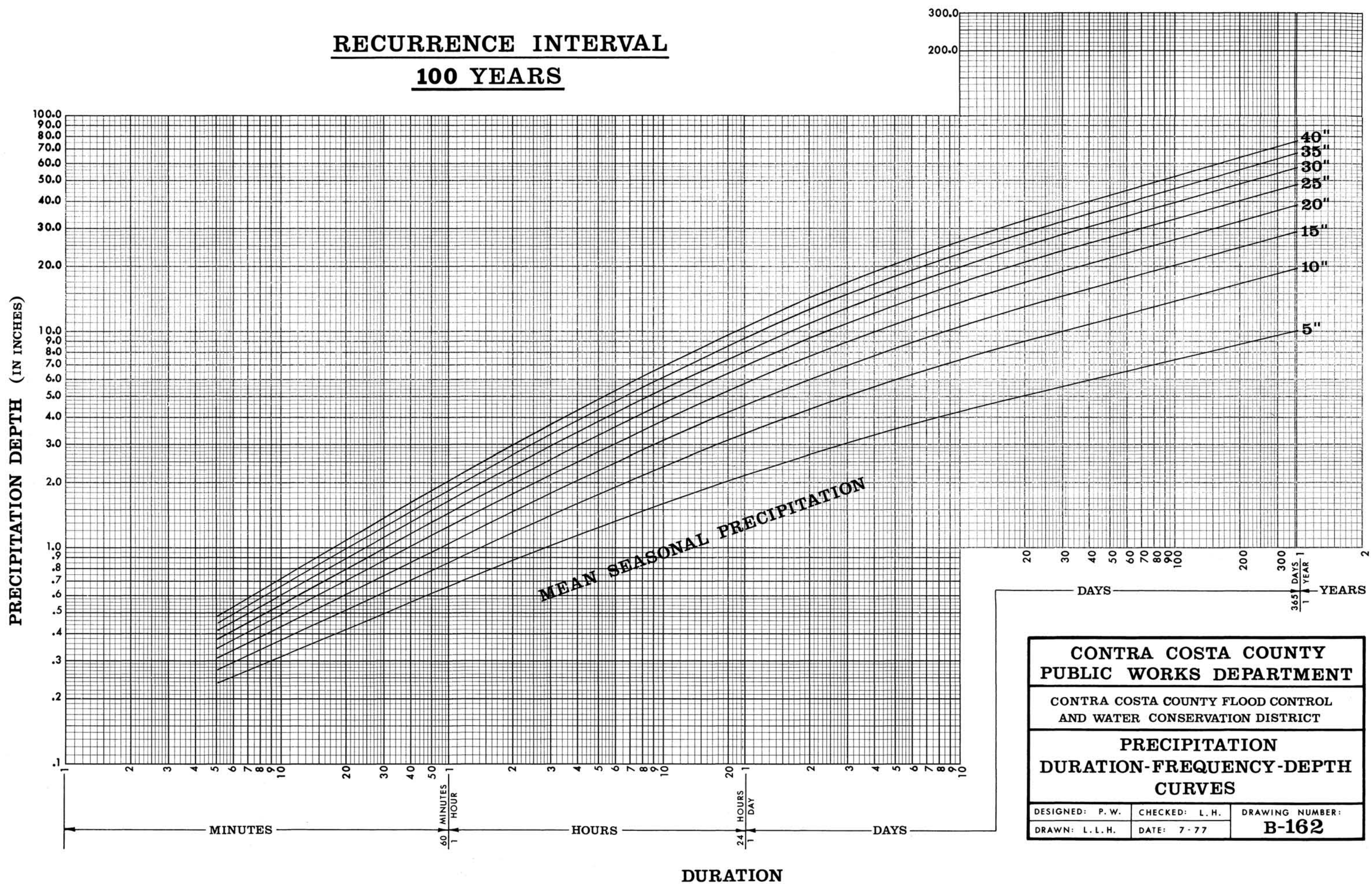


CONTRA COSTA COUNTY
PUBLIC WORKS DEPARTMENT

CONTRA COSTA COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT

PRECIPITATION
DURATION-FREQUENCY-DEPTH
CURVES

DESIGNED: P. W.	CHECKED: L. H.	DRAWING NUMBER:
DRAWN: L. L. H.	DATE: 7-77	B-160



RECURRENCE INTERVAL
100 YEARS
PRECIPITATION DEPTH (IN INCHES)
MEAN SEASONAL PRECIPITATION
40"
35"
30"
25"
20"
15"
10"
5"
MINUTES
HOURS
DAYS
YEARS
DURATION
CONTRA COSTA COUNTY
PUBLIC WORKS DEPARTMENT
CONTRA COSTA COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT
PRECIPITATION
DURATION-FREQUENCY-DEPTH
CURVES
DESIGNED: P. W.
CHECKED: L. H.
DRAWING NUMBER:
DRAWN: L. L. H.
DATE: 7-77
B-162

Appendix G: Noise Analysis

Noise Impact Analysis
San Ramon City Center Project
City of San Ramon, Contra Costa County, California

Prepared for:
City of San Ramon
Planning/Community Development Department
2226 Camino Ramon
San Ramon, CA 94583

Contact: Debbie Chamberlain, Planning Manager

Prepared by:
Michael Brandman Associates
Bishop Ranch 3
2633 Camino Ramon, Suite 460
San Ramon, CA 94583

Contact: Jason M. Brandman, Project Manager
Author: Greg Tonkovich, INCE, Senior Noise Analyst

June 27, 2007

TABLE OF CONTENTS

LIST OF EXHIBITS

LIST OF TABLES

SECTION 1: INTRODUCTION

1.1 - Purpose of Analysis and Study Objectives

This Noise Impact Analysis has been prepared by Michael Brandman Associates to determine the offsite and onsite noise impacts associated with the proposed San Ramon City Center Project (proposed project). The following is provided in this report:

- A description of the study area and the proposed project;
- Information regarding the fundamentals of noise;
- Information regarding the fundamentals of vibration;
- A description of the local noise guidelines and standards;
- An analysis of the potential short-term construction-related noise impacts from the proposed project; and,
- An analysis of long-term operations-related noise impacts from the proposed project.

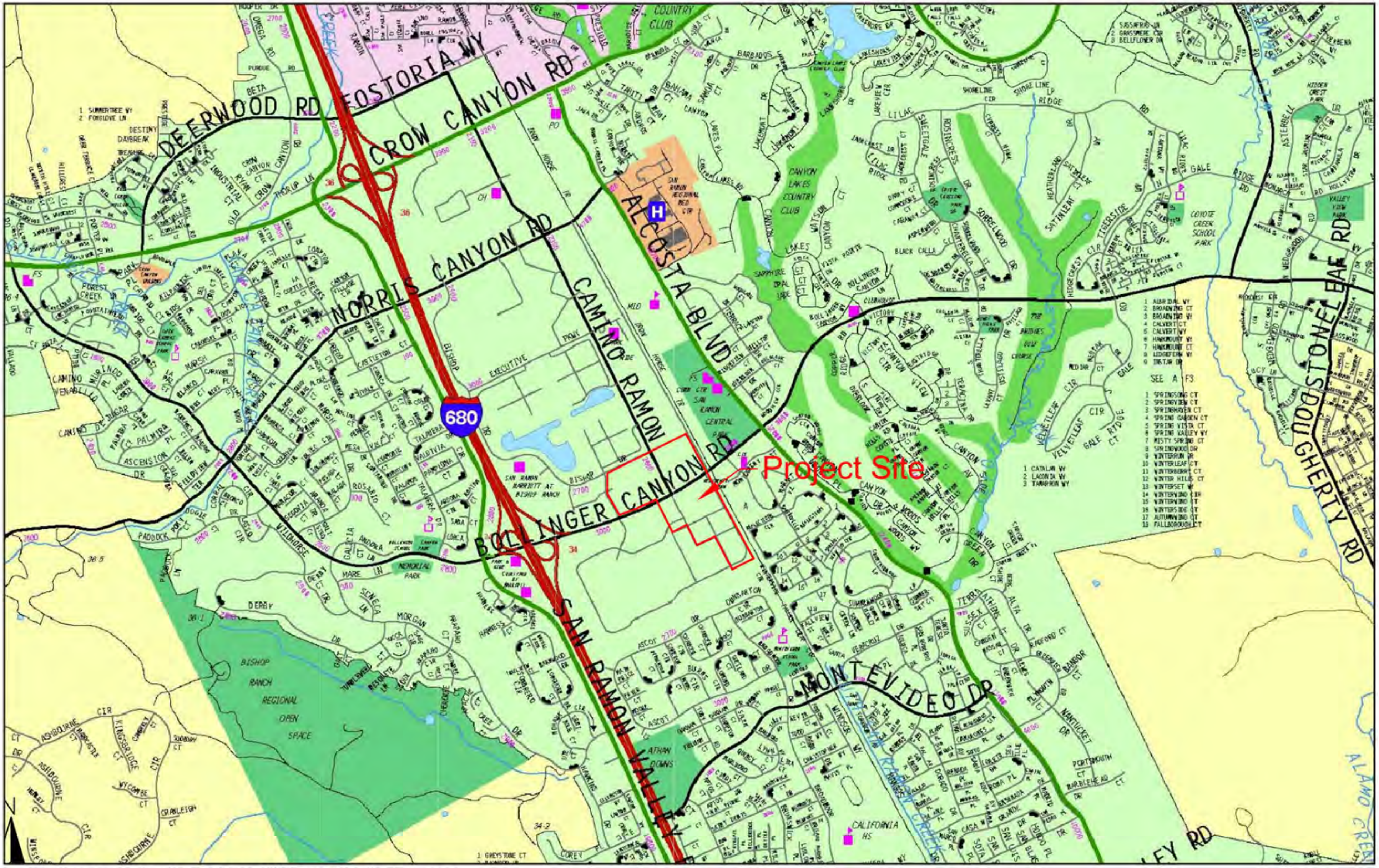
1.2 - Site Location and Study Area

The proposed project is located in the central portion of the City of San Ramon (City). The project site is composed of four parcels totaling 43.65 acres located on all four quadrants of the intersection of Bollinger Canyon Road and Camino Ramon. Three of the four parcels consist of undeveloped land, vegetation, and surface parking areas. The remaining parcel consists of the existing 14.57-acre Bishop Ranch 2 office complex. Bishop Ranch 2 contains 194,652 square feet of office space spread amongst several multi-story office structures.

The project site is bounded by Bishop Drive and Bishop Ranch 3 to the north, Iron Horse Trail, San Ramon Central Park, a hotel, commercial and single-family residential uses to the east, single-family residential to the south, and Sunset Drive and commercial office and retail to the west. In addition, Iron Horse Middle School is adjacent to the northern portion of San Ramon Central Park and P.E. classes from the school use the park's athletic fields. The classrooms are approximately 2,000 feet from the northeast corner of the project site. The site location and study area for this analysis is shown on Exhibit 1.

1.3 - Project Description

The City of San Ramon and Sunset Development Company are jointly proposing to develop a total of 2,168,466 square feet of mixed uses, including retail, office, hotel, residential, and civic, on the project site. Retail uses within the Plaza District would consist of two anchor stores, a six-screen arts cinema, and smaller inline retail uses such as shops, restaurants, and spa/fitness/ wellness. A six-



Source: Thomas Guide Digital Edition 2007 and Vista Environmental.

NORTH

NOT TO SCALE

Michael Brandman Associates

24910007 • 06/2007 | 1_site.cdr

Exhibit 1
Site Location and Study Area

CITY OF SAN RAMON • SAN RAMON CITY CENTER PROJECT
NOISE IMPACT ANALYSIS

story, 169-room, five-star hotel would feature conference, meeting room, and ballroom facilities. The City Hall would provide space for Council Chambers, meeting rooms, the Police Department, the library, and City offices. The Transit Center would provide four bus stalls and a waiting area for passengers, and surface and multi-level parking would be built throughout the project.

The proposed project would consist of the demolition of the Bishop Ranch 2 office complex and then the development of one of the following three alternatives:

1.3.1 - Alternative 1 - Flex Retail

- 488 Condominium units
- 169-room Hotel
- 487,117 square feet of Office Park (681,769 square feet less 194,652 square feet)
- 663,339 square feet Retail
- 6-screen Cinema (21,945 square feet)
- 75,150 square feet Civic Center
- 35,340 square feet Library

1.3.2 - Alternative 2 - Flex Office

- Same as Flex Retail except 50,142 square feet of the Retail space is converted to Office space.

1.3.3 - Alternative 3 - Flex Retail No Civic Center

- Same as Flex Retail except 75,150 square feet Civic Center plus 35,340 square feet Library is converted to 110,490 square feet Office space.

According to the *Draft Traffic Operations Evaluation For San Ramon City Center Project*, (Traffic Analysis), Prepared by DMJM Harris, June 2007, Flex Retail is anticipated to generate the most vehicular traffic and consequently create the greatest noise impacts. Therefore, since the Flex Retail Alternative would create the worst-case noise impacts as compared to the other alternatives, the analysis will be based on the Flex Retail Alternative project description. The Flex Retail Site Plan is shown on Exhibit 2.

Source: Sunset Development Company, February 2007, and Vista Environmental.

NORTH NOT TO SCALE

Michael Brandman Associates

24910007 • 06/2007 | 2_siteplan.cdr

Exhibit 2
Site Plan

CITY OF SAN RAMON • SAN RAMON CITY CENTER PROJECT
NOISE IMPACT ANALYSIS

SECTION 2: NOISE FUNDAMENTALS

Noise is defined as unwanted sound. Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm or when it has adverse effects on health. Sound is produced by the vibration of sound pressure waves in the air. Sound pressure levels are used to measure the intensity of sound and are described in terms of decibels. The decibel (dB) is a logarithmic unit, which expresses the ratio of the sound pressure level being measured to a standard reference level. A-weighted decibels (dBA) approximate the subjective response of the human ear to a broad frequency noise source by discriminating against very low and very high frequencies of the audible spectrum. They are adjusted to reflect only those frequencies, which are audible to the human ear.

2.1 - Noise Descriptors

Noise Equivalent sound levels are not measured directly, but are calculated from sound pressure levels typically measured in A-weighted decibels (dBA). The equivalent sound level (Leq) represents a steady state sound level containing the same total energy as a time varying signal over a given sample period. The peak traffic hour Leq is the noise metric used by California Department of Transportation (Caltrans) for all traffic noise impact analyses.

The Day-Night Average Level (Ldn) is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time of day corrections require the addition of ten decibels to sound levels at night between 10 p.m. and 7 a.m. While the Community Noise Equivalent Level (CNEL) is similar to the Ldn, except that it has another addition of 4.77 decibels to sound levels during the evening hours between 7 p.m. and 10 p.m. These additions are made to the sound levels at these time periods because during the evening and nighttime hours, when compared to daytime hours, there is a decrease in the ambient noise levels, which creates an increased sensitivity to sounds. For this reason the sound appears louder in the evening and nighttime hours and is weighted accordingly. The City of San Ramon relies on the CNEL noise standard to assess transportation-related impacts on noise sensitive land uses.

2.2 - Traffic Noise Propagation

Traffic noise is analyzed as a line source noise, where the noise levels are normalized throughout a roadway segment. In order to assess the noise levels at different locations near the roadway, the roadway noise, the trajectory of the path from the source to receiver and the location of the receiver are all considered in the noise prediction analysis. This analysis method is known as the source-path-receiver concept. In general, noise control measures can be applied to any and all of these three elements.

2.3 - Ground Absorption

The sound drop-off rate is highly dependent on the conditions of the land between the noise source and receiver. To account for this ground-effect attenuation (absorption), two types of site conditions are commonly used in traffic noise models, soft site and hard site conditions. Soft site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation. A drop-off rate of 4.5 dBA per doubling of distance is typically observed over soft ground with landscaping, as compared with a 3.0 dBA drop-off rate over hard ground such as asphalt, concrete, stone and very hard packed earth. Caltrans research has shown that the use of soft site conditions is more appropriate for the application of the Federal Highway Administration (FHWA) traffic noise prediction model used in this analysis.

2.4 - Traffic Noise Prediction

The level of traffic noise depends on the three primary factors: 1) the volume of the traffic, 2) the speed of the traffic, and 3) the number of trucks in the flow of traffic. Generally, the loudness of traffic noise is increased by heavier traffic volumes, higher speeds, and greater number of trucks. Vehicle noise is a combination of the noise produced by the engine, exhaust, and tires.

Because of the logarithmic nature of traffic noise levels, a doubling of the traffic noise (acoustic energy) results in a noise level increase of 3 dBA. Based on the FHWA community noise assessment criteria this change is “barely perceptible”. In other words, doubling the traffic volume (assuming that the speed and truck mix do not change) results in a noise increase of 3 dBA. The truck mix on a given roadway also has an effect on community noise levels. As the number of heavy trucks increases and becomes a larger percentage of the vehicle mix, adjacent noise levels increase.

2.5 - Noise Barrier Attenuation

Effective noise barriers can reduce noise levels by 10 to 15 dBA, cutting the loudness of traffic noise in half. For a noise barrier to work, it must be high enough and long enough to block the view of a road. A noise barrier is most effective when placed close to the noise source or receiver. A noise barrier can achieve a 5-dBA noise level reduction when it is tall enough to break the line-of-sight. When the noise barrier is a berm instead of a wall, the noise attenuation can be increased by another 3 dBA.

2.6 - Construction Noise Assumptions

The Federal Highway Administration (FHWA) compiled noise measurement data regarding the noise generating characteristics of several different types of construction equipment used during the Central Artery/Tunnel project in Boston. Table A below provides a list of the construction equipment measured along with the associated measured noise emissions and measured percentage of typical equipment use per day. From this acquired data, the FHWA developed the Roadway Construction

Noise Model (RCNM), which may be used for the prediction of construction noise. For the purposes of this analysis, the RCNM will be used to calculate the construction equipment noise emissions.

Table A: Construction Equipment Noise Emissions and Usage Factors

Equipment Description	Impact Device?	Acoustical Use Factor (%)	Spec 721.560 Lmax @ 50 ft (dBA, slow)	Actual Measured Lmax @ 50 ft (dBA, slow)	No. of Actual Data Samples (Count)
All Other Equipment > 5 HP	No	50	85	N/A	0
Auger Drill Rig	No	20	85	84	36
Backhoe	No	40	80	78	372
Bar Bender	No	20	80	N/A	0
Blasting	Yes	N/A	94	N/A	0
Boring Jack Power	No	50	80	83	1
Chain Saw	No	20	85	84	46
Clam Shovel (dropping)	Yes	20	93	87	4
Compactor (ground)	No	20	80	83	57
Compressor (air)	No	40	80	78	18
Concrete Batch	No	15	83	N/A	0
Concrete Mixer Truck	No	40	85	79	40
Concrete Pump	No	20	82	81	30
Concrete Saw	No	20	90	90	55
Crane	No	16	85	81	405
Dozer	No	40	85	82	55
Drill Rig Truck	No	20	84	79	22
Drum Mixer	No	50	80	80	1
Dump Truck	No	40	84	76	31
Excavator	No	40	85	81	170
Flat Bed Truck	No	40	84	74	4
Front End Loader	No	40	80	79	96
Generator	No	50	82	81	19
Generator (<25KVA, VMS signs)	No	50	70	73	74
Gradall	No	40	85	83	70
Grader	No	40	85	N/A	0
Grapple (on backhoe)	No	40	85	87	1

Table A (Cont.): Construction Equipment Noise Emissions and Usage Factors

Equipment Description	Impact Device?	Acoustical Use Factor (%)	Spec 721.560 Lmax @ 50 ft (dBA, slow)	Actual Measured Lmax @ 50 ft (dBA, slow)	No. of Actual Data Samples (Count)
Horizontal Boring Hydr. Jack	No	25	80	82	6
Hydra Break Ram	Yes	10	90	N/A	0
Impact Pile Driver	Yes	20	95	101	11
Jackhammer	Yes	20	85	89	133
Man Lift	No	20	85	75	23
Mounted Impact Hammer (hoe ram)	Yes	20	90	90	212
Pavement Scarafier	No	20	85	90	2
Paver	No	50	85	77	9
Pickup Truck	No	40	55	75	1
Pneumatic Tools	No	50	85	85	90
Pumps	No	50	77	81	17
Refrigerator Unit	No	100	82	73	3
Rivet Buster/chipping gun	Yes	20	85	79	19
Rock Drill	No	20	85	81	3
Roller	No	20	85	80	16
Sand Blasting (Single Nozzle)	No	20	85	96	9
Scraper	No	40	85	84	12
Shears (on backhoe)	No	40	85	96	5
Slurry Plant	No	100	78	78	1
Slurry Trenching Machine	No	50	82	80	75
Soil Mix Drill Rig	No	50	80	N/A	0
Tractor	No	40	84	N/A	0
Vacuum Excavator (Vac-	No	40	85	85	149
Vacuum Street Sweeper	No	10	80	82	19
Ventilation Fan	No	100	85	79	13
Vibrating Hopper	No	50	85	87	1

Table A (Cont.): Construction Equipment Noise Emissions and Usage Factors

Equipment Description	Impact Device?	Acoustical Use Factor (%)	Spec 721.560 Lmax @ 50 ft (dBA, slow)	Actual Measured Lmax @ 50 ft (dBA, slow)	No. of Actual Data Samples (Count)
Vibratory Concrete Mixer	No	20	80	80	1
Vibratory Pile Driver	No	20	95	101	44
Warning Horn	No	5	85	83	12
Welder / Torch	No	40	73	74	5
Source: FHWA Roadway Construction Noise Model User's Guide, prepared by FHWA, January 2006					

SECTION 3: GROUNDBORNE VIBRATION FUNDAMENTALS

Ground-borne vibrations consist of rapidly fluctuating motions within the ground that have an average motion of zero. The effects of ground-borne vibrations typically only cause a nuisance to people, but at extreme vibration levels damage to buildings may occur. Although ground-borne vibration can be felt outdoors, it is typically only an annoyance to people indoors where the associated effects of the shaking of a building can be notable. Ground-borne noise is an effect of ground-borne vibration and only exists indoors, since it is produced from noise radiated from the motion of the walls and floors of a room and may also consist of the rattling of windows or dishes on shelves.

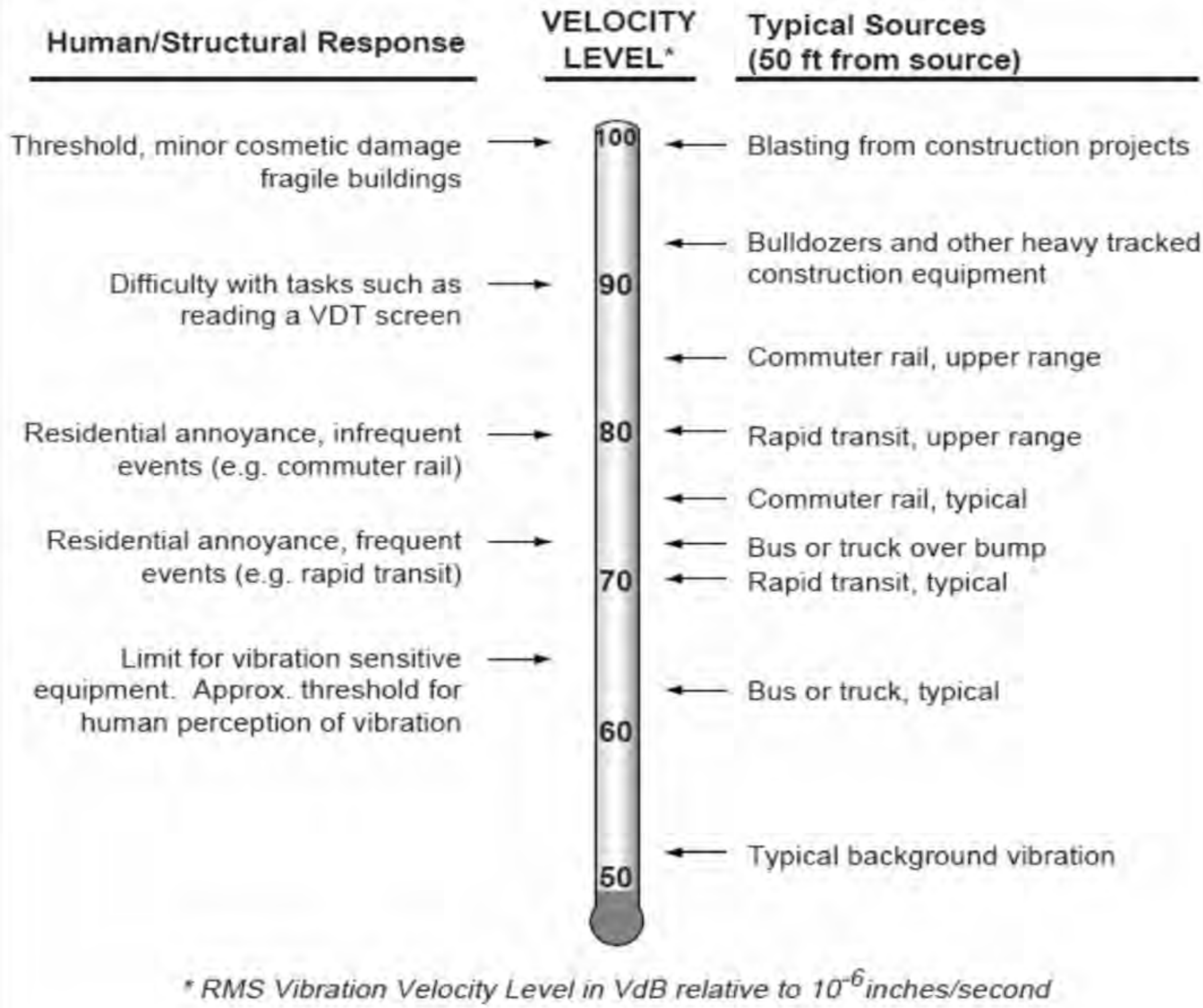
3.1 - Vibration Descriptors

Vibration is quantified through the measurement of the motion of a particular point on the ground or structure. Since the current available vibration measurement devices measure either the velocity or acceleration of the ground or structure, vibratory motion is commonly described by identifying the peak particle velocity (PPV) or peak particle acceleration (PPA). The PPV is generally accepted as the most appropriate descriptor for evaluating the potential for building damage. However, for human response, an average vibration amplitude is more appropriate since it takes time for the human body to respond to the vibration. Since the average particle velocity over time is zero, the root-mean-square (rms) amplitude of the vibration velocity is typically used to assess human response. The rms values are always less than PPV and for typical single frequency conditions, the rms value is about 70 percent of the PPV.

Due to the typically small amplitudes of vibrations, vibration velocity is often expressed in decibels, is denoted as L_v and is based on the rms velocity amplitude. A commonly used abbreviation is "VdB", which in this text, is when L_v is based on the reference quantity of 1 micro inch per second.

3.2 - Vibration Perception

Typically, developed areas are continuously affected by vibration velocities of 50 VdB or lower. These continuous vibrations are not noticeable to humans whose threshold of perception is around 65 VdB. Offsite sources that may produce perceptible vibrations are usually caused by construction equipment, steel-wheeled trains, and traffic on rough roads, while smooth roads rarely produce perceptible ground-borne noise or vibration. Exhibit 3 shows typical sources of vibration and the associated human responses to the vibration.



Source: Transit Noise and Vibration Impact Assessment,
Federal Transit Administration April 1995, and Vista Environmental.

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Exhibit 3
Typical Vibration Levels

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3.3 - Vibration Propagation

The propagation of ground-borne vibration is not as simple to model as airborne noise. This is due to the fact that noise in the air travels through a relatively uniform median, while ground-borne vibrations travel through the earth which may contain significant geological differences. There are three main types of vibration propagation: surface, compression, and shear waves. Surface waves, or Rayleigh waves, travel along the ground's surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water. P-waves, or compression waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a "push-pull" fashion). P-waves are analogous to airborne sound waves. S-waves, or shear waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse or "side-to-side and perpendicular to the direction of propagation."

As vibration waves propagate from a source, the vibration energy decreases in a logarithmic nature and the vibration levels typically decrease by 6 VdB per doubling of the distance from the vibration source. As stated above, this drop-off rate can vary greatly depending on the soil but has been shown to be effective enough for screening purposes, in order to identify potential vibration impacts that may need to be studied through actual field tests.

3.4 - Construction-Related Vibration Level Prediction

Construction activity can result in varying degrees of ground vibration, depending on the equipment used on the site. Operation of construction equipment causes ground vibrations, which spread through the ground and diminish in strength with distance. Buildings in the vicinity of the construction site respond to these vibrations with varying results ranging from no perceptible effects at the low levels to slight damage at the highest levels. Table B gives approximate vibration levels for particular construction activities. The data in Table B provides a reasonable estimate for a wide range of soil conditions.

Table B: Vibration Source Levels for Construction Equipment

Equipment	Range	Peak Particle Velocity (inches/second)	Approximate Vibration Level (L_v)at 25 feet
Pile driver (impact)	Upper range typical	1.518 0.644	112 104
Pile driver (sonic)	Upper range typical	0.734 0.170	105 93
Clam shovel drop (slurry wall)		0.202	94
Hydromill (slurry wall)	In soil In rock	0.008 0.017	66 75

Table B (Cont.): Vibration Source Levels for Construction Equipment

Equipment	Range	Peak Particle Velocity (inches/second)	Approximate Vibration Level (L_v)at 25 feet
Vibratory Roller		0.210	106
Large bulldozer		0.089	87
Caisson drill		0.089	87
Loaded trucks		0.076	86
Jackhammer		0.035	79
Small bulldozer		0.003	58
Source: Transit Noise and Vibration Impact Assessment, Federal Transit Administration, April 1995 and Transportation- and Construction-Induced Vibration Guidance Manual, Caltrans, June 2004.			

SECTION 4: NOISE AND VIBRATION STANDARDS

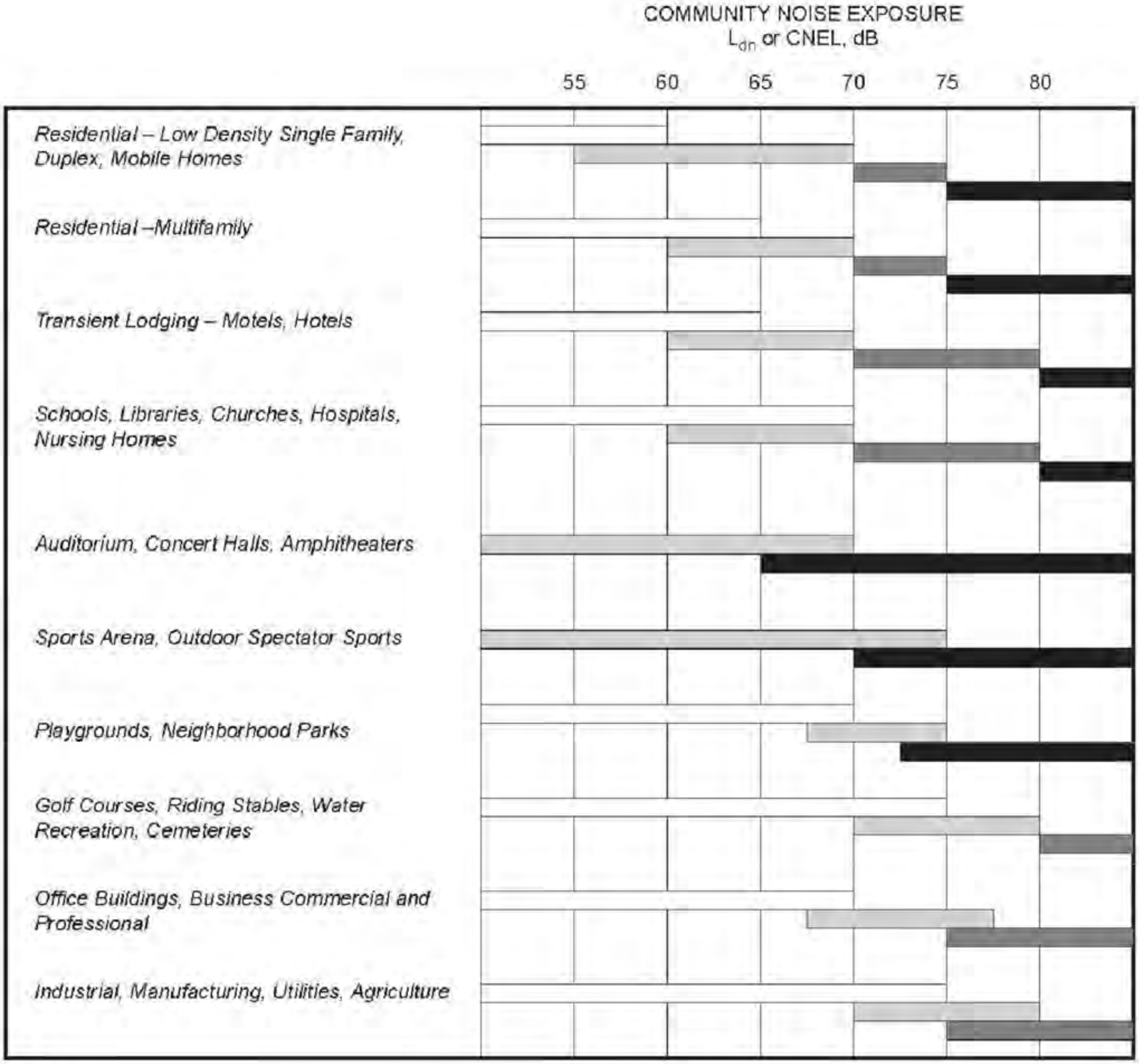
The project site is located in the jurisdiction of the City of San Ramon, which has separate standards for transportation, stationary, and construction noise and vibration sources. The following provides a discussion of the standards for these types of noise and vibration sources.

4.1 - Transportation-Related Noise

To control transportation-related noise sources such as arterial roads, freeways, airports, and railroads, the City has established guidelines for acceptable community noise levels in the General Plan Noise Element. The Noise Element outlines the land use compatibility for community noise exposure by land use category. For development of a site with exterior noise levels less than 65 dBA CNEL, commercial development is normally acceptable, with typically no noise analysis or mitigation required. For development of a site with exterior noise levels in the 65- to 78- dBA CNEL range, commercial development is conditionally acceptable upon further analysis through a noise impact analysis and possible mitigation. For development of a site with exterior noise levels in the 75- to 85-dBA CNEL range, commercial-retail development is normally unacceptable. Exhibit 4 provides the Land Use Compatibility Matrix, which identifies compatibility of land uses with noise levels.

For the residential portion of the proposed project, the General Plan Noise Element provides an interior noise level standard of 45 dBA CNEL or less and no noise standard for the commercial portion of the proposed project. For the surrounding noise sensitive residential uses, the General Plan Noise Element provides an exterior noise level standard of 60 dBA CNEL or less for the outdoor living areas and an interior noise level standard of 45 dBA CNEL or less. In the context of this noise impact analysis, the noise impacts from transportation-related noise associated with the proposed project are controlled by the City Noise Element. The applicable portions of the City's Noise Element are provided in Appendix A.

In community noise assessment, changes in noise levels less than 3 dBA are often identified as "barely perceptible," while changes of 5 dBA or greater are "readily perceptible." The range of 1 dBA to 3 dBA may be perceived by people who are very sensitive to noise as a slight change in noise level. It is recognized that an increase in noise level of 3 dBA is considered to be just perceptible in a community noise environment and an increase of 5 dBA would be readily perceptible. An increase above ambient noise levels between 3 dBA and 5 dBA would result in an adverse, but not significant impact, while an increase in noise level greater than 5 dBA when the community noise level already exceeds the City's 60 dBA CNEL standard for noise sensitive land uses would be considered a significant impact.



LEGEND:

NORMALLY ACCEPTABLE
Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.

CONDITIONALLY ACCEPTABLE
New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.

NORMALLY UNACCEPTABLE
New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and neede noise insulation features included in the design.

CLEARLY UNACCEPTABLE
New construction or development should generally not be undertaken.

Source: California Department of Health, *Guidelines for the Preparation and Content of Noise Elements of the General Plan*, November 1990.

Source: California Department of Health, Guidelines for the Preparation and Content of Noise Elements of the General Plan, November 1990, and Vista Environmental.

Michael Brandman Associates

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Exhibit 4
Land Use Compatiblity Matrix

4.2 - Stationary Noise and Vibration

The Municipal Code has established exterior noise level performance standards to control stationary source/non-transportation related noise impacts. The performance standards do not provide quantitative noise limits; instead, they provide operating rules, which are presented below from Municipal Code Chapter V Noise Control B6-101, Business and Residential Relationships:

- Store deliveries by any vehicle in the area between the business and residences is prohibited between ten p.m. and six-thirty a.m. weekdays and between ten p.m. and eight a.m. on weekend and federal holidays. Delivery vehicles will have their engines turned off during deliveries.
- Garbage disposal, construction, and maintenance by power equipment in the area between the business and residences are prohibited between ten p.m. and six-thirty a.m. weekdays and between ten p.m. and eight a.m. on weekends and federal holidays.
- Pedestrian, cycle or unauthorized vehicle traffic in the area between the business and residences is prohibited between ten p.m. and eight a.m. (Prior code B7-188).

In addition to the standards shown above, the City's General Plan Noise Element also provides a 45-dBA Leq noise level threshold for the interior living areas of all residences.

Since the City of San Ramon does not have specific vibration impact criteria for operations-related vibration levels, Caltrans' vibration impact thresholds presented in the *Transportation- and Construction-Induced Vibration Guidance Manual*, June, 2004, were utilized. The report recommends a threshold of 0.02 inches per second or 86 VdB (dB re: 1 micro-inch per second) as the significance level for on-going operation-related impacts.

In the context of this Noise Impact Analysis, the noise impacts from stationary sources associated with the proposed project are controlled by the Municipal Code. The applicable portions of the Municipal Code are provided in Appendix A.

4.3 - Construction Noise and Vibration

To control construction-related noise and vibration, the City has derived standards specifically for construction noise and vibration due to its short-term nature. The City standards are specified in the General Plan Noise Element and Noise Ordinance. The applicable sections of these documents are provided in Appendix A.

The City of San Ramon's Municipal Code Chapter V Noise Control, B6-100, states that noise and vibration from temporary construction activities are exempt from the Municipal Code's stationary noise and vibration standards, as long as construction activities are undertaken on Monday through

Friday between the hours of 7:30 a.m. and 6:00 p.m. and on Saturday and Sunday between the hours of 9:00 a.m. and 6:00 p.m., except federal holidays.

Since the City of San Ramon does not have specific vibration impact criteria for construction-related vibration levels, Caltrans' vibration impact thresholds presented in the *Transportation- and Construction-Induced Vibration Guidance Manual*, June, 2004, were utilized. The report recommends a threshold of 0.2 inches per second or 106 VdB (dB re: 1 micro-inch per second) as the significance level for construction activities.

In the context of this Noise Impact Analysis, the noise and vibration impacts from construction activities associated with the proposed project are controlled by the Municipal Code. The applicable portions of the Municipal Code are provided in Appendix A.

4.4 - California Environmental Quality Act Thresholds of Significance

Consistent with the California Environmental Quality Act (CEQA) and the State CEQA Guidelines, a significant impact related to noise would occur if a proposed project is determined to result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the local General Plan or noise ordinance, or applicable standards of other agencies;
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- A substantial permanent increase in ambient noise levels in the project vicinity above existing levels without the proposed project;
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above noise levels existing without the proposed project; or
- Exposure of persons residing or working in the project area to excessive noise levels from aircraft.

For the purposes of this noise impact analysis, a construction-related noise and vibration impact would be considered significant if construction activities are undertaken on Monday through Friday between the hours of 6:00 p.m. and 7:30 a.m. or on Saturday and Sunday between the hours of 6:00 p.m. and 9:00 a.m. or anytime on federal holidays. For the purposes of this noise impact analysis, an offsite traffic-related noise impact would be considered significant if the proposed project increases the noise levels for a noise sensitive land use by 5 dBA CNEL and if: (1) the existing noise levels already exceed the 60 dBA CNEL residential standard, or (2) the proposed project increases noise levels from below the 60 dBA CNEL standard to above 60 dBA CNEL. For the purposes of this noise impact analysis, an onsite noise impact would be considered significant if the interior noise level exceeds 45 dBA CNEL for the residential areas.

SECTION 5: EXISTING NOISE CONDITIONS

To determine the existing noise level environment, short-term peak hour noise measurements were taken at nine locations in the project study area and 24-hour noise measurements were taken at two locations on the project site. The following describes the measurement procedures, measurement locations, and the noise measurement results.

5.1 - Measurement Procedure and Criteria

To ascertain the existing noise at and adjacent to the project site, field monitoring was conducted by Greg Tonkovich, INCE, from Monday, June 4, 2007 to Tuesday, June 5, 2007. The field survey noted that noise within the proposed project area is generally characterized by vehicle traffic on the local roadways and from Interstate 680. No noise impacts from aircraft were observed during the measurements.

Noise monitoring was performed using two different styles of noise meters for the short-term peak hour measurements and the 24-hour measurements, which are described below.

5.1.1 - Short-Term Peak Hour Noise Measurements

The short-term peak hour noise measurements were taken using a Larson-Davis Model 824 Type 1 precision sound level meter programmed in “slow” mode to record noise levels in “A” weighted form. The sound level meter and microphone were mounted on a tripod five feet above the ground and were equipped with a windscreen during all measurements. The sound level meter was calibrated before and after the monitoring using a Larson-Davis calibrator, Model CAL 200. The accuracy of the calibrator is maintained through a program established through the manufacturer and is traceable to the National Bureau of Standards. The unit meets the requirements of ANSI Standard S1.4-1984 and IEC Standard 942: 1988 for Class 1 equipment. All noise level measurement equipment meets American National Standards Institute (ANSI) specifications for sound level meters (S1.4-1983 identified in Chapter 19.68.020.AA).

All noise measurement durations were measured according to the standards stated in Section N-3320 of Caltrans Technical Noise Supplement (TeNS), which specifies that the measurements be a duration of at least 10 minutes and shall be continued past 10 minutes until the fluctuations in the displayed Leq is less than 0.5 dBA.

5.1.2 - 24-Hour Noise Measurements

The 24-hour noise measurements were taken using an Extech Model 407780 Type 2 integrating sound level meter programmed in “slow” mode to record the sound pressure level at 5-second intervals for 24 hours in “A” weighted form. In addition, the Leq averaged over the entire measuring time was also recorded. The sound level meter and microphone were mounted on a tripod five feet above the ground and was equipped with a windscreen during all measurements. The sound level meter was calibrated before and after the monitoring using an Extech calibrator, Model 407766. All noise level measurement equipment meets American National Standards Institute (ANSI) specifications for sound level meters (S1.4-1983 identified in Chapter 19.68.020.AA).

5.2 - Noise Measurement Locations

The project site is located in a developed area. The project site is specifically bounded by Bishop Drive and Bishop Ranch 3 to the north, Iron Horse Trail, San Ramon Central Park, a hotel, commercial and single-family residential uses to the east, single-family residential to the south, and Sunset Drive and commercial office and retail to the west. Besides the local roadways, the project site is primarily impacted by noise from Interstate 680, which is located approximately 1,500 feet west of the project site.

The offsite short-term peak hour noise-monitoring locations were selected by Michael Brandman Associates based on the potential for impacts from noise level increases due to the development of the proposed project. Site 1 is located approximately 50 feet west of the centerline of San Ramon Valley Boulevard, approximately 25 feet north of the centerline of Talavera Drive, and approximately 120 feet west of the right-of-way for Interstate 680. Site 2 is located approximately 50 feet west of the centerline of Bollinger Canyon Road and approximately 25 feet north of the centerline of Aranda Drive. Site 3 is located approximately 50 feet west of the centerline of Sunset Drive and approximately 50 feet south of Shops at Bishop Ranch. Site 4 is located approximately 100 feet south of the centerline of Bollinger Canyon Road and approximately 50 feet east of the centerline of Bishop Ranch East. Site 5 is located on the southeastern portion of the project site at the southeastern edge of the existing parking lot. Site 6 is located approximately 20 feet north of the water feature located in Bishop Ranch 2. Site 7 is located approximately 90 feet south of the centerline of Bollinger Canyon Road and approximately 240 feet west of Canyon Lakes Drive. Site 8 is located approximately 50 feet southeast of the centerline of Woodview Circle and approximately 250 feet northwest of the centerline of Bollinger Canyon Road. Site 9 is located approximately 200 feet northeast of the centerline of Alcosta Boulevard and approximately 50 feet southeast of the centerline of Bollinger Canyon Road. The noise measurements were recorded between 3:20 p.m. and 6:20 p.m. on June 4, 2007 and between 7:10 a.m. and 9:35 a.m. on June 5, 2007. On June 4, 2007, the temperature was 76 degrees Fahrenheit, barometric pressure was 29.50 inches of mercury, with wind gusts up to 8 miles per hour during the noise measurement readings. On June 5, 2007, the temperature was 60 degrees Fahrenheit, barometric pressure was 29.47 inches of mercury, and the wind speed was around 5 miles per hour during the noise measurement readings.

The onsite 24-hour noise monitoring locations were selected by Michael Brandman Associates in order to assess the existing ambient noise levels currently impacting the project site and to determine the noise generated from a parking structure. Site A is located approximately 160 feet southeast of the southern Bishop Ranch 3 parking structure and approximately 25 feet from the centerline of Iron Horse Trail in the northeast corner of the project site. Site B is located approximately 20 feet from the south side and 75 feet from the east side of the southern Bishop Ranch 3 parking structure, in the northeast corner of the project site. Exhibit 5 shows both the short-term peak hour and 24-hour noise monitoring sites. Appendix B includes a photo index of the study area and noise level measurement locations.

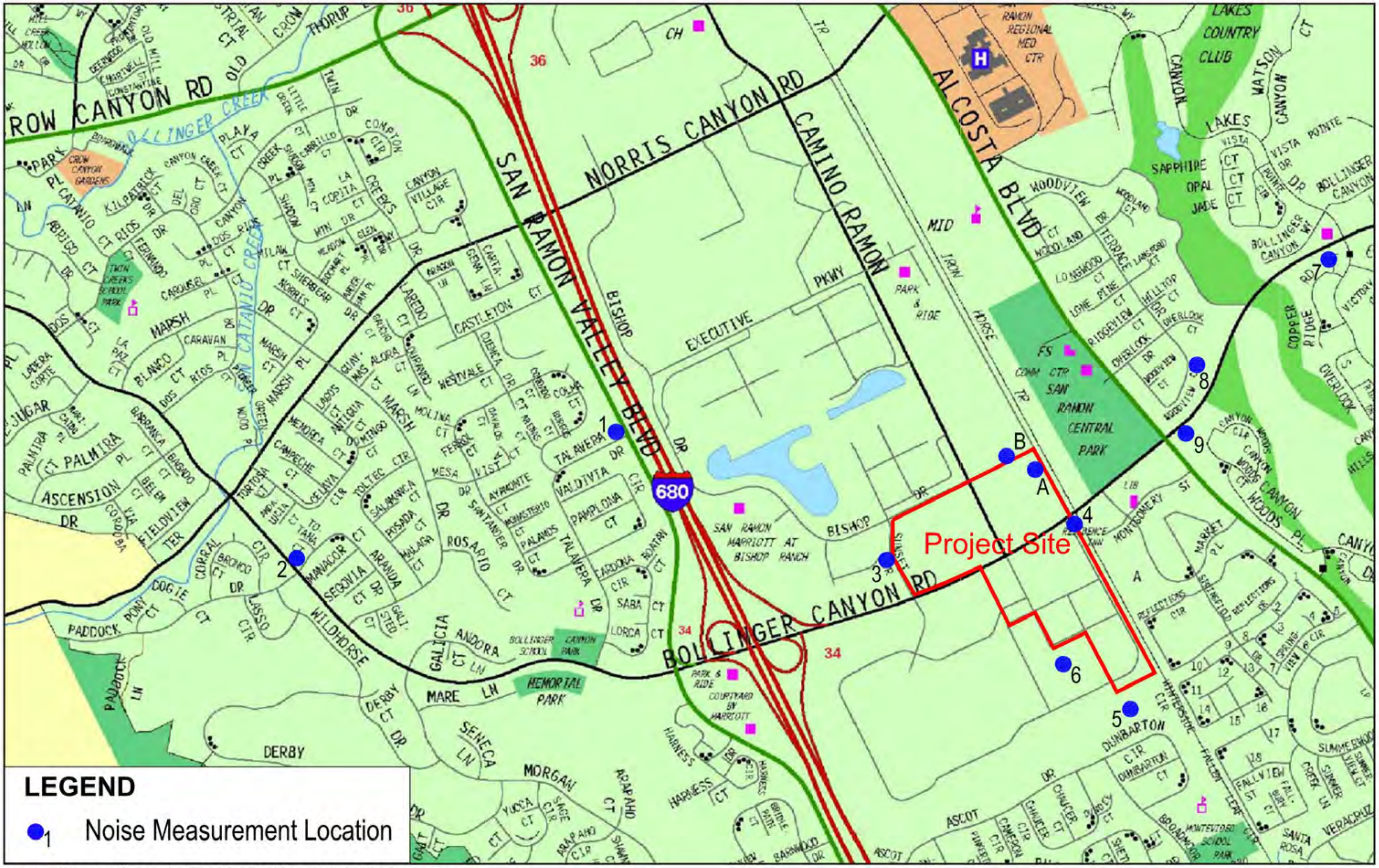
5.3 - Noise Measurement Results

5.3.1 - Short-Term Peak Hour Measurement Results

The results of the offsite short-term peak hour noise level measurements are presented in Table C. Except for Site 6, which measured the steady noise from the water feature, all other noise level measurements were monitored for a minimum time period of 10 minutes. The existing noise level measurements ranged from 51.6 to 72.5 dBA Leq, with the highest noise measurement at Site 9.

Table C: Existing (Ambient) Offsite Short-Term Noise Level Measurements

Site No.	Site Description	Primary Noise Source	Start Time and (Measurement Length - Minutes)	Noise Level (dBA Leq)
1	Located approximately 50 feet west of the centerline of San Ramon Valley Boulevard, approximately 25 feet north of the centerline of Talavera Drive, and approximately 120 feet west of the right-of-way for Interstate 680.	Traffic noise from Interstate 680 and San Ramon Valley Boulevard.	3:22 p.m. (15:30)	71.8
			7:11 a.m. (10:01)	71.9
2	Located approximately 50 feet west of the centerline of Bollinger Canyon Road and approximately 25 feet north of the centerline of Aranda Drive.	Traffic noise from Bollinger Canyon Road.	3:53 p.m. (12:00)	65.0
			7:26 a.m. (10:30)	65.5
3	Located approximately 50 feet west of the centerline of Sunset Drive and approximately 50 feet south of Shops at Bishop Ranch.	Traffic noise from Sunset Drive.	4:16 p.m. (11:00)	67.1
			7:50 a.m. (10:00)	65.1
4	Located approximately 100 feet south of the centerline of Bollinger Canyon Road and approximately 50 feet east of the centerline of Bishop Ranch East.	Traffic noise from Bollinger Canyon Road.	4:34 p.m. (11:30)	64.6
			8:04 a.m. (10:30)	63.9
5	Located on the southeastern portion of the project site at the southeastern edge of the existing parking lot.	Traffic noise from Interstate 680.	4:51 p.m. (10:00)	51.6
			8:18 a.m. (10:00)	52.0
6	Located approximately 20 feet north of the water feature located in Bishop Ranch 2.	Water feature noise.	5:06 p.m. (5:00)	66.3
			8:34 a.m. (4:00)	66.2
7	Located approximately 90 feet south of the centerline of Bollinger Canyon Road and approximately 240 feet west of Canyon Lakes Drive.	Traffic noise from Bollinger Canyon Road.	5:28 p.m. (12:30)	69.6
			8:46 a.m. (11:59)	70.0



Source: Thomas Guide Digital Edition 2007 and Vista Environmental.

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Exhibit 5
Noise Measurement Locations

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Table C (Cont.): Existing (Ambient) Offsite Short-Term Noise Level Measurements

Site No.	Site Description	Primary Noise Source	Start Time and (Measurement Length - Minutes)	Noise Level (dBA Leq)
8	Located approximately 50 feet southeast of the centerline of Woodview Circle and approximately 250 feet northwest of the centerline of Bollinger Canyon Road.	Traffic noise from Bollinger Canyon Road and Interstate 680.	5:49 p.m. (11:30)	50.8
			9:04 a.m. (10:00)	52.6
9	Located approximately 200 feet northeast of the centerline of Alcosta Boulevard and approximately 50 feet southeast of the centerline of Bollinger Canyon Road.	Traffic noise from Bollinger Canyon Road and Alcosta Boulevard.	6:09 p.m. (11:00)	72.5
			9:21 a.m. (11:30)	70.4
Notes: Weather conditions for June 4, 2007 p.m.: Partly Cloudy, temperature 76 degrees Fahrenheit, barometric pressure 29.50 inches of mercury, with wind gusts up to 8 miles per hour. For June 5, 2007 a.m.: Partly cloudy, temperature 60 degrees Fahrenheit, barometric pressure 29.47 inches of mercury, and the wind speed was around 5 miles per hour. Source: Noise measurements taken by Michael Brandman Associates.				

The noise level measurements were taken during both the peak afternoon and morning traffic periods. The noise level difference between the two measurements time are all within 1 dBA except for Site 3, where there was noticeably less traffic entering The Shops at Bishop Ranch during the morning peak hour and for Sites 8 and 9, where the morning noise measurements were taken towards the end of the morning peak traffic period.

The noise measurement results show that except for Sites 5 and 8, the remaining sites exceed the City's exterior noise standards of 60 dBA for noise sensitive residential areas. The noise monitoring data printouts are included in Appendix C. According to Section N-2230 of the TeNS, the CNEL values are generally within plus or minus 2 dBA of the measured peak hour Leq dBA.

5.3.2 - 24-Hour Measurement Results

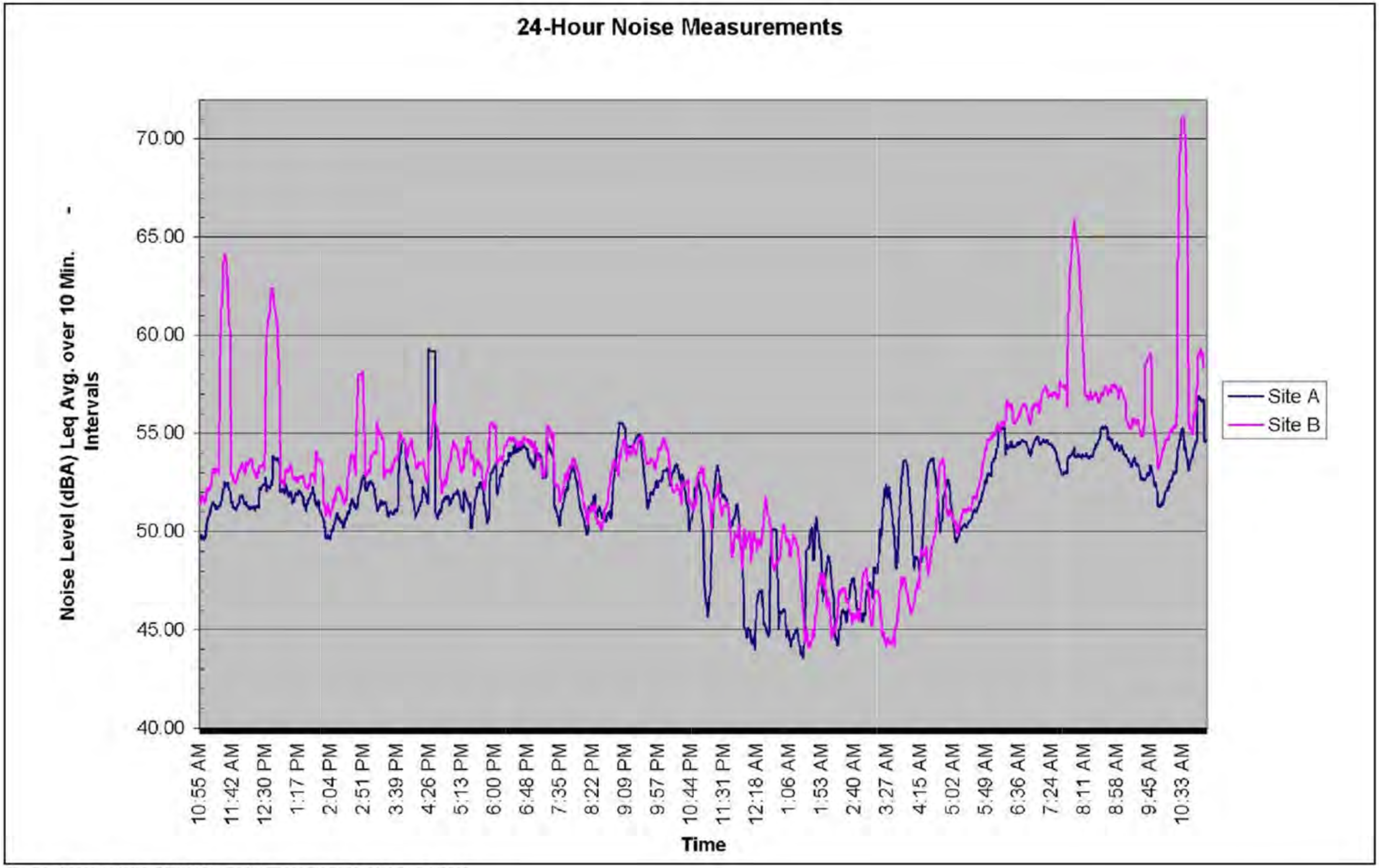
The two onsite 24-hour measurements were taken from 10:53 p.m. on June 4, 2007 and ran until 11:12 a.m. on June 5, 2007. Site A was positioned to capture the ambient noise of the project site, without the noise impacts from the local roadways. Site B was positioned to capture the noise levels generated from the southern Bishop Ranch 3 parking structure. At 2:30 p.m. on June 4, 2007, there were 311 vehicles parked in the parking structure, and it is assumed approximately that number of vehicles enter and leave the parking structure each day. Around 10 a.m. on June 5, 2007, maintenance workers were scraping peeling paint off the parking structure and utilizing a gas powered vacuum to pick up the paint flakes, which is not part of the typical daily maintenance, so the measured parking structure noise levels should be considered as worst-case noise levels for a parking structure.

The measured sound pressure levels in dBA have been used to calculate; the minimum and maximum Leq averaged over 10-minute intervals, and the 24-hour CNEL, which are shown in Table D along with the measured Leq averaged over the entire measurement time. In addition, a graph of the calculated Leq averaged over 10-minute intervals for both 24-hour measurements is shown in Exhibit 6.

Table D: Existing (Ambient) Onsite 24-Hour Noise Level Measurements

Site No.	Site Description	24-Hour Average (dBA Leq)	Minimum 10-Minute Interval (dBA Leq/Time)	Maximum 10-Minute Interval (dBA Leq/Time)	24-Hour Average (dBA CNEL)
A	Located approximately 160 feet southeast of the southern Bishop Ranch 3 parking structure and approximately 25 feet from the centerline of Iron Horse Trail in the northeast corner of the project site.	52.5	43.6/ 1:25 a.m.	59.3/ 4:25 p.m.	58.0
B	Located approximately 20 feet from the south side and 75 feet from the east side of the southern Bishop Ranch 3 parking structure, in the northeast corner of the project site.	55.7	44.1/ 1:34 a.m.	71.1/ 10:31 a.m.	59.4
Source: Noise measurements taken by Michael Brandman Associates on June 4 and 5, 2007.					

Table D above shows that the existing ambient noise level for the northern portion of the project site, represented by Site A, is 52.5 dBA, which is consistent with the short-term peak noise measurements for Site 5, which measured the ambient noise levels at the southern portion of the project site. Table D and Exhibit 6 above also show that the southern Bishop Ranch 3 parking structure produces a noise level of 3.2 dBA Leq above the ambient noise level. The 24-hour hour noise monitoring data printouts are included in Appendix C.



Source: Extech Model 407780 Type 2 Intergrating Sound Level Meter and Vista Environmental.

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Exhibit 6
24-Hour Noise Measurement Graphs

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SECTION 6: SHORT-TERM CONSTRUCTION IMPACTS

Construction noise and vibration represents a short-term increase in ambient noise and vibration levels. Noise and vibration impacts from construction activities associated with the proposed project would be a function of the noise and vibration generated by construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities.

The construction activities for the proposed project are anticipated to include demolition of 194,652 square feet of office space spread amongst several multi-story office structures, ground clearing/excavation and grading of approximately 43.65 acres of land and construction of 2,168,466 square feet of mixed uses. The following describes the anticipated construction schedule:

- Plaza District - Construction starts in fall 2008 with completion and opening November 2010.
- Bishop Ranch 1A - The first Bishop Ranch 1A office building starts in mid-2008 with a construction period of 14 months.
- Bishop Ranch 1A - Parking structure starts in mid-2008 with a construction period of 10 months; the second office building starts mid-2009 with a construction period of 14 months.
- Bishop Ranch 1 - Parking structure starts in mid-2009 with a construction period of 10 months. The third office building starts in mid-2010 with a construction period of 14 months.
- City Hall and Transit Center - Construction begins mid-2009 with a construction period of 18 months.

The following section provides a discussion of construction noise and vibration assumptions and an analysis of potential short-term construction impacts associated with the proposed project.

6.1 - Potential Short-Term Construction Noise Impacts

Short-term noise impacts could occur during construction activities from either the noise impacts created from the transport of workers and movement of construction materials to and from the project site, or from the noise generated onsite during; demolition, ground clearing/excavation, grading, and construction activities.

6.1.1 - Construction Noise Occurring Offsite

The transport of workers and movement of construction materials could incrementally increase the noise levels along nearby roadways. In order for offsite roadway noise impacts created by construction trips associated with the proposed project to be considered significant, the offsite roadway noise levels would have to increase by 5 dBA CNEL and the resulting noise level would have to exceed the City’s 60 dBA CNEL exterior noise standard for noise sensitive uses. This criteria for significance has been previously discussed above in Section 4.0. The greatest construction-related offsite noise impact is expected to occur when the existing 194,652 square feet of the Bishop Ranch 2 office park is demolished and the debris is hauled offsite. According to the URBEMIS2002 Model default settings this would require haul trucks to make approximately 45 round-trips per day for 20 days.

According to the Traffic Analysis, construction traffic would not be permitted east of the Bollinger Canyon Road and Bishop Ranch East intersection or north of Bishop Drive. With this limitation, no offsite noise sensitive land uses would be impacted by the construction-related traffic. Therefore, no significant impact is anticipated due to construction noise impacts that would occur off the project site.

6.1.2 - Construction Noise Occurring Onsite

The project site is specifically bounded by Bishop Drive and Bishop Ranch 3 to the north, Iron Horse Trail, San Ramon Central Park, a hotel, commercial, and apartment and single-family residential uses to the east, single-family residential to the south, and Sunset Drive and commercial office and retail to the west. The closest noise sensitive land uses include; a Marriott Residence Inn located approximately 180 feet east of the nearest construction activity and apartment homes located approximately 210 feet east of the nearest construction activity. In addition, the nearest Iron Horse Middle School classrooms are approximately 2,000 feet from the northeast corner of the project site.

The Marriott Residence Inn would experience the greatest noise impact during the construction of the Bishop Ranch 1A third office building, which is anticipated to occur mid 2010 and last for 14 months. The apartment homes to the east would experience the greatest noise impact during the construction of the Bishop Ranch 1 Parking Structure, which is anticipated to start mid 2009 and last for 10 months. Iron Horse Middle School would experience the greatest noise impacts during the construction of Block F of the Plaza District, which is anticipated to start in the fall of 2008 and be completed by November 2010.

Construction noise impacts onto the nearby sensitive receptors have been calculated according to the methodology presented in Section 2.0 and through the use of the RCNM. Pile drivers may be used during the construction of; Bishop Ranch 1A third office building, Bishop Ranch 1 Parking Structure and Block F of the Plaza District, which would be the noisiest phase of construction. Along with the operation of a pile driver, it was assumed that the simultaneous operation of an excavator, and a front end loader would occur. The individual noise levels of the various types of equipment have been previously shown above in Table A. The results of the construction noise impacts are shown below in Table E and the RCNM model printouts are provided in Appendix D.

Table E: Construction Noise Impacts

Land Use	Distance to Nearest Construction	Combined Equipment Noise Level	
		dBA Lmax	dBA Leq
Marriott Residence Inn	180	90.1	83.3
Apartments to the East	210	88.8	81.9
Iron Horse Middle School	2,000	69.2	62.4
Source: FHWA Roadway Construction Noise Model Version 1.0.			

Table E above shows that the Marriott Residence Inn located approximately 180 feet east of the nearest construction will experience the greatest construction noise impact from the proposed project with combined maximum average noise levels from the construction equipment at 83.3 dBA Leq.

Since construction noise is of a temporary nature, the City does not require noise mitigations to specific levels. However, they do require construction-related operational considerations such as limitation on the hours of construction and proper maintenance of sound attenuation equipment on construction equipment. With application of the of the City's regulatory requirements from the General Plan Noise Element, the short-term construction-related noise from the proposed project will not result in a short-term significant noise impact.

6.2 - Potential Short-Term Construction Vibration Impacts

Construction activities can produce vibration that may be felt by adjacent uses. The primary sources of vibration during construction will potentially be from pile drivers, which are known to generate substantial vibration levels. From Table B, an impact pile driver truck will be the piece of equipment that will produce the largest amount of vibration on the project site with an upper range of 1.518 PPV or 112 VdB at 25 feet.

The closest potentially impacted land from vibration includes the Marriott Residence Inn located approximately 180 feet east of the nearest construction activities. It is anticipated that the vibration levels created at the Marriott Residence Inn caused by an impact pile driver operating on the eastern portion of the Bishop Ranch 1A third office building would be around 95 VdB. This vibration level is below the 106 VdB significance level discussed in Section 4.0. Therefore, the short-term construction-related vibration from the proposed project will not result in a significant vibration impact.

SECTION 7: LONG-TERM OPERATIONS NOISE IMPACTS

The on-going operation of the proposed project would result in a long-term increase in ambient noise levels. Potential noise impacts associated with the operations of the proposed project are a result of project-generated vehicular traffic on the project vicinity roadways. The following section provides an analysis of potential long-term offsite noise impacts and onsite interior noise and vibration impacts associated with the on-going operations of the proposed project.

7.1 - Potential Offsite Vehicular Noise Impacts

The following provides a discussion of the methodology used to calculate the offsite traffic noise impacts and an analysis of the proposed project's offsite traffic noise impacts created from the on-going operations of the proposed project.

7.1.1 - Methodology

Noise from motor vehicles is generated by engine vibrations, the interaction between tires and the road, and the exhaust system. The following describes the FHWA Traffic noise prediction model, the model inputs, and the model calibration to the field noise measurements.

FHWA-RD-77-108 Traffic Noise Prediction Model

The projected roadway noise impacts from vehicular traffic were projected using a computer program that replicates the FHWA Traffic Noise Prediction Model FHWA-RD-77-108. The FHWA-RD-77-108 Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). Adjustments are then made to the reference energy mean emission level to account for: the roadway active width (i.e., the distance between the center of the outermost travel lanes on each side of the roadway), the total average daily traffic (ADT) and the percentage of (ADT) which flows during the day, evening and night, the travel speed, the vehicle mix on the roadway, which is a percentage of the volume of automobiles, medium trucks and heavy trucks, the roadway grade, the angle of view of the observer exposed to the roadway, the site conditions ("hard" or "soft" relates to the absorption of the ground, pavement or landscaping.

Traffic Noise Prediction Model Inputs

The roadway parameters used for this study are presented below in Table F. The roadway classifications are based on the City's General Plan Circulation Element. The roadway speed is based on the posted speed limits. Soft site conditions were used to develop noise contours and analyze noise impacts to the project site.

Table F: Roadway Parameters

Roadway	Segment	General Plan Classification	Vehicle Speed (MPH)	Site
Bollinger Canyon Road	South of Crow Canyon Road	2-lane Arterial	35	Soft
	North of Norris Canyon Road	2-lane Arterial	35	Soft
	South of Norris Canyon Road	4-lane Arterial	40	Soft
San Ramon Valley Boulevard	North of Crow Canyon Road	4-lane Arterial	35	Soft
	North of Norris Canyon Road	4-lane Arterial	35	Soft
	North of Bollinger Canyon Road	4-lane Arterial	40	Soft
	South of Bollinger Canyon Road	4-lane Arterial	40	Soft
	South of Montevideo Drive	4-lane Arterial	40	Soft
Sunset Drive	South of Bishop Drive	4-lane Collector	35	Soft
	North of Bollinger Canyon Road	4-lane Collector	35	Soft
Camino Ramon	North of Crow Canyon Road	4-lane Collector	35	Soft
	North of Norris Canyon Road	4-lane Collector	35	Soft
	North of Executive Parkway	4-lane Collector	35	Soft
	North of Bishop Drive	4-lane Collector	35	Soft
	North of Bollinger Canyon Road	4-lane Collector	35	Soft
	South of Bollinger Canyon Road	4-lane Collector	35	Soft
Bishop Ranch East	South of Bollinger Canyon Road	2-lane Collector	30	Soft
Market	South of Bollinger Canyon Road	4-lane Collector	35	Soft
Alcosta Boulevard	North of Norris Canyon Road	4-lane Arterial	40	Soft
	North of Bollinger Canyon Road	4-lane Arterial	40	Soft
	South of Bollinger Canyon Road	4-lane Arterial	40	Soft
	South of Montevideo Drive	4-lane Arterial	40	Soft
	North of Old Ranch Road	4-lane Arterial	40	Soft
	South of Old Ranch Road	4-lane Arterial	40	Soft
Canyon Lakes Road	North of Bollinger Canyon Road	2-lane Collector	30	Soft
Dougherty Road	South of Crow Canyon Road	6-lane Arterial	40	Soft
	North of Bollinger Canyon Road	6-lane Arterial	40	Soft
	North of Old Ranch Road	6-lane Arterial	40	Soft
	South of Old Ranch Road	6-lane Arterial	40	Soft
Crow Canyon Road	West of Bollinger Canyon Road	4-lane Arterial	40	Soft
	East of Bollinger Canyon Road	6-lane Arterial	40	Soft
	West of San Ramon Valley Boulevard	6-lane Arterial	40	Soft

Table F (Cont.): Roadway Parameters

Roadway	Segment	General Plan Classification	Vehicle Speed (MPH)	Site
cont.	West of Camino Ramon	8-lane Arterial	40	Soft
	East of Camino Ramon	8-lane Arterial	40	Soft
	East of Alcosta Boulevard	6-lane Arterial	40	Soft
	West of Dougherty Road	6-lane Arterial	40	Soft
	East of Dougherty Road	6-lane Arterial	40	Soft
Norris Canyon Road	West of Bollinger Canyon Road	2-lane Collector	30	Soft
	West of San Ramon Valley Boulevard	4-lane Collector	35	Soft
	West of Camino Ramon	4-lane Collector	35	Soft
Bishop Drive	West of Sunset Drive	4-lane Collector	35	Soft
	West of Camino Ramon	4-lane Collector	35	Soft
	East of Camino Ramon	4-lane Collector	35	Soft
Bollinger Canyon Road	West of San Ramon Valley Boulevard	4-lane Arterial	40	Soft
	West of Sunset Drive	8-lane Arterial	40	Soft
	West of Camino Ramon	8-lane Arterial	40	Soft
	East of Camino Ramon	8-lane Arterial	40	Soft
	East of Bishop Ranch East	8-lane Arterial	40	Soft
	East of Market	8-lane Arterial	40	Soft
	East of Alcosta Boulevard	6-lane Arterial	40	Soft
	East of Canyon Lakes Drive	6-lane Arterial	40	Soft
	West of Dougherty Road	6-lane Arterial	40	Soft
	East of Dougherty Road	6-lane Arterial	40	Soft
Montevideo Drive	East of San Ramon Valley Boulevard	2-lane Collector	30	Soft
	West of Alcosta Boulevard	2-lane Collector	30	Soft
Old Ranch Road	East of Alcosta Boulevard	4-lane Arterial	40	Soft
	West of Dougherty Road	4-lane Arterial	40	Soft
Source: City of San Ramon General Plan Circulation Element				

In order to determine the offsite project generated traffic noise impacts, the average daily traffic volumes on the study area roadways were obtained from the Traffic Analysis. The ADT volumes were provided for the existing, existing with project, year 2020 baseline, and year 2020 baseline with project scenarios. The ADT volumes are shown below in Table G.

Table G: Average Daily Traffic

Roadway	Segment	Average Daily Traffic			
		Existing	Existing With Project	Year 2020 No Project	Year 2020 With Project
Bollinger Canyon Road (North-South)	South of Crow Canyon Road	5,010	6,106	6,410	7,364
	North of Norris Canyon Road	7,105	8,201	8,755	9,709
	South of Norris Canyon Road	8,810	9,906	10,830	11,784
San Ramon Valley Boulevard	North of Crow Canyon Road	20,300	20,997	23,910	24,544
	North of Norris Canyon Road	12,585	12,998	15,225	15,575
	North of Bollinger Canyon Road	13,400	13,813	15,985	16,745
	South of Bollinger Canyon Road	23,175	23,759	26,080	28,935
	South of Montevideo Drive	16,650	16,954	21,455	21,727
Sunset Drive	South of Bishop Drive	9,090	15,822	11,985	15,017
	North of Bollinger Canyon Road	15,050	22,206	19,420	23,246
Camino Ramon	North of Crow Canyon Road	9,485	9,553	11,485	11,553
	North of Norris Canyon Road	14,540	19,242	17,775	22,033
	North of Executive Parkway	13,915	19,015	16,885	21,509
	North of Bishop Drive	13,905	19,115	16,800	21,533
	North of Bollinger Canyon Road	14,765	13,163	9,815	14,410
	South of Bollinger Canyon Road	4,015	10,737	4,430	9,454
Bishop Ranch East	South of Bollinger Canyon Road	1,685	5,982	1,925	4,787
Market	South of Bollinger Canyon Road	7,540	7,990	8,685	9,071
Alcosta Boulevard	North of Norris Canyon Road	15,690	16,432	18,975	19,574
	North of Bollinger Canyon Road	16,300	17,042	19,815	20,414
	South of Bollinger Canyon Road	17,375	20,983	21,120	24,474
	South of Montevideo Drive	9,630	11,306	11,650	13,198
	North of Old Ranch Road	7,915	9,591	9,625	11,173
	South of Old Ranch Road	8,210	9,108	9,985	10,819
Canyon Lakes Road	North of Bollinger Canyon Road	6,075	6,599	7,065	7,525
Dougherty Road	South of Crow Canyon Road	15,245	15,763	18,630	19,084
	North of Bollinger Canyon Road	14,760	15,278	31,930	32,384
	North of Old Ranch Road	19,945	20,307	24,625	24,955
	South of Old Ranch Road	21,050	21,466	25,990	26,374

Table G (Cont.): Average Daily Traffic

Roadway	Segment	Average Daily Traffic			
		Existing	Existing With Project	Year 2020 No Project	Year 2020 With Project
Crow Canyon Road	West of Bollinger Canyon Road	17,115	19,307	24,960	26,868
	East of Bollinger Canyon Road	16,580	17,676	24,200	25,154
	West of San Ramon Valley Boulevard	28,940	30,036	33,500	34,454
	West of Camino Ramon	36,010	38,740	43,540	45,936
	East of Camino Ramon	33,685	35,590	40,730	42,524
	East of Alcosta Boulevard	32,220	34,867	39,075	41,468
	West of Dougherty Road	19,635	21,243	23,785	25,233
	East of Dougherty Road	29,000	30,090	35,215	36,209
Norris Canyon Road	West of Bollinger Canyon Road	5,315	5,933	6,270	6,856
	West of San Ramon Valley Boulevard	9,855	10,473	11,915	12,501
	West of Camino Ramon	10,625	11,023	12,890	13,256
Bishop Drive	West of Sunset Drive	5,835	6,013	6,300	6,478
	West of Camino Ramon	3,155	9,790	5,040	9,565
	East of Camino Ramon	2,160	11,872	6,340	12,707
Bollinger Canyon Road (East-West)	West of San Ramon Valley Boulevard	13,365	14,461	15,300	17,429
	West of Sunset Drive	51,495	63,375	59,095	69,306
	West of Camino Ramon	38,005	45,877	42,305	50,619
	East of Camino Ramon	32,195	36,093	33,560	39,659
	East of Bishop Ranch East	31,730	42,572	39,370	49,178
	East of Market	27,100	37,492	33,315	42,737
	East of Alcosta Boulevard	26,405	32,447	34,110	43,533
	East of Canyon Lakes Drive	20,820	26,338	25,605	30,615
	West of Dougherty Road	18,285	23,085	25,180	29,534
	East of Dougherty Road	17,345	21,055	24,805	28,197
Montevideo Drive	East of San Ramon Valley Boulevard	13,435	13,717	18,030	18,280
	West of Alcosta Boulevard	4,395	6,327	5,345	7,151
Old Ranch Road	East of Alcosta Boulevard	7,160	7,938	8,775	9,489
	West of Dougherty Road	5,305	6,083	6,555	7,269

Table G (Cont.): Average Daily Traffic

Roadway	Segment	Average Daily Traffic			
		Existing	Existing With Project	Year 2020 No Project	Year 2020 With Project
Bollinger Canyon Road	South of Crow Canyon Road	5,010	6,106	6,410	7,364
	North of Norris Canyon Road	7,105	8,201	8,755	9,709
	South of Norris Canyon Road	8,810	9,906	10,830	11,784
San Ramon Valley Boulevard	North of Crow Canyon Road	20,300	20,997	23,910	24,544
	North of Norris Canyon Road	12,585	12,998	15,225	15,575
	North of Bollinger Canyon Road	13,400	13,813	15,985	16,745
	South of Bollinger Canyon Road	23,175	23,759	26,080	28,935
	South of Montevideo Drive	16,650	16,954	21,455	21,727
Sunset Drive	South of Bishop Drive	9,090	15,822	11,985	15,017
Source: Draft Traffic Operations Evaluation for San Ramon City Center Project, prepared by DMJM Harris, June 2007.					

Table H presents the hourly traffic flow distribution (vehicle mix) used in for this analysis. The vehicle mix provides the hourly distribution percentages of automobile, medium trucks and heavy trucks for input into the FHWA-RD-77-108 Model.

Table H: Roadway Vehicle Mix

Vehicle Type	Day (7 a.m. to 7p.m.)	Evening (7 p.m. to 10 p.m.)	Night (10 p.m. to 7 a.m.)	Overall
Major, Arterial, or Expressway				
Automobiles	69.50%	12.90%	9.60%	92.00%
Medium Trucks	1.44%	0.06%	1.50%	3.00%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%
Secondary, Collector or Local				
Automobiles	73.60%	13.60%	10.22%	97.40%
Medium Trucks	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	0.35%	0.04%	0.35%	0.74%
Source: Typical vehicle mixes in California.				

Source Assumptions

To assess the roadway noise generation in a uniform manner, all vehicles were analyzed at the single lane equivalent acoustic center of the roadway being analyzed. In order to determine the height above the road grade where the noise is being emitted from, each type of vehicle has been analyzed independently with autos at road grade, medium trucks at 2.3 feet above road grade, and heavy trucks at 8 feet above road grade. These elevations were determined through a noise-weighted average of the elevation of the exhaust pipe, tires, and mechanical parts in the engine, which are the primary noise emitters from a vehicle.

7.1.2 - Model Results

The potential offsite noise impacts caused through the increase in vehicular traffic from the on-going operations from the proposed project on to the project study area roadways has been analyzed for the following five traffic scenarios:

- Existing Condition: This scenario refers to the existing traffic noise conditions, without construction of the proposed project.
- Existing Conditions plus project: This scenario refers to the existing traffic noise conditions based on the site’s current conditions plus the additional noise generated by the project.
- 2020 Baseline Conditions: This scenario refers to the future traffic noise conditions based on the assumed regional growth shown in the Contra Costa Transportation Authority Countywide Travel Demand Model.
- 2020 Plus Project Conditions: This scenario refers to the 2020 Baseline Condition with the addition of traffic from the Flex Retail alternative project condition.

In order to quantify the traffic noise impacts along the analyzed roadways, the roadway noise contours were calculated. Noise contours represent the distance to noise levels of a constant value and are measured from the center of the roadway. For analysis comparison purposes, the Ldn and CNEL noise levels are calculated at 100 feet from the centerline. In addition, the distance from the centerline to the 55, 60, 65, and 70 dBA noise levels are calculated for both Ldn and CNEL standards.

Existing Conditions

The calculated existing condition noise contours are shown below in Table I and Appendix E. Table I shows that at 100 feet the analyzed segments of: San Ramon Valley Boulevard except for north of Norris Canyon Road, Sunset Drive north of Bollinger Canyon Road, Alcosta Boulevard north of Montevideo Road, Dougherty Road, Crow Canyon Road, and the east-west portion of Bollinger Canyon Road currently exceed the City’s 60 dBA CNEL standard. The noise levels from all analyzed roadway segments range from 48.5 to 68.1 dBA CNEL.

Table I: Existing Noise Contours

Roadway	Segment	CNEL at 100 feet (dBA)	Distance to Contour (feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Bollinger Canyon Road (North-South)	South of Crow Canyon Road	55.6	RW	RW	51	110
	North of Norris Canyon Road	57.1	RW	RW	64	139
	South of Norris Canyon Road	59.6	RW	44	94	203
San Ramon Valley Boulevard	North of Crow Canyon Road	61.8	RW	61	131	283
	North of Norris Canyon Road	59.7	RW	44	95	206
	North of Bollinger Canyon Road	61.4	RW	58	125	269
	South of Bollinger Canyon Road	63.8	39	83	180	387
	South of Montevideo Drive	62.4	RW	67	144	310
Sunset Drive	South of Bishop Drive	57.8	RW	RW	72	155
	North of Bollinger Canyon Road	60.0	RW	47	100	216
Camino Ramon	North of Crow Canyon Road	58.0	RW	RW	74	159
	North of Norris Canyon Road	59.9	21	46	98	212
	North of Executive Parkway	59.7	21	44	95	205
	North of Bishop Drive	59.7	RW	44	95	205
	North of Bollinger Canyon Road	59.9	RW	46	99	214
	South of Bollinger Canyon Road	54.3	RW	RW	42	90
Bishop Ranch East	South of Bollinger Canyon Road	48.5	RW	RW	RW	RW
Market	South of Bollinger Canyon Road	57.0	RW	RW	63	137
Alcosta Boulevard	North of Norris Canyon Road	61.9	RW	62	133	287
	North of Bollinger Canyon Road	62.3	RW	66	142	306
	South of Bollinger Canyon Road	62.6	RW	69	148	319
	South of Montevideo Drive	60.0	RW	46	100	216
	North of Old Ranch Road	59.2	RW	41	88	189
	South of Old Ranch Road	59.3	RW	42	90	194
Canyon Lakes Road	North of Bollinger Canyon Road	55.1	RW	RW	47	102
Dougherty Road	South of Crow Canyon Road	62.1	RW	RW	138	297
	North of Bollinger Canyon Road	62.2	RW	RW	140	302
	North of Old Ranch Road	63.5	RW	80	171	369
	South of Old Ranch Road	63.7	RW	82	178	383

Table I (Cont.): Existing Noise Contours

Roadway	Segment	CNEL at 100 feet (dBA)	Distance to Contour (feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Crow Canyon Road	West of Bollinger Canyon Road	62.5	RW	68	147	316
	East of Bollinger Canyon Road	62.7	RW	70	151	326
	West of San Ramon Valley Boulevard	65.1	RW	102	220	473
	West of Camino Ramon	66.5	RW	126	272	586
	East of Camino Ramon	66.2	RW	121	260	560
	East of Alcosta Boulevard	65.6	RW	109	236	508
	West of Dougherty Road	63.4	RW	79	170	365
	East of Dougherty Road	65.1	RW	102	220	474
Norris Canyon Road	West of Bollinger Canyon Road	54.6	RW	RW	43	94
	West of San Ramon Valley Boulevard	58.2	RW	RW	76	163
	West of Camino Ramon	58.5	RW	RW	80	172
Bishop Drive	West of Sunset Drive	55.9	RW	RW	53	115
	West of Camino Ramon	53.2	RW	RW	RW	76
	East of Camino Ramon	51.6	RW	RW	RW	59
Bollinger Canyon Road (East-West)	West of San Ramon Valley Boulevard	61.2	RW	56	120	258
	West of Sunset Drive	68.1	RW	160	345	744
	West of Camino Ramon	66.8	RW	131	282	607
	East of Camino Ramon	66.0	RW	117	252	544
	East of Bishop Ranch East	66.0	RW	116	250	539
	East of Market	65.3	RW	104	225	485
	East of Alcosta Boulevard	64.7	RW	96	207	445
	East of Canyon Lakes Drive	63.7	RW	82	176	380
	West of Dougherty Road	63.1	RW	75	162	348
	East of Dougherty Road	62.9	RW	72	156	336
Montevideo Drive	East of San Ramon Valley Boulevard	58.6	RW	RW	81	174
	West of Alcosta Boulevard	52.6	RW	RW	RW	70
Old Ranch Road	East of Alcosta Boulevard	58.5	RW	37	79	170
	West of Dougherty Road	57.4	RW	RW	67	145
Note: RW = Noise contour is located within right-of-way of roadway.						

Existing Plus Project Conditions

The calculated existing plus project noise contours are shown below in Table J and Appendix E. Table J shows that at 100 feet compared to the existing conditions; Bollinger Canyon Road south of Norris Canyon Road, Sunset Drive south of Bishop Drive, Camino Ramon from north of Norris Canyon Road to north of Bishop Drive, and Alcosta Boulevard south of Montevideo Drive would be the additional roadway segments that would exceed the City's 60 dBA CNEL standard. The noise levels from all analyzed roadway segments will range from 54.0 to 69.0 dBA CNEL.

Table J: Existing Plus Project Noise Contours

Roadway	Segment	CNEL at 100 feet (dBA)	Distance to Contour (feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Bollinger Canyon Road (North-South)	South of Crow Canyon Road	56.5	RW	RW	58	125
	North of Norris Canyon Road	57.7	RW	RW	71	152
	South of Norris Canyon Road	60.1	RW	47	102	220
San Ramon Valley Boulevard	North of Crow Canyon Road	61.9	RW	62	134	289
	North of Norris Canyon Road	59.8	RW	45	97	210
	North of Bollinger Canyon Road	61.6	RW	59	127	274
	South of Bollinger Canyon Road	63.9	39	85	183	393
	South of Montevideo Drive	62.5	RW	68	146	314
Sunset Drive	South of Bishop Drive	60.2	RW	48	104	224
	North of Bollinger Canyon Road	61.7	RW	60	130	281
Camino Ramon	North of Crow Canyon Road	58.1	RW	RW	74	160
	North of Norris Canyon Road	61.1	RW	55	118	255
	North of Executive Parkway	61.0	RW	55	117	253
	North of Bishop Drive	61.1	RW	55	118	254
	North of Bollinger Canyon Road	59.4	RW	43	92	198
	South of Bollinger Canyon Road	58.6	RW	RW	80	173
Bishop Ranch East	South of Bollinger Canyon Road	54.0	RW	RW	RW	85
Market	South of Bollinger Canyon Road	57.3	RW	RW	66	142
Alcosta Boulevard	North of Norris Canyon Road	62.1	RW	64	138	296
	North of Bollinger Canyon Road	62.5	RW	68	146	315
	South of Bollinger Canyon Road	63.4	36	78	168	362

Table J (Cont.): Existing Plus Project Noise Contours

Roadway	Segment	CNEL at 100 feet (dBA)	Distance to Contour (feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
cont.	South of Montevideo Drive	60.7	RW	52	111	240
	North of Old Ranch Road	60.0	RW	46	100	215
	South of Old Ranch Road	59.8	RW	45	96	208
Canyon Lakes Road	North of Bollinger Canyon Road	55.5	RW	RW	50	108
Dougherty Road	South of Crow Canyon Road	62.2	RW	RW	141	304
	North of Bollinger Canyon Road	62.4	RW	RW	143	309
	North of Old Ranch Road	63.6	RW	80	173	374
	South of Old Ranch Road	63.8	RW	84	180	388
Crow Canyon Road	West of Bollinger Canyon Road	63.0	RW	74	159	343
	East of Bollinger Canyon Road	63.0	RW	73	158	341
	West of San Ramon Valley Boulevard	65.3	RW	104	225	485
	West of Camino Ramon	66.8	RW	133	286	615
	East of Camino Ramon	66.5	RW	125	270	581
	East of Alcosta Boulevard	65.9	RW	115	249	536
	West of Dougherty Road	63.8	RW	83	179	385
	East of Dougherty Road	65.3	RW	105	225	486
Norris Canyon Road	West of Bollinger Canyon Road	55.0	RW	RW	47	101
	West of San Ramon Valley Boulevard	58.5	RW	RW	79	170
	West of Camino Ramon	58.7	RW	RW	82	176
Bishop Drive	West of Sunset Drive	56.0	RW	RW	55	117
	West of Camino Ramon	58.2	RW	RW	75	163
	East of Camino Ramon	59.0	RW	RW	86	185
Bollinger Canyon Road (East-West)	West of San Ramon Valley Boulevard	61.5	RW	59	126	272
	West of Sunset Drive	69.0	85	184	396	854
	West of Camino Ramon	67.6	RW	148	320	689
	East of Camino Ramon	66.5	RW	126	272	587
	East of Bishop Ranch East	67.2	RW	141	304	655
	East of Market	66.7	RW	130	279	602

Table J (Cont.): Existing Plus Project Noise Contours

Roadway	Segment	CNEL at 100 feet (dBA)	Distance to Contour (feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
cont.	East of Alcosta Boulevard	65.6	RW	110	237	511
	East of Canyon Lakes Drive	64.7	RW	96	206	444
	West of Dougherty Road	64.1	RW	88	189	407
	East of Dougherty Road	63.7	RW	82	178	383
Montevideo Drive	East of San Ramon Valley Boulevard	58.7	RW	RW	82	176
	West of Alcosta Boulevard	54.2	RW	RW	41	89
Old Ranch Road	East of Alcosta Boulevard	58.9	RW	39	85	182
	West of Dougherty Road	58.0	RW	RW	74	159
Note: RW = Noise contour is located within right-of-way of roadway.						

Year 2020 Baseline

The calculated year 2020 baseline noise contours are shown below in Table K and Appendix E. The calculated noise measurements in Table K show that at 100 feet, compared to existing conditions, Bollinger Canyon Road south of Norris Canyon Road, San Ramon Valley Boulevard north of Norris Canyon Road, Sunset Drive south of Bishop Drive, Camino Ramon from north of Norris Canyon Road to north of Bishop Drive, and Alcosta Boulevard south of Montevideo Drive to south of Old Ranch Road would be the additional roadway segments that would exceed the City's 60 dBA CNEL standard. The noise levels from all analyzed roadway segments will range from 49.1 to 68.7 dBA CNEL.

Table K: Year 2020 Baseline Noise Contours

Roadway	Segment	CNEL at 100 feet (dBA)	Distance to Contour (feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Bollinger Canyon Road (North-South)	South of Crow Canyon Road	56.7	RW	RW	60	129
	North of Norris Canyon Road	58.0	RW	34	74	159
	South of Norris Canyon Road	60.5	RW	50	108	233
San Ramon Valley Boulevard	North of Crow Canyon Road	62.5	RW	68	146	315
	North of Norris Canyon Road	60.5	RW	50	108	233
	North of Bollinger Canyon Road	62.2	RW	65	140	302

Table K (Cont.): Year 2020 Baseline Noise Contours

Roadway	Segment	CNEL at 100 feet (dBA)	Distance to Contour (feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
cont.	South of Bollinger Canyon Road	64.3	42	90	194	419
	South of Montevideo Drive	63.5	37	79	171	368
Sunset Drive	South of Bishop Drive	59.0	RW	40	86	186
	North of Bollinger Canyon Road	61.1	RW	55	119	257
Camino Ramon	North of Crow Canyon Road	58.9	RW	RW	84	181
	North of Norris Canyon Road	60.8	RW	52	112	242
	North of Executive Parkway	60.5	RW	50	108	234
	North of Bishop Drive	60.5	RW	50	108	233
	North of Bollinger Canyon Road	58.2	RW	RW	76	163
	South of Bollinger Canyon Road	54.7	RW	RW	44	96
Bishop Ranch East	South of Bollinger Canyon Road	49.1	RW	RW	RW	40
Market	South of Bollinger Canyon Road	57.6	RW	RW	70	150
Alcosta Boulevard	North of Norris Canyon Road	62.7	RW	70	151	326
	North of Bollinger Canyon Road	63.1	RW	75	162	349
	South of Bollinger Canyon Road	63.4	36	78	169	364
	South of Montevideo Drive	60.8	RW	53	114	245
	North of Old Ranch Road	60.0	RW	46	100	215
	South of Old Ranch Road	60.2	RW	48	102	221
Canyon Lakes Road	North of Bollinger Canyon Road	55.8	RW	RW	53	113
Dougherty Road	South of Crow Canyon Road	63.0	RW	73	158	340
	North of Bollinger Canyon Road	65.6	RW	109	234	505
	North of Old Ranch Road	64.4	RW	92	197	425
	South of Old Ranch Road	64.7	RW	95	204	440
Crow Canyon Road	West of Bollinger Canyon Road	64.1	41	88	189	407
	East of Bollinger Canyon Road	64.3	RW	90	195	420
	West of San Ramon Valley Boulevard	65.8	RW	112	242	522
	West of Camino Ramon	67.3	RW	143	309	665
	East of Camino Ramon	67.1	RW	137	295	636
	East of Alcosta Boulevard	66.4	RW	125	268	578

Table K (Cont.): Year 2020 Baseline Noise Contours

Roadway	Segment	CNEL at 100 feet (dBA)	Distance to Contour (feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
cont.	West of Dougherty Road	64.3	RW	89	193	415
	East of Dougherty Road	66.0	RW	116	250	539
Norris Canyon Road	West of Bollinger Canyon Road	55.3	RW	RW	48	104
	West of San Ramon Valley Boulevard	59.0	RW	RW	86	185
	West of Camino Ramon	59.4	RW	42	91	195
Bishop Drive	West of Sunset Drive	56.2	RW	RW	56	121
	West of Camino Ramon	55.3	RW	RW	48	104
	East of Camino Ramon	56.3	RW	RW	56	122
Bollinger Canyon Road (East-West)	West of San Ramon Valley Boulevard	61.8	RW	61	131	283
	West of Sunset Drive	68.7	82	176	378	815
	West of Camino Ramon	67.2	RW	141	303	652
	East of Camino Ramon	66.2	RW	120	259	559
	East of Bishop Ranch East	66.9	RW	134	289	622
	East of Market	66.2	RW	120	258	556
	East of Alcosta Boulevard	65.8	RW	114	245	528
	East of Canyon Lakes Drive	64.6	RW	94	202	436
	West of Dougherty Road	64.5	RW	93	200	431
	East of Dougherty Road	64.5	RW	92	198	427
Montevideo Drive	East of San Ramon Valley Boulevard	59.9	RW	46	98	211
	West of Alcosta Boulevard	53.5	RW	RW	RW	79
Old Ranch Road	East of Alcosta Boulevard	59.4	RW	42	91	195
	West of Dougherty Road	58.3	RW	36	77	167
RW = Noise contour is located within right-of-way of roadway.						

Year 2020 Baseline Plus Project

The calculated year 2020 baseline with project noise contours are shown below in Table L and Appendix E. The calculated noise measurements in Table L shows that at 100 feet, compared to year 2020 baseline conditions, no additional roadway segments would exceed the City's 60-dBA CNEL standard. The noise levels from all analyzed roadway segments will range from 53.0 to 69.4 dBA CNEL.

Table L: Year 2020 Plus Project Noise Contours

Roadway	Segment	CNEL at 100 feet (dBA)	Distance to Contour (feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Bollinger Canyon Road (North-South)	South of Crow Canyon Road	57.3	RW	RW	66	142
	North of Norris Canyon Road	58.5	RW	37	79	171
	South of Norris Canyon Road	60.9	RW	53	114	247
San Ramon Valley Boulevard	North of Crow Canyon Road	62.6	RW	69	149	321
	North of Norris Canyon Road	60.6	RW	51	110	237
	North of Bollinger Canyon Road	62.4	RW	67	145	312
	South of Bollinger Canyon Road	64.8	45	97	208	449
	South of Montevideo Drive	63.5	37	80	172	371
Sunset Drive	South of Bishop Drive	60.0	RW	47	100	216
	North of Bollinger Canyon Road	61.9	RW	62	134	289
Camino Ramon	North of Crow Canyon Road	58.9	RW	RW	84	181
	North of Norris Canyon Road	61.7	RW	60	130	279
	North of Executive Parkway	61.6	RW	59	127	275
	North of Bishop Drive	61.6	RW	59	128	275
	North of Bollinger Canyon Road	59.8	RW	45	98	210
	South of Bollinger Canyon Road	58.0	RW	RW	74	159
Bishop Ranch East	South of Bollinger Canyon Road	53.0	RW	RW	RW	74
Market	South of Bollinger Canyon Road	57.8	RW	RW	72	154
Alcosta Boulevard	North of Norris Canyon Road	62.8	RW	72	155	333
	North of Bollinger Canyon Road	63.3	36	77	165	356
	South of Bollinger Canyon Road	64.1	40	86	186	401
	South of Montevideo Drive	61.4	RW	57	123	266
	North of Old Ranch Road	60.6	RW	51	110	238
	South of Old Ranch Road	60.5	RW	50	108	233
Canyon Lakes Road	North of Bollinger Canyon Road	56.1	RW	RW	55	118
Dougherty Road	South of Crow Canyon Road	63.1	RW	74	160	345
	North of Bollinger Canyon Road	65.6	RW	110	237	510
	North of Old Ranch Road	64.5	RW	92	199	429
	South of Old Ranch Road	64.7	RW	96	206	445

Table L (Cont.): Year 2020 Plus Project Noise Contours

Roadway	Segment	CNEL at 100 feet (dBA)	Distance to Contour (feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Crow Canyon Road	West of Bollinger Canyon Road	64.5	43	92	198	427
	East of Bollinger Canyon Road	64.5	RW	93	200	431
	West of San Ramon Valley Boulevard	65.9	RW	115	247	531
	West of Camino Ramon	67.6	RW	148	320	689
	East of Camino Ramon	67.2	RW	141	304	655
	East of Alcosta Boulevard	66.7	RW	130	279	601
	West of Dougherty Road	64.5	RW	93	200	432
	East of Dougherty Road	66.1	RW	118	255	549
Norris Canyon Road	West of Bollinger Canyon Road	55.7	RW	RW	51	111
	West of San Ramon Valley Boulevard	59.2	RW	41	89	191
	West of Camino Ramon	59.5	RW	43	92	199
Bishop Drive	West of Sunset Drive	56.4	RW	RW	57	123
	West of Camino Ramon	58.1	RW	RW	74	160
	East of Camino Ramon	59.3	RW	42	90	193
Bollinger Canyon Road (East-West)	West of San Ramon Valley Boulevard	62.3	RW	66	143	308
	West of Sunset Drive	69.4	91	195	421	907
	West of Camino Ramon	68.0	RW	158	341	735
	East of Camino Ramon	66.9	RW	135	290	625
	East of Bishop Ranch East	67.9	RW	155	335	721
	East of Market	67.3	RW	142	305	657
	East of Alcosta Boulevard	66.9	RW	134	288	621
	East of Canyon Lakes Drive	65.4	RW	106	228	491
	West of Dougherty Road	65.2	RW	103	223	480
	East of Dougherty Road	65.0	RW	100	216	465
Montevideo Drive	East of San Ramon Valley Boulevard	59.9	RW	46	99	213
	West of Alcosta Boulevard	54.8	RW	RW	45	96
Old Ranch Road	East of Alcosta Boulevard	59.7	RW	44	95	205
	West of Dougherty Road	58.8	RW	38	83	179

Note: RW = Noise contour is located within right-of-way of roadway.

7.1.3 - Project Impacts

In order for offsite roadway noise impacts created by the proposed project's operations to be considered significant, the roadway noise levels would have to increase by 5 dBA CNEL and the resulting noise level would have to exceed the City's 60 dBA CNEL exterior noise standard. This criterion for significance has been previously discussed in Section 4.0. The proposed project's onsite and offsite noise impacts have been analyzed for the existing and year 2020 conditions and are discussed below.

Existing Conditions

The proposed project's potential offsite noise impacts have been calculated through a comparison of the existing without project scenario to the existing with project scenario. The results of this comparison shown in Table M indicate that the noise level contributions from the proposed project to the study area roadways would range from -0.5 to 7.4 dBA CNEL. The greatest increase of 7.4 dBA CNEL would be anticipated to occur on Bishop Drive east of Camino Ramon. Although the proposed project would have the potential to result in a large increase in traffic-related noise on Bishop Drive east of Camino Ramon, the resulting with project noise level at 100 feet is expected to be 59.0 dBA CNEL which is less than the City's threshold of 60 dBA CNEL Therefore, for the existing conditions and based on thresholds of significance defined above, no significant long-term offsite noise impacts from project-related vehicle noise would occur along the study area roadways segments.

Table M: Project Contributions Under Existing Conditions

Roadway	Segment	CNEL at 100 feet			Potential Significant Impact?
		No Project	With Project	Project Contribution	
Bollinger Canyon Road (North-South)	South of Crow Canyon Road	55.6	56.5	0.9	No
	North of Norris Canyon Road	57.1	57.7	0.6	No
	South of Norris Canyon Road	59.6	60.1	0.5	No
San Ramon Valley Boulevard	North of Crow Canyon Road	61.8	61.9	0.1	No
	North of Norris Canyon Road	59.7	59.8	0.1	No
	North of Bollinger Canyon Road	61.4	61.6	0.2	No
	South of Bollinger Canyon Road	63.8	63.9	0.1	No
	South of Montevideo Drive	62.4	62.5	0.1	No
Sunset Drive	South of Bishop Drive	57.8	60.2	2.4	No
	North of Bollinger Canyon Road	60.0	61.7	1.7	No

Table M (Cont.): Project Contributions Under Existing Conditions

Roadway	Segment	CNEL at 100 feet			Potential Significant Impact?
		No Project	With Project	Project Contribution	
Camino Ramon	North of Crow Canyon Road	58.0	58.1	0.1	No
	North of Norris Canyon Road	59.9	61.1	1.2	No
	North of Executive Parkway	59.7	61.0	1.3	No
	North of Bishop Drive	59.7	61.1	1.4	No
	North of Bollinger Canyon Road	59.9	59.4	-0.5	No
	South of Bollinger Canyon Road	54.3	58.6	4.3	No
Bishop Ranch East	South of Bollinger Canyon Road	48.5	54.0	5.5	No
Market	South of Bollinger Canyon Road	57.0	57.3	0.3	No
Alcosta Boulevard	North of Norris Canyon Road	61.9	62.1	0.2	No
	North of Bollinger Canyon Road	62.3	62.5	0.2	No
	South of Bollinger Canyon Road	62.6	63.4	0.8	No
	South of Montevideo Drive	60.0	60.7	0.7	No
	North of Old Ranch Road	59.2	60.0	0.8	No
	South of Old Ranch Road	59.3	59.8	0.5	No
Canyon Lakes Road	North of Bollinger Canyon Road	55.1	55.5	0.4	No
Dougherty Road	South of Crow Canyon Road	62.1	62.2	0.1	No
	North of Bollinger Canyon Road	62.2	62.4	0.2	No
	North of Old Ranch Road	63.5	63.6	0.1	No
	South of Old Ranch Road	63.7	63.8	0.1	No
Crow Canyon Road	West of Bollinger Canyon Road	62.5	63.0	0.5	No
	East of Bollinger Canyon Road	62.7	63.0	0.3	No
	West of San Ramon Valley Boulevard	65.1	65.3	0.2	No
	West of Camino Ramon	66.5	66.8	0.3	No
	East of Camino Ramon	66.2	66.5	0.3	No
	East of Alcosta Boulevard	65.6	65.9	0.3	No

Table M (Cont.): Project Contributions Under Existing Conditions

Roadway	Segment	CNEL at 100 feet			Potential Significant Impact?
		No Project	With Project	Project Contribution	
cont.	West of Dougherty Road	63.4	63.8	0.4	No
	East of Dougherty Road	65.1	65.3	0.2	No
Norris Canyon Road	West of Bollinger Canyon Road	54.6	55.0	0.4	No
	West of San Ramon Valley Boulevard	58.2	58.5	0.3	No
	West of Camino Ramon	58.5	58.7	0.2	No
Bishop Drive	West of Sunset Drive	55.9	56.0	0.1	No
	West of Camino Ramon	53.2	58.2	5.0	No
	East of Camino Ramon	51.6	59.0	7.4	No
Bollinger Canyon Road (East-West)	West of San Ramon Valley Boulevard	61.2	61.5	0.3	No
	West of Sunset Drive	68.1	69.0	0.9	No
	West of Camino Ramon	66.8	67.6	0.8	No
	East of Camino Ramon	66.0	66.5	0.5	No
	East of Bishop Ranch East	66.0	67.2	1.2	No
	East of Market	65.3	66.7	1.4	No
	East of Alcosta Boulevard	64.7	65.6	0.9	No
	East of Canyon Lakes Drive	63.7	64.7	1.0	No
	West of Dougherty Road	63.1	64.1	1.0	No
	East of Dougherty Road	62.9	63.7	0.8	No
Montevideo Drive	East of San Ramon Valley Boulevard	58.6	58.7	0.1	No
	West of Alcosta Boulevard	52.6	54.2	1.6	No
Old Ranch Road	East of Alcosta Boulevard	58.5	58.9	0.4	No
	West of Dougherty Road	57.4	58.0	0.6	No
Source:					

Table M above also shows that through development of the proposed project the noise would be reduced slightly for the segment of Camino Ramon north of Bollinger Road. This would be due to the removal of the Bishop Ranch 2 office complex, which would change the land use and result in a different traffic pattern.

Year 2020 Conditions

The proposed project's potential offsite noise impacts have been calculated through a comparison of the Year 2020 without project scenario to the Year 2020 with project scenario. The results of this comparison shown in Table N indicate that the noise level contributions from the proposed project to the study area roadways would range from 0.0 to 3.9 dBA CNEL. The greatest increase of 3.9 dBA CNEL would be anticipated to occur on Bishop Ranch East south of Bollinger Canyon Road. Although the proposed project will have the potential to result in a large increase in traffic-related noise on Bishop Ranch East south of Bollinger Canyon Road, the with project noise level at 100 feet is expected to be 53.0 CNEL which is less than the City's threshold of 60 dBA CNEL Therefore for the year 2020 conditions and based on thresholds of significance defined above, no significant long-term offsite noise impacts from project-related vehicle noise would occur along the study area roadways segments.

Table N: Year 2020 Plus Project Contributions

Roadway	Segment	CNEL at 100 feet			Potential Significant Impact?
		No Project	With Project	Project Contribution	
Bollinger Canyon Road (North-South)	South of Crow Canyon Road	56.7	57.3	0.6	No
	North of Norris Canyon Road	58.0	58.5	0.5	No
	South of Norris Canyon Road	60.5	60.9	0.4	No
San Ramon Valley Boulevard	North of Crow Canyon Road	62.5	62.6	0.1	No
	North of Norris Canyon Road	60.5	60.6	0.1	No
	North of Bollinger Canyon Road	62.2	62.4	0.2	No
	South of Bollinger Canyon Road	64.3	64.8	0.5	No
	South of Montevideo Drive	63.5	63.5	0.0	No
Sunset Drive	South of Bishop Drive	59.0	60.0	1.0	No
	North of Bollinger Canyon Road	61.1	61.9	0.8	No
Camino Ramon	North of Crow Canyon Road	58.9	58.9	0.0	No
	North of Norris Canyon Road	60.8	61.7	0.9	No
	North of Executive Parkway	60.5	61.6	1.1	No
	North of Bishop Drive	60.5	61.6	1.1	No
	North of Bollinger Canyon Road	58.2	59.8	1.6	No
	South of Bollinger Canyon Road	54.7	58.0	3.3	No

Table N (Cont.): Year 2020 Plus Project Contributions

Roadway	Segment	CNEL at 100 feet			Potential Significant Impact?
		No Project	With Project	Project Contribution	
Bishop Ranch East	South of Bollinger Canyon Road	49.1	53.0	3.9	No
Market	South of Bollinger Canyon Road	57.6	57.8	0.2	No
Alcosta Boulevard	North of Norris Canyon Road	62.7	62.8	0.1	No
	North of Bollinger Canyon Road	63.1	63.3	0.2	No
	South of Bollinger Canyon Road	63.4	64.1	0.7	No
	South of Montevideo Drive	60.8	61.4	0.6	No
	North of Old Ranch Road	60.0	60.6	0.6	No
	South of Old Ranch Road	60.2	60.5	0.3	No
Canyon Lakes Road	North of Bollinger Canyon Road	55.8	56.1	0.3	No
Dougherty Road	South of Crow Canyon Road	63.0	63.1	0.1	No
	North of Bollinger Canyon Road	65.6	65.6	0.0	No
	North of Old Ranch Road	64.4	64.5	0.1	No
	South of Old Ranch Road	64.7	64.7	0.0	No
Crow Canyon Road	West of Bollinger Canyon Road	64.1	64.5	0.4	No
	East of Bollinger Canyon Road	64.3	64.5	0.2	No
	West of San Ramon Valley Boulevard	65.8	65.9	0.1	No
	West of Camino Ramon	67.3	67.6	0.3	No
	East of Camino Ramon	67.1	67.2	0.1	No
	East of Alcosta Boulevard	66.4	66.7	0.3	No
	West of Dougherty Road	64.3	64.5	0.2	No
	East of Dougherty Road	66.0	66.1	0.1	No
Norris Canyon Road	West of Bollinger Canyon Road	55.3	55.7	0.4	No
	West of San Ramon Valley Boulevard	59.0	59.2	0.2	No
	West of Camino Ramon	59.4	59.5	0.1	No

Table N (Cont.): Year 2020 Plus Project Contributions

Roadway	Segment	CNEL at 100 feet			Potential Significant Impact?
		No Project	With Project	Project Contribution	
Bishop Drive	West of Sunset Drive	56.2	56.4	0.2	No
	West of Camino Ramon	55.3	58.1	2.8	No
	East of Camino Ramon	56.3	59.3	3.0	No
Bollinger Canyon Road (East-West)	West of San Ramon Valley Boulevard	61.8	62.3	0.5	No
	West of Sunset Drive	68.7	69.4	0.7	No
	West of Camino Ramon	67.2	68.0	0.8	No
	East of Camino Ramon	66.2	66.9	0.7	No
	East of Bishop Ranch East	66.9	67.9	1.0	No
	East of Market	66.2	67.3	1.1	No
	East of Alcosta Boulevard	65.8	66.9	1.1	No
	East of Canyon Lakes Drive	64.6	65.4	0.8	No
	West of Dougherty Road	64.5	65.2	0.7	No
	East of Dougherty Road	64.5	65.0	0.5	No
Montevideo Drive	East of San Ramon Valley Boulevard	59.9	59.9	0.0	No
	West of Alcosta Boulevard	53.5	54.8	1.3	No
Old Ranch Road	East of Alcosta Boulevard	59.4	59.7	0.3	No
	West of Dougherty Road	58.3	58.8	0.5	No
Source:					

7.2 - Potential Onsite Noise Impacts

According to the City's General Plan, a noise impact would be considered significant if the noise level from onsite sources exceeds an exterior noise level standard of 60 dBA CNEL or an interior noise level standard of 45 dBA CNEL onto any onsite or nearby noise-sensitive land uses. It is anticipated that the primary sources of noise impacts from the proposed project would be from noise associated with the existing and proposed roadways and parking lots.

7.2.1 - Methodology

In order to provide a more detailed noise analysis of the project vicinity, calculations of the expected future exterior noise levels were made through using SoundPlan Version 6.4 noise modeling software. The following section describes the noise analysis methodologies, which includes a discussion of the software and modeling input parameters used in this analysis.

SoundPlan Noise Modeling Software

Due to the project site proximity to Interstate 680, which is a significant source of traffic noise and since the project vicinity is impacted by multiple roadways and existing and proposed parking lots, the SoundPlan Version 6.4 noise modeling software was used. SoundPlan's road noise algorithms are based on the FHWA Traffic Noise Model (FHWA TNM Model) and SoundPlan's parking lot noise algorithms are based on the international standard ISO 9613-2, since no national standard for parking lot noise currently exists. The SoundPlan Model requires the input of roadways, parking lots, and the locations of the noise measurement receivers. In addition, sound barriers, terrain contour lines, building placement, and specific ground coverage zones may be incorporated as well. The site plan along with scaled aerial photographs, were used to determine the placement of the roadways, parking lots, structures, and key contour lines to establish the terrain in project vicinity. Except for the roadways and buildings, which were analyzed as "hard" site conditions, the remainder of the area was analyzed as "soft" site conditions. The default temperature and humidity were used in the analysis. The SoundPlan Model printouts are shown in Appendix F and the following describes the roadway, parking lot, and receiver assumptions used.

Roadway Assumptions

The model analyzed the noise impacts from Interstate 680, Sunset Drive, West Street (proposed), Camino Ramon, East Street (proposed), Bishop Ranch East, Bishop Drive, Bollinger Canyon Road, and the road into the City Hall parking structure. Each direction of travel for Interstate 680, Bollinger Canyon Road, and Camino Ramon south of Bollinger Canyon Road were analyzed separately, while the remaining roadways were analyzed based on a single lane equivalency. The CNEL noise levels were calculated for the existing, year 2020 baseline, and year 2020 with project scenarios. The average daily traffic volumes were obtained from the Traffic Analysis except for West Street (proposed), East Street (proposed), and the road into City Hall parking structure, which were not analyzed by the Traffic Analysis and were assumed to have average daily traffic volumes of 2,000 vehicles for the year 2020 with project scenario.

The model requires the separate input of autos, medium trucks, and heavy trucks. For the local roadways, the vehicle mix was based on the roadway's General Plan classification vehicle mix shown above in Table H. The Collector vehicle mix was used for the roadways that do not have a General Plan classification. For Interstate 680, the vehicle mix was obtained from the *2005 Annual Average Daily Truck Traffic on the California Highway System*, prepared by State of California Department of Transportation, November 2006 and is shown below in Table O. The roadway speeds were based on the posted speed limits.

Table O: Interstate 680 Vehicle Mix

Vehicle Type	Day (7 a.m. to 7p.m.)	Evening (7 p.m. to 10 p.m.)	Night (10 p.m. to 7 a.m.)	Overall
Automobiles	65.6%	13.4%	15.7%	94.7%
Medium Trucks	1.8%	0.3%	0.5%	2.5%
Heavy Trucks	1.7%	0.1%	1.0%	2.8%
Source: 2005 Annual Average Daily Truck Traffic on the California Highway System, prepared by State of California Department of Transportation, November 2006.				

Transit Assumptions

The proposed project includes a transit center with four bus stalls that would be located on the ground floor of the parking structure adjacent to City Hall. According to the Traffic Analysis there are currently seven bus routes serving the project site, which average approximately one stop per hour per route near the project site. It was assumed that each of these routes would add a stop at the transit center and that an additional route would serve the area in the future. Therefore the analysis was based on the transit center would be utilized by 8 buses per hour. The bus volumes were added to the road to the City Hall parking structure and to Camino Ramon south of Bollinger Canyon Road.

Parking Lot Assumptions

The SoundPlan model also analyzed the noise impacts from the existing and proposed parking lots, which requires input of the placement of the parking lots, the number of parking spaces in each lot, and the average number of car movements per hour that occur per space. 24-hour noise measurements were taken measuring the parking lot noise from the Bishop Ranch 3 southern parking structure, which have been described above in Section 5.0. The noise measurements found that at 20 feet from the Bishop Ranch 3 southern parking structure the noise level was 55.7 dBA Leq or 59.4 dBA CNEL. It was assumed that the Bishop Ranch 3 southern parking structure has 1,200 parking spaces. The noise level for the proposed parking structures was based on the proportional noise level to the number of parking spaces provided in each parking structure.

Water Feature Assumptions

The SoundPlan model also analyzed the noise impacts from the existing and proposed water features in the project study area. Noise measurements of the existing water feature in Bishop Ranch 1A were obtained and are described above in Section 5.0. The noise measurements found that at 20 feet from the water feature the noise level was 66.3 dBA Leq. The water features were analyzed as area noise sources and the noise levels for the proposed water features were based on the measured water feature noise level proportional to the area of the water feature.

Receiver Assumptions

Receivers were placed at the field noise measurements locations, on the offsite structures with noise sensitive uses and onsite, where residential uses are proposed. The receivers were placed either five feet above ground level or five feet above floor level for the residential structure receivers.

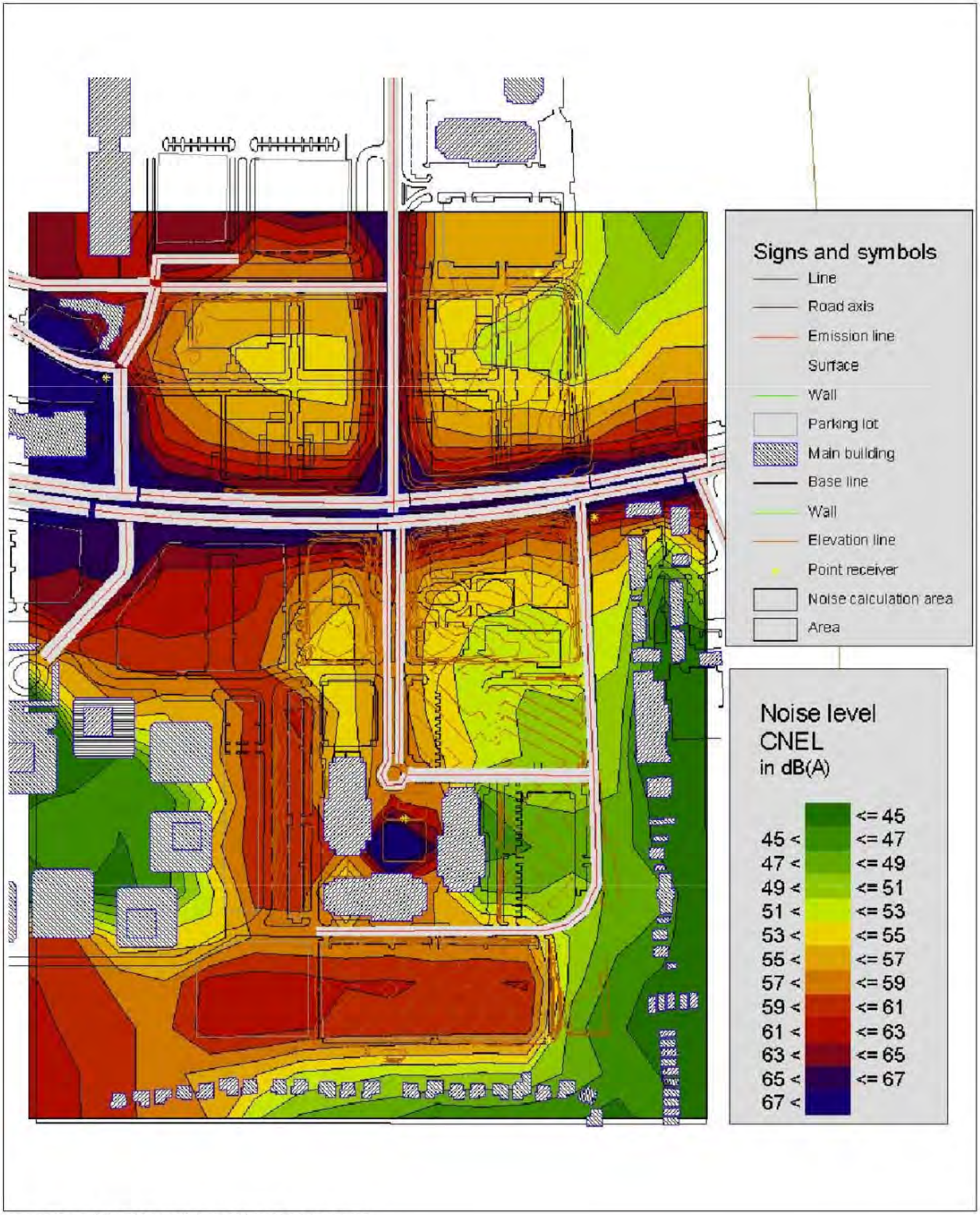
Existing Conditions

The existing conditions have been modeled in order to calibrate the noise model to the six field noise measurements that were obtained on or near the project site and have been presented above in Section 5.0. Table P shows the modeled noise level, the field noise measurement and the difference for each noise measurement site and Exhibit 7 shows the modeled existing noise contours of the project vicinity. Exhibit 7 also shows the placement of the noise calibration receivers used in Table P.

Table P: Existing Noise Level Calculations and Model Calibration

Site No.	Site Description	Noise Levels (dBA Leq)		
		Modeled	Average Field Measurement	Difference
3	Located approximately 50 feet west of the centerline of Sunset Drive and approximately 50 feet south of Shops at Bishop Ranch.	65.2	66.1	-0.9
4	Located approximately 100 feet south of the centerline of Bollinger Canyon Road and approximately 50 feet east of the centerline of Bishop Ranch East.	65.9	64.3	1.6
5	Located on the southeastern portion of the project site at the southeastern edge of the existing parking lot.	52.9	51.8	1.1
6	Located approximately 20 feet north of the water feature located in Bishop Ranch 2.	65.4	66.3	-0.9
A	**Located approximately 160 feet southeast of the southern Bishop Ranch 3 parking structure and approximately 25 feet from the centerline of Iron Horse Trail in the northeast corner of the project site.**	**51.2**	**52.5**	**-1.1**
B	**Located approximately 20 feet from the south side and 75 feet from the east side of the southern Bishop Ranch 3 parking structure, in the northeast corner of the project site.**	**55.3**	**55.7**	**-0.4**
Source: Noise measurements taken by Michael Brandman Associates and SoundPlan Version 6.4.				

Table P above shows that the modeled noise level ranged from -1.1 to 1.6 dBA Leq compared to the field noise measurements. The differences are less than the 1.6 dBA, which is below the threshold of perception and therefore the model was concluded to be satisfactorily calibrated.



Source: SoundPlan Version6.4 and Vista Environmental.

NORTH NOT TO SCALE

Michael Brandman Associates

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Exhibit 7
Existing Noise Contour Map

CITY OF SAN RAMON • SAN RAMON CITY CENTER PROJECT
NOISE IMPACT ANALYSIS

7.2.2 - Noise Impacts Onto Nearby Noise Sensitive Uses

The potential offsite noise impacts onto the nearby noise sensitive uses caused through the increased traffic on the roadways and noise from the existing and proposed parking lots and other stationary sources have been analyzed. In order to calculate the noise created by the proposed project, the following two model runs were performed:

- Year 2020 Baseline: This scenario modeled the future roadway and existing parking lot traffic noise conditions to determine the future without project ambient noise levels.
- Year 2020 With Project: This scenario modeled the future roadway and future parking lot traffic noise conditions to determine the future with project study area noise levels.

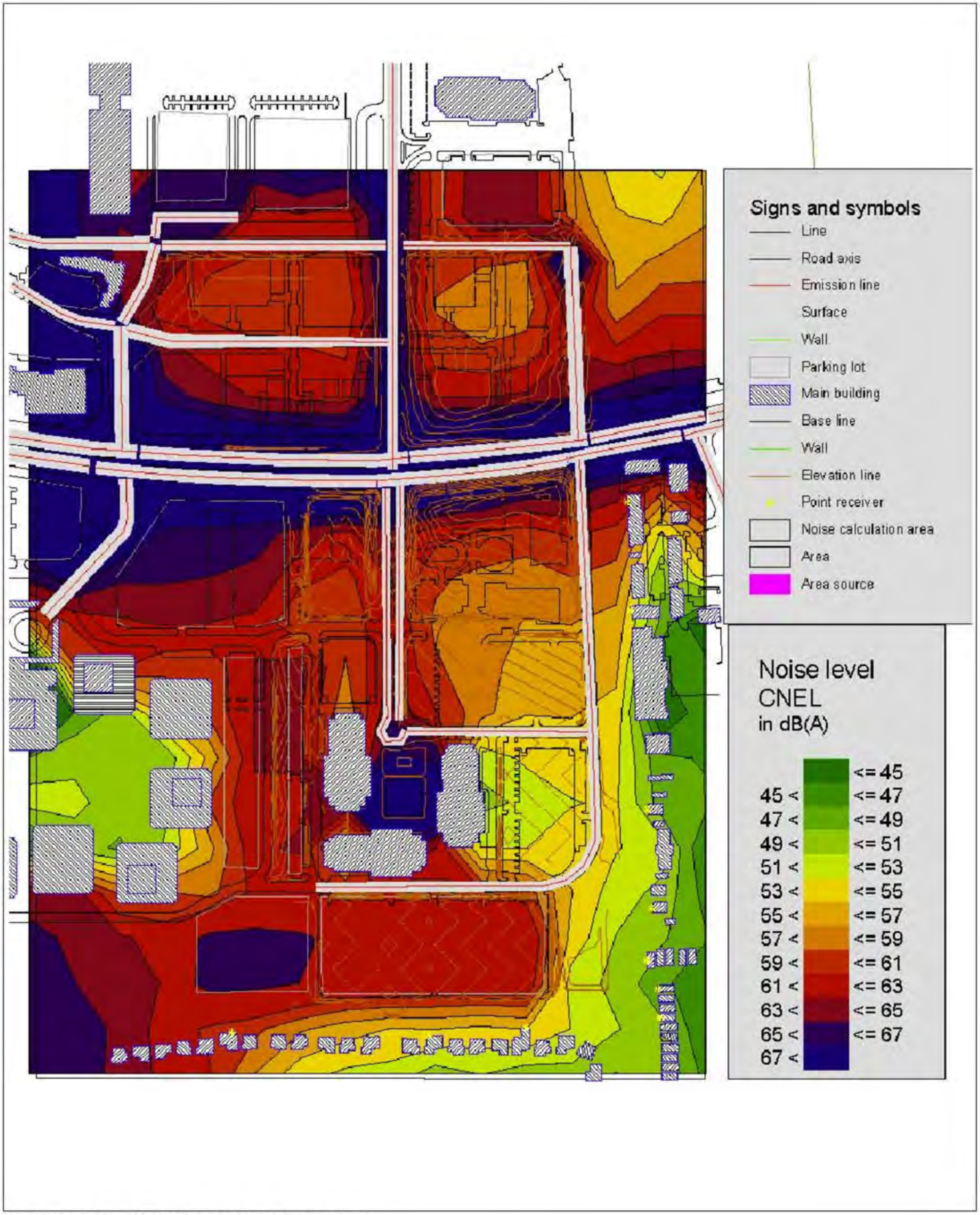
For each scenario, the Leq and CNEL noise levels have been calculated for each receiver. The SoundPlan printouts for each model run are provided in Appendix F.

Year 2020 Baseline Conditions

The year 2020 baseline conditions have been modeled in order to present the anticipated future ambient noise levels without construction of the proposed project. Table Q presents the calculated noise levels at the building facades of the nearby residential and school uses to the project site and Exhibit 8 shows the calculated noise contours of the project vicinity. Exhibit 8 also shows the placement of the receivers used in Table Q.

Table Q: Year 2020 Baseline Noise Levels at Nearby Uses

Site	dBA CNEL	dBA Leq Day	dBA Leq Evening[1]	dBA Leq Night[2]
Iron Horse Middle School[3]				
-First Floor	44.7	40.8	43.9	47.7
Marriott Residence Inn [3]				
-First Floor	60.9	56.1	58.4	64.3
-Second Floor	61.4	56.5	58.9	64.9
Marriott Residence Inn [6]				
-First Floor	54.7	50.0	52.8	58.1
-Second Floor	56.1	51.4	54.0	59.5
Apartment to the East [1]				
-First Floor	51.4	47.5	50.4	54.4
-Second Floor	52.5	48.4	51.3	55.5
Apartment to the East [2]				
-First Floor	50.1	46.3	49.5	52.9



Source: SoundPlan Version6.4 and Vista Environmental.

NORTH

NOT TO SCALE

Michael Brandman Associates

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Exhibit 8

Year 2020 Baseline Noise Contour Map

CITY OF SAN RAMON • SAN RAMON CITY CENTER PROJECT
NOISE IMPACT ANALYSIS

Table Q (Cont.): Year 2020 Baseline Noise Levels at Nearby Uses

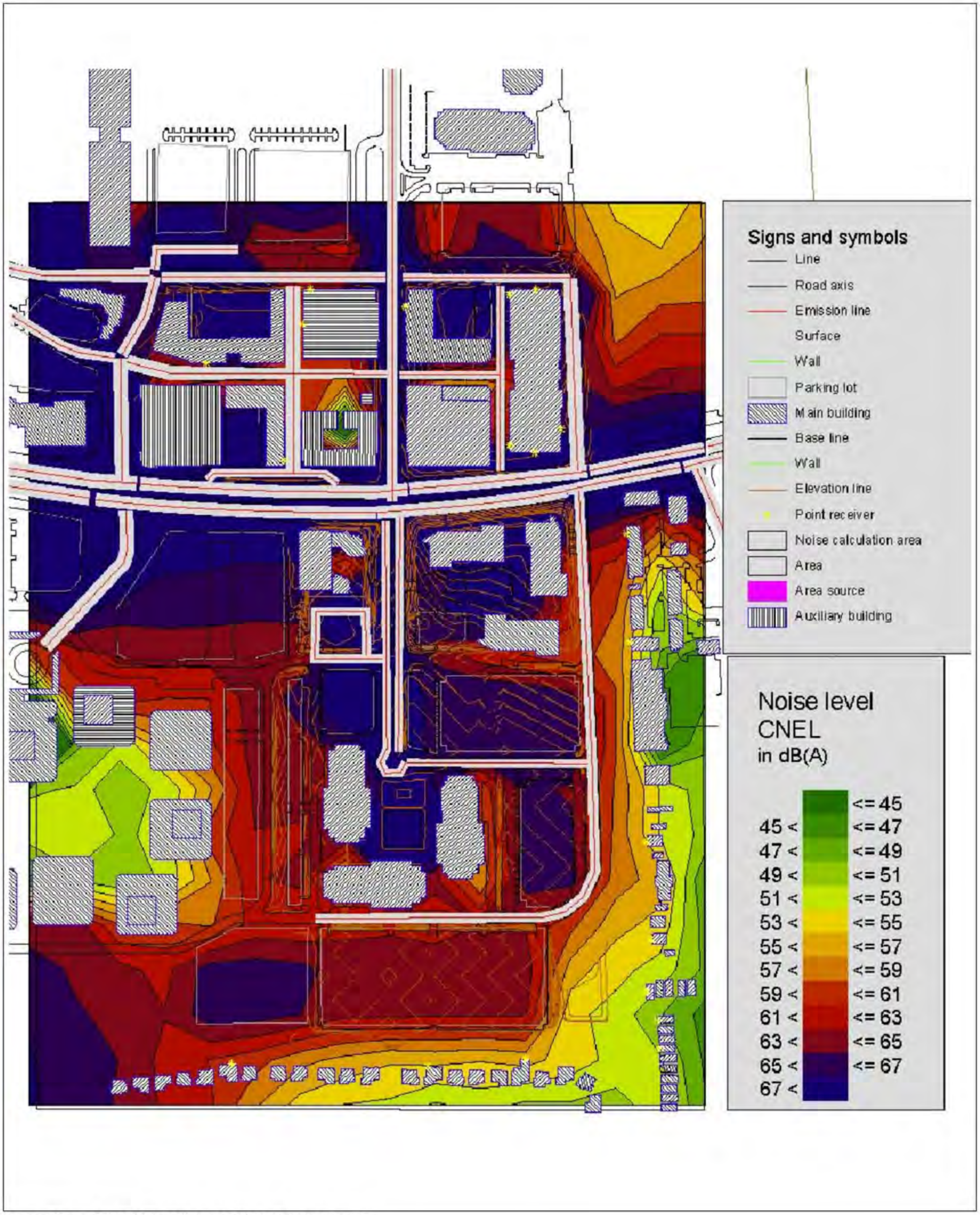
Site	dBA CNEL	dBA Leq Day	dBA Leq Evening[1]	dBA Leq Night[2]
-Second Floor	51.2	47.4	50.5	54.2
Single-Family to the East [1]				
-First Floor	49.9	46.1	49.5	52.7
-Second Floor	51.0	47.3	50.5	53.9
Single-Family to the East [2]				
-First Floor	49.0	45.4	48.8	51.7
-Second Floor	50.2	46.5	49.9	52.9
Single-Family to the South [1]				
-First Floor	52.7	48.9	52.6	55.4
-Second Floor	53.5	49.7	53.3	56.3
Single-Family to the South [2]				
-First Floor	52.1	48.7	52.4	54.6
-Second Floor	53.6	50.2	53.6	56.1
Single-Family to the South [1]				
-First Floor	59.4	55.9	59.3	62.1
-Second Floor	59.7	56.2	59.5	62.4

Notes:
[1] Noise level includes a 4.77-dBA penalty to account for the noise sensitive evening hours.
[2] Noise level includes a 10-dBA penalty to account for the noise sensitive nighttime hours.
[3] The calculated noise at Iron Horse Middle School is only from noise generated at the project site and does not account for other nearby sources such as Alcosta Boulevard.
Source: SoundPlan Version 6.4.

Table Q above shows that for the year 2020 baseline condition without construction of the proposed project, only the noise levels at the exterior of the Marriott Residence Inn's northern structures, will exceed the City's 60 dBA CNEL exterior noise standard described above in Section 4.0.

Year 2020 Plus Project Conditions

The year 2020 plus project conditions have been modeled in order to present the anticipated future ambient noise levels with the on-going operations of the proposed project. Table R presents the calculated noise levels at the building facades of the nearby residential and school uses to the project site and Exhibit 9 shows the calculated noise contours of the project vicinity.



Source: SoundPlan Version6.4 and Vista Environmental.

NORTH NOT TO SCALE

Michael Brandman Associates

24910007 • 06/2007 | 9_2020_project_contour.cdr

Exhibit 9
Year 2020 With Project Noise Contour Map

CITY OF SAN RAMON • SAN RAMON CITY CENTER PROJECT
NOISE IMPACT ANALYSIS

Table R: Year 2020 Baseline Plus Project Noise Levels at Nearby Uses

Site	dBA CNEL	dBA Leq Day	dBA Leq Evening[1]	dBA Leq Night[2]
Iron Horse Middle School[3]				
-First Floor	43.8	40.0	43.2	46.7
Marriott Residence Inn [3]				
-First Floor	61.7	56.8	59.0	65.2
-Second Floor	62.2	57.3	59.6	65.7
Marriott Residence Inn [6]				
-First Floor	57.0	52.5	55.9	60.2
-Second Floor	58.2	53.7	57.2	61.4
Apartment to the East [1]				
-First Floor	55.9	52.6	56.1	58.4
-Second Floor	56.4	53.0	56.5	59.0
Apartment to the East [2]				
-First Floor	53.5	50.2	53.8	56.0
-Second Floor	54.2	50.8	54.3	56.8
Single-Family to the East [1]				
-First Floor	52.5	49.1	52.7	55.0
-Second Floor	53.2	49.8	53.3	55.8
Single-Family to the East [2]				
-First Floor	51.0	47.6	51.2	53.5
-Second Floor	51.9	48.5	52.0	54.5
Single-Family to the South [1]				
-First Floor	53.9	50.2	54.0	56.5
-Second Floor	54.5	50.9	54.5	56.8
Single-Family to the South [2]				
-First Floor	53.0	49.7	53.3	55.4
-Second Floor	54.3	50.9	54.5	56.8
Single-Family to the South [1]				
-First Floor	59.7	56.2	59.5	62.4
-Second Floor	60.0	56.5	59.8	62.7

[1] Noise level includes a 4.77-dBA penalty to account for the noise sensitive evening hours.
[2] Noise level includes a 10-dBA penalty to account for the noise sensitive nighttime hours.
[3] The calculated noise at Iron Horse Middle School is only from noise generated at the project site and does not account for other nearby sources such as Alcosta Boulevard.
Source: SoundPlan Version 6.4.

Table R above shows that for the year 2020 with project condition, compared to the year 2020 baseline condition, no additional nearby sensitive uses will exceed the City's 60 dBA CNEL exterior noise standard described above in Section 4.0.

Project Impacts to Offsite Receptors

According to the City's General Plan, an offsite noise impact would be considered significant if the noise level from onsite sources exceeds an exterior noise level standard of 60 dBA CNEL or an interior noise level standard of 45 dBA CNEL onto any nearby noise sensitive use.

The noise levels at the backyards of the nearby single-family homes have been calculated for the year 2020 without and with project scenarios. Table S shows a summary of the noise impacts found for these scenarios and the calculated project impacts for each backyard receiver.

Table S: Project-Related Stationary Noise Impacts

Site	Year 2020 Baseline	Year 2020 With Project	Project Noise Impacts
Iron Horse Middle School[3]			
-First Floor	44.7	43.8	-0.9
Marriott Residence Inn [3]			
-First Floor	60.9	61.7	0.8
-Second Floor	61.4	62.2	0.8
Marriott Residence Inn [6]			
-First Floor	54.7	57.0	2.3
-Second Floor	56.1	58.2	2.1
Apartment to the East [1]			
-First Floor	51.4	55.9	4.5
-Second Floor	52.5	56.4	3.9
Apartment to the East [2]			
-First Floor	50.1	53.5	3.4
-Second Floor	51.2	54.2	3.0
Single-Family to the East [1]			
-First Floor	49.9	52.5	2.6
-Second Floor	51.0	53.2	2.2
Single-Family to the East [2]			
-First Floor	49.0	51.0	3.0
-Second Floor	50.2	51.9	1.7

Table S (Cont.): Project-Related Stationary Noise Impacts

Site	Year 2020 Baseline	Year 2020 With Project	Project Noise Impacts
Single-Family to the South [1]			
-First Floor	52.7	53.9	1.2
-Second Floor	53.5	54.5	1.0
Single-Family to the South [2]			
-First Floor	52.1	53.0	0.9
-Second Floor	53.6	54.3	0.7
Single-Family to the South [3]			
-First Floor	59.4	59.7	0.3
-Second Floor	59.7	60.0	0.3

[1] The calculated noise at Iron Horse Middle School is only from noise generated at the project site and does not account for other nearby sources such as Alcosta Boulevard.
Source: SoundPlan Version 6.4.

Table S above shows that the noise impacts onto the nearby homes will range from -0.9 to 4.5 dBA CNEL. The greatest increase of 4.5 dBA is anticipated to occur at the apartments to the east of Bishop Ranch 1, which would result in a noise level of 55.9 dBA CNEL. This increase is below the 5.0 dBA threshold of significance and the resulting noise level is below the City's 60-dBA exterior noise standard, therefore no significant noise impact is anticipated to occur at the nearby noise sensitive land uses.

The analysis shows that the noise level at Iron Horse Middle School will decrease with development of the proposed project. This is due to the noise shielding the proposed project's buildings will provide from Interstate 680 and portions of Bollinger Canyon Road. However, the with project noise level of 43.8 dBA CNEL, does not represent a true forecast of the future noise levels at the school since for Alcosta Boulevard to the east and Norris Canyon Road to the north were not included in the model.

7.2.3 - Potential Onsite Long-Term Noise Impacts

According to the City's General Plan, an onsite noise impact would be considered significant if the onsite noise level exceeds an interior noise level standard of 45 dBA CNEL for the residential uses. Calculations of the expected future interior noise levels were made through using the SoundPlan Version 6.4 noise modeling software and the modeling parameters described above for the 2020 plus project scenario.

To assess the interior noise levels related to the compliance with the City's 45-dBA CNEL interior noise criteria, future CNEL exterior noise levels were calculated at the building facades for the floors on the buildings where residential uses are proposed. To assess the onsite interior noise level impacts, the receivers were placed 5.5 feet above the proposed floor level and a height of 10 feet was assumed for each floor. All receivers were placed along the exterior edge of each unit at the location expected to receive the greatest noise impact.

The expected future exterior noise levels are presented in Table T. Table T also presents the anticipated interior noise levels for both “windows open” and “windows closed” conditions, which was based on a 12 dBA noise reduction for the “windows open” condition and a 25 dBA noise reduction for the “windows closed” condition, which is the noise attenuation typically found in mid-rise structures. Based on the FHWA traffic noise prediction model, the exterior noise levels at the building façade will range from 59.9 to 69.0 dBA CNEL. The calculations show that the “windows open” condition will result in interior noise levels that will exceed the City’s 45 dBA CNEL interior standard for all analyzed units. This would be considered a significant impact.

Table T: Onsite Residential Noise Levels

Building	Exterior Noise Level at Façade (CNEL)	Interior Noise Levels For:		Required Interior Noise Reduction
		Windows Open	Windows Closed	
South Side of Building A				
-Second Floor	59.9	47.9	34.9	14.9
-Third Floor	60.8	48.8	35.8	15.8
-Fourth Floor	61.6	49.6	36.6	16.6
-Fifth Floor	62.9	50.9	37.9	17.9
North Side of Building B				
-Second Floor	61.7	49.7	36.7	16.7
-Third Floor	62.2	50.2	37.2	17.2
-Fourth Floor	62.7	50.7	37.7	17.7
-Fifth Floor	62.9	50.9	37.9	17.9
West Side of Building B				
-Second Floor	57.6	45.6	32.6	12.6
-Third Floor	57.7	45.7	32.7	12.7
-Fourth Floor	57.7	45.7	32.7	12.7
-Fifth Floor	57.8	45.8	32.8	12.8
East Side of Building D				
-Second Floor	66.1	54.1	41.1	21.1
-Third Floor	66.2	54.2	41.2	21.2
-Fourth Floor	66.3	54.3	41.3	21.3
-Fifth Floor	66.4	54.4	41.4	21.4

Table T (Cont.): Onsite Residential Noise Levels

Building	Exterior Noise Level at Façade (CNEL)	Interior Noise Levels For:		Required Interior Noise Reduction
		Windows Open	Windows Closed	
West Side of Building E				
-Second Floor	62.8	50.8	37.8	17.8
-Third Floor	63.0	51.0	38.0	18.0
-Fourth Floor	63.1	51.1	38.1	18.1
-Fifth Floor	63.3	51.3	38.3	18.3
-Sixth Floor	63.3	51.3	38.3	18.3
North Side of Building F				
-Second Floor	61.3	49.3	36.3	16.3
-Third Floor	61.4	49.4	36.4	16.4
-Fourth Floor	61.5	49.5	36.5	16.5
-Fifth Floor	61.8	49.8	36.8	16.8
-Sixth Floor	61.9	49.9	36.9	16.9
-Seventh Floor	62.0	50.0	37.0	17.0
-Eighth Floor	61.9	49.9	36.9	16.9
-Ninth Floor	62.5	50.5	37.5	17.5
West Side of Building F				
-Second Floor	61.6	49.6	36.6	16.6
-Third Floor	61.8	49.8	36.8	16.8
-Fourth Floor	61.9	49.9	36.9	16.9
-Fifth Floor	62.1	50.1	37.1	17.1
-Sixth Floor	62.3	50.3	37.3	17.3
-Seventh Floor	62.3	50.3	37.3	17.3
-Eighth Floor	62.5	50.5	37.5	17.5
-Ninth Floor	63.0	51.0	38.0	18.0
East Side of Building G				
-Second Floor	64.8	52.8	39.8	19.8
-Third Floor	64.9	52.9	39.9	19.9
-Fourth Floor	64.8	52.8	39.8	19.8
-Fifth Floor	64.9	52.9	39.9	19.9
-Sixth Floor	64.8	52.8	39.8	19.8
-Seventh Floor	64.8	52.8	39.8	19.8
-Eighth Floor	64.7	52.7	39.7	19.7

Table T (Cont.): Onsite Residential Noise Levels

Building	Exterior Noise Level at Façade (CNEL)	Interior Noise Levels For:		Required Interior Noise Reduction
		Windows Open	Windows Closed	
-Ninth Floor	66.0	54.0	41.0	21.0
South Side of Building G				
-Second Floor	68.7	56.7	43.7	23.7
-Third Floor	68.8	56.8	43.8	23.8
-Fourth Floor	68.8	56.8	43.8	23.8
-Fifth Floor	68.9	56.9	43.9	23.9
-Sixth Floor	68.9	56.9	43.9	23.9
-Seventh Floor	68.9	56.9	43.9	23.9
-Eighth Floor	68.9	56.9	43.9	23.9
-Ninth Floor	69.0	57.0	44.0	24.0
West Side of Building G				
-Second Floor	65.0	53.0	40.0	20.0
-Third Floor	65.0	53.0	40.0	20.0
-Fourth Floor	65.0	53.0	40.0	20.0
-Fifth Floor	64.5	52.5	39.5	19.5
-Sixth Floor	65.1	53.1	40.1	20.1
-Seventh Floor	65.4	53.4	40.4	20.4
-Eighth Floor	65.2	53.2	40.2	20.2
-Ninth Floor	65.3	53.3	40.3	20.3

Notes:
[1] A minimum of 12-dBA noise reduction is assumed with a windows open condition.
[2] A minimum of 20-dBA noise reduction is assumed with a windows closed condition.
[3] Interior noise reduction is not required when interior noise level with "windows open" condition does not exceed 45 dBA Ldn noise standards.
Source: SoundPlan Version 6.4.

As shown in Table T, in order to meet the 45-dBA CNEL interior noise standards, an interior noise level reduction of up to 24.0 dBA CNEL is required. The incorporation of the following mitigation measures would reduce the significant onsite long-term noise impacts to a less than significant level.

Mitigation Measure 1 The applicant shall provide a windows closed condition for all units. A windows closed condition requires a means of mechanical ventilation per the Uniform Building Code standards. This shall be achieved with standard air conditioning or a fresh air intake system.

Mitigation Measure 2 The applicant shall ensure that all air ducts and vents for the residential units shall incorporate either: (a) sound baffle ducting, or (b) be oriented away from the respective traffic noise source and incorporate at least 6' of flexible fiberglass ducting and at least one 90 degree bend.

Mitigation Measure 3 The applicant shall provide exterior walls with a minimum STC rating of 46 for all exterior walls of the residential units. Typical walls with this rating will have 2x4 studs or greater, 16" o.c. with R-13 insulation, a minimum 7/8" exterior surface of cement plaster and a minimum interior surface of ½" gypsum board.

Mitigation Measure 4 The applicant shall provide window and door assemblies used throughout the project that are free of cutouts and openings, well fitted and well weather-stripped.

With these mitigation measures incorporated as design features into the proposed project, the future interior noise levels will be at or below 44.0 dBA CNEL, which is below the City's 45-dBA CNEL interior noise level standard.

7.3 - Potential Long-Term Vibration Impacts

Since the City of San Ramon does not have specific vibration impact criteria for operations-related vibration levels, Caltrans' vibration impact thresholds presented in the *Transportation- and Construction-Induced Vibration Guidance Manual*, June 2004, were utilized. The report recommends a threshold of 0.02 inches per second or 86 VdB (dB re: 1 micro-inch per second) as the significance level for on-going operation-related impacts.

The proposed project would result in the operation of a total of 2,168,466 square feet of mixed uses, including retail, office, hotel, residential, and civic, on the project site. The commercial uses would require the use of delivery trucks that may create vibration. In addition, in Block A, D, and E of the Plaza District propose parking and residential uses on the same floor levels, which may create vibration impacts to the proposed residential uses.

The nearest offsite sensitive uses include a Marriott Residence Inn approximately 150 feet east of the nearest path of travel for delivery trucks on the project site and residential apartments approximately 180 feet east of the nearest path of travel for delivery trucks on the project site. Due to this distance and the relatively low vibration impact caused by delivery trucks, no offsite or onsite vibration impacts are anticipated from the operation of delivery trucks.

Detailed architectural plans are not yet available for Blocks A, D, and E of the Plaza District to adequately analysis the potential vibration impacts that may be created by the proposed parking and residential uses on the same floor levels. This vibration may result in a significant impact to the proposed residential units in Block A, D, and E of the Plaza District.

The incorporation of the following mitigation measures would reduce the possibly significant onsite long-term vibration impacts to a less than significant level.

Mitigation Measure 5 Upon completion of the architectural plans for Block A, D, and E of the Plaza District and prior to the issuance of a building permit, a vibration analysis shall be required in order to assess the potential vibration impacts onto the proposed residential units.

SECTION 8: FINDINGS AND RECOMMENDATIONS

8.1 - Short-Term Construction Impacts

8.1.1 - Potential Short-Term Construction Noise Impacts

Construction noise is of short-term duration and would not present any long-term impacts on the project site or surrounding area. Short-term noise impacts could occur during construction activities from either the noise impacts occurring offsite, created from the transport of workers and movement of construction materials to and from the project site, or from the noise generated onsite during ground clearing/excavation, grading, and construction activities.

Construction Noise Occurring Offsite

The transport of workers and movement of construction materials could incrementally increase the noise levels along nearby roadways. In order for offsite roadway noise impacts created by construction trips associated with the proposed project to be considered significant, the offsite roadway noise levels would have to increase by 5 dBA CNEL and the resulting noise level would have to exceed the City's 60 dBA CNEL exterior noise standard for noise sensitive uses. This criterion for significance has been previously discussed above in Section 4.0. The greatest construction-related offsite noise impact is expected to occur when the existing 194,652 square feet of the Bishop Ranch 2 office park is demolished and the debris is hauled offsite. According to the URBEMIS2002 Model default, settings this would require haul trucks to make approximately 45 round-trips per day for 20 days.

According to the Traffic Analysis, construction traffic would not be permitted east of the Bollinger Canyon Road and Bishop Ranch East intersection or north of Bishop Drive. With this limitation, no offsite noise sensitive land uses would be impacted by the construction-related traffic. Therefore, no significant impact is anticipated due to construction noise impacts that would occur off the project site.

Construction Noise Occurring Onsite

The analysis shows that the Marriott Residence Inn located approximately 180 feet east of the nearest construction will experience the greatest construction noise impact from the proposed project with combined maximum average noise levels from the construction equipment at 83.3 dBA Leq.

Since construction noise is of a temporary nature, the City does not require noise mitigations to specific levels. However, they do require construction-related operational considerations such as limitation on the hours of construction and proper maintenance of sound attenuation equipment on construction equipment. With application of the of the City's regulatory requirements from the General Plan Noise Element, the short-term construction-related noise from the proposed project will not result in a short-term significant noise impact.

8.1.2 - Potential Short-Term Construction Vibration Impacts

The analysis shows that the closest potentially impacted land from vibration includes the Marriott Residence Inn located approximately 180 feet east of the nearest construction activities. It is anticipated that the vibration levels created at the Marriott Residence Inn caused by an impact pile driver operating on the eastern portion of the Bishop Ranch 1A third office building would be around 95 VdB. This vibration level is below the 106 VdB significance level discussed in Section 4.0. Therefore, the short-term construction-related vibration from the proposed project will not result in a significant vibration impact.

8.2 - Long-Term Operations Noise Impacts

8.2.1 - Offsite Long-Term Project Noise Impacts

In order for offsite roadway noise impacts created by the proposed project's operations to be considered significant, the roadway noise levels would have to increase by 5 dBA CNEL and the resulting noise level would have to exceed the City's 60 dBA CNEL exterior noise standard. This criterion for significance has been previously discussed in Section 4.0. The proposed project's offsite noise impacts have been analyzed for both existing conditions and year 2020 conditions.

Existing Conditions

The proposed project's potential offsite noise impacts have been calculated through a comparison of the existing without project scenario to the existing with project scenario. The results of this comparison indicate that the noise level contributions from the proposed project to the study area roadways would range from -0.5 to 7.4 dBA CNEL. The greatest increase of 7.4 dBA CNEL would be anticipated to occur on Bishop Drive east of Camino Ramon. Although the proposed project would have the potential to result in a large increase in traffic-related noise on Bishop Drive east of Camino Ramon, the resulting with project noise level at 100 feet is expected to be 59.0 dBA CNEL which is less than the City's threshold of 60 dBA CNEL Therefore, for the existing conditions and based on thresholds of significance defined above, no significant long-term offsite noise impacts from project-related vehicle noise would occur along the study area roadways segments.

Year 2020 Conditions

The proposed project's potential offsite noise impacts have been calculated through a comparison of the Year 2020 without project scenario to the Year 2020 with project scenario. The results of this comparison shown in Table N indicate that the noise level contributions from the proposed project to the study area roadways would range from 0.0 to 3.9 dBA CNEL. The greatest increase of 3.9 dBA CNEL would be anticipated to occur on Bishop Ranch East south of Bollinger Canyon Road. Although the proposed project will have the potential to result in a large increase in traffic-related noise on Bishop Ranch East south of Bollinger Canyon Road, the with project noise level at 100 feet is expected to be 53.0 CNEL which is less than the City's threshold of 60 dBA CNEL Therefore for the year 2020 conditions and based on thresholds of significance defined above, no significant long-term offsite noise impacts from project-related vehicle noise would occur along the study area roadways segments.

8.2.2 - Onsite Noise Impacts

According to the City's General Plan, a noise impact would be considered significant if the noise level from onsite sources exceeds an exterior noise level standard of 60 dBA CNEL or an interior noise level standard of 45 dBA CNEL onto any onsite or nearby noise-sensitive land uses.

Project Impacts to Offsite Receptors

The analysis shows that the noise impacts onto the nearby homes will range from -0.9 to 4.5 dBA CNEL. The greatest increase of 4.5 dBA is anticipated to occur at the apartments to the east of Bishop Ranch 1, which would result in a noise level of 55.9 dBA CNEL. This increase is below the 5.0 dBA threshold of significance and the resulting noise level is below the City's 60-dBA exterior noise standard, therefore no significant noise impact is anticipated to occur at the nearby noise sensitive land uses.

Onsite Noise Impacts

The analysis shows that the exterior noise levels at the proposed residential building façades would range from 59.9 to 69.0 dBA CNEL. The calculations show that the "windows open" condition will result in interior noise levels that will exceed the City's 45 dBA CNEL interior standard for all analyzed units. This would be considered a significant impact. The incorporation of the following mitigation measures would reduce the significant onsite long-term noise impacts to a less than significant level.

Mitigation Measure 1 The applicant shall provide a windows closed condition for all units. A windows closed condition requires a means of mechanical ventilation per the Uniform Building Code standards. This shall be achieved with standard air conditioning or a fresh air intake system.

Mitigation Measure 2 The applicant shall ensure that all air ducts and vents for the residential units shall incorporate either: (a) sound baffle ducting, or (b) be oriented away from the respective traffic noise source and incorporate at least 6' of flexible fiberglass ducting and at least one 90 degree bend.

Mitigation Measure 3 The applicant shall provide exterior walls with a minimum STC rating of 46 for all exterior walls of the residential units. Typical walls with this rating will have 2x4 studs or greater, 16" o.c. with R-13 insulation, a minimum 7/8" exterior surface of cement plaster and a minimum interior surface of ½" gypsum board.

Mitigation Measure 4 The applicant shall provide window and door assemblies used throughout the project that are free of cutouts and openings, well fitted and well weather-stripped.

8.2.3 - Long-Term Vibration Impacts

Since the City of San Ramon does not have specific vibration impact criteria for operations-related vibration levels, Caltrans' vibration impact thresholds presented in the *Transportation- and Construction-Induced Vibration Guidance Manual*, June, 2004, were utilized. The report recommends a threshold of 0.02 inches per second or 86 VdB (dB re: 1 micro-inch per second) as the significance level for on-going operation-related impacts.

The proposed project would result in the operation of a total of 2,168,466 square feet of mixed uses, including retail, office, hotel, residential, and civic, on the project site. The commercial uses would require the use of delivery trucks that may create vibration. In addition, in Block A, D, and E of the Plaza District propose parking and residential uses on the same floor levels, which may create vibration impacts to the proposed residential uses.

The nearest offsite sensitive uses include a Marriott Residence Inn approximately 150 feet east of the nearest path of travel for delivery trucks on the project site and residential apartments approximately 180 feet east of the nearest path of travel for delivery trucks on the project site. Due to this distance and the relatively low vibration impact caused by delivery trucks, no offsite or onsite vibration impacts are anticipated from the operation of delivery trucks.

Detailed architectural plans are not yet available for Blocks A, D, and E of the Plaza District to adequately analysis the potential vibration impacts that may be created by the proposed parking and residential uses on the same floor levels. This vibration may result in a significant impact to the proposed residential units in Block A, D, and E of the Plaza District.

The incorporation of the following mitigation measures would reduce the possibly significant onsite long-term vibration impacts to a less than significant level.

Mitigation Measure 5 Upon completion of the architectural plans for Block A, D, and E of the Plaza District and prior to the issuance of a building permit, a vibration analysis shall be required in order to assess the potential vibration impacts onto the proposed residential units.

SECTION 9: REFERENCES

California Air Resources Board, URBEMIS2002 Air Emissions from Land Development.

California Department of Transportation. October 1998. Technical Noise Supplement.

California Department of Transportation. June, 2004. Transportation- and Construction-Induced Vibration Guidance Manual.

City of San Ramon. March 5, 2002. A New Plan for the Future San Ramon 2020 General Plan.

City of San Ramon. Municipal Code Chapter B6-97, Machinery or Air Conditioning Equipment.

City of San Ramon. Municipal Code Chapter B6-100, Construction Projects.

City of San Ramon. Municipal Code Chapter B6-101, Business and Residential Relationships.

DMJM Harris. June 2007. Draft Traffic Operations Evaluation For San Ramon City Center Project.

Federal Transit Administration. April 1995. Transit Noise and Vibration Impact Assessment.

Appendix A: City of San Ramon Noise Standards

10
Noise

The purpose of San Ramon's Noise Element is to set forth policies that regulate the ambient noise environment and protect residents from exposure to excessive noise.

Noises vary widely in their scope, source, and volume, ranging from individual occurrences such as leaf blowers, to the intermittent disturbances of overhead aircraft, to the fairly constant noise generated by traffic on freeways. Noise is primarily a concern with regard to noise–sensitive uses such as residences, schools, churches, and hospitals. Figure 10-1 shows the decibel levels associated with different common sounds, and illustrates typical sound levels, while Figure 10-2 provides noise level criteria for a variety of land uses.

Noise is commonly defined as undesirable or unwanted sound. The major noise source in San Ramon is vehicular traffic on Interstate 680, some residential streets, and near some schools and shopping centers. Other noise sources include overflights from Livermore and Buchanan Airfields, and flight operations and training from the Camp Parks Reserve Forces Training Area. Noise produced by industrial facilities has a negligible effect on the City's noise environment.

Sound levels are usually measured and expressed in decibels (dB). Noise descriptors used for analysis need to account for human sensitivity to nighttime noise. Common descriptors include the Community Noise Equivalent Level (CNEL) and

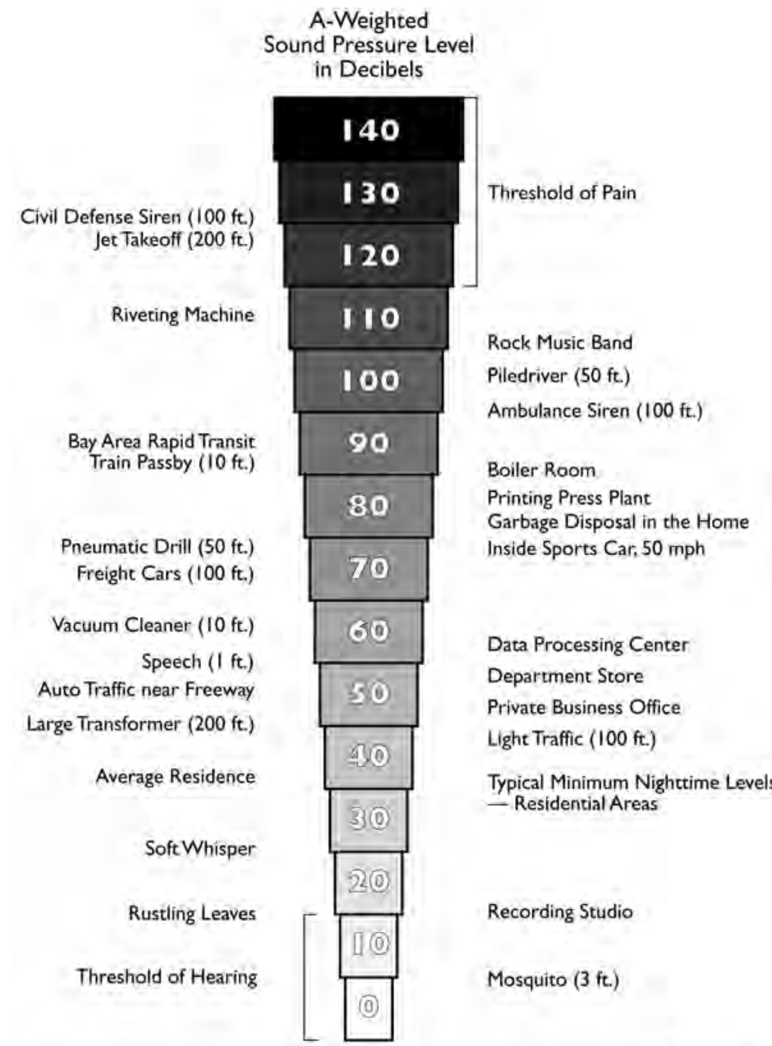


Figure 10-1
Typical Sound Levels

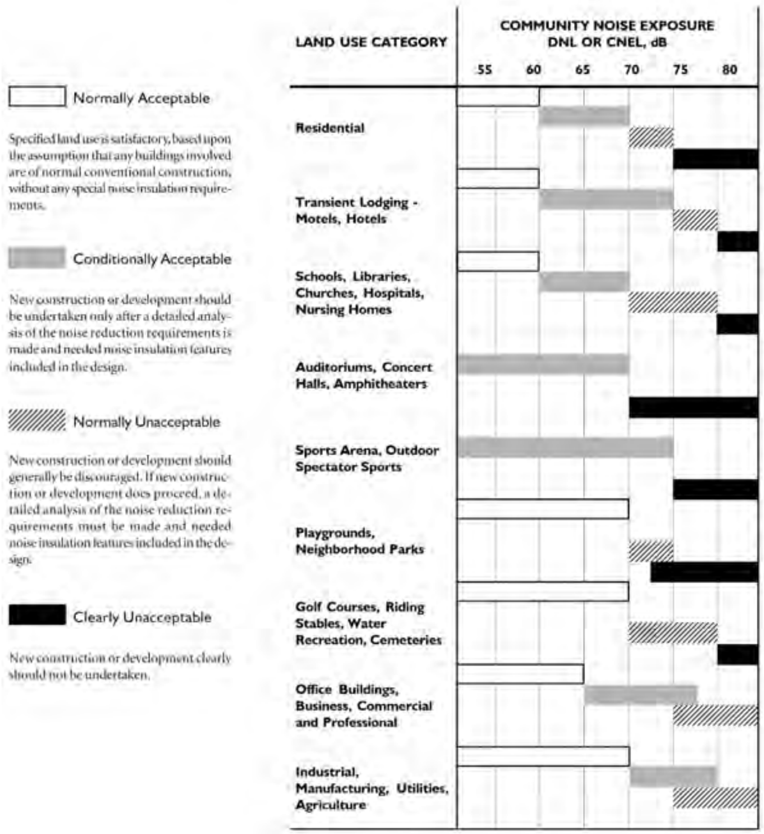


Figure 10-2
Land Use Compatability

the Day-Night Average Level (DNL, symbol (L_{dn}). Both reflect noise exposure over an average day with weighting to reflect the increased sensitivity to noise during the evening and night. The two descriptors are roughly equivalent. The CNEL descriptor is used in relation to major continuous noise sources, such as aircraft or traffic, and is the reference level for State noise law.

Knowledge of the following relationships is helpful in understanding how changes in noise and noise exposure are perceived:

- Except under special conditions, a change in sound level of 1 dB cannot be perceived;
- A 3 dB change is considered a just-noticeable difference;
- A 5 dB change is required before any noticeable change in community response would be expected. A 5 dB increase is often considered a significant impact; and
- A 10 dB increase is subjectively heard as an approximate doubling in loudness and almost always causes an adverse community response.

10.1 NOISE IN SAN RAMON

Noise in San Ramon is the result of both traffic and other sources. The nature of this noise is outlined below.

Traffic noise depends primarily on the speed of traffic and the percentage of truck traffic. Traffic volume has a lesser influence on traffic noise levels. The primary source of noise from automobiles is high frequency tire noise, which increases with speed. In addition, trucks and older automobiles produce engine and exhaust noise, and trucks also generate wind noise.

While tire noise from autos is generally located at ground level, truck noise sources can be located as high as ten to fifteen feet above the roadbed due to tall exhaust stacks and higher engines. Sound walls are not effective for mitigating such noise unless they are very tall.

According to common practice for residential areas, CNEL noise exposure up to 60 dB is considered “normally acceptable” for unshielded residential development. Noise levels from 60 to 70 dB fall within the “conditionally unacceptable” range, and those in the 70 to 75 dB range are considered “normally unacceptable”.

TRAFFIC NOISE LEVELS

The San Ramon Planning Area is subject to noise impacts from several transportation corridors, as illustrated in Figure 10-3.

Figure 10-4 illustrates future contours throughout the Planning Area. By far the greatest contributor to noise is traffic on I-680. The State Department of Transportation has constructed sound walls adjacent to the freeway and existing nearby homes, but this measure has increased ambient noise levels for residences located uphill and at greater distances from the sound walls. This traffic noise thus presents the City with the challenge of providing adequate noise mitigation without more sound walls along the freeway or throughout the City. Other areas that will experience significant increases in ambient noise levels include Crow Canyon Road, Bollinger Canyon Road, Old Ranch Road, and Dougherty Road.

OTHER NOISE

Although traffic is the primary source of noise in San Ramon, other sources do exist. These sources include construction, maintenance and repair activities, manufacturing activities, lawn care activities, etc. The policies of this Chapter address the full range of these sources.

GUIDING POLICY

10.1-G-1 Strive to achieve an acceptable noise environment for the present and future residents of San Ramon.

IMPLEMENTING POLICIES

10.1-I-1 Minimize vehicular and stationary noise sources and noise emanating from temporary activities.

The City’s regulations restrict the hours of operation for a variety of noise sources, and State laws limit the noise levels of motor vehicles and some activities at industrial plants.

10.1-I-2 Require a noise study for all projects that have noise exposure greater than “normally acceptable” levels indicated in Figure 10-2.

If noise exposure is greater than levels considered normally acceptable, some form of noise mitigation will have to be incorporated, to the extent practicable, unless the impacts are found to be less than significant. The mitigation can be conventional insulation features or techniques that require more complex building or equipment design and site layout. The City applies the standards of Title 24, *Part II of the California Code of Regulations to all housing, thereby requiring an acoustical study if a proposed development will be located in an area exposed to a DNL (Day-Night Average Sound Level) in excess of 60 dB. The Code requires mitigation to reduce the DNL to 45 dB in all habitable rooms.*

10.1-I-3 Develop uniform guidelines for acoustical studies based on current professional standards.

Uniform guidelines for the preparation of noise studies will help applicants understand City requirements for adequate acoustical evaluation.

10.1-I-4 Include noise attenuation measures in new developments that expose the community to greater than "normally acceptable" noise levels.

Open space, building orientation and design, and landscaping and running water can be used to buffer or mask sound. The new City Center complex is an area where these techniques can be used.

10.1-I-5 Discourage the use of sound walls.

The construction of sound walls will be considered where noise mitigation to acceptable levels by other means is not feasible.

10.1-I-6 Require developers to reduce the noise impacts of new development on adjacent properties through appropriate means, including, but not limited to, the following actions:

- Screen and control noise sources, such as parking and loading facilities, outdoor activities and mechanical equipment,
- Increase setbacks for noise sources from adjacent dwellings,
- Retain fences, walls, and landscaping that serve as noise buffers,
- Use soundproofing materials and double-glazed windows,
- Control hours of operation, including deliveries and trash pickup, to minimize noise impacts, and
- As a last resort, construct noise walls along highways and arterials when compatible with aesthetic concerns and neighborhood character. This would be a developer responsibility.

Mitigation for noise impacts should not transfer noise from one resident to another. Proposed development can introduce potential noise sources, even when it is compatible with existing adjacent uses. An example is the handling of large trash bins for multi-family housing. Site design and/or screening techniques can help mitigate the resulting noise.

10.1-I-7 Minimize noise impacts of flight operations on existing noise-sensitive development.

10.1-I-8 Protect especially sensitive uses, including schools, hospitals, and senior care facilities, from excessive noise.

10.1-I-9 Implement the City's regulations and performance standards for noise control to ensure appropriate regulation of common residential, commercial, and industrial noise sources.

10.1-I-10 Require new noise sources to use best available control technology (BACT) to minimize noise from all sources.

10.1-I-11 Accept applications from residents for exceptions to the 60 dB Residential Noise Level for the operation of standby electrical equipment used to meet medical needs.

This assumes that equipment noise will be mitigated to reduce the noise level at the property line to the 60 decibel level requirement.

B6-97. Machinery or air conditioning equipment.

It is unlawful for a person to operate machinery, equipment, pump, fan, air conditioning apparatus or similar mechanical device used for commercial purposes in the manner which creates noise, unless the noise is muffled and the device is equipped with a muffler sufficient to deaden the noise. (Prior code § B7-184)

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DIVISION B6 HEALTH, SANITATION AND ENVIRONMENTAL QUALITY

Chapter V Noise Control

B6-100. Construction projects.

It is unlawful for a person within a residential land use district to operate or perform construction or repair work on a building, structure or project, or to operate a pile driver, steam shovel, pneumatic hammer, derrick, steam or electric hoist or other construction-type device on holidays celebrated by the federal government, and on Monday through Friday, prior to seven-thirty a.m. and after seven p.m. on each day and on Saturdays and Sundays, prior to nine a.m. and after six p.m. (Prior code § B7-187)

<< previous | next >>

B6-101. Business and residential relationships.

A. Store deliveries by any vehicle in the area between the business and residences is prohibited between ten p.m. and six-thirty a.m. weekdays and between ten p.m. and eight a.m. on weekends and federal holidays. Delivery vehicles will have their engines turned off during deliveries.
B. Garbage disposal, construction and maintenance by power equipment in the area between the business and residences is prohibited between ten p.m. and six-thirty a.m. weekdays and between ten p.m. and eight a.m. on weekends and federal holidays.
C. Pedestrian, cycle or unauthorized vehicle traffic in the area between the business and residences is prohibited between ten p.m. and eight a.m. (Prior code § B7-188)

<< previous | next >>

Northeast corner of project site - looking north

Northeast corner of project site - looking northeast

Northeast corner of project site - looking east

Northeast corner of project site - looking southeast

Northeast corner of project site - looking south

Northeast corner of project site - looking southwest

Northeast corner of project site - looking west

Northeast corner of project site - looking northwest

Bishop Ranch 3 southern office building

Southern portion of AT&T Building

Chevron Office Park

Marriott Residence Inn

Apartment Homes to the east of the project site

Single-family homes to the southeast of the project site - looking northeast

Single-family homes to the south of the project site - looking southwest

Camino Ramon south of Bishop - looking north

Bishop Ranch East - looking south

Noise Measurement Site 1 - looking north

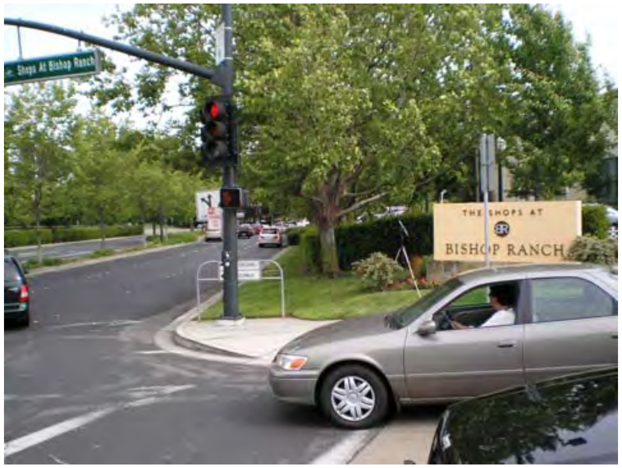
Noise Measurement Site 1 - looking southeast

Noise Measurement Site 1 - looking south

Noise Measurement Site 2 - looking south

Noise Measurement Site 2 - looking west

Noise Measurement Site 3 - looking northwest



Noise Measurement Site 3 - looking southeast

Noise Measurement Site 4 - looking northwest

Noise Measurement Site 4 - looking northeast

Noise Measurement Site 5 - looking east

Noise Measurement Site 5 - looking northwest

Noise Measurement Site 6 - looking south

Noise Measurement Site 7 - looking north

Noise Measurement Site 7 - looking southeast

Noise Measurement Site 8 - looking northwest

Noise Measurement Site 8 - looking southeast

Noise Measurement Site 9 - looking northwest

Noise Measurement Site 9 - looking northeast

Noise Measurement Site 9 - looking east

Noise Measurement Site 9 - looking southeast

Noise Measurement Site 9 - looking southwest

Noise Measurement Site A - looking northeast

Noise Measurement Site A - looking northwest

Noise Measurement Site B - looking north

Noise Measurement Site B - looking south

Appendix B: Study Area Photo Index

Northeast corner of project site - looking north

Northeast corner of project site - looking northeast

Northeast corner of project site - looking east

Northeast corner of project site - looking southeast

Northeast corner of project site - looking south

Northeast corner of project site - looking southwest

Northeast corner of project site - looking west

Northeast corner of project site - looking northwest

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Southern portion of AT&T Building

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Bishop Ranch East - looking south

Noise Measurement Site 1 - looking north

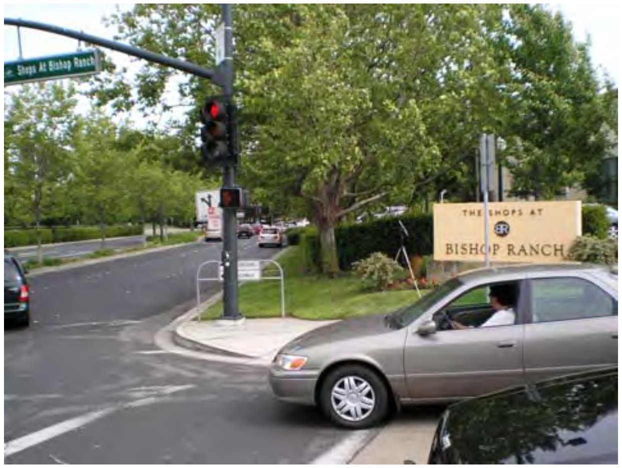
Noise Measurement Site 1 - looking southeast

Noise Measurement Site 1 - looking south

Noise Measurement Site 2 - looking south

Noise Measurement Site 2 - looking west

Noise Measurement Site 3 - looking northwest



Noise Measurement Site 3 - looking southeast

Noise Measurement Site 4 - looking northwest

Noise Measurement Site 4 - looking northeast

Noise Measurement Site 5 - looking east

Noise Measurement Site 5 - looking northwest

Noise Measurement Site 6 - looking south

Noise Measurement Site 7 - looking north

Noise Measurement Site 7 - looking southeast

Noise Measurement Site 8 - looking northwest

Noise Measurement Site 8 - looking southeast

Noise Measurement Site 9 - looking northwest

Noise Measurement Site 9 - looking northeast

Noise Measurement Site 9 - looking east

Noise Measurement Site 9 - looking southeast

Noise Measurement Site 9 - looking southwest

Noise Measurement Site A - looking northeast

Noise Measurement Site A - looking northwest

Noise Measurement Site B - looking north

Noise Measurement Site B - looking south

Appendix C: Field Noise Measurement Printouts

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Peak:	101.4 dBA	108.8 dBC	109.9 dBF
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Lmax (slow):	80.7 dBA	99.2 dBC	100.2 dBF
	04-Jun-2007 03:36:50	04-Jun-2007 03:36:49	04-Jun-2007 03:36:49
Lmin (slow):	64.7 dBA	69.3 dBC	69.9 dBF
	04-Jun-2007 03:27:46	04-Jun-2007 03:33:12	04-Jun-2007 03:33:13
Lmax (fast):	83.4 dBA	102.6 dBC	103.6 dBF
	04-Jun-2007 03:36:50	04-Jun-2007 03:36:49	04-Jun-2007 03:36:49
Lmin (fast):	64.0 dBA	68.5 dBC	69.0 dBF
	04-Jun-2007 03:27:43	04-Jun-2007 03:33:12	04-Jun-2007 03:33:12
Lmax (impulse):	83.9 dBA	104.0 dBC	105.0 dBF
	04-Jun-2007 03:36:50	04-Jun-2007 03:36:49	04-Jun-2007 03:36:49
Lmin (impulse):	64.4 dBA	69.7 dBC	70.3 dBF
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	A Weight	C Weight	Flat
Leq:	71.9 dBA	84.8 dBC	85.7 dBF
SEL:	99.7 dBA	112.6 dBC	113.5 dBF
Peak:	97.6 dBA	105.5 dBC	106.3 dBF
	04-Jun-2007 19:12:40	04-Jun-2007 19:19:29	04-Jun-2007 19:19:29
Lmax (slow):	80.5 dBA	100.3 dBC	101.1 dBF
	04-Jun-2007 19:11:34	04-Jun-2007 19:19:30	04-Jun-2007 19:19:30
Lmin (slow):	66.6 dBA	71.7 dBC	72.4 dBF
	04-Jun-2007 19:14:57	04-Jun-2007 19:14:55	04-Jun-2007 19:14:55
Lmax (fast):	82.4 dBA	100.6 dBC	101.5 dBF
	04-Jun-2007 19:11:34	04-Jun-2007 19:19:30	04-Jun-2007 19:19:29
Lmin (fast):	65.6 dBA	70.7 dBC	71.1 dBF
	04-Jun-2007 19:14:54	04-Jun-2007 19:14:55	04-Jun-2007 19:14:55
Lmax (impulse):	82.8 dBA	100.9 dBC	101.9 dBF
	04-Jun-2007 19:11:34	04-Jun-2007 19:19:29	04-Jun-2007 19:19:28
Lmin (impulse):	66.3 dBA	72.3 dBC	72.9 dBF
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	A Weight	C Weight	Flat
Leq:	65.0 dBA	71.2 dBC	73.0 dBF
SEL:	93.6 dBA	99.8 dBC	101.5 dBF
Peak:	92.0 dBA	96.7 dBC	98.9 dBF
	04-Jun-2007 04:03:46	04-Jun-2007 04:04:51	04-Jun-2007 04:04:51
Lmax (slow):	76.8 dBA	87.4 dBC	88.3 dBF
	04-Jun-2007 03:56:35	04-Jun-2007 04:04:52	04-Jun-2007 04:04:52
Lmin (slow):	47.0 dBA	53.6 dBC	55.1 dBF
	04-Jun-2007 04:00:16	04-Jun-2007 04:00:25	04-Jun-2007 04:00:25
Lmax (fast):	79.0 dBA	89.8 dBC	90.8 dBF
	04-Jun-2007 04:03:46	04-Jun-2007 04:04:52	04-Jun-2007 04:04:52
Lmin (fast):	46.4 dBA	52.7 dBC	53.6 dBF
	04-Jun-2007 04:00:16	04-Jun-2007 04:00:25	04-Jun-2007 04:00:23
Lmax (impulse):	80.2 dBA	90.7 dBC	92.3 dBF
	04-Jun-2007 04:03:46	04-Jun-2007 04:04:52	04-Jun-2007 04:04:52
Lmin (impulse):	46.8 dBA	53.9 dBC	54.6 dBF
	04-Jun-2007 03:55:18	04-Jun-2007 04:00:25	04-Jun-2007 04:00:23

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Lmax (fast):	77.9 dBA	92.8 dBC	93.3 dBF
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Lmin (fast):	42.9 dBA	51.8 dBC	53.3 dBF
	04-Jun-2007 19:27:33	04-Jun-2007 19:27:33	04-Jun-2007 19:27:33
Lmax (impulse):	78.4 dBA	93.9 dBC	94.5 dBF
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SEL:	95.4 dBA	105.9 dBC	107.3 dBF
Peak:	101.5 dBA	107.1 dBC	107.3 dBF
	04-Jun-2007 04:25:27	04-Jun-2007 04:25:27	04-Jun-2007 04:25:27
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Lmin (slow):	58.5 dBA	69.9 dBC	71.3 dBF
	04-Jun-2007 04:23:28	04-Jun-2007 04:26:19	04-Jun-2007 04:26:23
Lmax (fast):	87.9 dBA	97.1 dBC	97.2 dBF
	04-Jun-2007 04:25:26	04-Jun-2007 04:25:26	04-Jun-2007 04:25:26
Lmin (fast):	57.8 dBA	68.1 dBC	69.5 dBF
	04-Jun-2007 04:23:26	04-Jun-2007 04:26:18	04-Jun-2007 04:26:18
Lmax (impulse):	88.8 dBA	97.8 dBC	97.9 dBF
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Peak:	95.9 dBA	100.6 dBC	101.7 dBF
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Lmin (slow):	58.1 dBA	69.3 dBC	70.4 dBF
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Lmax (fast):	83.6 dBA	90.6 dBC	91.2 dBF
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Lmin (fast):	57.3 dBA	68.2 dBC	69.2 dBF
	04-Jun-2007 19:55:09	04-Jun-2007 19:55:12	04-Jun-2007 19:55:12
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	04-Jun-2007 19:52:32	04-Jun-2007 19:52:33	04-Jun-2007 19:52:33
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Descr1: 1021 Didrikson Way
Descr2: Laguna Beach, CA 92651
Setup/Setup Descr: slm.ism / Simple Integrating SLM
Location:
Note1:
Note2:

Current Any Data
Start Time: 04-Jun-2007 04:34:51
Elapsed Time: 00:11:30.4

	A Weight	C Weight	Flat
Leq:	64.6 dBA	73.3 dBC	74.2 dBF
SEL:	93.0 dBA	101.7 dBC	102.6 dBF
Peak:	88.0 dBA	94.5 dBC	95.1 dBF
	04-Jun-2007 04:35:00	04-Jun-2007 04:41:04	04-Jun-2007 04:41:01
Lmax (slow):	71.5 dBA	87.4 dBC	88.0 dBF
	04-Jun-2007 04:35:01	04-Jun-2007 04:46:14	04-Jun-2007 04:46:14
Lmin (slow):	53.7 dBA	64.6 dBC	65.9 dBF
	04-Jun-2007 04:43:43	04-Jun-2007 04:35:23	04-Jun-2007 04:44:46
Lmax (fast):	73.3 dBA	89.6 dBC	90.2 dBF
	04-Jun-2007 04:34:58	04-Jun-2007 04:46:14	04-Jun-2007 04:46:14
Lmin (fast):	53.2 dBA	62.4 dBC	63.4 dBF
	04-Jun-2007 04:44:43	04-Jun-2007 04:35:23	04-Jun-2007 04:35:21
Lmax (impulse):	74.7 dBA	90.0 dBC	90.8 dBF
	04-Jun-2007 04:34:58	04-Jun-2007 04:46:14	04-Jun-2007 04:46:14
Lmin (impulse):	53.6 dBA	65.8 dBC	66.7 dBF
	04-Jun-2007 04:43:43	04-Jun-2007 04:43:41	04-Jun-2007 04:44:45

File Translated: C:\Vista Env\2007\070404 - San Ramon\Noise Measurements\LD\13.slmdl
Model/Serial Number: 824 / A3176
Firmware/Software Revs: 4.261 / 3.120
Name: Vista Environmental
Descr1: 1021 Didrikson Way
Descr2: Laguna Beach, CA 92651
Setup/Setup Descr: slm.ism / Simple Integrating SLM
Location:
Note1:
Note2:

Current Any Data
Start Time: 04-Jun-2007 20:04:41
Elapsed Time: 00:10:30.6

	A Weight	C Weight	Flat
Leq:	63.9 dBA	73.5 dBC	74.4 dBF
SEL:	91.9 dBA	101.5 dBC	102.4 dBF
Peak:	85.8 dBA	94.3 dBC	97.1 dBF
	04-Jun-2007 20:04:46	04-Jun-2007 20:04:46	04-Jun-2007 20:15:07
Lmax (slow):	72.6 dBA	83.2 dBC	84.3 dBF
	04-Jun-2007 20:04:46	04-Jun-2007 20:07:11	04-Jun-2007 20:04:47
Lmin (slow):	53.5 dBA	66.5 dBC	67.9 dBF
	04-Jun-2007 20:09:48	04-Jun-2007 20:09:51	04-Jun-2007 20:09:51
Lmax (fast):	75.0 dBA	85.5 dBC	88.1 dBF
	04-Jun-2007 20:04:46	04-Jun-2007 20:07:11	04-Jun-2007 20:15:07
Lmin (fast):	52.8 dBA	64.9 dBC	66.2 dBF
	04-Jun-2007 20:09:48	04-Jun-2007 20:09:50	04-Jun-2007 20:09:50
Lmax (impulse):	76.1 dBA	86.9 dBC	91.6 dBF
	04-Jun-2007 20:04:46	04-Jun-2007 20:07:11	04-Jun-2007 20:15:07
Lmin (impulse):	53.3 dBA	67.6 dBC	68.8 dBF
	04-Jun-2007 20:09:47	04-Jun-2007 20:09:48	04-Jun-2007 20:05:04

File Translated: C:\Vista Env\2007\070404 - San Ramon\Noise Measurements\LD\5.slmdl
Model/Serial Number: 824 / A3176
Firmware/Software Revs: 4.261 / 3.120
Name: Vista Environmental
Descr1: 1021 Didrikson Way
Descr2: Laguna Beach, CA 92651
Setup/Setup Descr: slm.ism / Simple Integrating SLM
Location:
Note1:
Note2:

Current Any Data
Start Time: 04-Jun-2007 04:51:02
Elapsed Time: 00:10:00.4

	A Weight	C Weight	Flat
Leq:	51.6 dBA	64.5 dBC	69.2 dBF
SEL:	79.4 dBA	92.3 dBC	97.0 dBF
Peak:	86.7 dBA	88.7 dBC	92.6 dBF
	04-Jun-2007 04:51:02	04-Jun-2007 04:51:02	04-Jun-2007 04:51:02
Lmax (slow):	63.8 dBA	76.0 dBC	81.9 dBF
	04-Jun-2007 04:51:02	04-Jun-2007 04:51:03	04-Jun-2007 04:51:03
Lmin (slow):	48.6 dBA	58.6 dBC	60.0 dBF
	04-Jun-2007 04:53:02	04-Jun-2007 04:58:59	04-Jun-2007 04:58:59
Lmax (fast):	63.6 dBA	80.1 dBC	85.4 dBF
	04-Jun-2007 04:51:02	04-Jun-2007 04:52:29	04-Jun-2007 04:52:29
Lmin (fast):	47.9 dBA	57.1 dBC	58.1 dBF
	04-Jun-2007 04:52:56	04-Jun-2007 04:58:59	04-Jun-2007 04:58:59
Lmax (impulse):	61.9 dBA	82.8 dBC	88.6 dBF
	04-Jun-2007 04:54:04	04-Jun-2007 04:58:34	04-Jun-2007 04:58:34
Lmin (impulse):	48.4 dBA	58.5 dBC	60.4 dBF
	04-Jun-2007 04:52:56	04-Jun-2007 05:00:31	04-Jun-2007 04:58:59

File Translated:	C:\Vista Env\2007\070404 - San Ramon\Noise Measurements\LD\14.slmdl
Model/Serial Number:	824 / A3176
Firmware/Software Revs:	4.261 / 3.120
Name:	Vista Environmental
Descr1:	1021 Didrikson Way
Descr2:	Laguna Beach, CA 92651
Setup/Setup Descr:	slm.ism / Simple Integrating SLM
Location:	
Note1:	
Note2:	

Current Any Data
Start Time: 04-Jun-2007 20:18:46
Elapsed Time: 00:10:00.6

	A Weight	C Weight	Flat
Leq:	52.0 dBA	63.6 dBC	66.1 dBF
SEL:	79.8 dBA	91.4 dBC	93.9 dBF
Peak:	83.1 dBA	82.6 dBC	87.4 dBF
	04-Jun-2007 20:27:07	04-Jun-2007 20:21:12	04-Jun-2007 20:24:48
Lmax (slow):	61.3 dBA	68.8 dBC	75.4 dBF
	04-Jun-2007 20:18:48	04-Jun-2007 20:18:48	04-Jun-2007 20:21:26
Lmin (slow):	50.2 dBA	60.6 dBC	61.9 dBF
	04-Jun-2007 20:19:53	04-Jun-2007 20:27:21	04-Jun-2007 20:27:32
Lmax (fast):	64.8 dBA	72.7 dBC	79.4 dBF
	04-Jun-2007 20:18:48	04-Jun-2007 20:18:48	04-Jun-2007 20:21:26
Lmin (fast):	49.7 dBA	58.3 dBC	59.6 dBF
	04-Jun-2007 20:27:16	04-Jun-2007 20:27:19	04-Jun-2007 20:27:19
Lmax (impulse):	66.1 dBA	74.6 dBC	81.7 dBF
	04-Jun-2007 20:18:48	04-Jun-2007 20:21:06	04-Jun-2007 20:21:37
Lmin (impulse):	50.2 dBA	60.7 dBC	61.4 dBF
	04-Jun-2007 20:19:52	04-Jun-2007 20:18:46	04-Jun-2007 20:18:46

File Translated: C:\Vista Env\2007\070404 - San Ramon\Noise Measurements\LD\6.slmdl
Model/Serial Number: 824 / A3176
Firmware/Software Revs: 4.261 / 3.120
Name: Vista Environmental
Descr1: 1021 Didrikson Way
Descr2: Laguna Beach, CA 92651
Setup/Setup Descr: slm.ism / Simple Integrating SLM
Location:
Note1:
Note2:

Current Any Data
Start Time: 04-Jun-2007 05:06:29
Elapsed Time: 00:05:00.4

	A Weight	C Weight	Flat
Leq:	66.3 dBA	71.1 dBC	75.4 dBF
SEL:	91.1 dBA	95.8 dBC	100.2 dBF
Peak:	91.7 dBA	97.0 dBC	100.8 dBF
	04-Jun-2007 05:08:00	04-Jun-2007 05:06:31	04-Jun-2007 05:06:31
Lmax (slow):	68.9 dBA	82.4 dBC	88.2 dBF
	04-Jun-2007 05:06:29	04-Jun-2007 05:06:29	04-Jun-2007 05:06:32
Lmin (slow):	65.0 dBA	67.7 dBC	68.6 dBF
	04-Jun-2007 05:11:05	04-Jun-2007 05:06:56	04-Jun-2007 05:06:59
Lmax (fast):	68.4 dBA	87.8 dBC	93.3 dBF
	04-Jun-2007 05:08:00	04-Jun-2007 05:06:31	04-Jun-2007 05:06:31
Lmin (fast):	64.5 dBA	67.0 dBC	67.9 dBF
	04-Jun-2007 05:10:38	04-Jun-2007 05:10:06	04-Jun-2007 05:07:48
Lmax (impulse):	71.1 dBA	90.7 dBC	95.7 dBF
	04-Jun-2007 05:08:00	04-Jun-2007 05:06:31	04-Jun-2007 05:06:31
Lmin (impulse):	63.7 dBA	67.5 dBC	68.7 dBF
	04-Jun-2007 05:06:29	04-Jun-2007 05:10:06	04-Jun-2007 05:07:19

File Translated:	C:\Vista Env\2007\070404 - San Ramon\Noise Measurements\LD\15.slmdl
Model/Serial Number:	824 / A3176
Firmware/Software Revs:	4.261 / 3.120
Name:	Vista Environmental
Descr1:	1021 Didrikson Way
Descr2:	Laguna Beach, CA 92651
Setup/Setup Descr:	slm.ism / Simple Integrating SLM
Location:	
Note1:	
Note2:	

Current Any Data

Start Time: 04-Jun-2007 20:34:10

Elapsed Time: 00:04:00.4

	A Weight	C Weight	Flat
Leq:	66.2 dBA	69.0 dBC	70.8 dBF
SEL:	90.0 dBA	92.8 dBC	94.6 dBF
Peak:	83.3 dBA	85.6 dBC	89.1 dBF
	04-Jun-2007 20:35:34	04-Jun-2007 20:37:46	04-Jun-2007 20:37:14
Lmax (slow):	67.3 dBA	73.9 dBC	78.8 dBF
	04-Jun-2007 20:34:10	04-Jun-2007 20:37:48	04-Jun-2007 20:37:16
Lmin (slow):	65.6 dBA	67.2 dBC	68.2 dBF
	04-Jun-2007 20:35:05	04-Jun-2007 20:36:06	04-Jun-2007 20:36:06
Lmax (fast):	67.2 dBA	76.7 dBC	81.8 dBF
	04-Jun-2007 20:35:11	04-Jun-2007 20:37:45	04-Jun-2007 20:37:14
Lmin (fast):	65.1 dBA	66.7 dBC	67.4 dBF
	04-Jun-2007 20:34:50	04-Jun-2007 20:35:52	04-Jun-2007 20:35:52
Lmax (impulse):	68.1 dBA	78.7 dBC	83.9 dBF
	04-Jun-2007 20:35:11	04-Jun-2007 20:37:45	04-Jun-2007 20:37:14
Lmin (impulse):	64.0 dBA	66.9 dBC	68.2 dBF
	04-Jun-2007 20:34:10	04-Jun-2007 20:34:10	04-Jun-2007 20:36:06

File Translated: C:\Vista Env\2007\070404 - San Ramon\Noise Measurements\LD\7.slmdl
Model/Serial Number: 824 / A3176
Firmware/Software Revs: 4.261 / 3.120
Name: Vista Environmental
Descr1: 1021 Didrikson Way
Descr2: Laguna Beach, CA 92651
Setup/Setup Descr: slm.ism / Simple Integrating SLM
Location:
Note1:
Note2:

Current Any Data
Start Time: 04-Jun-2007 05:28:38
Elapsed Time: 00:12:30.4

	A Weight	C Weight	Flat
Leq:	69.6 dBA	78.1 dBC	78.7 dBF
SEL:	98.4 dBA	106.9 dBC	107.5 dBF
Peak:	90.3 dBA	101.7 dBC	102.0 dBF
	04-Jun-2007 05:36:06	04-Jun-2007 05:34:53	04-Jun-2007 05:34:53
Lmax (slow):	79.3 dBA	92.6 dBC	92.7 dBF
	04-Jun-2007 05:34:54	04-Jun-2007 05:34:54	04-Jun-2007 05:34:54
Lmin (slow):	54.9 dBA	66.6 dBC	68.6 dBF
	04-Jun-2007 05:39:26	04-Jun-2007 05:33:26	04-Jun-2007 05:33:27
Lmax (fast):	80.7 dBA	95.3 dBC	95.5 dBF
	04-Jun-2007 05:34:54	04-Jun-2007 05:34:51	04-Jun-2007 05:34:51
Lmin (fast):	54.2 dBA	63.8 dBC	65.0 dBF
	04-Jun-2007 05:39:26	04-Jun-2007 05:33:25	04-Jun-2007 05:33:25
Lmax (impulse):	81.5 dBA	96.5 dBC	96.7 dBF
	04-Jun-2007 05:34:54	04-Jun-2007 05:34:51	04-Jun-2007 05:34:51
Lmin (impulse):	54.6 dBA	67.4 dBC	69.6 dBF
	04-Jun-2007 05:39:26	04-Jun-2007 05:33:26	04-Jun-2007 05:35:26

File Translated:	C:\Vista Env\2007\070404 - San Ramon\Noise Measurements\LD\16.slmdl
Model/Serial Number:	824 / A3176
Firmware/Software Revs:	4.261 / 3.120
Name:	Vista Environmental
Descr1:	1021 Didrikson Way
Descr2:	Laguna Beach, CA 92651
Setup/Setup Descr:	slm.ism / Simple Integrating SLM
Location:	
Note1:	
Note2:	

Current Any Data
Start Time: 04-Jun-2007 20:46:44
Elapsed Time: 00:11:59.9

	A Weight	C Weight	Flat
Leq:	70.0 dBA	78.2 dBC	78.7 dBF
SEL:	98.6 dBA	106.7 dBC	107.2 dBF
Peak:	100.2 dBA	101.2 dBC	101.9 dBF
	04-Jun-2007 20:52:16	04-Jun-2007 20:56:42	04-Jun-2007 20:56:42
Lmax (slow):	81.6 dBA	94.3 dBC	94.8 dBF
	04-Jun-2007 20:54:57	04-Jun-2007 20:56:43	04-Jun-2007 20:56:43
Lmin (slow):	54.8 dBA	64.4 dBC	66.0 dBF
	04-Jun-2007 20:53:21	04-Jun-2007 20:49:19	04-Jun-2007 20:49:19
Lmax (fast):	86.1 dBA	95.9 dBC	96.4 dBF
	04-Jun-2007 20:52:16	04-Jun-2007 20:56:42	04-Jun-2007 20:56:42
Lmin (fast):	54.1 dBA	62.6 dBC	64.2 dBF
	04-Jun-2007 20:53:21	04-Jun-2007 20:49:16	04-Jun-2007 20:53:21
Lmax (impulse):	88.2 dBA	96.7 dBC	97.2 dBF
	04-Jun-2007 20:52:16	04-Jun-2007 20:56:42	04-Jun-2007 20:56:42
Lmin (impulse):	54.6 dBA	65.0 dBC	66.8 dBF
	04-Jun-2007 20:53:22	04-Jun-2007 20:49:17	04-Jun-2007 20:53:21

File Translated: C:\Vista Env\2007\070404 - San Ramon\Noise Measurements\LD\8.slmdl
Model/Serial Number: 824 / A3176
Firmware/Software Revs: 4.261 / 3.120
Name: Vista Environmental
Descr1: 1021 Didrikson Way
Descr2: Laguna Beach, CA 92651
Setup/Setup Descr: slm.ism / Simple Integrating SLM
Location:
Note1:
Note2:

Current Any Data
Start Time: 04-Jun-2007 05:49:52
Elapsed Time: 00:11:30.1

	A Weight	C Weight	Flat
Leq:	50.8 dBA	61.8 dBC	64.2 dBF
SEL:	79.2 dBA	90.2 dBC	92.6 dBF
Peak:	74.3 dBA	90.3 dBC	92.0 dBF
	04-Jun-2007 05:50:12	04-Jun-2007 05:50:12	04-Jun-2007 05:50:12
Lmax (slow):	55.9 dBA	70.4 dBC	74.3 dBF
	04-Jun-2007 05:50:04	04-Jun-2007 05:50:12	04-Jun-2007 06:00:41
Lmin (slow):	46.9 dBA	57.0 dBC	58.5 dBF
	04-Jun-2007 05:51:15	04-Jun-2007 05:51:18	04-Jun-2007 05:51:18
Lmax (fast):	58.2 dBA	77.9 dBC	80.4 dBF
	04-Jun-2007 05:50:12	04-Jun-2007 05:50:12	04-Jun-2007 05:50:12
Lmin (fast):	45.9 dBA	55.4 dBC	56.2 dBF
	04-Jun-2007 05:51:14	04-Jun-2007 05:51:20	04-Jun-2007 05:51:20
Lmax (impulse):	61.5 dBA	81.2 dBC	84.1 dBF
	04-Jun-2007 05:50:12	04-Jun-2007 05:50:12	04-Jun-2007 05:50:12
Lmin (impulse):	46.7 dBA	57.5 dBC	59.5 dBF
	04-Jun-2007 05:51:14	04-Jun-2007 05:51:13	04-Jun-2007 05:51:13

File Translated: C:\Vista Env\2007\070404 - San Ramon\Noise Measurements\LD\17.slmdl
Model/Serial Number: 824 / A3176
Firmware/Software Revs: 4.261 / 3.120
Name: Vista Environmental
Descr1: 1021 Didrikson Way
Descr2: Laguna Beach, CA 92651
Setup/Setup Descr: slm.ism / Simple Integrating SLM
Location:
Note1:
Note2:

Current Any Data
Start Time: 04-Jun-2007 21:04:31
Elapsed Time: 00:10:00.6

	A Weight	C Weight	Flat
Leq:	52.6 dBA	63.0 dBC	65.0 dBF
SEL:	80.4 dBA	90.8 dBC	92.8 dBF
Peak:	82.8 dBA	88.9 dBC	91.1 dBF
	04-Jun-2007 21:08:24	04-Jun-2007 21:12:56	04-Jun-2007 21:12:56
Lmax (slow):	59.3 dBA	70.3 dBC	75.8 dBF
	04-Jun-2007 21:09:21	04-Jun-2007 21:04:37	04-Jun-2007 21:08:16
Lmin (slow):	48.6 dBA	58.3 dBC	59.4 dBF
	04-Jun-2007 21:11:42	04-Jun-2007 21:13:47	04-Jun-2007 21:13:44
Lmax (fast):	61.4 dBA	76.5 dBC	81.5 dBF
	04-Jun-2007 21:09:20	04-Jun-2007 21:12:56	04-Jun-2007 21:08:15
Lmin (fast):	48.1 dBA	57.1 dBC	58.1 dBF
	04-Jun-2007 21:11:42	04-Jun-2007 21:13:45	04-Jun-2007 21:13:44
Lmax (impulse):	64.0 dBA	81.2 dBC	84.7 dBF
	04-Jun-2007 21:09:20	04-Jun-2007 21:12:56	04-Jun-2007 21:08:15
Lmin (impulse):	48.5 dBA	59.2 dBC	60.2 dBF
	04-Jun-2007 21:11:42	04-Jun-2007 21:13:45	04-Jun-2007 21:13:44

File Translated:	C:\Vista Env\2007\070404 - San Ramon\Noise Measurements\LD\9.slmdl
Model/Serial Number:	824 / A3176
Firmware/Software Revs:	4.261 / 3.120
Name:	Vista Environmental
Descr1:	1021 Didrikson Way
Descr2:	Laguna Beach, CA 92651
Setup/Setup Descr:	slm.ism / Simple Integrating SLM
Location:	
Note1:	
Note2:	

Current Any Data

Start Time:	04-Jun-2007 06:09:24
Elapsed Time:	00:11:00.6

	A Weight	C Weight	Flat
Leq:	72.5 dBA	79.2 dBC	79.7 dBF
SEL:	100.7 dBA	107.4 dBC	108.0 dBF
Peak:	102.2 dBA	103.3 dBC	103.8 dBF
	04-Jun-2007 06:19:43	04-Jun-2007 06:19:43	04-Jun-2007 06:19:43
Lmax (slow):	85.4 dBA	90.6 dBC	90.7 dBF
	04-Jun-2007 06:19:44	04-Jun-2007 06:09:56	04-Jun-2007 06:09:56
Lmin (slow):	60.0 dBA	68.3 dBC	69.3 dBF
	04-Jun-2007 06:14:16	04-Jun-2007 06:11:47	04-Jun-2007 06:11:47
Lmax (fast):	89.7 dBA	93.4 dBC	93.5 dBF
	04-Jun-2007 06:19:43	04-Jun-2007 06:09:56	04-Jun-2007 06:09:56
Lmin (fast):	59.2 dBA	66.7 dBC	67.3 dBF
	04-Jun-2007 06:14:15	04-Jun-2007 06:11:46	04-Jun-2007 06:11:46
Lmax (impulse):	90.6 dBA	94.3 dBC	94.5 dBF
	04-Jun-2007 06:19:43	04-Jun-2007 06:09:56	04-Jun-2007 06:09:56
Lmin (impulse):	60.0 dBA	68.8 dBC	70.0 dBF
	04-Jun-2007 06:11:46	04-Jun-2007 06:11:46	04-Jun-2007 06:11:47

File Translated:	C:\Vista Env\2007\070404 - San Ramon\Noise Measurements\LD\18.slmdl
Model/Serial Number:	824 / A3176
Firmware/Software Revs:	4.261 / 3.120
Name:	Vista Environmental
Descr1:	1021 Didrikson Way
Descr2:	Laguna Beach, CA 92651
Setup/Setup Descr:	slm.ism / Simple Integrating SLM
Location:	
Note1:	
Note2:	

Current Any Data
Start Time: 04-Jun-2007 21:21:23
Elapsed Time: 00:11:30.4

	A Weight	C Weight	Flat
Leq:	70.4 dBA	79.8 dBC	80.4 dBF
SEL:	98.8 dBA	108.2 dBC	108.8 dBF
Peak:	98.1 dBA	105.0 dBC	105.3 dBF
	04-Jun-2007 21:26:08	04-Jun-2007 21:26:08	04-Jun-2007 21:26:08
Lmax (slow):	84.4 dBA	94.9 dBC	95.2 dBF
	04-Jun-2007 21:26:08	04-Jun-2007 21:26:09	04-Jun-2007 21:26:09
Lmin (slow):	59.4 dBA	68.2 dBC	69.5 dBF
	04-Jun-2007 21:23:13	04-Jun-2007 21:21:42	04-Jun-2007 21:21:42
Lmax (fast):	85.6 dBA	96.7 dBC	97.1 dBF
	04-Jun-2007 21:26:08	04-Jun-2007 21:26:08	04-Jun-2007 21:26:08
Lmin (fast):	58.9 dBA	66.8 dBC	67.8 dBF
	04-Jun-2007 21:23:11	04-Jun-2007 21:21:41	04-Jun-2007 21:21:41
Lmax (impulse):	86.2 dBA	97.9 dBC	98.2 dBF
	04-Jun-2007 21:26:08	04-Jun-2007 21:26:08	04-Jun-2007 21:26:08
Lmin (impulse):	58.7 dBA	69.0 dBC	69.9 dBF
	04-Jun-2007 21:21:23	04-Jun-2007 21:28:30	04-Jun-2007 21:28:30

Site A

Date	Time=06/04/07	10:55:00 AM			
Sampling	Time=5	Weighting=A			
Record	Num= 17520	Weighting=Slow	CNEL(24hr)=	58.0	
Leq	alue=52.5 SEL	Value=102.0	Ldn(24hr)=	57.7	
MAX	77.7	Min Leq10min =		43.6	at 1:25 a.m.
MIN	39.9	Max Leq10min =		59.3	at 4:25 p.m.

Site A

SPL	Time	Leq (10 min. Avg.)	Ldn	CNEL
53.6	10:55:00		53.6	53.6
50.4	10:55:05		50.4	50.4
51.3	10:55:10		51.3	51.3
52.4	10:55:15		52.4	52.4
51.7	10:55:20		51.7	51.7
49.2	10:55:25		49.2	49.2
48.2	10:55:30		48.2	48.2
49.7	10:55:35		49.7	49.7
49	10:55:40		49	49
49	10:55:45		49	49
49	10:55:50		49	49
49.8	10:55:55		49.8	49.8
49.5	10:56:00		49.5	49.5
49.8	10:56:05		49.8	49.8
49.6	10:56:10		49.6	49.6
49.9	10:56:15		49.9	49.9
50	10:56:20		50	50
49.6	10:56:25		49.6	49.6
50.5	10:56:30		50.5	50.5
50.1	10:56:35		50.1	50.1
48.9	10:56:40		48.9	48.9
49.5	10:56:45		49.5	49.5
48.8	10:56:50		48.8	48.8
48.6	10:56:55		48.6	48.6
48.8	10:57:00		48.8	48.8
50.7	10:57:05		50.7	50.7
49.8	10:57:10		49.8	49.8
49.6	10:57:15		49.6	49.6
49.7	10:57:20		49.7	49.7
50.7	10:57:25		50.7	50.7
50.2	10:57:30	49.8	50.2	50.2
49.1	10:57:35	49.8	49.1	49.1
48.8	10:57:40	49.7	48.8	48.8
49.5	10:57:45	49.7	49.5	49.5
49.4	10:57:50	49.7	49.4	49.4
52.1	10:57:55	49.6	52.1	52.1
53.5	10:58:00	49.7	53.5	53.5
53.6	10:58:05	49.7	53.6	53.6
54.2	10:58:10	49.7	54.2	54.2
50.3	10:58:15	49.7	50.3	50.3
47.8	10:58:20	49.7	47.8	47.8
47.7	10:58:25	49.7	47.7	47.7
48.6	10:58:30	49.7	48.6	48.6
48.4	10:58:35	49.7	48.4	48.4
49	10:58:40	49.7	49	49
49.1	10:58:45	49.7	49.1	49.1
49.2	10:58:50	49.7	49.2	49.2
50.8	10:58:55	49.7	50.8	50.8
50.3	10:59:00	49.7	50.3	50.3
49.7	10:59:05	49.7	49.7	49.7
49.1	10:59:10	49.7	49.1	49.1
49.1	10:59:15	49.7	49.1	49.1
49.7	10:59:20	49.7	49.7	49.7
47.8	10:59:25	49.7	47.8	47.8
47.2	10:59:30	49.7	47.2	47.2
47.9	10:59:35	49.7	47.9	47.9
48.1	10:59:40	49.8	48.1	48.1

Site B

Date	Time=06/04/07	10:53:00 AM			
Sampling	Time=5	Freq Weighting=A			
Record	Num= 17520	Weighting=Slow	CNEL(24hr)=	59.4	
Leq	ılue=55.7 SEL	Value=105.2	Ldn(24hr)=	59.2	
MAX	76.4	Min Leq10min =		44.1	at 1:34 a.m.
MIN	39.8	Max Leq10min =		71.1	at 10:31 a.m.

Site B

SPL	Time	Leq (10 min. Avg.)	Ldn	CNEL
52.5	10:53:00		52.5	52.5
51.2	10:53:05		51.2	51.2
50.9	10:53:10		50.9	50.9
51.1	10:53:15		51.1	51.1
53.4	10:53:20		53.4	53.4
50.1	10:53:25		50.1	50.1
50.8	10:53:30		50.8	50.8
51.4	10:53:35		51.4	51.4
51	10:53:40		51	51
50.4	10:53:45		50.4	50.4
51	10:53:50		51	51
51.2	10:53:55		51.2	51.2
51.3	10:54:00		51.3	51.3
51.7	10:54:05		51.7	51.7
51.6	10:54:10		51.6	51.6
51.3	10:54:15		51.3	51.3
51	10:54:20		51	51
51.1	10:54:25		51.1	51.1
51.6	10:54:30		51.6	51.6
50.6	10:54:35		50.6	50.6
51.3	10:54:40		51.3	51.3
50.2	10:54:45		50.2	50.2
49.3	10:54:50		49.3	49.3
50.8	10:54:55		50.8	50.8
49.4	10:55:00		49.4	49.4
51.2	10:55:05		51.2	51.2
51.8	10:55:10		51.8	51.8
50.5	10:55:15		50.5	50.5
51.9	10:55:20		51.9	51.9
50.6	10:55:25		50.6	50.6
50.4	10:55:30	51.5	50.4	50.4
50.4	10:55:35	51.5	50.4	50.4
52.2	10:55:40	51.5	52.2	52.2
50.5	10:55:45	51.4	50.5	50.5
53.5	10:55:50	51.4	53.5	53.5
51.7	10:55:55	51.4	51.7	51.7
51.6	10:56:00	51.4	51.6	51.6
53.4	10:56:05	51.4	53.4	53.4
52.9	10:56:10	51.4	52.9	52.9
53.8	10:56:15	51.4	53.8	53.8
52.7	10:56:20	51.4	52.7	52.7
51.5	10:56:25	51.4	51.5	51.5
50.7	10:56:30	51.4	50.7	50.7
50.6	10:56:35	51.4	50.6	50.6
55.2	10:56:40	51.5	55.2	55.2
54.8	10:56:45	51.5	54.8	54.8
51.4	10:56:50	51.5	51.4	51.4
51	10:56:55	51.5	51	51
51.9	10:57:00	51.5	51.9	51.9
51.8	10:57:05	51.5	51.8	51.8
52	10:57:10	51.5	52	52
50.4	10:57:15	51.6	50.4	50.4
50.5	10:57:20	51.7	50.5	50.5
50.9	10:57:25	51.7	50.9	50.9
50.7	10:57:30	51.7	50.7	50.7
51	10:57:35	51.7	51	51
50.9	10:57:40	51.7	50.9	50.9
50.5	10:57:45	51.7	50.5	50.5
52.6	10:57:50	51.7	52.6	52.6
55.1	10:57:55	51.7	55.1	55.1
54.2	10:58:00	51.8	54.2	54.2
53.4	10:58:05	51.8	53.4	53.4
52.4	10:58:10	51.8	52.4	52.4
51.6	10:58:15	51.8	51.6	51.6
51.5	10:58:20	51.8	51.5	51.5
50.6	10:58:25	51.8	50.6	50.6
50.1	10:58:30	51.8	50.1	50.1
51.4	10:58:35	51.8	51.4	51.4
50.8	10:58:40	51.8	50.8	50.8
49.4	10:58:45	51.8	49.4	49.4
50.8	10:58:50	51.8	50.8	50.8
55.2	10:58:55	51.8	55.2	55.2
50.9	10:59:00	51.8	50.9	50.9
51.9	10:59:05	51.8	51.9	51.9
56	10:59:10	51.8	56	56
53.5	10:59:15	51.7	53.5	53.5
50.2	10:59:20	51.7	50.2	50.2
49.4	10:59:25	51.7	49.4	49.4
50.1	10:59:30	51.7	50.1	50.1
50.2	10:59:35	51.7	50.2	50.2
49.6	10:59:40	51.7	49.6	49.6

Appendix D: Construction - RCNM Printouts

Roadway Construction Noise Model (RCNM),Version 1.0

Report date: 6/27/2007
Case Description: San Ramon City Center

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Marriott Residence Inr	Residential	60	60	60

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Impact Pile Driver	Yes	20		101.3	180	0
Excavator	No	40		80.7	200	0
Front End Loader	No	40		79.1	220	0

Results

Equipment		Calculated (dBA) *Lmax	Leq	Noise Limits (dBA) Day Lmax	Leq	Evening Lmax	Leq
Impact Pile Driver		90.1	83.2	N/A	N/A	N/A	N/A
Excavator		68.7	64.7	N/A	N/A	N/A	N/A
Front End Loader		66.2	62.3	N/A	N/A	N/A	N/A
	Total	**90.1**	**83.3**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Apartment to the east	Residential	60	60	60

Description	**Impact** Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Impact Pile Driver	Yes	20		101.3	210	0
Excavator	No	40		80.7	230	0
Front End Loader	No	40		79.1	240	0

Results

Equipment		Calculated (dBA) *Lmax	Leq	Noise Limits (dBA) Day Lmax	Leq	Evening Lmax	Leq
Impact Pile Driver		88.8	81.8	N/A	N/A	N/A	N/A
Excavator		67.5	63.5	N/A	N/A	N/A	N/A
Front End Loader		65.5	61.5	N/A	N/A	N/A	N/A
	Total	**88.8**	**81.9**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Iron Horse Middle Sch	Commercial	60	60	60

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Impact Pile Driver	Yes	20		101.3	2000	0
Excavator	No	40		80.7	2020	0
Front End Loader	No	40		79.1	2040	0

Results

Equipment		Calculated (dBA) *Lmax	Leq	Noise Limits (dBA) Day Lmax	Leq	Evening Lmax	Leq
Impact Pile Driver		69.2	62.2	N/A	N/A	N/A	N/A
Excavator		48.6	44.6	N/A	N/A	N/A	N/A
Front End Loader		46.9	42.9	N/A	N/A	N/A	N/A
	Total	**69.2**	**62.4**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Appendix E: Offsite Traffic Noise Impact Calculations

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS

Project Name: San Ramon City Center

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Bollinger Canyon Road **Segment: South of Crow Canyon Road**

Average Daily Traffic: 5010 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 1 Roadway Classification: 2-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 98.37 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-4.11	-4.51	-1.20	55.29	52.92	51.62	45.57	54.00	54.63	70 dBA:	**10**	**11**
Medium Trucks	74.83	-18.98	-4.51	-1.20	50.14	30.93	23.15	32.36	38.51	38.55	65 dBA:	**22**	**24**
Heavy Trucks	80.05	-16.76	-4.51	-1.20	57.58	40.59	32.81	42.01	48.17	48.20	60 dBA:	**47**	**51**
				Total:	**60.06**	**53.19**	**51.69**	**47.30**	**55.10**	**55.61**	55 dBA:	**102**	**110**

Road Name: Bollinger Canyon Road **Segment: North of Norris Canyon Road**

Average Daily Traffic: 7105 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 1 Roadway Classification: 2-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 98.37 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-2.59	-4.51	-1.20	56.81	54.43	53.14	47.09	55.52	56.15	70 dBA:	**13**	**14**
Medium Trucks	74.83	-17.46	-4.51	-1.20	51.66	32.45	24.67	33.88	40.03	40.06	65 dBA:	**28**	**30**
Heavy Trucks	80.05	-15.24	-4.51	-1.20	59.09	42.10	34.32	43.53	49.69	49.72	60 dBA:	**60**	**64**
				Total:	**61.58**	**54.71**	**53.20**	**48.81**	**56.62**	**57.13**	55 dBA:	**128**	**139**

Road Name: Bollinger Canyon Road **Segment: South of Norris Canyon Road**

Average Daily Traffic: 8810 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	-2.24	-4.43	-1.20	59.50	57.12	55.83	49.78	58.21	58.84	70 dBA:	**19**	**20**
Medium Trucks	76.31	-16.53	-4.43	-1.20	54.16	34.37	26.59	35.80	41.95	41.99	65 dBA:	**40**	**44**
Heavy Trucks	81.16	-14.89	-4.43	-1.20	60.65	43.66	35.88	45.08	51.24	51.27	60 dBA:	**87**	**94**
				Total:	**63.64**	**57.34**	**55.88**	**51.17**	**59.09**	**59.62**	55 dBA:	**187**	**203**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: San Ramon Valley Boulevard **Segment: North of Crow Canyon Road**
Average Daily Traffic: 20300 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	1.97	-4.43	-1.20	61.45	59.08	57.79	51.73	60.16	60.79	70 dBA:	**26**	**28**
Medium Trucks	74.83	-12.90	-4.43	-1.20	56.30	37.09	29.31	38.52	44.68	44.71	65 dBA:	**56**	**61**
Heavy Trucks	80.05	-10.68	-4.43	-1.20	63.74	46.75	38.97	48.18	54.33	54.36	60 dBA:	**121**	**131**
				Total:	**66.22**	**59.35**	**57.85**	**53.46**	**61.27**	**61.77**	55 dBA:	**262**	**283**

Road Name: San Ramon Valley Boulevard **Segment: North of Norris Canyon Road**
Average Daily Traffic: 12585 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-0.11	-4.43	-1.20	59.37	57.00	55.71	49.65	58.09	58.72	70 dBA:	**19**	**21**
Medium Trucks	74.83	-14.98	-4.43	-1.20	54.23	35.02	27.24	36.44	42.60	42.63	65 dBA:	**41**	**44**
Heavy Trucks	80.05	-12.76	-4.43	-1.20	61.66	44.67	36.89	46.10	52.25	52.29	60 dBA:	**88**	**95**
				Total:	**64.14**	**57.28**	**55.77**	**51.38**	**59.19**	**59.69**	55 dBA:	**190**	**206**

Road Name: San Ramon Valley Boulevard **Segment: North of Bollinger Canyon Road**
Average Daily Traffic: 13400 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	-0.42	-4.43	-1.20	61.32	58.95	57.65	51.60	60.03	60.66	70 dBA:	**25**	**27**
Medium Trucks	76.31	-14.70	-4.43	-1.20	55.98	36.20	28.41	37.62	43.78	43.81	65 dBA:	**53**	**58**
Heavy Trucks	81.16	-13.07	-4.43	-1.20	62.47	45.48	37.70	46.91	53.06	53.09	60 dBA:	**115**	**125**
				Total:	**65.46**	**59.16**	**57.70**	**52.99**	**60.91**	**61.44**	55 dBA:	**248**	**269**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: San Ramon Valley Boulevard **Segment: South of Bollinger Canyon Road**
Average Daily Traffic: 23175 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	1.96	-4.43	-1.20	63.70	61.32	60.03	53.98	62.41	63.04	70 dBA:	**36**	**39**
Medium Trucks	76.31	-12.32	-4.43	-1.20	58.36	38.57	30.79	40.00	46.16	46.19	65 dBA:	**77**	**83**
Heavy Trucks	81.16	-10.69	-4.43	-1.20	64.85	47.86	40.08	49.28	55.44	55.47	60 dBA:	**166**	**180**
				Total:	**67.84**	**61.54**	**60.08**	**55.37**	**63.29**	**63.82**	55 dBA:	**357**	**387**

Road Name: San Ramon Valley Boulevard **Segment: South of Montevideo Drive**
Average Daily Traffic: 16650 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	0.53	-4.43	-1.20	62.26	59.89	58.60	52.54	60.97	61.60	70 dBA:	**29**	**31**
Medium Trucks	76.31	-13.76	-4.43	-1.20	56.93	37.14	29.36	38.56	44.72	44.75	65 dBA:	**62**	**67**
Heavy Trucks	81.16	-12.12	-4.43	-1.20	63.41	46.42	38.64	47.85	54.00	54.04	60 dBA:	**133**	**144**
				Total:	**66.40**	**60.10**	**58.64**	**53.94**	**61.85**	**62.38**	55 dBA:	**286**	**310**

Road Name: Sunset Drive **Segment: South of Bishop Drive**
Average Daily Traffic: 9090 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-1.27	-4.43	-1.20	58.21	56.09	54.77	48.76	57.18	57.81	70 dBA:	**14**	**15**
Medium Trucks	74.83	-18.51	-4.43	-1.20	50.69	29.44	35.46	17.17	30.31	33.06	65 dBA:	**30**	**33**
Heavy Trucks	80.05	-22.47	-4.43	-1.20	51.95	26.60	23.20	27.85	34.05	34.15	60 dBA:	**65**	**72**
				Total:	**59.71**	**56.10**	**54.83**	**48.80**	**57.21**	**57.84**	55 dBA:	**140**	**155**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Sunset Drive **Segment: North of Bollinger Canyon Road**

Average Daily Traffic: 15050 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	0.91	-4.43	-1.20	60.40	58.28	56.96	50.95	59.37	60.00	70 dBA:	**20**	**22**
Medium Trucks	74.83	-16.32	-4.43	-1.20	52.88	31.63	37.65	19.36	32.50	35.25	65 dBA:	**42**	**47**
Heavy Trucks	80.05	-20.28	-4.43	-1.20	54.14	28.79	25.39	30.04	36.24	36.34	60 dBA:	**91**	**100**
				Total:	**61.90**	**58.29**	**57.02**	**50.99**	**59.40**	**60.03**	55 dBA:	**197**	**216**

Road Name: Camino Ramon **Segment: North of Crow Canyon Road**

Average Daily Traffic: 9485 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-1.09	-4.43	-1.20	58.39	56.27	54.96	48.95	57.37	57.99	70 dBA:	**14**	**16**
Medium Trucks	74.83	-18.33	-4.43	-1.20	50.88	29.63	35.65	17.35	30.50	33.25	65 dBA:	**31**	**34**
Heavy Trucks	80.05	-22.28	-4.43	-1.20	52.14	26.79	23.39	28.04	34.23	34.33	60 dBA:	**67**	**74**
				Total:	**59.90**	**56.29**	**55.01**	**48.98**	**57.40**	**58.03**	55 dBA:	**144**	**159**

Road Name: Camino Ramon **Segment: North of Norris Canyon Road**

Average Daily Traffic: 14540 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	0.77	-4.43	-1.20	60.25	58.13	56.81	50.80	59.22	59.85	70 dBA:	**19**	**21**
Medium Trucks	74.83	-16.47	-4.43	-1.20	52.73	31.48	37.50	19.21	32.35	35.10	65 dBA:	**41**	**46**
Heavy Trucks	80.05	-20.43	-4.43	-1.20	53.99	28.64	25.24	29.89	36.09	36.19	60 dBA:	**89**	**98**
				Total:	**61.75**	**58.14**	**56.87**	**50.84**	**59.25**	**59.88**	55 dBA:	**192**	**212**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS **Project Name: San Ramon City Center**

Vehicle Type	Vehicle Mix (Arterial) Day	Evening	Night	Daily	Vehicle Mix (Collector or local) Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Camino Ramon **Segment: North of Executive Parkway**

Average Daily Traffic: 13915 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)

	Noise Adjustments				Unmitigated Noise Levels						Centerline Distance to Noise Contour (in feet)		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	0.57	-4.43	-1.20	60.06	57.94	56.62	50.61	59.03	59.66	70 dBA:	**19**	**21**
Medium Trucks	74.83	-16.66	-4.43	-1.20	52.54	31.29	37.31	19.02	32.16	34.91	65 dBA:	**40**	**44**
Heavy Trucks	80.05	-20.62	-4.43	-1.20	53.80	28.45	25.05	29.70	35.90	35.99	60 dBA:	**87**	**95**
				Total:	**61.56**	**57.95**	**56.68**	**50.65**	**59.06**	**59.69**	55 dBA:	**187**	**205**

Road Name: Camino Ramon **Segment: North of Bishop Drive**

Average Daily Traffic: 13905 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)

	Noise Adjustments				Unmitigated Noise Levels						Centerline Distance to Noise Contour (in feet)		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	0.57	-4.43	-1.20	60.06	57.93	56.62	50.61	59.03	59.65	70 dBA:	**19**	**21**
Medium Trucks	74.83	-16.67	-4.43	-1.20	52.54	31.29	37.31	19.01	32.16	34.91	65 dBA:	**40**	**44**
Heavy Trucks	80.05	-20.62	-4.43	-1.20	53.80	28.45	25.05	29.70	35.90	35.99	60 dBA:	**87**	**95**
				Total:	**61.56**	**57.95**	**56.67**	**50.65**	**59.06**	**59.69**	55 dBA:	**186**	**205**

Road Name: Camino Ramon **Segment: North of Bollinger Canyon Road**

Average Daily Traffic: 14765 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)

	Noise Adjustments				Unmitigated Noise Levels						Centerline Distance to Noise Contour (in feet)		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	0.83	-4.43	-1.20	60.32	58.19	56.88	50.87	59.29	59.91	70 dBA:	**19**	**21**
Medium Trucks	74.83	-16.41	-4.43	-1.20	52.80	31.55	37.57	19.28	32.42	35.17	65 dBA:	**42**	**46**
Heavy Trucks	80.05	-20.36	-4.43	-1.20	54.06	28.71	25.31	29.96	36.16	36.25	60 dBA:	**90**	**99**
				Total:	**61.82**	**58.21**	**56.93**	**50.91**	**59.32**	**59.95**	55 dBA:	**194**	**214**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Camino Ramon **Segment: South of Bollinger Canyon Road**

Average Daily Traffic: 4015 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-4.82	-4.43	-1.20	54.66	52.54	51.22	45.21	53.63	54.26	70 dBA:	**8**	**9**
Medium Trucks	74.83	-22.06	-4.43	-1.20	47.14	25.89	31.91	13.62	26.76	29.52	65 dBA:	**18**	**19**
Heavy Trucks	80.05	-26.02	-4.43	-1.20	48.40	23.05	19.65	24.30	30.50	30.60	60 dBA:	**38**	**42**
				Total:	**56.16**	**52.55**	**51.28**	**45.25**	**53.66**	**54.29**	55 dBA:	**81**	**90**

Road Name: Bishop Ranch East **Segment: South of Bollinger Canyon Road**

Average Daily Traffic: 1685 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 2 Roadway Classification: 2-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 99.15 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-7.92	-4.56	-1.20	48.82	46.70	45.39	39.38	47.80	48.42	70 dBA:	**3**	**4**
Medium Trucks	73.11	-25.83	-4.56	-1.20	41.52	20.94	26.96	8.67	21.81	24.56	65 dBA:	**7**	**8**
Heavy Trucks	80.26	-29.12	-4.56	-1.20	45.38	20.03	16.63	21.28	27.48	27.57	60 dBA:	**15**	**17**
				Total:	**50.97**	**46.72**	**45.46**	**39.45**	**47.85**	**48.48**	55 dBA:	**33**	**37**

Road Name: Market **Segment: South of Bollinger Canyon Road**

Average Daily Traffic: 7540 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-2.09	-4.43	-1.20	57.40	55.27	53.96	47.95	56.37	57.00	70 dBA:	**12**	**14**
Medium Trucks	74.83	-19.32	-4.43	-1.20	49.88	28.63	34.65	16.36	29.50	32.25	65 dBA:	**27**	**29**
Heavy Trucks	80.05	-23.28	-4.43	-1.20	51.14	25.79	22.39	27.04	33.24	33.33	60 dBA:	**58**	**63**
				Total:	**58.90**	**55.29**	**54.02**	**47.99**	**56.40**	**57.03**	55 dBA:	**124**	**137**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Alcosta Boulevard **Segment: North of Norris Canyon Road**

Average Daily Traffic: 15690 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	0.52	-4.43	-1.20	62.25	60.13	58.81	52.80	61.22	61.85	70 dBA:	**26**	**29**
Medium Trucks	76.31	-16.14	-4.43	-1.20	54.55	32.72	38.74	20.44	33.59	36.34	65 dBA:	**56**	**62**
Heavy Trucks	81.16	-20.68	-4.43	-1.20	54.86	29.51	26.11	30.75	36.95	37.05	60 dBA:	**121**	**133**
				Total:	**63.56**	**60.14**	**58.86**	**52.83**	**61.25**	**61.88**	55 dBA:	**261**	**287**

Road Name: Alcosta Boulevard **Segment: North of Bollinger Canyon Road**

Average Daily Traffic: 16300 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	0.43	-4.43	-1.20	62.17	59.80	58.50	52.45	60.88	61.51	70 dBA:	**28**	**31**
Medium Trucks	76.31	-13.85	-4.43	-1.20	56.83	37.05	29.26	38.47	44.63	44.66	65 dBA:	**61**	**66**
Heavy Trucks	81.16	-12.21	-4.43	-1.20	63.32	46.33	38.55	47.76	53.91	53.94	60 dBA:	**131**	**142**
				Total:	**66.31**	**60.01**	**58.55**	**53.85**	**61.76**	**62.29**	55 dBA:	**282**	**306**

Road Name: Alcosta Boulevard **Segment: South of Bollinger Canyon Road**

Average Daily Traffic: 17375 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	0.71	-4.43	-1.20	62.45	60.07	58.78	52.73	61.16	61.79	70 dBA:	**29**	**32**
Medium Trucks	76.31	-13.58	-4.43	-1.20	57.11	37.32	29.54	38.75	44.90	44.94	65 dBA:	**63**	**69**
Heavy Trucks	81.16	-11.94	-4.43	-1.20	63.60	46.61	38.83	48.03	54.19	54.22	60 dBA:	**137**	**148**
				Total:	**66.59**	**60.29**	**58.83**	**54.12**	**62.04**	**62.56**	55 dBA:	**295**	**319**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Alcosta Boulevard **Segment: South of Montevideo Drive**
Average Daily Traffic: 9630 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	-1.85	-4.43	-1.20	59.88	57.51	56.22	50.16	58.59	59.23	70 dBA:	**20**	**22**
Medium Trucks	76.31	-16.14	-4.43	-1.20	54.55	34.76	26.98	36.19	42.34	42.38	65 dBA:	**43**	**46**
Heavy Trucks	81.16	-14.50	-4.43	-1.20	61.03	44.04	36.26	45.47	51.63	51.66	60 dBA:	**92**	**100**
				Total:	**64.03**	**57.72**	**56.27**	**51.56**	**59.47**	**60.00**	55 dBA:	**199**	**216**

Road Name: Alcosta Boulevard **Segment: North of Old Ranch Road**
Average Daily Traffic: 7915 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	-2.70	-4.43	-1.20	59.03	56.66	55.37	49.31	57.74	58.37	70 dBA:	**17**	**19**
Medium Trucks	76.31	-16.99	-4.43	-1.20	53.70	33.91	26.13	35.34	41.49	41.52	65 dBA:	**38**	**41**
Heavy Trucks	81.16	-15.35	-4.43	-1.20	60.18	43.19	35.41	44.62	50.77	50.81	60 dBA:	**81**	**88**
				Total:	**63.17**	**56.87**	**55.41**	**50.71**	**58.62**	**59.15**	55 dBA:	**174**	**189**

Road Name: Alcosta Boulevard **Segment: South of Old Ranch Road**
Average Daily Traffic: 8210 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	-2.54	-4.43	-1.20	59.19	56.82	55.52	49.47	57.90	58.53	70 dBA:	**18**	**19**
Medium Trucks	76.31	-16.83	-4.43	-1.20	53.86	34.07	26.29	35.49	41.65	41.68	65 dBA:	**38**	**42**
Heavy Trucks	81.16	-15.19	-4.43	-1.20	60.34	43.35	35.57	44.78	50.93	50.97	60 dBA:	**83**	**90**
				Total:	**63.33**	**57.03**	**55.57**	**50.87**	**58.78**	**59.31**	55 dBA:	**179**	**194**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS **Project Name: San Ramon City Center**

Vehicle Type	Vehicle Mix (Arterial) Day	Evening	Night	Daily	Vehicle Mix (Collector or local) Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Canyon Lakes Road **Segment: North of Bollinger Canyon Road**
Average Daily Traffic: 6075 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: 2-lane Collector

NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 99.15 ft)

Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)	Ldn	CNEL
Automobiles	62.51	-2.60	-4.56	-1.20	54.15	51.77	50.48	44.43	52.86	53.49	70 dBA:	**10**	**10**
Medium Trucks	73.11	-18.14	-4.56	-1.20	49.21	30.67	22.89	32.10	38.25	38.29	65 dBA:	**21**	**22**
Heavy Trucks	80.26	-15.25	-4.56	-1.20	59.25	42.26	34.47	43.68	49.84	49.87	60 dBA:	**44**	**47**
				Total:	**60.73**	**52.26**	**50.60**	**47.22**	**54.71**	**55.15**	55 dBA:	**96**	**102**

Road Name: Doughterty Road **Segment: South of Crow Canyon Road**
Average Daily Traffic: 15245 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: 6-lane Arterial

NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)

Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)	Ldn	CNEL
Automobiles	67.36	0.39	-4.08	-1.20	62.47	60.35	59.03	53.02	61.44	62.07	70 dBA:	**27**	**30**
Medium Trucks	76.31	-16.27	-4.08	-1.20	54.76	32.94	38.96	20.66	33.81	36.56	65 dBA:	**58**	**64**
Heavy Trucks	81.16	-20.80	-4.08	-1.20	55.08	29.72	26.33	30.97	37.17	37.27	60 dBA:	**125**	**138**
				Total:	**63.78**	**60.36**	**59.08**	**53.05**	**61.46**	**62.09**	55 dBA:	**270**	**297**

Road Name: Doughterty Road **Segment: North of Bollinger Canyon Road**
Average Daily Traffic: 14760 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)

Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)	Ldn	CNEL
Automobiles	67.36	0.00	-4.08	-1.20	62.08	59.71	58.42	52.36	60.79	61.42	70 dBA:	**28**	**30**
Medium Trucks	76.31	-14.28	-4.08	-1.20	56.75	36.96	29.18	38.39	44.54	44.57	65 dBA:	**60**	**65**
Heavy Trucks	81.16	-12.65	-4.08	-1.20	63.23	46.24	38.46	47.67	53.82	53.86	60 dBA:	**129**	**140**
				Total:	**66.23**	**59.92**	**58.46**	**53.76**	**61.67**	**62.20**	55 dBA:	**279**	**302**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Doughterty Road **Segment: North of Old Ranch Road**

Average Daily Traffic: 19945 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	1.31	-4.08	-1.20	63.39	61.02	59.72	53.67	62.10	62.73	70 dBA:	**34**	**37**
Medium Trucks	76.31	-12.98	-4.08	-1.20	58.05	38.27	30.49	39.69	45.85	45.88	65 dBA:	**73**	**80**
Heavy Trucks	81.16	-11.34	-4.08	-1.20	64.54	47.55	39.77	48.98	55.13	55.17	60 dBA:	**158**	**171**
				Total:	**67.53**	**61.23**	**59.77**	**55.07**	**62.98**	**63.51**	55 dBA:	**340**	**369**

Road Name: Doughterty Road **Segment: South of Old Ranch Road**

Average Daily Traffic: 21050 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	1.54	-4.08	-1.20	63.62	61.25	59.96	53.90	62.33	62.97	70 dBA:	**35**	**38**
Medium Trucks	76.31	-12.74	-4.08	-1.20	58.29	38.50	30.72	39.93	46.08	46.12	65 dBA:	**76**	**82**
Heavy Trucks	81.16	-11.10	-4.08	-1.20	64.77	47.78	40.00	49.21	55.37	55.40	60 dBA:	**164**	**178**
				Total:	**67.77**	**61.46**	**60.01**	**55.30**	**63.21**	**63.74**	55 dBA:	**353**	**383**

Road Name: Crow Canyon Road **Segment: West of Bollinger Canyon Road**

Average Daily Traffic: 17115 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	0.65	-4.43	-1.20	62.38	60.01	58.71	52.66	61.09	61.72	70 dBA:	**29**	**32**
Medium Trucks	76.31	-13.64	-4.43	-1.20	57.05	37.26	29.48	38.68	44.84	44.87	65 dBA:	**63**	**68**
Heavy Trucks	81.16	-12.00	-4.43	-1.20	63.53	46.54	38.76	47.97	54.12	54.16	60 dBA:	**135**	**147**
				Total:	**66.52**	**60.22**	**58.76**	**54.06**	**61.97**	**62.50**	55 dBA:	**292**	**316**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS | **Project Name: San Ramon City Center**

Vehicle Type	Vehicle Mix (Arterial) Day	Evening	Night	Daily	Vehicle Mix (Collector or local) Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Crow Canyon Road **Segment: East of Bollinger Canyon Road**

Average Daily Traffic: 16580 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)

Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)	Ldn	CNEL
Automobiles	67.36	0.51	-4.08	-1.20	62.59	60.21	58.92	52.87	61.30	61.93	70 dBA:	**30**	**33**
Medium Trucks	76.31	-13.78	-4.08	-1.20	57.25	37.46	29.68	38.89	45.05	45.08	65 dBA:	**65**	**70**
Heavy Trucks	81.16	-12.14	-4.08	-1.20	63.74	46.75	38.97	48.17	54.33	54.36	60 dBA:	**140**	**151**
				Total:	**66.73**	**60.43**	**58.97**	**54.26**	**62.18**	**62.71**	55 dBA:	**301**	**326**

Road Name: Crow Canyon Road **Segment: West of San Ramon Valley Boulevard**

Average Daily Traffic: 28940 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)

Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)	Ldn	CNEL
Automobiles	67.36	2.93	-4.08	-1.20	65.01	62.63	61.34	55.29	63.72	64.35	70 dBA:	**44**	**47**
Medium Trucks	76.31	-11.36	-4.08	-1.20	59.67	39.88	32.10	41.31	47.46	47.50	65 dBA:	**94**	**102**
Heavy Trucks	81.16	-9.72	-4.08	-1.20	66.16	49.17	41.39	50.59	56.75	56.78	60 dBA:	**203**	**220**
				Total:	**69.15**	**62.85**	**61.39**	**56.68**	**64.60**	**65.12**	55 dBA:	**436**	**473**

Road Name: Crow Canyon Road **Segment: West of Camino Ramon**

Average Daily Traffic: 36010 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 8-lane Arterial

NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 86.02 ft)

Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)	Ldn	CNEL
Automobiles	67.36	3.88	-3.64	-1.20	66.40	64.03	62.73	56.68	65.11	65.74	70 dBA:	**54**	**59**
Medium Trucks	76.31	-10.41	-3.64	-1.20	61.06	41.28	33.49	42.70	48.86	48.89	65 dBA:	**116**	**126**
Heavy Trucks	81.16	-8.77	-3.64	-1.20	67.55	50.56	42.78	51.99	58.14	58.18	60 dBA:	**251**	**272**
				Total:	**70.54**	**64.24**	**62.78**	**58.08**	**65.99**	**66.52**	55 dBA:	**540**	**586**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS | **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Crow Canyon Road **Segment: East of Camino Ramon**

Average Daily Traffic: 33685 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 8-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 86.02 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	3.59	-3.64	-1.20	66.11	63.74	62.44	56.39	64.82	65.45	70 dBA:	**52**	**56**
Medium Trucks	76.31	-10.70	-3.64	-1.20	60.77	40.99	33.20	42.41	48.57	48.60	65 dBA:	**111**	**121**
Heavy Trucks	81.16	-9.06	-3.64	-1.20	67.26	50.27	42.49	51.70	57.85	57.89	60 dBA:	**240**	**260**
				Total:	**70.25**	**63.95**	**62.49**	**57.79**	**65.70**	**66.23**	55 dBA:	**517**	**560**

Road Name: Crow Canyon Road **Segment: East of Alcosta Boulevard**

Average Daily Traffic: 32220 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	3.39	-4.08	-1.20	65.47	63.10	61.81	55.75	64.18	64.81	70 dBA:	**47**	**51**
Medium Trucks	76.31	-10.89	-4.08	-1.20	60.14	40.35	32.57	41.78	47.93	47.96	65 dBA:	**101**	**109**
Heavy Trucks	81.16	-9.26	-4.08	-1.20	66.62	49.63	41.85	51.06	57.21	57.25	60 dBA:	**218**	**236**
				Total:	**69.62**	**63.31**	**61.86**	**57.15**	**65.06**	**65.59**	55 dBA:	**469**	**508**

Road Name: Crow Canyon Road **Segment: West of Dougherty Road**

Average Daily Traffic: 19635 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	1.24	-4.08	-1.20	63.32	60.95	59.66	53.60	62.03	62.66	70 dBA:	**34**	**37**
Medium Trucks	76.31	-13.04	-4.08	-1.20	57.99	38.20	30.42	39.63	45.78	45.81	65 dBA:	**73**	**79**
Heavy Trucks	81.16	-11.41	-4.08	-1.20	64.47	47.48	39.70	48.91	55.06	55.10	60 dBA:	**156**	**170**
				Total:	**67.46**	**61.16**	**59.70**	**55.00**	**62.91**	**63.44**	55 dBA:	**337**	**365**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS | **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Crow Canyon Road | **Segment: East of Dougherty Road**

Average Daily Traffic: 29000 Vehicles | Vehicle Speed: 40 MPH | Vehicle Mix: 1 | Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE				(Equiv. Lane Dist: 92.08 ft)						**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	2.94	-4.08	-1.20	65.01	62.64	61.35	55.29	63.73	64.36	70 dBA:	**44**	**47**
Medium Trucks	76.31	-11.35	-4.08	-1.20	59.68	39.89	32.11	41.32	47.47	47.51	65 dBA:	**94**	**102**
Heavy Trucks	81.16	-9.71	-4.08	-1.20	66.17	49.18	41.39	50.60	56.76	56.79	60 dBA:	**203**	**220**
				Total:	**69.16**	**62.86**	**61.40**	**56.69**	**64.61**	**65.13**	55 dBA:	**437**	**474**

Road Name: Norris Canyon Road | **Segment: West of Bollinger Canyon Road**

Average Daily Traffic: 5315 Vehicles | Vehicle Speed: 30 MPH | Vehicle Mix: 1 | Roadway Classification: 2-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE				(Equiv. Lane Dist: 99.15 ft)						**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-3.18	-4.56	-1.20	53.57	51.19	49.90	43.85	52.28	52.91	70 dBA:	**9**	**9**
Medium Trucks	73.11	-18.72	-4.56	-1.20	48.63	30.09	22.31	31.52	37.67	37.71	65 dBA:	**19**	**20**
Heavy Trucks	80.26	-15.83	-4.56	-1.20	58.67	41.68	33.89	43.10	49.26	49.29	60 dBA:	**41**	**43**
				Total:	**60.15**	**51.68**	**50.01**	**46.64**	**54.13**	**54.57**	55 dBA:	**88**	**94**

Road Name: Norris Canyon Road | **Segment: West of San Ramon Valley Boulevard**

Average Daily Traffic: 9855 Vehicles | Vehicle Speed: 35 MPH | Vehicle Mix: 2 | Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE				(Equiv. Lane Dist: 97.08 ft)						**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-0.92	-4.43	-1.20	58.56	56.44	55.12	49.11	57.53	58.16	70 dBA:	**15**	**16**
Medium Trucks	74.83	-18.16	-4.43	-1.20	51.04	29.79	35.81	17.52	30.66	33.42	65 dBA:	**32**	**35**
Heavy Trucks	80.05	-22.12	-4.43	-1.20	52.30	26.95	23.55	28.20	34.40	34.50	60 dBA:	**69**	**76**
				Total:	**60.06**	**56.45**	**55.18**	**49.15**	**57.56**	**58.19**	55 dBA:	**148**	**163**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Norris Canyon Road **Segment: West of Camino Ramon**

Average Daily Traffic: 10625 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE				(Equiv. Lane Dist: 97.08 ft)						**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-0.60	-4.43	-1.20	58.89	56.76	55.45	49.44	57.86	58.49	70 dBA:	**16**	**17**
Medium Trucks	74.83	-17.83	-4.43	-1.20	51.37	30.12	36.14	17.85	30.99	33.74	65 dBA:	**34**	**37**
Heavy Trucks	80.05	-21.79	-4.43	-1.20	52.63	27.28	23.88	28.53	34.73	34.82	60 dBA:	**72**	**80**
				Total:	**60.39**	**56.78**	**55.50**	**49.48**	**57.89**	**58.52**	55 dBA:	**156**	**172**

Road Name: Bishop Drive **Segment: West of Sunset Drive**

Average Daily Traffic: 5835 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE				(Equiv. Lane Dist: 97.08 ft)						**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-3.20	-4.43	-1.20	56.28	54.16	52.85	46.84	55.26	55.88	70 dBA:	**10**	**12**
Medium Trucks	74.83	-20.44	-4.43	-1.20	48.77	27.52	33.54	15.24	28.39	31.14	65 dBA:	**23**	**25**
Heavy Trucks	80.05	-24.39	-4.43	-1.20	50.03	24.68	21.28	25.93	32.12	32.22	60 dBA:	**48**	**53**
				Total:	**57.79**	**54.18**	**52.90**	**46.87**	**55.29**	**55.92**	55 dBA:	**104**	**115**

Road Name: Bishop Drive **Segment: West of Camino Ramon**

Average Daily Traffic: 3155 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE				(Equiv. Lane Dist: 97.08 ft)						**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-5.87	-4.43	-1.20	53.61	51.49	50.18	44.17	52.59	53.21	70 dBA:	**7**	**8**
Medium Trucks	74.83	-23.11	-4.43	-1.20	46.09	24.85	30.87	12.57	25.72	28.47	65 dBA:	**15**	**16**
Heavy Trucks	80.05	-27.06	-4.43	-1.20	47.36	22.01	18.61	23.25	29.45	29.55	60 dBA:	**32**	**35**
				Total:	**55.12**	**51.50**	**50.23**	**44.20**	**52.62**	**53.25**	55 dBA:	**69**	**76**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Bishop Drive **Segment: East of Camino Ramon**

Average Daily Traffic: 2160 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-7.52	-4.43	-1.20	51.97	49.85	48.53	42.52	50.94	51.57	70 dBA:	**5**	**6**
Medium Trucks	74.83	-24.75	-4.43	-1.20	44.45	23.20	29.22	10.93	24.07	26.82	65 dBA:	**12**	**13**
Heavy Trucks	80.05	-28.71	-4.43	-1.20	45.71	20.36	16.96	21.61	27.81	27.90	60 dBA:	**25**	**28**
				Total:	**53.47**	**49.86**	**48.59**	**42.56**	**50.97**	**51.60**	55 dBA:	**54**	**59**

Road Name: Bollinger Canyon Road **Segment: West of San Ramon Valley Boulevard**

Average Daily Traffic: 13365 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	-0.18	-4.43	-1.20	61.55	59.43	58.12	52.11	60.53	61.15	70 dBA:	**23**	**26**
Medium Trucks	76.31	-16.84	-4.43	-1.20	53.85	32.02	38.04	19.75	32.89	35.64	65 dBA:	**50**	**56**
Heavy Trucks	81.16	-21.37	-4.43	-1.20	54.16	28.81	25.41	30.06	36.26	36.35	60 dBA:	**109**	**120**
				Total:	**62.86**	**59.44**	**58.16**	**52.14**	**60.55**	**61.18**	55 dBA:	**234**	**258**

Road Name: Bollinger Canyon Road **Segment: West of Sunset Drive**

Average Daily Traffic: 51495 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 8-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 86.02 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	5.43	-3.64	-1.20	67.95	65.58	64.29	58.23	66.66	67.29	70 dBA:	**69**	**74**
Medium Trucks	76.31	-8.86	-3.64	-1.20	62.62	42.83	35.05	44.26	50.41	50.44	65 dBA:	**148**	**160**
Heavy Trucks	81.16	-7.22	-3.64	-1.20	69.10	52.11	44.33	53.54	59.69	59.73	60 dBA:	**318**	**345**
				Total:	**72.10**	**65.79**	**64.34**	**59.63**	**67.54**	**68.07**	55 dBA:	**686**	**744**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Bollinger Canyon Road **Segment: West of Camino Ramon**

Average Daily Traffic: 38005 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 8-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 86.02 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	4.11	-3.64	-1.20	66.63	64.26	62.97	56.91	65.34	65.98	70 dBA:	**56**	**61**
Medium Trucks	76.31	-10.18	-3.64	-1.20	61.30	41.51	33.73	42.94	49.09	49.13	65 dBA:	**121**	**131**
Heavy Trucks	81.16	-8.54	-3.64	-1.20	67.78	50.79	43.01	52.22	58.38	58.41	60 dBA:	**260**	**282**
				Total:	**70.78**	**64.47**	**63.02**	**58.31**	**66.22**	**66.75**	55 dBA:	**560**	**607**

Road Name: Bollinger Canyon Road **Segment: East of Camino Ramon**

Average Daily Traffic: 32195 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 8-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 86.02 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	3.39	-3.64	-1.20	65.91	63.54	62.25	56.19	64.62	65.25	70 dBA:	**50**	**54**
Medium Trucks	76.31	-10.90	-3.64	-1.20	60.58	40.79	33.01	42.22	48.37	48.40	65 dBA:	**108**	**117**
Heavy Trucks	81.16	-9.26	-3.64	-1.20	67.06	50.07	42.29	51.50	57.65	57.69	60 dBA:	**233**	**252**
				Total:	**70.06**	**63.75**	**62.30**	**57.59**	**65.50**	**66.03**	55 dBA:	**501**	**544**

Road Name: Bollinger Canyon Road **Segment: East of Bishop Ranch East**

Average Daily Traffic: 31730 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 8-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 86.02 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	3.33	-3.64	-1.20	65.85	63.48	62.18	56.13	64.56	65.19	70 dBA:	**50**	**54**
Medium Trucks	76.31	-10.96	-3.64	-1.20	60.51	40.73	32.95	42.15	48.31	48.34	65 dBA:	**107**	**116**
Heavy Trucks	81.16	-9.32	-3.64	-1.20	67.00	50.01	42.23	51.44	57.59	57.63	60 dBA:	**231**	**250**
				Total:	**69.99**	**63.69**	**62.23**	**57.53**	**65.44**	**65.97**	55 dBA:	**497**	**539**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Bollinger Canyon Road **Segment: East of Market**

Average Daily Traffic: 27100 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 8-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 86.02 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	2.64	-3.64	-1.20	65.16	62.79	61.50	55.44	63.88	64.51	70 dBA:	**45**	**48**
Medium Trucks	76.31	-11.65	-3.64	-1.20	59.83	40.04	32.26	41.47	47.62	47.66	65 dBA:	**96**	**104**
Heavy Trucks	81.16	-10.01	-3.64	-1.20	66.32	49.33	41.54	50.75	56.91	56.94	60 dBA:	**208**	**225**
				Total:	**69.31**	**63.01**	**61.55**	**56.84**	**64.76**	**65.28**	55 dBA:	**447**	**485**

Road Name: Bollinger Canyon Road **Segment: East of Alcosta Boulevard**

Average Daily Traffic: 26405 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	2.53	-4.08	-1.20	64.61	62.24	60.94	54.89	63.32	63.95	70 dBA:	**41**	**45**
Medium Trucks	76.31	-11.76	-4.08	-1.20	59.27	39.49	31.70	40.91	47.07	47.10	65 dBA:	**88**	**96**
Heavy Trucks	81.16	-10.12	-4.08	-1.20	65.76	48.77	40.99	50.20	56.35	56.38	60 dBA:	**191**	**207**
				Total:	**68.75**	**62.45**	**60.99**	**56.28**	**64.20**	**64.73**	55 dBA:	**410**	**445**

Road Name: Bollinger Canyon Road **Segment: East of Canyon Lakes Drive**

Average Daily Traffic: 20820 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	1.50	-4.08	-1.20	63.58	61.20	59.91	53.86	62.29	62.92	70 dBA:	**35**	**38**
Medium Trucks	76.31	-12.79	-4.08	-1.20	58.24	38.45	30.67	39.88	46.03	46.07	65 dBA:	**75**	**82**
Heavy Trucks	81.16	-11.15	-4.08	-1.20	64.73	47.74	39.96	49.16	55.32	55.35	60 dBA:	**163**	**176**
				Total:	**67.72**	**61.42**	**59.96**	**55.25**	**63.17**	**63.69**	55 dBA:	**350**	**380**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Bollinger Canyon Road **Segment: West of Dougherty Road**

Average Daily Traffic: 18285 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	0.93	-4.08	-1.20	63.01	60.64	59.35	53.29	61.72	62.35	70 dBA:	**32**	**35**
Medium Trucks	76.31	-13.35	-4.08	-1.20	57.68	37.89	30.11	39.32	45.47	45.50	65 dBA:	**69**	**75**
Heavy Trucks	81.16	-11.72	-4.08	-1.20	64.16	47.17	39.39	48.60	54.75	54.79	60 dBA:	**149**	**162**
				Total:	**67.16**	**60.85**	**59.39**	**54.69**	**62.60**	**63.13**	55 dBA:	**321**	**348**

Road Name: Bollinger Canyon Road **Segment: East of Dougherty Road**

Average Daily Traffic: 17345 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	0.70	-4.08	-1.20	62.78	60.41	59.12	53.06	61.49	62.12	70 dBA:	**31**	**34**
Medium Trucks	76.31	-13.58	-4.08	-1.20	57.45	37.66	29.88	39.09	45.24	45.28	65 dBA:	**67**	**72**
Heavy Trucks	81.16	-11.94	-4.08	-1.20	63.93	46.94	39.16	48.37	54.52	54.56	60 dBA:	**144**	**156**
				Total:	**66.93**	**60.62**	**59.17**	**54.46**	**62.37**	**62.90**	55 dBA:	**310**	**336**

Road Name: Montevideo Drive **Segment: East of San Ramon Valley Boulevard**

Average Daily Traffic: 13435 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: 2-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 99.15 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	0.84	-4.56	-1.20	57.59	55.22	53.93	47.87	56.30	56.94	70 dBA:	**16**	**17**
Medium Trucks	73.11	-14.69	-4.56	-1.20	52.66	34.12	26.34	35.55	41.70	41.73	65 dBA:	**35**	**37**
Heavy Trucks	80.26	-11.80	-4.56	-1.20	62.69	45.70	37.92	47.13	53.28	53.32	60 dBA:	**75**	**81**
				Total:	**64.18**	**55.71**	**54.04**	**50.66**	**58.16**	**58.59**	55 dBA:	**162**	**174**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS

Project Name: San Ramon City Center

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Montevideo Drive **Segment: West of Alcosta Boulevard**

Average Daily Traffic: 4395 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 2 Roadway Classification: 2-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE				(Equiv. Lane Dist: 99.15 ft)						**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-3.76	-4.56	-1.20	52.99	50.86	49.55	43.54	51.96	52.59	70 dBA:	**6**	**7**
Medium Trucks	73.11	-21.67	-4.56	-1.20	45.68	25.10	31.12	12.83	25.97	28.73	65 dBA:	**14**	**15**
Heavy Trucks	80.26	-24.95	-4.56	-1.20	49.54	24.19	20.79	25.44	31.64	31.74	60 dBA:	**29**	**32**
				Total:	**55.13**	**50.89**	**49.62**	**43.61**	**52.01**	**52.64**	55 dBA:	**63**	**70**

Road Name: Old Ranch Road **Segment: East of Alcosta Boulevard**

Average Daily Traffic: 7160 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE				(Equiv. Lane Dist: 97.08 ft)						**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	-2.89	-4.43	-1.20	58.84	56.72	55.41	49.40	57.81	58.44	70 dBA:	**15**	**17**
Medium Trucks	76.31	-19.55	-4.43	-1.20	51.14	29.31	35.33	17.04	30.18	32.93	65 dBA:	**33**	**37**
Heavy Trucks	81.16	-24.08	-4.43	-1.20	51.45	26.10	22.70	27.35	33.55	33.64	60 dBA:	**72**	**79**
				Total:	**60.15**	**56.73**	**55.45**	**49.42**	**57.84**	**58.47**	55 dBA:	**155**	**170**

Road Name: Old Ranch Road **Segment: West of Dougherty Road**

Average Daily Traffic: 5305 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE				(Equiv. Lane Dist: 97.08 ft)						**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	-4.44	-4.43	-1.20	57.29	54.92	53.63	47.57	56.00	56.64	70 dBA:	**13**	**14**
Medium Trucks	76.31	-18.73	-4.43	-1.20	51.96	32.17	24.39	33.60	39.75	39.79	65 dBA:	**29**	**31**
Heavy Trucks	81.16	-17.09	-4.43	-1.20	58.44	41.45	33.67	42.88	49.04	49.07	60 dBA:	**62**	**67**
				Total:	**61.44**	**55.13**	**53.68**	**48.97**	**56.89**	**57.41**	55 dBA:	**134**	**145**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING PLUS PROJECT CONDITIONS

Project Name: San Ramon City Center

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Bollinger Canyon Road **Segment: South of Crow Canyon Road**

Average Daily Traffic: 6106 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 1 Roadway Classification: 2-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 98.37 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-3.25	-4.51	-1.20	56.15	53.78	52.48	46.43	54.86	55.49	70 dBA:	**12**	**13**
Medium Trucks	74.83	-18.12	-4.51	-1.20	51.00	31.79	24.01	33.22	39.37	39.41	65 dBA:	**25**	**27**
Heavy Trucks	80.05	-15.90	-4.51	-1.20	58.44	41.45	33.66	42.87	49.03	49.06	60 dBA:	**54**	**58**
				Total:	**60.92**	**54.05**	**52.55**	**48.16**	**55.96**	**56.47**	55 dBA:	**116**	**125**

Road Name: Bollinger Canyon Road **Segment: North of Norris Canyon Road**

Average Daily Traffic: 8201 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 1 Roadway Classification: 2-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 98.37 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-1.97	-4.51	-1.20	57.43	55.06	53.76	47.71	56.14	56.77	70 dBA:	**14**	**15**
Medium Trucks	74.83	-16.84	-4.51	-1.20	52.28	33.07	25.29	34.50	40.65	40.69	65 dBA:	**30**	**33**
Heavy Trucks	80.05	-14.62	-4.51	-1.20	59.72	42.73	34.95	44.15	50.31	50.34	60 dBA:	**66**	**71**
				Total:	**62.20**	**55.33**	**53.83**	**49.44**	**57.24**	**57.75**	55 dBA:	**141**	**152**

Road Name: Bollinger Canyon Road **Segment: South of Norris Canyon Road**

Average Daily Traffic: 9906 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	-1.73	-4.43	-1.20	60.01	57.63	56.34	50.29	58.72	59.35	70 dBA:	**20**	**22**
Medium Trucks	76.31	-16.02	-4.43	-1.20	54.67	34.88	27.10	36.31	42.46	42.50	65 dBA:	**44**	**47**
Heavy Trucks	81.16	-14.38	-4.43	-1.20	61.16	44.17	36.39	45.59	51.75	51.78	60 dBA:	**94**	**102**
				Total:	**64.15**	**57.85**	**56.39**	**51.68**	**59.60**	**60.12**	55 dBA:	**203**	**220**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING PLUS PROJECT CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: San Ramon Valley Boulevard **Segment: North of Crow Canyon Road**
Average Daily Traffic: 20997 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	2.11	-4.43	-1.20	61.60	59.23	57.93	51.88	60.31	60.94	70 dBA:	**27**	**29**
Medium Trucks	74.83	-12.75	-4.43	-1.20	56.45	37.24	29.46	38.67	44.82	44.86	65 dBA:	**58**	**62**
Heavy Trucks	80.05	-10.53	-4.43	-1.20	63.89	46.90	39.11	48.32	54.48	54.51	60 dBA:	**124**	**134**
				Total:	**66.37**	**59.50**	**58.00**	**53.61**	**61.41**	**61.92**	55 dBA:	**268**	**289**

Road Name: San Ramon Valley Boulevard **Segment: North of Norris Canyon Road**
Average Daily Traffic: 12998 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	0.03	-4.43	-1.20	59.51	57.14	55.85	49.80	58.23	58.86	70 dBA:	**19**	**21**
Medium Trucks	74.83	-14.84	-4.43	-1.20	54.37	35.16	27.38	36.58	42.74	42.77	65 dBA:	**42**	**45**
Heavy Trucks	80.05	-12.62	-4.43	-1.20	61.80	44.81	37.03	46.24	52.39	52.43	60 dBA:	**90**	**97**
				Total:	**64.28**	**57.42**	**55.91**	**51.52**	**59.33**	**59.83**	55 dBA:	**194**	**210**

Road Name: San Ramon Valley Boulevard **Segment: North of Bollinger Canyon Road**
Average Daily Traffic: 13813 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	-0.29	-4.43	-1.20	61.45	59.08	57.78	51.73	60.16	60.79	70 dBA:	**25**	**27**
Medium Trucks	76.31	-14.57	-4.43	-1.20	56.12	36.33	28.55	37.75	43.91	43.94	65 dBA:	**54**	**59**
Heavy Trucks	81.16	-12.93	-4.43	-1.20	62.60	45.61	37.83	47.04	53.19	53.23	60 dBA:	**117**	**127**
				Total:	**65.59**	**59.29**	**57.83**	**53.13**	**61.04**	**61.57**	55 dBA:	**253**	**274**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING PLUS PROJECT CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: San Ramon Valley Boulevard **Segment: South of Bollinger Canyon Road**
Average Daily Traffic: 23759 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE				(Equiv. Lane Dist: 97.08 ft)						**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	2.07	-4.43	-1.20	63.80	61.43	60.14	54.08	62.52	63.15	70 dBA:	**36**	**39**
Medium Trucks	76.31	-12.22	-4.43	-1.20	58.47	38.68	30.90	40.11	46.26	46.30	65 dBA:	**78**	**85**
Heavy Trucks	81.16	-10.58	-4.43	-1.20	64.96	47.97	40.18	49.39	55.55	55.58	60 dBA:	**168**	**183**
				Total:	**67.95**	**61.65**	**60.19**	**55.48**	**63.40**	**63.92**	55 dBA:	**363**	**393**

Road Name: San Ramon Valley Boulevard **Segment: South of Montevideo Drive**
Average Daily Traffic: 16954 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE				(Equiv. Lane Dist: 97.08 ft)						**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	0.60	-4.43	-1.20	62.34	59.97	58.67	52.62	61.05	61.68	70 dBA:	**29**	**31**
Medium Trucks	76.31	-13.68	-4.43	-1.20	57.00	37.22	29.44	38.64	44.80	44.83	65 dBA:	**62**	**68**
Heavy Trucks	81.16	-12.04	-4.43	-1.20	63.49	46.50	38.72	47.93	54.08	54.12	60 dBA:	**135**	**146**
				Total:	**66.48**	**60.18**	**58.72**	**54.02**	**61.93**	**62.46**	55 dBA:	**290**	**314**

Road Name: Sunset Drive **Segment: South of Bishop Drive**
Average Daily Traffic: 15822 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE				(Equiv. Lane Dist: 97.08 ft)						**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	1.13	-4.43	-1.20	60.62	58.49	57.18	51.17	59.59	60.21	70 dBA:	**20**	**22**
Medium Trucks	74.83	-16.11	-4.43	-1.20	53.10	31.85	37.87	19.58	32.72	35.47	65 dBA:	**44**	**48**
Heavy Trucks	80.05	-20.06	-4.43	-1.20	54.36	29.01	25.61	30.26	36.46	36.55	60 dBA:	**94**	**104**
				Total:	**62.12**	**58.51**	**57.23**	**51.21**	**59.62**	**60.25**	55 dBA:	**203**	**224**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING PLUS PROJECT CONDITIONS | **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Sunset Drive | **Segment: North of Bollinger Canyon Road**
Average Daily Traffic: 22206 Vehicles | Vehicle Speed: 35 MPH | Vehicle Mix: 2 | Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	2.60	-4.43	-1.20	62.09	59.97	58.65	52.64	61.06	61.69	70 dBA:	**25**	**28**
Medium Trucks	74.83	-14.63	-4.43	-1.20	54.57	33.32	39.34	21.05	34.19	36.94	65 dBA:	**55**	**60**
Heavy Trucks	80.05	-18.59	-4.43	-1.20	55.83	30.48	27.08	31.73	37.93	38.02	60 dBA:	**118**	**130**
				Total:	**63.59**	**59.98**	**58.71**	**52.68**	**61.09**	**61.72**	55 dBA:	**255**	**281**

Road Name: Camino Ramon | **Segment: North of Crow Canyon Road**
Average Daily Traffic: 9553 Vehicles | Vehicle Speed: 35 MPH | Vehicle Mix: 2 | Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-1.06	-4.43	-1.20	58.43	56.30	54.99	48.98	57.40	58.02	70 dBA:	**15**	**16**
Medium Trucks	74.83	-18.30	-4.43	-1.20	50.91	29.66	35.68	17.38	30.53	33.28	65 dBA:	**31**	**34**
Heavy Trucks	80.05	-22.25	-4.43	-1.20	52.17	26.82	23.42	28.07	34.27	34.36	60 dBA:	**67**	**74**
				Total:	**59.93**	**56.32**	**55.04**	**49.02**	**57.43**	**58.06**	55 dBA:	**145**	**160**

Road Name: Camino Ramon | **Segment: North of Norris Canyon Road**
Average Daily Traffic: 19242 Vehicles | Vehicle Speed: 35 MPH | Vehicle Mix: 2 | Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	1.98	-4.43	-1.20	61.47	59.34	58.03	52.02	60.44	61.06	70 dBA:	**23**	**25**
Medium Trucks	74.83	-15.26	-4.43	-1.20	53.95	32.70	38.72	20.43	33.57	36.32	65 dBA:	**50**	**55**
Heavy Trucks	80.05	-19.21	-4.43	-1.20	55.21	29.86	26.46	31.11	37.31	37.40	60 dBA:	**107**	**118**
				Total:	**62.97**	**59.36**	**58.08**	**52.06**	**60.47**	**61.10**	55 dBA:	**231**	**255**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING PLUS PROJECT CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Camino Ramon **Segment: North of Executive Parkway**
Average Daily Traffic: 19015 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE				(Equiv. Lane Dist: 97.08 ft)						**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	1.93	-4.43	-1.20	61.41	59.29	57.98	51.97	60.39	61.01	70 dBA:	**23**	**25**
Medium Trucks	74.83	-15.31	-4.43	-1.20	53.90	32.65	38.67	20.37	33.52	36.27	65 dBA:	**49**	**55**
Heavy Trucks	80.05	-19.26	-4.43	-1.20	55.16	29.81	26.41	31.06	37.26	37.35	60 dBA:	**107**	**117**
				Total:	**62.92**	**59.31**	**58.03**	**52.00**	**60.42**	**61.05**	55 dBA:	**230**	**253**

Road Name: Camino Ramon **Segment: North of Bishop Drive**
Average Daily Traffic: 19115 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE				(Equiv. Lane Dist: 97.08 ft)						**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	1.95	-4.43	-1.20	61.44	59.31	58.00	51.99	60.41	61.04	70 dBA:	**23**	**25**
Medium Trucks	74.83	-15.28	-4.43	-1.20	53.92	32.67	38.69	20.40	33.54	36.29	65 dBA:	**50**	**55**
Heavy Trucks	80.05	-19.24	-4.43	-1.20	55.18	29.83	26.43	31.08	37.28	37.37	60 dBA:	**107**	**118**
				Total:	**62.94**	**59.33**	**58.06**	**52.03**	**60.44**	**61.07**	55 dBA:	**230**	**254**

Road Name: Camino Ramon **Segment: North of Bollinger Canyon Road**
Average Daily Traffic: 13163 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE				(Equiv. Lane Dist: 97.08 ft)						**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	0.33	-4.43	-1.20	59.82	57.69	56.38	50.37	58.79	59.42	70 dBA:	**18**	**20**
Medium Trucks	74.83	-16.90	-4.43	-1.20	52.30	31.05	37.07	18.78	31.92	34.67	65 dBA:	**39**	**43**
Heavy Trucks	80.05	-20.86	-4.43	-1.20	53.56	28.21	24.81	29.46	35.66	35.75	60 dBA:	**83**	**92**
				Total:	**61.32**	**57.71**	**56.44**	**50.41**	**58.82**	**59.45**	55 dBA:	**180**	**198**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING PLUS PROJECT CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Camino Ramon **Segment: South of Bollinger Canyon Road**

Average Daily Traffic: 10737 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-0.55	-4.43	-1.20	58.93	56.81	55.50	49.48	57.90	58.53	70 dBA:	**16**	**17**
Medium Trucks	74.83	-17.79	-4.43	-1.20	51.41	30.16	36.18	17.89	31.04	33.79	65 dBA:	**34**	**37**
Heavy Trucks	80.05	-21.74	-4.43	-1.20	52.68	27.32	23.92	28.57	34.77	34.87	60 dBA:	**73**	**80**
				Total:	**60.44**	**56.82**	**55.55**	**49.52**	**57.93**	**58.56**	55 dBA:	**157**	**173**

Road Name: Bishop Ranch East **Segment: South of Bollinger Canyon Road**

Average Daily Traffic: 5982 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 2 Roadway Classification: 2-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 99.15 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-2.42	-4.56	-1.20	54.33	52.20	50.89	44.88	53.30	53.92	70 dBA:	**8**	**9**
Medium Trucks	73.11	-20.33	-4.56	-1.20	47.02	26.44	32.46	14.17	27.31	30.07	65 dBA:	**17**	**18**
Heavy Trucks	80.26	-23.62	-4.56	-1.20	50.88	25.53	22.13	26.78	32.98	33.07	60 dBA:	**36**	**40**
				Total:	**56.47**	**52.22**	**50.96**	**44.95**	**53.35**	**53.98**	55 dBA:	**78**	**85**

Road Name: Market **Segment: South of Bollinger Canyon Road**

Average Daily Traffic: 7990 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-1.83	-4.43	-1.20	57.65	55.53	54.21	48.20	56.62	57.25	70 dBA:	**13**	**14**
Medium Trucks	74.83	-19.07	-4.43	-1.20	50.13	28.88	34.90	16.61	29.75	32.50	65 dBA:	**28**	**31**
Heavy Trucks	80.05	-23.03	-4.43	-1.20	51.39	26.04	22.64	27.29	33.49	33.59	60 dBA:	**60**	**66**
				Total:	**59.15**	**55.54**	**54.27**	**48.24**	**56.65**	**57.28**	55 dBA:	**129**	**142**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING PLUS PROJECT CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Alcosta Boulevard **Segment: North of Norris Canyon Road**

Average Daily Traffic: 16432 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	0.72	-4.43	-1.20	62.45	60.33	59.02	53.00	61.42	62.05	70 dBA:	**27**	**30**
Medium Trucks	76.31	-15.94	-4.43	-1.20	54.75	32.92	38.94	20.64	33.79	36.54	65 dBA:	**58**	**64**
Heavy Trucks	81.16	-20.48	-4.43	-1.20	55.06	29.71	26.31	30.96	37.15	37.25	60 dBA:	**125**	**138**
				Total:	**63.76**	**60.34**	**59.06**	**53.03**	**61.45**	**62.08**	55 dBA:	**269**	**296**

Road Name: Alcosta Boulevard **Segment: North of Bollinger Canyon Road**

Average Daily Traffic: 17042 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	0.63	-4.43	-1.20	62.36	59.99	58.70	52.64	61.07	61.70	70 dBA:	**29**	**32**
Medium Trucks	76.31	-13.66	-4.43	-1.20	57.03	37.24	29.46	38.67	44.82	44.85	65 dBA:	**63**	**68**
Heavy Trucks	81.16	-12.02	-4.43	-1.20	63.51	46.52	38.74	47.95	54.10	54.14	60 dBA:	**135**	**146**
				Total:	**66.51**	**60.20**	**58.74**	**54.04**	**61.95**	**62.48**	55 dBA:	**291**	**315**

Road Name: Alcosta Boulevard **Segment: South of Bollinger Canyon Road**

Average Daily Traffic: 20983 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	1.53	-4.43	-1.20	63.26	60.89	59.60	53.55	61.98	62.61	70 dBA:	**33**	**36**
Medium Trucks	76.31	-12.76	-4.43	-1.20	57.93	38.14	30.36	39.57	45.72	45.76	65 dBA:	**72**	**78**
Heavy Trucks	81.16	-11.12	-4.43	-1.20	64.42	47.43	39.65	48.85	55.01	55.04	60 dBA:	**155**	**168**
				Total:	**67.41**	**61.11**	**59.65**	**54.94**	**62.86**	**63.38**	55 dBA:	**334**	**362**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING PLUS PROJECT CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Alcosta Boulevard **Segment: South of Montevideo Drive**

Average Daily Traffic: 11306 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	-1.16	-4.43	-1.20	60.58	58.21	56.91	50.86	59.29	59.92	70 dBA:	**22**	**24**
Medium Trucks	76.31	-15.44	-4.43	-1.20	55.25	35.46	27.68	36.88	43.04	43.07	65 dBA:	**48**	**52**
Heavy Trucks	81.16	-13.80	-4.43	-1.20	61.73	44.74	36.96	46.17	52.32	52.36	60 dBA:	**103**	**111**
				Total:	**64.72**	**58.42**	**56.96**	**52.26**	**60.17**	**60.70**	55 dBA:	**221**	**240**

Road Name: Alcosta Boulevard **Segment: North of Old Ranch Road**

Average Daily Traffic: 9591 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	-1.87	-4.43	-1.20	59.86	57.49	56.20	50.15	58.58	59.21	70 dBA:	**20**	**21**
Medium Trucks	76.31	-16.16	-4.43	-1.20	54.53	34.74	26.96	36.17	42.32	42.36	65 dBA:	**43**	**46**
Heavy Trucks	81.16	-14.52	-4.43	-1.20	61.02	44.03	36.25	45.45	51.61	51.64	60 dBA:	**92**	**100**
				Total:	**64.01**	**57.71**	**56.25**	**51.54**	**59.46**	**59.98**	55 dBA:	**198**	**215**

Road Name: Alcosta Boulevard **Segment: South of Old Ranch Road**

Average Daily Traffic: 9108 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	-2.09	-4.43	-1.20	59.64	57.27	55.98	49.92	58.35	58.98	70 dBA:	**19**	**21**
Medium Trucks	76.31	-16.38	-4.43	-1.20	54.31	34.52	26.74	35.95	42.10	42.13	65 dBA:	**41**	**45**
Heavy Trucks	81.16	-14.74	-4.43	-1.20	60.79	43.80	36.02	45.23	51.38	51.42	60 dBA:	**89**	**96**
				Total:	**63.78**	**57.48**	**56.02**	**51.32**	**59.23**	**59.76**	55 dBA:	**191**	**208**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING PLUS PROJECT CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Canyon Lakes Road **Segment: North of Bollinger Canyon Road**

Average Daily Traffic: 6599 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: 2-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 99.15 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-2.24	-4.56	-1.20	54.51	52.13	50.84	44.79	53.22	53.85	70 dBA:	**10**	**11**
Medium Trucks	73.11	-17.78	-4.56	-1.20	49.57	31.03	23.25	32.46	38.61	38.65	65 dBA:	**22**	**23**
Heavy Trucks	80.26	-14.89	-4.56	-1.20	59.61	42.62	34.83	44.04	50.20	50.23	60 dBA:	**47**	**50**
				Total:	**61.09**	**52.62**	**50.95**	**47.58**	**55.07**	**55.51**	55 dBA:	**101**	**108**

Road Name: Doughterty Road **Segment: South of Crow Canyon Road**

Average Daily Traffic: 15763 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	0.54	-4.08	-1.20	62.61	60.49	59.18	53.17	61.59	62.21	70 dBA:	**28**	**30**
Medium Trucks	76.31	-16.12	-4.08	-1.20	54.91	33.08	39.10	20.81	33.95	36.70	65 dBA:	**59**	**65**
Heavy Trucks	81.16	-20.66	-4.08	-1.20	55.22	29.87	26.47	31.12	37.32	37.41	60 dBA:	**128**	**141**
				Total:	**63.92**	**60.50**	**59.22**	**53.20**	**61.61**	**62.24**	55 dBA:	**276**	**304**

Road Name: Doughterty Road **Segment: North of Bollinger Canyon Road**

Average Daily Traffic: 15278 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	0.15	-4.08	-1.20	62.23	59.86	58.57	52.51	60.94	61.57	70 dBA:	**29**	**31**
Medium Trucks	76.31	-14.13	-4.08	-1.20	56.90	37.11	29.33	38.54	44.69	44.72	65 dBA:	**61**	**67**
Heavy Trucks	81.16	-12.50	-4.08	-1.20	63.38	46.39	38.61	47.82	53.97	54.01	60 dBA:	**132**	**143**
				Total:	**66.37**	**60.07**	**58.61**	**53.91**	**61.82**	**62.35**	55 dBA:	**285**	**309**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING PLUS PROJECT CONDITIONS **Project Name: San Ramon City Center**

Vehicle Type	Vehicle Mix (Arterial) Day	Evening	Night	Daily	Vehicle Mix (Collector or local) Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Doughterty Road **Segment: North of Old Ranch Road**

Average Daily Traffic: 20307 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)

Vehicle Type	Noise Adjustments: REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Unmitigated Noise Levels: Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)	Ldn	CNEL
Automobiles	67.36	1.39	-4.08	-1.20	63.47	61.09	59.80	53.75	62.18	62.81	70 dBA:	**34**	**37**
Medium Trucks	76.31	-12.90	-4.08	-1.20	58.13	38.34	30.56	39.77	45.93	45.96	65 dBA:	**74**	**80**
Heavy Trucks	81.16	-11.26	-4.08	-1.20	64.62	47.63	39.85	49.06	55.21	55.24	60 dBA:	**160**	**173**
				Total:	**67.61**	**61.31**	**59.85**	**55.14**	**63.06**	**63.59**	55 dBA:	**345**	**374**

Road Name: Doughterty Road **Segment: South of Old Ranch Road**

Average Daily Traffic: 21466 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)

Vehicle Type	Noise Adjustments: REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Unmitigated Noise Levels: Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)	Ldn	CNEL
Automobiles	67.36	1.63	-4.08	-1.20	63.71	61.34	60.04	53.99	62.42	63.05	70 dBA:	**36**	**39**
Medium Trucks	76.31	-12.66	-4.08	-1.20	58.37	38.59	30.80	40.01	46.17	46.20	65 dBA:	**77**	**84**
Heavy Trucks	81.16	-11.02	-4.08	-1.20	64.86	47.87	40.09	49.30	55.45	55.48	60 dBA:	**166**	**180**
				Total:	**67.85**	**61.55**	**60.09**	**55.39**	**63.30**	**63.83**	55 dBA:	**358**	**388**

Road Name: Crow Canyon Road **Segment: West of Bollinger Canyon Road**

Average Daily Traffic: 19307 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)

Vehicle Type	Noise Adjustments: REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Unmitigated Noise Levels: Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)	Ldn	CNEL
Automobiles	67.36	1.17	-4.43	-1.20	62.90	60.53	59.24	53.18	61.62	62.25	70 dBA:	**32**	**34**
Medium Trucks	76.31	-13.12	-4.43	-1.20	57.57	37.78	30.00	39.21	45.36	45.40	65 dBA:	**68**	**74**
Heavy Trucks	81.16	-11.48	-4.43	-1.20	64.05	47.07	39.28	48.49	54.65	54.68	60 dBA:	**147**	**159**
				Total:	**67.05**	**60.74**	**59.29**	**54.58**	**62.50**	**63.02**	55 dBA:	**316**	**343**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING PLUS PROJECT CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Crow Canyon Road **Segment: East of Bollinger Canyon Road**

Average Daily Traffic: 17676 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	0.79	-4.08	-1.20	62.86	60.49	59.20	53.14	61.58	62.21	70 dBA:	**31**	**34**
Medium Trucks	76.31	-13.50	-4.08	-1.20	57.53	37.74	29.96	39.17	45.32	45.36	65 dBA:	**68**	**73**
Heavy Trucks	81.16	-11.86	-4.08	-1.20	64.02	47.03	39.24	48.45	54.61	54.64	60 dBA:	**146**	**158**
				Total:	**67.01**	**60.71**	**59.25**	**54.54**	**62.46**	**62.98**	55 dBA:	**314**	**341**

Road Name: Crow Canyon Road **Segment: West of San Ramon Valley Boulevard**

Average Daily Traffic: 30036 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	3.09	-4.08	-1.20	65.17	62.79	61.50	55.45	63.88	64.51	70 dBA:	**45**	**49**
Medium Trucks	76.31	-11.20	-4.08	-1.20	59.83	40.04	32.26	41.47	47.63	47.66	65 dBA:	**96**	**104**
Heavy Trucks	81.16	-9.56	-4.08	-1.20	66.32	49.33	41.55	50.76	56.91	56.94	60 dBA:	**208**	**225**
				Total:	**69.31**	**63.01**	**61.55**	**56.84**	**64.76**	**65.29**	55 dBA:	**447**	**485**

Road Name: Crow Canyon Road **Segment: West of Camino Ramon**

Average Daily Traffic: 38740 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 8-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 86.02 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	4.19	-3.64	-1.20	66.72	64.34	63.05	57.00	65.43	66.06	70 dBA:	**57**	**62**
Medium Trucks	76.31	-10.09	-3.64	-1.20	61.38	41.59	33.81	43.02	49.17	49.21	65 dBA:	**122**	**133**
Heavy Trucks	81.16	-8.45	-3.64	-1.20	67.87	50.88	43.10	52.30	58.46	58.49	60 dBA:	**263**	**286**
				Total:	**70.86**	**64.56**	**63.10**	**58.39**	**66.31**	**66.84**	55 dBA:	**567**	**615**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING PLUS PROJECT CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Crow Canyon Road **Segment: East of Camino Ramon**
Average Daily Traffic: 35590 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 8-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 86.02 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	3.83	-3.64	-1.20	66.35	63.98	62.68	56.63	65.06	65.69	70 dBA:	**54**	**58**
Medium Trucks	76.31	-10.46	-3.64	-1.20	61.01	41.23	33.44	42.65	48.81	48.84	65 dBA:	**116**	**125**
Heavy Trucks	81.16	-8.82	-3.64	-1.20	67.50	50.51	42.73	51.94	58.09	58.12	60 dBA:	**249**	**270**
				Total:	**70.49**	**64.19**	**62.73**	**58.03**	**65.94**	**66.47**	55 dBA:	**536**	**581**

Road Name: Crow Canyon Road **Segment: East of Alcosta Boulevard**
Average Daily Traffic: 34867 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	3.74	-4.08	-1.20	65.81	63.44	62.15	56.09	64.53	65.16	70 dBA:	**49**	**54**
Medium Trucks	76.31	-10.55	-4.08	-1.20	60.48	40.69	32.91	42.12	48.27	48.31	65 dBA:	**106**	**115**
Heavy Trucks	81.16	-8.91	-4.08	-1.20	66.97	49.98	42.19	51.40	57.56	57.59	60 dBA:	**229**	**249**
				Total:	**69.96**	**63.66**	**62.20**	**57.49**	**65.41**	**65.93**	55 dBA:	**494**	**536**

Road Name: Crow Canyon Road **Segment: West of Dougherty Road**
Average Daily Traffic: 21243 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	1.58	-4.08	-1.20	63.66	61.29	60.00	53.94	62.37	63.01	70 dBA:	**36**	**38**
Medium Trucks	76.31	-12.70	-4.08	-1.20	58.33	38.54	30.76	39.97	46.12	46.16	65 dBA:	**76**	**83**
Heavy Trucks	81.16	-11.06	-4.08	-1.20	64.81	47.82	40.04	49.25	55.41	55.44	60 dBA:	**165**	**179**
				Total:	**67.81**	**61.50**	**60.05**	**55.34**	**63.25**	**63.78**	55 dBA:	**355**	**385**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING PLUS PROJECT CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Crow Canyon Road **Segment: East of Dougherty Road**

Average Daily Traffic: 30090 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	3.10	-4.08	-1.20	65.17	62.80	61.51	55.45	63.89	64.52	70 dBA:	**45**	**49**
Medium Trucks	76.31	-11.19	-4.08	-1.20	59.84	40.05	32.27	41.48	47.63	47.67	65 dBA:	**96**	**105**
Heavy Trucks	81.16	-9.55	-4.08	-1.20	66.33	49.34	41.55	50.76	56.92	56.95	60 dBA:	**208**	**225**
				Total:	**69.32**	**63.02**	**61.56**	**56.85**	**64.77**	**65.29**	55 dBA:	**448**	**486**

Road Name: Norris Canyon Road **Segment: West of Bollinger Canyon Road**

Average Daily Traffic: 5933 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: 2-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 99.15 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-2.71	-4.56	-1.20	54.04	51.67	50.38	44.32	52.75	53.39	70 dBA:	**9**	**10**
Medium Trucks	73.11	-18.24	-4.56	-1.20	49.11	30.57	22.79	32.00	38.15	38.19	65 dBA:	**20**	**22**
Heavy Trucks	80.26	-15.35	-4.56	-1.20	59.14	42.15	34.37	43.58	49.73	49.77	60 dBA:	**44**	**47**
				Total:	**60.63**	**52.16**	**50.49**	**47.11**	**54.61**	**55.04**	55 dBA:	**94**	**101**

Road Name: Norris Canyon Road **Segment: West of San Ramon Valley Boulevard**

Average Daily Traffic: 10473 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-0.66	-4.43	-1.20	58.82	56.70	55.39	49.38	57.80	58.42	70 dBA:	**15**	**17**
Medium Trucks	74.83	-17.90	-4.43	-1.20	51.31	30.06	36.08	17.78	30.93	33.68	65 dBA:	**33**	**37**
Heavy Trucks	80.05	-21.85	-4.43	-1.20	52.57	27.22	23.82	28.47	34.66	34.76	60 dBA:	**72**	**79**
				Total:	**60.33**	**56.72**	**55.44**	**49.41**	**57.83**	**58.46**	55 dBA:	**154**	**170**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING PLUS PROJECT CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Norris Canyon Road **Segment: West of Camino Ramon**

Average Daily Traffic: 11023 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-0.44	-4.43	-1.20	59.05	56.92	55.61	49.60	58.02	58.65	70 dBA:	**16**	**18**
Medium Trucks	74.83	-17.67	-4.43	-1.20	51.53	30.28	36.30	18.01	31.15	33.90	65 dBA:	**34**	**38**
Heavy Trucks	80.05	-21.63	-4.43	-1.20	52.79	27.44	24.04	28.69	34.89	34.98	60 dBA:	**74**	**82**
				Total:	**60.55**	**56.94**	**55.66**	**49.64**	**58.05**	**58.68**	55 dBA:	**160**	**176**

Road Name: Bishop Drive **Segment: West of Sunset Drive**

Average Daily Traffic: 6013 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-3.07	-4.43	-1.20	56.41	54.29	52.98	46.97	55.39	56.01	70 dBA:	**11**	**12**
Medium Trucks	74.83	-20.31	-4.43	-1.20	48.90	27.65	33.67	15.37	28.52	31.27	65 dBA:	**23**	**25**
Heavy Trucks	80.05	-24.26	-4.43	-1.20	50.16	24.81	21.41	26.06	32.26	32.35	60 dBA:	**49**	**55**
				Total:	**57.92**	**54.31**	**53.03**	**47.00**	**55.42**	**56.05**	55 dBA:	**107**	**117**

Road Name: Bishop Drive **Segment: West of Camino Ramon**

Average Daily Traffic: 9790 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-0.95	-4.43	-1.20	58.53	56.41	55.10	49.08	57.50	58.13	70 dBA:	**15**	**16**
Medium Trucks	74.83	-18.19	-4.43	-1.20	51.01	29.76	35.78	17.49	30.63	33.39	65 dBA:	**32**	**35**
Heavy Trucks	80.05	-22.15	-4.43	-1.20	52.27	26.92	23.52	28.17	34.37	34.47	60 dBA:	**68**	**75**
				Total:	**60.04**	**56.42**	**55.15**	**49.12**	**57.53**	**58.16**	55 dBA:	**148**	**163**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING PLUS PROJECT CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Bishop Drive **Segment: East of Camino Ramon**

Average Daily Traffic: 11872 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)											**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**									
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL			Ldn	CNEL
Automobiles	65.11	-0.12	-4.43	-1.20	59.37	57.25	55.93	49.92	58.34	58.97		70 dBA:	**17**	**18**
Medium Trucks	74.83	-17.35	-4.43	-1.20	51.85	30.60	36.62	18.33	31.47	34.22		65 dBA:	**36**	**40**
Heavy Trucks	80.05	-21.31	-4.43	-1.20	53.11	27.76	24.36	29.01	35.21	35.30		60 dBA:	**78**	**86**
				Total:	**60.87**	**57.26**	**55.99**	**49.96**	**58.37**	**59.00**		55 dBA:	**168**	**185**

Road Name: Bollinger Canyon Road **Segment: West of San Ramon Valley Boulevard**

Average Daily Traffic: 14461 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)											**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**									
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL			Ldn	CNEL
Automobiles	67.36	0.16	-4.43	-1.20	61.90	59.77	58.46	52.45	60.87	61.49		70 dBA:	**25**	**27**
Medium Trucks	76.31	-16.50	-4.43	-1.20	54.19	32.36	38.38	20.09	33.23	35.99		65 dBA:	**53**	**59**
Heavy Trucks	81.16	-21.03	-4.43	-1.20	54.50	29.15	25.75	30.40	36.60	36.70		60 dBA:	**115**	**126**
				Total:	**63.21**	**59.78**	**58.50**	**52.48**	**60.89**	**61.52**		55 dBA:	**247**	**272**

Road Name: Bollinger Canyon Road **Segment: West of Sunset Drive**

Average Daily Traffic: 63375 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 8-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 86.02 ft)											**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**									
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL			Ldn	CNEL
Automobiles	67.36	6.33	-3.64	-1.20	68.85	66.48	65.19	59.13	67.57	68.20		70 dBA:	**79**	**85**
Medium Trucks	76.31	-7.96	-3.64	-1.20	63.52	43.73	35.95	45.16	51.31	51.35		65 dBA:	**170**	**184**
Heavy Trucks	81.16	-6.32	-3.64	-1.20	70.00	53.02	45.23	54.44	60.60	60.63		60 dBA:	**366**	**396**
				Total:	**73.00**	**66.69**	**65.24**	**60.53**	**68.45**	**68.97**		55 dBA:	**788**	**854**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING PLUS PROJECT CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Bollinger Canyon Road **Segment: West of Camino Ramon**

Average Daily Traffic: 45877 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 8-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 86.02 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	4.93	-3.64	-1.20	67.45	65.08	63.78	57.73	66.16	66.79	70 dBA:	**64**	**69**
Medium Trucks	76.31	-9.36	-3.64	-1.20	62.12	42.33	34.55	43.75	49.91	49.94	65 dBA:	**137**	**148**
Heavy Trucks	81.16	-7.72	-3.64	-1.20	68.60	51.61	43.83	53.04	59.19	59.23	60 dBA:	**295**	**320**
				Total:	**71.59**	**65.29**	**63.83**	**59.13**	**67.04**	**67.57**	55 dBA:	**635**	**689**

Road Name: Bollinger Canyon Road **Segment: East of Camino Ramon**

Average Daily Traffic: 36093 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 8-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 86.02 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	3.89	-3.64	-1.20	66.41	64.04	62.74	56.69	65.12	65.75	70 dBA:	**54**	**59**
Medium Trucks	76.31	-10.40	-3.64	-1.20	61.07	41.29	33.50	42.71	48.87	48.90	65 dBA:	**117**	**126**
Heavy Trucks	81.16	-8.76	-3.64	-1.20	67.56	50.57	42.79	52.00	58.15	58.19	60 dBA:	**251**	**272**
				Total:	**70.55**	**64.25**	**62.79**	**58.09**	**66.00**	**66.53**	55 dBA:	**541**	**587**

Road Name: Bollinger Canyon Road **Segment: East of Bishop Ranch East**

Average Daily Traffic: 42572 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 8-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 86.02 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	4.60	-3.64	-1.20	67.13	64.75	63.46	57.41	65.84	66.47	70 dBA:	**60**	**66**
Medium Trucks	76.31	-9.68	-3.64	-1.20	61.79	42.00	34.22	43.43	49.58	49.62	65 dBA:	**130**	**141**
Heavy Trucks	81.16	-8.05	-3.64	-1.20	68.28	51.29	43.51	52.71	58.87	58.90	60 dBA:	**280**	**304**
				Total:	**71.27**	**64.97**	**63.51**	**58.80**	**66.72**	**67.24**	55 dBA:	**604**	**655**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING PLUS PROJECT CONDITIONS | **Project Name: San Ramon City Center**

Vehicle Type	Vehicle Mix (Arterial) Day	Evening	Night	Daily	Vehicle Mix (Collector or local) Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Bollinger Canyon Road **Segment: East of Market**

Average Daily Traffic: 37492 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 8-lane Arterial

NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 86.02 ft)

Vehicle Type	Noise Adjustments REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Unmitigated Noise Levels Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)	Ldn	CNEL
Automobiles	67.36	4.05	-3.64	-1.20	66.57	64.20	62.91	56.85	65.29	65.92	70 dBA:	**56**	**60**
Medium Trucks	76.31	-10.24	-3.64	-1.20	61.24	41.45	33.67	42.88	49.03	49.07	65 dBA:	**120**	**130**
Heavy Trucks	81.16	-8.60	-3.64	-1.20	67.73	50.74	42.95	52.16	58.32	58.35	60 dBA:	**258**	**279**
				Total:	**70.72**	**64.41**	**62.96**	**58.25**	**66.17**	**66.69**	55 dBA:	**555**	**602**

Road Name: Bollinger Canyon Road **Segment: East of Alcosta Boulevard**

Average Daily Traffic: 32447 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)

Vehicle Type	Noise Adjustments REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Unmitigated Noise Levels Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)	Ldn	CNEL
Automobiles	67.36	3.42	-4.08	-1.20	65.50	63.13	61.84	55.78	64.21	64.84	70 dBA:	**47**	**51**
Medium Trucks	76.31	-10.86	-4.08	-1.20	60.17	40.38	32.60	41.81	47.96	48.00	65 dBA:	**101**	**110**
Heavy Trucks	81.16	-9.22	-4.08	-1.20	66.65	49.66	41.88	51.09	57.24	57.28	60 dBA:	**219**	**237**
				Total:	**69.65**	**63.34**	**61.89**	**57.18**	**65.09**	**65.62**	55 dBA:	**471**	**511**

Road Name: Bollinger Canyon Road **Segment: East of Canyon Lakes Drive**

Average Daily Traffic: 26338 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)

Vehicle Type	Noise Adjustments REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Unmitigated Noise Levels Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)	Ldn	CNEL
Automobiles	67.36	2.52	-4.08	-1.20	64.60	62.22	60.93	54.88	63.31	63.94	70 dBA:	**41**	**44**
Medium Trucks	76.31	-11.77	-4.08	-1.20	59.26	39.47	31.69	40.90	47.06	47.09	65 dBA:	**88**	**96**
Heavy Trucks	81.16	-10.13	-4.08	-1.20	65.75	48.76	40.98	50.18	56.34	56.37	60 dBA:	**190**	**206**
				Total:	**68.74**	**62.44**	**60.98**	**56.27**	**64.19**	**64.72**	55 dBA:	**410**	**444**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING PLUS PROJECT CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Bollinger Canyon Road **Segment: West of Dougherty Road**

Average Daily Traffic: 23085 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	1.95	-4.08	-1.20	64.02	61.65	60.36	54.30	62.74	63.37	70 dBA:	**38**	**41**
Medium Trucks	76.31	-12.34	-4.08	-1.20	58.69	38.90	31.12	40.33	46.48	46.52	65 dBA:	**81**	**88**
Heavy Trucks	81.16	-10.70	-4.08	-1.20	65.18	48.19	40.40	49.61	55.77	55.80	60 dBA:	**174**	**189**
				Total:	**68.17**	**61.86**	**60.41**	**55.70**	**63.62**	**64.14**	55 dBA:	**375**	**407**

Road Name: Bollinger Canyon Road **Segment: East of Dougherty Road**

Average Daily Traffic: 21055 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	1.55	-4.08	-1.20	63.62	61.25	59.96	53.90	62.34	62.97	70 dBA:	**35**	**38**
Medium Trucks	76.31	-12.74	-4.08	-1.20	58.29	38.50	30.72	39.93	46.08	46.12	65 dBA:	**76**	**82**
Heavy Trucks	81.16	-11.10	-4.08	-1.20	64.78	47.79	40.00	49.21	55.37	55.40	60 dBA:	**164**	**178**
				Total:	**67.77**	**61.47**	**60.01**	**55.30**	**63.22**	**63.74**	55 dBA:	**353**	**383**

Road Name: Montevideo Drive **Segment: East of San Ramon Valley Boulevard**

Average Daily Traffic: 13717 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: 2-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 99.15 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	0.93	-4.56	-1.20	57.68	55.31	54.02	47.96	56.39	57.03	70 dBA:	**16**	**18**
Medium Trucks	73.11	-14.60	-4.56	-1.20	52.75	34.21	26.43	35.64	41.79	41.82	65 dBA:	**35**	**38**
Heavy Trucks	80.26	-11.71	-4.56	-1.20	62.78	45.79	38.01	47.22	53.37	53.41	60 dBA:	**76**	**82**
				Total:	**64.27**	**55.80**	**54.13**	**50.75**	**58.25**	**58.68**	55 dBA:	**165**	**176**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING PLUS PROJECT CONDITIONS **Project Name: San Ramon City Center**

Site Conditions: Soft

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Road Name: Montevideo Drive **Segment: West of Alcosta Boulevard**

Average Daily Traffic: 6327 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 2 Roadway Classification: 2-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 99.15 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-2.18	-4.56	-1.20	54.57	52.45	51.13	45.12	53.54	54.17	70 dBA:	**8**	**9**
Medium Trucks	73.11	-20.09	-4.56	-1.20	47.27	26.69	32.71	14.41	27.56	30.31	65 dBA:	**17**	**19**
Heavy Trucks	80.26	-23.37	-4.56	-1.20	51.13	25.77	22.37	27.02	33.22	33.32	60 dBA:	**37**	**41**
				Total:	**56.71**	**52.47**	**51.20**	**45.19**	**53.59**	**54.22**	55 dBA:	**81**	**89**

Road Name: Old Ranch Road **Segment: East of Alcosta Boulevard**

Average Daily Traffic: 7938 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	-2.44	-4.43	-1.20	59.29	57.17	55.86	49.84	58.26	58.89	70 dBA:	**17**	**18**
Medium Trucks	76.31	-19.10	-4.43	-1.20	51.59	29.76	35.78	17.48	30.63	33.38	65 dBA:	**36**	**39**
Heavy Trucks	81.16	-23.64	-4.43	-1.20	51.90	26.55	23.15	27.80	33.99	34.09	60 dBA:	**77**	**85**
				Total:	**60.60**	**57.18**	**55.90**	**49.87**	**58.29**	**58.92**	55 dBA:	**166**	**182**

Road Name: Old Ranch Road **Segment: West of Dougherty Road**

Average Daily Traffic: 6083 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	-3.85	-4.43	-1.20	57.89	55.52	54.22	48.17	56.60	57.23	70 dBA:	**15**	**16**
Medium Trucks	76.31	-18.13	-4.43	-1.20	52.55	32.77	24.98	34.19	40.35	40.38	65 dBA:	**32**	**34**
Heavy Trucks	81.16	-16.50	-4.43	-1.20	59.04	42.05	34.27	43.48	49.63	49.66	60 dBA:	**68**	**74**
				Total:	**62.03**	**55.73**	**54.27**	**49.56**	**57.48**	**58.01**	55 dBA:	**146**	**159**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 BASELINE CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Bollinger Canyon Road **Segment: South of Crow Canyon Road**
Average Daily Traffic: 6410 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 1 Roadway Classification: 2-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 98.37 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-3.04	-4.51	-1.20	56.36	53.99	52.69	46.64	55.07	55.70	70 dBA:	**12**	**13**
Medium Trucks	74.83	-17.91	-4.51	-1.20	51.21	32.00	24.22	33.43	39.58	39.62	65 dBA:	**26**	**28**
Heavy Trucks	80.05	-15.69	-4.51	-1.20	58.65	41.66	33.88	43.08	49.24	49.27	60 dBA:	**56**	**60**
				Total:	**61.13**	**54.26**	**52.76**	**48.37**	**56.17**	**56.68**	55 dBA:	**120**	**129**

Road Name: Bollinger Canyon Road **Segment: North of Norris Canyon Road**
Average Daily Traffic: 8755 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 1 Roadway Classification: 2-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 98.37 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-1.69	-4.51	-1.20	57.71	55.34	54.05	47.99	56.42	57.06	70 dBA:	**15**	**16**
Medium Trucks	74.83	-16.55	-4.51	-1.20	52.56	33.36	25.57	34.78	40.94	40.97	65 dBA:	**32**	**34**
Heavy Trucks	80.05	-14.33	-4.51	-1.20	60.00	43.01	35.23	44.44	50.59	50.63	60 dBA:	**68**	**74**
				Total:	**62.48**	**55.61**	**54.11**	**49.72**	**57.53**	**58.03**	55 dBA:	**147**	**159**

Road Name: Bollinger Canyon Road **Segment: South of Norris Canyon Road**
Average Daily Traffic: 10830 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	-1.34	-4.43	-1.20	60.39	58.02	56.73	50.67	59.10	59.74	70 dBA:	**21**	**23**
Medium Trucks	76.31	-15.63	-4.43	-1.20	55.06	35.27	27.49	36.70	42.85	42.89	65 dBA:	**46**	**50**
Heavy Trucks	81.16	-13.99	-4.43	-1.20	61.54	44.55	36.77	45.98	52.14	52.17	60 dBA:	**100**	**108**
				Total:	**64.54**	**58.23**	**56.78**	**52.07**	**59.98**	**60.51**	55 dBA:	**215**	**233**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 BASELINE CONDITIONS **Project Name: San Ramon City Center**

Site Conditions: Soft

Vehicle Type	Vehicle Mix (Arterial) Day	Evening	Night	Daily	Vehicle Mix (Collector or local) Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Road Name: San Ramon Valley Boulevard **Segment: North of Crow Canyon Road**

Average Daily Traffic: 23910 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	2.68	-4.43	-1.20	62.16	59.79	58.50	52.44	60.87	61.50	70 dBA:	**29**	**32**
Medium Trucks	74.83	-12.19	-4.43	-1.20	57.01	37.81	30.02	39.23	45.39	45.42	65 dBA:	**63**	**68**
Heavy Trucks	80.05	-9.97	-4.43	-1.20	64.45	47.46	39.68	48.89	55.04	55.08	60 dBA:	**135**	**146**
				Total:	**66.93**	**60.06**	**58.56**	**54.17**	**61.98**	**62.48**	55 dBA:	**292**	**315**

Road Name: San Ramon Valley Boulevard **Segment: North of Norris Canyon Road**

Average Daily Traffic: 15225 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	0.72	-4.43	-1.20	60.20	57.83	56.54	50.48	58.91	59.54	70 dBA:	**22**	**23**
Medium Trucks	74.83	-14.15	-4.43	-1.20	55.05	35.85	28.06	37.27	43.43	43.46	65 dBA:	**47**	**50**
Heavy Trucks	80.05	-11.93	-4.43	-1.20	62.49	45.50	37.72	46.93	53.08	53.11	60 dBA:	**100**	**108**
				Total:	**64.97**	**58.10**	**56.60**	**52.21**	**60.02**	**60.52**	55 dBA:	**216**	**233**

Road Name: San Ramon Valley Boulevard **Segment: North of Bollinger Canyon Road**

Average Daily Traffic: 15985 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	0.35	-4.43	-1.20	62.08	59.71	58.42	52.36	60.80	61.43	70 dBA:	**28**	**30**
Medium Trucks	76.31	-13.94	-4.43	-1.20	56.75	36.96	29.18	38.39	44.54	44.58	65 dBA:	**60**	**65**
Heavy Trucks	81.16	-12.30	-4.43	-1.20	63.23	46.25	38.46	47.67	53.83	53.86	60 dBA:	**129**	**140**
				Total:	**66.23**	**59.92**	**58.47**	**53.76**	**61.68**	**62.20**	55 dBA:	**279**	**302**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 BASELINE CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: San Ramon Valley Boulevard **Segment: South of Bollinger Canyon Road**

Average Daily Traffic: 26080 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)											**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**									
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL			Ldn	CNEL
Automobiles	67.36	2.47	-4.43	-1.20	64.21	61.84	60.54	54.49	62.92	63.55		70 dBA:	**39**	**42**
Medium Trucks	76.31	-11.81	-4.43	-1.20	58.88	39.09	31.31	40.51	46.67	46.70		65 dBA:	**83**	**90**
Heavy Trucks	81.16	-10.17	-4.43	-1.20	65.36	48.37	40.59	49.80	55.95	55.99		60 dBA:	**179**	**194**
				Total:	**68.35**	**62.05**	**60.59**	**55.89**	**63.80**	**64.33**		55 dBA:	**386**	**419**

Road Name: San Ramon Valley Boulevard **Segment: South of Montevideo Drive**

Average Daily Traffic: 21455 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)											**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**									
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL			Ldn	CNEL
Automobiles	67.36	1.63	-4.43	-1.20	63.36	60.99	59.70	53.64	62.07	62.70		70 dBA:	**34**	**37**
Medium Trucks	76.31	-12.66	-4.43	-1.20	58.03	38.24	30.46	39.67	45.82	45.85		65 dBA:	**73**	**79**
Heavy Trucks	81.16	-11.02	-4.43	-1.20	64.51	47.52	39.74	48.95	55.10	55.14		60 dBA:	**157**	**171**
				Total:	**67.51**	**61.20**	**59.74**	**55.04**	**62.95**	**63.48**		55 dBA:	**339**	**368**

Road Name: Sunset Drive **Segment: South of Bishop Drive**

Average Daily Traffic: 11985 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)											**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**									
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL			Ldn	CNEL
Automobiles	65.11	-0.07	-4.43	-1.20	59.41	57.29	55.97	49.96	58.38	59.01		70 dBA:	**17**	**19**
Medium Trucks	74.83	-17.31	-4.43	-1.20	51.89	30.64	36.66	18.37	31.51	34.27		65 dBA:	**36**	**40**
Heavy Trucks	80.05	-21.27	-4.43	-1.20	53.15	27.80	24.40	29.05	35.25	35.35		60 dBA:	**78**	**86**
				Total:	**60.91**	**57.30**	**56.03**	**50.00**	**58.41**	**59.04**		55 dBA:	**169**	**186**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 BASELINE CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Sunset Drive **Segment: North of Bollinger Canyon Road**

Average Daily Traffic: 19420 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	2.02	-4.43	-1.20	61.51	59.38	58.07	52.06	60.48	61.10	70 dBA:	**23**	**26**
Medium Trucks	74.83	-15.22	-4.43	-1.20	53.99	32.74	38.76	20.47	33.61	36.36	65 dBA:	**50**	**55**
Heavy Trucks	80.05	-19.17	-4.43	-1.20	55.25	29.90	26.50	31.15	37.35	37.44	60 dBA:	**108**	**119**
				Total:	**63.01**	**59.40**	**58.12**	**52.10**	**60.51**	**61.14**	55 dBA:	**233**	**257**

Road Name: Camino Ramon **Segment: North of Crow Canyon Road**

Average Daily Traffic: 11485 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-0.26	-4.43	-1.20	59.23	57.10	55.79	49.78	58.20	58.82	70 dBA:	**16**	**18**
Medium Trucks	74.83	-17.50	-4.43	-1.20	51.71	30.46	36.48	18.18	31.33	34.08	65 dBA:	**35**	**39**
Heavy Trucks	80.05	-21.45	-4.43	-1.20	52.97	27.62	24.22	28.87	35.07	35.16	60 dBA:	**76**	**84**
				Total:	**60.73**	**57.12**	**55.84**	**49.82**	**58.23**	**58.86**	55 dBA:	**164**	**181**

Road Name: Camino Ramon **Segment: North of Norris Canyon Road**

Average Daily Traffic: 17775 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	1.64	-4.43	-1.20	61.12	59.00	57.69	51.67	60.09	60.72	70 dBA:	**22**	**24**
Medium Trucks	74.83	-15.60	-4.43	-1.20	53.60	32.35	38.37	20.08	33.22	35.98	65 dBA:	**47**	**52**
Heavy Trucks	80.05	-19.56	-4.43	-1.20	54.86	29.51	26.11	30.76	36.96	37.06	60 dBA:	**102**	**112**
				Total:	**62.63**	**59.01**	**57.74**	**51.71**	**60.12**	**60.75**	55 dBA:	**220**	**242**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 BASELINE CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Camino Ramon **Segment: North of Executive Parkway**

Average Daily Traffic: 16885 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	1.41	-4.43	-1.20	60.90	58.78	57.46	51.45	59.87	60.50	70 dBA:	**21**	**23**
Medium Trucks	74.83	-15.82	-4.43	-1.20	53.38	32.13	38.15	19.86	33.00	35.75	65 dBA:	**46**	**50**
Heavy Trucks	80.05	-19.78	-4.43	-1.20	54.64	29.29	25.89	30.54	36.74	36.83	60 dBA:	**98**	**108**
				Total:	**62.40**	**58.79**	**57.52**	**51.49**	**59.90**	**60.53**	55 dBA:	**212**	**234**

Road Name: Camino Ramon **Segment: North of Bishop Drive**

Average Daily Traffic: 16800 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	1.39	-4.43	-1.20	60.88	58.75	57.44	51.43	59.85	60.48	70 dBA:	**21**	**23**
Medium Trucks	74.83	-15.84	-4.43	-1.20	53.36	32.11	38.13	19.84	32.98	35.73	65 dBA:	**46**	**50**
Heavy Trucks	80.05	-19.80	-4.43	-1.20	54.62	29.27	25.87	30.52	36.72	36.81	60 dBA:	**98**	**108**
				Total:	**62.38**	**58.77**	**57.49**	**51.47**	**59.88**	**60.51**	55 dBA:	**211**	**233**

Road Name: Camino Ramon **Segment: North of Bollinger Canyon Road**

Average Daily Traffic: 9815 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-0.94	-4.43	-1.20	58.54	56.42	55.11	49.09	57.51	58.14	70 dBA:	**15**	**16**
Medium Trucks	74.83	-18.18	-4.43	-1.20	51.02	29.77	35.79	17.50	30.65	33.40	65 dBA:	**32**	**35**
Heavy Trucks	80.05	-22.13	-4.43	-1.20	52.29	26.93	23.54	28.18	34.38	34.48	60 dBA:	**69**	**76**
				Total:	**60.05**	**56.43**	**55.16**	**49.13**	**57.54**	**58.17**	55 dBA:	**148**	**163**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 BASELINE CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Camino Ramon **Segment: South of Bollinger Canyon Road**

Average Daily Traffic: 4430 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-4.40	-4.43	-1.20	55.09	52.96	51.65	45.64	54.06	54.69	70 dBA:	**9**	**10**
Medium Trucks	74.83	-21.63	-4.43	-1.20	47.57	26.32	32.34	14.05	27.19	29.94	65 dBA:	**19**	**21**
Heavy Trucks	80.05	-25.59	-4.43	-1.20	48.83	23.48	20.08	24.73	30.93	31.02	60 dBA:	**40**	**44**
				Total:	**56.59**	**52.98**	**51.71**	**45.68**	**54.09**	**54.72**	55 dBA:	**87**	**96**

Road Name: Bishop Ranch East **Segment: South of Bollinger Canyon Road**

Average Daily Traffic: 1925 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 2 Roadway Classification: 2-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 99.15 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-7.35	-4.56	-1.20	49.40	47.28	45.97	39.95	48.37	49.00	70 dBA:	**4**	**4**
Medium Trucks	73.11	-25.25	-4.56	-1.20	42.10	21.52	27.54	9.25	22.39	25.14	65 dBA:	**8**	**9**
Heavy Trucks	80.26	-28.54	-4.56	-1.20	45.96	20.61	17.21	21.86	28.05	28.15	60 dBA:	**17**	**19**
				Total:	**51.55**	**47.30**	**46.03**	**40.02**	**48.42**	**49.05**	55 dBA:	**36**	**40**

Road Name: Market **Segment: South of Bollinger Canyon Road**

Average Daily Traffic: 8685 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-1.47	-4.43	-1.20	58.01	55.89	54.58	48.56	56.98	57.61	70 dBA:	**14**	**15**
Medium Trucks	74.83	-18.71	-4.43	-1.20	50.49	29.24	35.26	16.97	30.11	32.87	65 dBA:	**29**	**32**
Heavy Trucks	80.05	-22.67	-4.43	-1.20	51.75	26.40	23.00	27.65	33.85	33.95	60 dBA:	**63**	**70**
				Total:	**59.52**	**55.90**	**54.63**	**48.60**	**57.01**	**57.64**	55 dBA:	**136**	**150**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 BASELINE CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Alcosta Boulevard **Segment: North of Norris Canyon Road**
Average Daily Traffic: 18975 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	1.34	-4.43	-1.20	63.08	60.95	59.64	53.63	62.05	62.67	70 dBA:	**30**	**33**
Medium Trucks	76.31	-15.32	-4.43	-1.20	55.37	33.54	39.56	21.27	34.41	37.17	65 dBA:	**64**	**70**
Heavy Trucks	81.16	-19.85	-4.43	-1.20	55.68	30.33	26.93	31.58	37.78	37.87	60 dBA:	**137**	**151**
				Total:	**64.39**	**60.96**	**59.68**	**53.66**	**62.07**	**62.70**	55 dBA:	**296**	**326**

Road Name: Alcosta Boulevard **Segment: North of Bollinger Canyon Road**
Average Daily Traffic: 19815 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	1.28	-4.43	-1.20	63.02	60.64	59.35	53.30	61.73	62.36	70 dBA:	**32**	**35**
Medium Trucks	76.31	-13.00	-4.43	-1.20	57.68	37.89	30.11	39.32	45.48	45.51	65 dBA:	**69**	**75**
Heavy Trucks	81.16	-11.37	-4.43	-1.20	64.17	47.18	39.40	48.60	54.76	54.79	60 dBA:	**149**	**162**
				Total:	**67.16**	**60.86**	**59.40**	**54.69**	**62.61**	**63.14**	55 dBA:	**322**	**349**

Road Name: Alcosta Boulevard **Segment: South of Bollinger Canyon Road**
Average Daily Traffic: 21120 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	1.56	-4.43	-1.20	63.29	60.92	59.63	53.57	62.00	62.64	70 dBA:	**34**	**36**
Medium Trucks	76.31	-12.73	-4.43	-1.20	57.96	38.17	30.39	39.60	45.75	45.79	65 dBA:	**72**	**78**
Heavy Trucks	81.16	-11.09	-4.43	-1.20	64.44	47.45	39.67	48.88	55.04	55.07	60 dBA:	**156**	**169**
				Total:	**67.44**	**61.13**	**59.68**	**54.97**	**62.89**	**63.41**	55 dBA:	**335**	**364**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 BASELINE CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Alcosta Boulevard **Segment: South of Montevideo Drive**
Average Daily Traffic: 11650 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	-1.02	-4.43	-1.20	60.71	58.34	57.04	50.99	59.42	60.05	70 dBA:	**23**	**24**
Medium Trucks	76.31	-15.31	-4.43	-1.20	55.38	35.59	27.81	37.01	43.17	43.20	65 dBA:	**49**	**53**
Heavy Trucks	81.16	-13.67	-4.43	-1.20	61.86	44.87	37.09	46.30	52.45	52.49	60 dBA:	**105**	**114**
				Total:	**64.85**	**58.55**	**57.09**	**52.39**	**60.30**	**60.83**	55 dBA:	**226**	**245**

Road Name: Alcosta Boulevard **Segment: North of Old Ranch Road**
Average Daily Traffic: 9625 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	-1.85	-4.43	-1.20	59.88	57.51	56.21	50.16	58.59	59.22	70 dBA:	**20**	**22**
Medium Trucks	76.31	-16.14	-4.43	-1.20	54.55	34.76	26.98	36.18	42.34	42.37	65 dBA:	**43**	**46**
Heavy Trucks	81.16	-14.50	-4.43	-1.20	61.03	44.04	36.26	45.47	51.62	51.66	60 dBA:	**92**	**100**
				Total:	**64.02**	**57.72**	**56.26**	**51.56**	**59.47**	**60.00**	55 dBA:	**199**	**215**

Road Name: Alcosta Boulevard **Segment: South of Old Ranch Road**
Average Daily Traffic: 9985 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	-1.69	-4.43	-1.20	60.04	57.67	56.37	50.32	58.75	59.38	70 dBA:	**20**	**22**
Medium Trucks	76.31	-15.98	-4.43	-1.20	54.71	34.92	27.14	36.34	42.50	42.53	65 dBA:	**44**	**48**
Heavy Trucks	81.16	-14.34	-4.43	-1.20	61.19	44.20	36.42	45.63	51.78	51.82	60 dBA:	**95**	**102**
				Total:	**64.18**	**57.88**	**56.42**	**51.72**	**59.63**	**60.16**	55 dBA:	**204**	**221**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 BASELINE CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Canyon Lakes Road **Segment: North of Bollinger Canyon Road**

Average Daily Traffic: 7065 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: 2-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 99.15 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-1.95	-4.56	-1.20	54.80	52.43	51.14	45.08	53.51	54.14	70 dBA:	**11**	**11**
Medium Trucks	73.11	-17.48	-4.56	-1.20	49.87	31.33	23.55	32.76	38.91	38.94	65 dBA:	**23**	**24**
Heavy Trucks	80.26	-14.60	-4.56	-1.20	59.90	42.91	35.13	44.34	50.49	50.53	60 dBA:	**49**	**53**
				Total:	**61.39**	**52.92**	**51.25**	**47.87**	**55.37**	**55.80**	55 dBA:	**106**	**113**

Road Name: Doughterty Road **Segment: South of Crow Canyon Road**

Average Daily Traffic: 18630 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	1.26	-4.08	-1.20	63.34	61.22	59.90	53.89	62.31	62.94	70 dBA:	**31**	**34**
Medium Trucks	76.31	-15.40	-4.08	-1.20	55.64	33.81	39.83	21.53	34.68	37.43	65 dBA:	**66**	**73**
Heavy Trucks	81.16	-19.93	-4.08	-1.20	55.95	30.60	27.20	31.84	38.04	38.14	60 dBA:	**143**	**158**
				Total:	**64.65**	**61.23**	**59.95**	**53.92**	**62.34**	**62.97**	55 dBA:	**308**	**340**

Road Name: Doughterty Road **Segment: North of Bollinger Canyon Road**

Average Daily Traffic: 31930 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	3.35	-4.08	-1.20	65.43	63.06	61.77	55.71	64.14	64.78	70 dBA:	**47**	**51**
Medium Trucks	76.31	-10.93	-4.08	-1.20	60.10	40.31	32.53	41.74	47.89	47.93	65 dBA:	**100**	**109**
Heavy Trucks	81.16	-9.29	-4.08	-1.20	66.58	49.59	41.81	51.02	57.18	57.21	60 dBA:	**216**	**234**
				Total:	**69.58**	**63.27**	**61.82**	**57.11**	**65.02**	**65.55**	55 dBA:	**466**	**505**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 BASELINE CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Doughterty Road **Segment: North of Old Ranch Road**

Average Daily Traffic: 24625 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	2.23	-4.08	-1.20	64.30	61.93	60.64	54.58	63.02	63.65	70 dBA:	**39**	**42**
Medium Trucks	76.31	-12.06	-4.08	-1.20	58.97	39.18	31.40	40.61	46.76	46.80	65 dBA:	**84**	**92**
Heavy Trucks	81.16	-10.42	-4.08	-1.20	65.46	48.47	40.68	49.89	56.05	56.08	60 dBA:	**182**	**197**
				Total:	**68.45**	**62.15**	**60.69**	**55.98**	**63.90**	**64.42**	55 dBA:	**392**	**425**

Road Name: Doughterty Road **Segment: South of Old Ranch Road**

Average Daily Traffic: 25990 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	2.46	-4.08	-1.20	64.54	62.17	60.87	54.82	63.25	63.88	70 dBA:	**41**	**44**
Medium Trucks	76.31	-11.83	-4.08	-1.20	59.20	39.42	31.63	40.84	47.00	47.03	65 dBA:	**88**	**95**
Heavy Trucks	81.16	-10.19	-4.08	-1.20	65.69	48.70	40.92	50.13	56.28	56.32	60 dBA:	**189**	**204**
				Total:	**68.68**	**62.38**	**60.92**	**56.22**	**64.13**	**64.66**	55 dBA:	**406**	**440**

Road Name: Crow Canyon Road **Segment: West of Bollinger Canyon Road**

Average Daily Traffic: 24960 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	2.28	-4.43	-1.20	64.02	61.65	60.35	54.30	62.73	63.36	70 dBA:	**38**	**41**
Medium Trucks	76.31	-12.00	-4.43	-1.20	58.68	38.90	31.12	40.32	46.48	46.51	65 dBA:	**81**	**88**
Heavy Trucks	81.16	-10.36	-4.43	-1.20	65.17	48.18	40.40	49.61	55.76	55.80	60 dBA:	**174**	**189**
				Total:	**68.16**	**61.86**	**60.40**	**55.70**	**63.61**	**64.14**	55 dBA:	**375**	**407**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 BASELINE CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Crow Canyon Road **Segment: East of Bollinger Canyon Road**

Average Daily Traffic: 24200 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	2.15	-4.08	-1.20	64.23	61.86	60.56	54.51	62.94	63.57	70 dBA:	**39**	**42**
Medium Trucks	76.31	-12.14	-4.08	-1.20	58.89	39.11	31.32	40.53	46.69	46.72	65 dBA:	**83**	**90**
Heavy Trucks	81.16	-10.50	-4.08	-1.20	65.38	48.39	40.61	49.82	55.97	56.01	60 dBA:	**180**	**195**
				Total:	**68.37**	**62.07**	**60.61**	**55.91**	**63.82**	**64.35**	55 dBA:	**387**	**420**

Road Name: Crow Canyon Road **Segment: West of San Ramon Valley Boulevard**

Average Daily Traffic: 33500 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	3.56	-4.08	-1.20	65.64	63.27	61.98	55.92	64.35	64.98	70 dBA:	**48**	**52**
Medium Trucks	76.31	-10.72	-4.08	-1.20	60.31	40.52	32.74	41.95	48.10	48.13	65 dBA:	**104**	**112**
Heavy Trucks	81.16	-9.09	-4.08	-1.20	66.79	49.80	42.02	51.23	57.38	57.42	60 dBA:	**223**	**242**
				Total:	**69.78**	**63.48**	**62.02**	**57.32**	**65.23**	**65.76**	55 dBA:	**481**	**522**

Road Name: Crow Canyon Road **Segment: West of Camino Ramon**

Average Daily Traffic: 43540 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 8-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 86.02 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	4.70	-3.64	-1.20	67.22	64.85	63.56	57.50	65.93	66.57	70 dBA:	**61**	**67**
Medium Trucks	76.31	-9.59	-3.64	-1.20	61.89	42.10	34.32	43.53	49.68	49.72	65 dBA:	**132**	**143**
Heavy Trucks	81.16	-7.95	-3.64	-1.20	68.37	51.38	43.60	52.81	58.97	59.00	60 dBA:	**285**	**309**
				Total:	**71.37**	**65.06**	**63.61**	**58.90**	**66.82**	**67.34**	55 dBA:	**613**	**665**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 BASELINE CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Crow Canyon Road **Segment: East of Camino Ramon**

Average Daily Traffic: 40730 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 8-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 86.02 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	4.41	-3.64	-1.20	66.93	64.56	63.27	57.21	65.65	66.28	70 dBA:	**59**	**64**
Medium Trucks	76.31	-9.88	-3.64	-1.20	61.60	41.81	34.03	43.24	49.39	49.43	65 dBA:	**126**	**137**
Heavy Trucks	81.16	-8.24	-3.64	-1.20	68.08	51.10	43.31	52.52	58.68	58.71	60 dBA:	**272**	**295**
				Total:	**71.08**	**64.77**	**63.32**	**58.61**	**66.53**	**67.05**	55 dBA:	**587**	**636**

Road Name: Crow Canyon Road **Segment: East of Alcosta Boulevard**

Average Daily Traffic: 39075 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	4.23	-4.08	-1.20	66.31	63.94	62.64	56.59	65.02	65.65	70 dBA:	**53**	**58**
Medium Trucks	76.31	-10.06	-4.08	-1.20	60.98	41.19	33.41	42.61	48.77	48.80	65 dBA:	**115**	**125**
Heavy Trucks	81.16	-8.42	-4.08	-1.20	67.46	50.47	42.69	51.90	58.05	58.09	60 dBA:	**247**	**268**
				Total:	**70.45**	**64.15**	**62.69**	**57.99**	**65.90**	**66.43**	55 dBA:	**533**	**578**

Road Name: Crow Canyon Road **Segment: West of Dougherty Road**

Average Daily Traffic: 23785 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	2.07	-4.08	-1.20	64.15	61.78	60.49	54.43	62.87	63.50	70 dBA:	**38**	**42**
Medium Trucks	76.31	-12.21	-4.08	-1.20	58.82	39.03	31.25	40.46	46.61	46.65	65 dBA:	**82**	**89**
Heavy Trucks	81.16	-10.57	-4.08	-1.20	65.30	48.32	40.53	49.74	55.90	55.93	60 dBA:	**178**	**193**
				Total:	**68.30**	**61.99**	**60.54**	**55.83**	**63.75**	**64.27**	55 dBA:	**383**	**415**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 BASELINE CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Crow Canyon Road **Segment: East of Dougherty Road**

Average Daily Traffic: 35215 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	3.78	-4.08	-1.20	65.86	63.49	62.19	56.14	64.57	65.20	70 dBA:	**50**	**54**
Medium Trucks	76.31	-10.51	-4.08	-1.20	60.52	40.74	32.95	42.16	48.32	48.35	65 dBA:	**107**	**116**
Heavy Trucks	81.16	-8.87	-4.08	-1.20	67.01	50.02	42.24	51.45	57.60	57.63	60 dBA:	**231**	**250**
				Total:	**70.00**	**63.70**	**62.24**	**57.54**	**65.45**	**65.98**	55 dBA:	**497**	**539**

Road Name: Norris Canyon Road **Segment: West of Bollinger Canyon Road**

Average Daily Traffic: 6270 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: 2-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 99.15 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-2.47	-4.56	-1.20	54.28	51.91	50.62	44.56	52.99	53.63	70 dBA:	**10**	**10**
Medium Trucks	73.11	-18.00	-4.56	-1.20	49.35	30.81	23.03	32.24	38.39	38.43	65 dBA:	**21**	**23**
Heavy Trucks	80.26	-15.11	-4.56	-1.20	59.38	42.39	34.61	43.82	49.97	50.01	60 dBA:	**45**	**48**
				Total:	**60.87**	**52.40**	**50.73**	**47.35**	**54.85**	**55.28**	55 dBA:	**98**	**104**

Road Name: Norris Canyon Road **Segment: West of San Ramon Valley Boulevard**

Average Daily Traffic: 11915 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-0.10	-4.43	-1.20	59.38	57.26	55.95	49.94	58.36	58.98	70 dBA:	**17**	**19**
Medium Trucks	74.83	-17.34	-4.43	-1.20	51.87	30.62	36.64	18.34	31.49	34.24	65 dBA:	**36**	**40**
Heavy Trucks	80.05	-21.29	-4.43	-1.20	53.13	27.78	24.38	29.03	35.23	35.32	60 dBA:	**78**	**86**
				Total:	**60.89**	**57.28**	**56.00**	**49.97**	**58.39**	**59.02**	55 dBA:	**168**	**185**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 BASELINE CONDITIONS **Project Name: San Ramon City Center**

Vehicle Type	Vehicle Mix (Arterial) Day	Evening	Night	Daily	Vehicle Mix (Collector or local) Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Norris Canyon Road **Segment: West of Camino Ramon**
Average Daily Traffic: 12890 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	0.24	-4.43	-1.20	59.73	57.60	56.29	50.28	58.70	59.32	70 dBA:	**18**	**20**
Medium Trucks	74.83	-17.00	-4.43	-1.20	52.21	30.96	36.98	18.69	31.83	34.58	65 dBA:	**38**	**42**
Heavy Trucks	80.05	-20.95	-4.43	-1.20	53.47	28.12	24.72	29.37	35.57	35.66	60 dBA:	**82**	**91**
				Total:	**61.23**	**57.62**	**56.34**	**50.32**	**58.73**	**59.36**	55 dBA:	**177**	**195**

Road Name: Bishop Drive **Segment: West of Sunset Drive**
Average Daily Traffic: 6300 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-2.87	-4.43	-1.20	56.62	54.49	53.18	47.17	55.59	56.22	70 dBA:	**11**	**12**
Medium Trucks	74.83	-20.10	-4.43	-1.20	49.10	27.85	33.87	15.58	28.72	31.47	65 dBA:	**24**	**26**
Heavy Trucks	80.05	-24.06	-4.43	-1.20	50.36	25.01	21.61	26.26	32.46	32.55	60 dBA:	**51**	**56**
				Total:	**58.12**	**54.51**	**53.23**	**47.21**	**55.62**	**56.25**	55 dBA:	**110**	**121**

Road Name: Bishop Drive **Segment: West of Camino Ramon**
Average Daily Traffic: 5040 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-3.84	-4.43	-1.20	55.65	53.53	52.21	46.20	54.62	55.25	70 dBA:	**9**	**10**
Medium Trucks	74.83	-21.07	-4.43	-1.20	48.13	26.88	32.90	14.61	27.75	30.50	65 dBA:	**20**	**22**
Heavy Trucks	80.05	-25.03	-4.43	-1.20	49.39	24.04	20.64	25.29	31.49	31.58	60 dBA:	**44**	**48**
				Total:	**57.15**	**53.54**	**52.27**	**46.24**	**54.65**	**55.28**	55 dBA:	**95**	**104**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 BASELINE CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Bishop Drive **Segment: East of Camino Ramon**

Average Daily Traffic: 6340 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-2.84	-4.43	-1.20	56.64	54.52	53.21	47.20	55.62	56.24	70 dBA:	**11**	**12**
Medium Trucks	74.83	-20.08	-4.43	-1.20	49.13	27.88	33.90	15.60	28.75	31.50	65 dBA:	**24**	**26**
Heavy Trucks	80.05	-24.03	-4.43	-1.20	50.39	25.04	21.64	26.29	32.49	32.58	60 dBA:	**51**	**56**
				Total:	**58.15**	**54.54**	**53.26**	**47.23**	**55.65**	**56.28**	55 dBA:	**110**	**122**

Road Name: Bollinger Canyon Road **Segment: West of San Ramon Valley Boulevard**

Average Daily Traffic: 15300 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	0.41	-4.43	-1.20	62.14	60.02	58.71	52.69	61.11	61.74	70 dBA:	**26**	**28**
Medium Trucks	76.31	-16.25	-4.43	-1.20	54.44	32.61	38.63	20.33	33.48	36.23	65 dBA:	**55**	**61**
Heavy Trucks	81.16	-20.79	-4.43	-1.20	54.75	29.40	26.00	30.65	36.84	36.94	60 dBA:	**119**	**131**
				Total:	**63.45**	**60.03**	**58.75**	**52.72**	**61.14**	**61.77**	55 dBA:	**256**	**283**

Road Name: Bollinger Canyon Road **Segment: West of Sunset Drive**

Average Daily Traffic: 59095 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 8-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 86.02 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	6.03	-3.64	-1.20	68.55	66.18	64.88	58.83	67.26	67.89	70 dBA:	**75**	**82**
Medium Trucks	76.31	-8.26	-3.64	-1.20	63.22	43.43	35.65	44.85	51.01	51.04	65 dBA:	**162**	**176**
Heavy Trucks	81.16	-6.62	-3.64	-1.20	69.70	52.71	44.93	54.14	60.29	60.33	60 dBA:	**349**	**378**
				Total:	**72.69**	**66.39**	**64.93**	**60.23**	**68.14**	**68.67**	55 dBA:	**752**	**815**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 BASELINE CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Bollinger Canyon Road **Segment: West of Camino Ramon**

Average Daily Traffic: 42305 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 8-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 86.02 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	4.58	-3.64	-1.20	67.10	64.73	63.43	57.38	65.81	66.44	70 dBA:	**60**	**65**
Medium Trucks	76.31	-9.71	-3.64	-1.20	61.76	41.98	34.19	43.40	49.56	49.59	65 dBA:	**130**	**141**
Heavy Trucks	81.16	-8.07	-3.64	-1.20	68.25	51.26	43.48	52.69	58.84	58.87	60 dBA:	**279**	**303**
				Total:	**71.24**	**64.94**	**63.48**	**58.78**	**66.69**	**67.22**	55 dBA:	**602**	**652**

Road Name: Bollinger Canyon Road **Segment: East of Camino Ramon**

Average Daily Traffic: 33560 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 8-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 86.02 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	3.57	-3.64	-1.20	66.09	63.72	62.43	56.37	64.80	65.44	70 dBA:	**52**	**56**
Medium Trucks	76.31	-10.72	-3.64	-1.20	60.76	40.97	33.19	42.40	48.55	48.59	65 dBA:	**111**	**120**
Heavy Trucks	81.16	-9.08	-3.64	-1.20	67.24	50.25	42.47	51.68	57.84	57.87	60 dBA:	**239**	**259**
				Total:	**70.24**	**63.93**	**62.48**	**57.77**	**65.68**	**66.21**	55 dBA:	**516**	**559**

Road Name: Bollinger Canyon Road **Segment: East of Bishop Ranch East**

Average Daily Traffic: 39370 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 8-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 86.02 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	4.26	-3.64	-1.20	66.79	64.41	63.12	57.07	65.50	66.13	70 dBA:	**57**	**62**
Medium Trucks	76.31	-10.02	-3.64	-1.20	61.45	41.66	33.88	43.09	49.24	49.28	65 dBA:	**124**	**134**
Heavy Trucks	81.16	-8.38	-3.64	-1.20	67.94	50.95	43.17	52.37	58.53	58.56	60 dBA:	**266**	**289**
				Total:	**70.93**	**64.63**	**63.17**	**58.46**	**66.38**	**66.91**	55 dBA:	**573**	**622**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 BASELINE CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Bollinger Canyon Road **Segment: East of Market**
Average Daily Traffic: 33315 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 8-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 86.02 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	3.54	-3.64	-1.20	66.06	63.69	62.40	56.34	64.77	65.40	70 dBA:	**51**	**56**
Medium Trucks	76.31	-10.75	-3.64	-1.20	60.73	40.94	33.16	42.37	48.52	48.55	65 dBA:	**111**	**120**
Heavy Trucks	81.16	-9.11	-3.64	-1.20	67.21	50.22	42.44	51.65	57.80	57.84	60 dBA:	**238**	**258**
				Total:	**70.20**	**63.90**	**62.44**	**57.74**	**65.65**	**66.18**	55 dBA:	**513**	**556**

Road Name: Bollinger Canyon Road **Segment: East of Alcosta Boulevard**
Average Daily Traffic: 34110 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	3.64	-4.08	-1.20	65.72	63.35	62.05	56.00	64.43	65.06	70 dBA:	**49**	**53**
Medium Trucks	76.31	-10.65	-4.08	-1.20	60.39	40.60	32.82	42.02	48.18	48.21	65 dBA:	**105**	**114**
Heavy Trucks	81.16	-9.01	-4.08	-1.20	66.87	49.88	42.10	51.31	57.46	57.50	60 dBA:	**226**	**245**
				Total:	**69.86**	**63.56**	**62.10**	**57.40**	**65.31**	**65.84**	55 dBA:	**487**	**528**

Road Name: Bollinger Canyon Road **Segment: East of Canyon Lakes Drive**
Average Daily Traffic: 25605 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	2.40	-4.08	-1.20	64.47	62.10	60.81	54.75	63.19	63.82	70 dBA:	**40**	**44**
Medium Trucks	76.31	-11.89	-4.08	-1.20	59.14	39.35	31.57	40.78	46.93	46.97	65 dBA:	**87**	**94**
Heavy Trucks	81.16	-10.25	-4.08	-1.20	65.63	48.64	40.85	50.06	56.22	56.25	60 dBA:	**187**	**202**
				Total:	**68.62**	**62.31**	**60.86**	**56.15**	**64.07**	**64.59**	55 dBA:	**402**	**436**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 BASELINE CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Bollinger Canyon Road **Segment: West of Dougherty Road**

Average Daily Traffic: 25180 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	2.32	-4.08	-1.20	64.40	62.03	60.74	54.68	63.11	63.74	70 dBA:	**40**	**43**
Medium Trucks	76.31	-11.96	-4.08	-1.20	59.07	39.28	31.50	40.71	46.86	46.89	65 dBA:	**86**	**93**
Heavy Trucks	81.16	-10.33	-4.08	-1.20	65.55	48.56	40.78	49.99	56.14	56.18	60 dBA:	**185**	**200**
				Total:	**68.54**	**62.24**	**60.78**	**56.08**	**63.99**	**64.52**	55 dBA:	**398**	**431**

Road Name: Bollinger Canyon Road **Segment: East of Dougherty Road**

Average Daily Traffic: 24805 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	2.26	-4.08	-1.20	64.34	61.96	60.67	54.62	63.05	63.68	70 dBA:	**39**	**43**
Medium Trucks	76.31	-12.03	-4.08	-1.20	59.00	39.21	31.43	40.64	46.79	46.83	65 dBA:	**85**	**92**
Heavy Trucks	81.16	-10.39	-4.08	-1.20	65.49	48.50	40.72	49.92	56.08	56.11	60 dBA:	**183**	**198**
				Total:	**68.48**	**62.18**	**60.72**	**56.01**	**63.93**	**64.46**	55 dBA:	**394**	**427**

Road Name: Montevideo Drive **Segment: East of San Ramon Valley Boulevard**

Average Daily Traffic: 18030 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: 2-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 99.15 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	2.12	-4.56	-1.20	58.87	56.50	55.20	49.15	57.58	58.21	70 dBA:	**20**	**21**
Medium Trucks	73.11	-13.41	-4.56	-1.20	53.94	35.40	27.62	36.82	42.98	43.01	65 dBA:	**43**	**46**
Heavy Trucks	80.26	-10.53	-4.56	-1.20	63.97	46.98	39.20	48.41	54.56	54.60	60 dBA:	**92**	**98**
				Total:	**65.46**	**56.99**	**55.32**	**51.94**	**59.44**	**59.87**	55 dBA:	**198**	**211**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 BASELINE CONDITIONS **Project Name: San Ramon City Center**

Vehicle Type	Vehicle Mix (Arterial) Day	Evening	Night	Daily	Vehicle Mix (Collector or local) Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Montevideo Drive **Segment: West of Alcosta Boulevard**

Average Daily Traffic: 5345 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 2 Roadway Classification: 2-lane Collector

NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 99.15 ft)

Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)	Ldn	CNEL
	Noise Adjustments				**Unmitigated Noise Levels**								
Automobiles	62.51	-2.91	-4.56	-1.20	53.84	51.71	50.40	44.39	52.81	53.44	70 dBA:	**7**	**8**
Medium Trucks	73.11	-20.82	-4.56	-1.20	46.53	25.95	31.97	13.68	26.82	29.58	65 dBA:	**16**	**17**
Heavy Trucks	80.26	-24.10	-4.56	-1.20	50.39	25.04	21.64	26.29	32.49	32.59	60 dBA:	**33**	**37**
				Total:	**55.98**	**51.74**	**50.47**	**44.46**	**52.86**	**53.49**	55 dBA:	**72**	**79**

Road Name: Old Ranch Road **Segment: East of Alcosta Boulevard**

Average Daily Traffic: 8775 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Arterial

NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)

Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)	Ldn	CNEL
	Noise Adjustments				**Unmitigated Noise Levels**								
Automobiles	67.36	-2.01	-4.43	-1.20	59.73	57.60	56.29	50.28	58.70	59.32	70 dBA:	**18**	**20**
Medium Trucks	76.31	-18.67	-4.43	-1.20	52.02	30.19	36.21	17.92	31.06	33.82	65 dBA:	**38**	**42**
Heavy Trucks	81.16	-23.20	-4.43	-1.20	52.33	26.98	23.58	28.23	34.43	34.53	60 dBA:	**82**	**91**
				Total:	**61.04**	**57.61**	**56.34**	**50.31**	**58.72**	**59.35**	55 dBA:	**177**	**195**

Road Name: Old Ranch Road **Segment: West of Dougherty Road**

Average Daily Traffic: 6555 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)

Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)	Ldn	CNEL
	Noise Adjustments				**Unmitigated Noise Levels**								
Automobiles	67.36	-3.52	-4.43	-1.20	58.21	55.84	54.55	48.49	56.92	57.55	70 dBA:	**15**	**17**
Medium Trucks	76.31	-17.81	-4.43	-1.20	52.88	33.09	25.31	34.52	40.67	40.70	65 dBA:	**33**	**36**
Heavy Trucks	81.16	-16.17	-4.43	-1.20	59.36	42.37	34.59	43.80	49.95	49.99	60 dBA:	**71**	**77**
				Total:	**62.36**	**56.05**	**54.60**	**49.89**	**57.80**	**58.33**	55 dBA:	**154**	**167**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 WITH PROJECT CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Bollinger Canyon Road **Segment: South of Crow Canyon Road**
Average Daily Traffic: 7364 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 1 Roadway Classification: 2-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 98.37 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-2.44	-4.51	-1.20	56.96	54.59	53.30	47.24	55.67	56.30	70 dBA:	**13**	**14**
Medium Trucks	74.83	-17.30	-4.51	-1.20	51.81	32.60	24.82	34.03	40.19	40.22	65 dBA:	**28**	**31**
Heavy Trucks	80.05	-15.09	-4.51	-1.20	59.25	42.26	34.48	43.69	49.84	49.87	60 dBA:	**61**	**66**
				Total:	**61.73**	**54.86**	**53.36**	**48.97**	**56.78**	**57.28**	55 dBA:	**131**	**142**

Road Name: Bollinger Canyon Road **Segment: North of Norris Canyon Road**
Average Daily Traffic: 9709 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 1 Roadway Classification: 2-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 98.37 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-1.24	-4.51	-1.20	58.16	55.79	54.50	48.44	56.87	57.50	70 dBA:	**16**	**17**
Medium Trucks	74.83	-16.10	-4.51	-1.20	53.01	33.81	26.02	35.23	41.39	41.42	65 dBA:	**34**	**37**
Heavy Trucks	80.05	-13.88	-4.51	-1.20	60.45	43.46	35.68	44.89	51.04	51.08	60 dBA:	**73**	**79**
				Total:	**62.93**	**56.06**	**54.56**	**50.17**	**57.98**	**58.48**	55 dBA:	**158**	**171**

Road Name: Bollinger Canyon Road **Segment: South of Norris Canyon Road**
Average Daily Traffic: 11784 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	-0.98	-4.43	-1.20	60.76	58.39	57.09	51.04	59.47	60.10	70 dBA:	**23**	**25**
Medium Trucks	76.31	-15.26	-4.43	-1.20	55.43	35.64	27.86	37.06	43.22	43.25	65 dBA:	**49**	**53**
Heavy Trucks	81.16	-13.62	-4.43	-1.20	61.91	44.92	37.14	46.35	52.50	52.54	60 dBA:	**106**	**114**
				Total:	**64.90**	**58.60**	**57.14**	**52.44**	**60.35**	**60.88**	55 dBA:	**227**	**247**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 WITH PROJECT CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: San Ramon Valley Boulevard **Segment: North of Crow Canyon Road**

Average Daily Traffic: 24544 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	2.79	-4.43	-1.20	62.28	59.90	58.61	52.56	60.99	61.62	70 dBA:	**30**	**32**
Medium Trucks	74.83	-12.08	-4.43	-1.20	57.13	37.92	30.14	39.35	45.50	45.53	65 dBA:	**64**	**69**
Heavy Trucks	80.05	-9.86	-4.43	-1.20	64.56	47.57	39.79	49.00	55.15	55.19	60 dBA:	**138**	**149**
				Total:	**67.05**	**60.18**	**58.67**	**54.28**	**62.09**	**62.59**	55 dBA:	**297**	**321**

Road Name: San Ramon Valley Boulevard **Segment: North of Norris Canyon Road**

Average Daily Traffic: 15575 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	0.82	-4.43	-1.20	60.30	57.93	56.64	50.58	59.01	59.64	70 dBA:	**22**	**24**
Medium Trucks	74.83	-14.05	-4.43	-1.20	55.15	35.94	28.16	37.37	43.52	43.56	65 dBA:	**47**	**51**
Heavy Trucks	80.05	-11.83	-4.43	-1.20	62.59	45.60	37.82	47.03	53.18	53.21	60 dBA:	**102**	**110**
				Total:	**65.07**	**58.20**	**56.70**	**52.31**	**60.12**	**60.62**	55 dBA:	**219**	**237**

Road Name: San Ramon Valley Boulevard **Segment: North of Bollinger Canyon Road**

Average Daily Traffic: 16745 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	0.55	-4.43	-1.20	62.29	59.91	58.62	52.57	61.00	61.63	70 dBA:	**29**	**31**
Medium Trucks	76.31	-13.74	-4.43	-1.20	56.95	37.16	29.38	38.59	44.74	44.78	65 dBA:	**62**	**67**
Heavy Trucks	81.16	-12.10	-4.43	-1.20	63.44	46.45	38.67	47.87	54.03	54.06	60 dBA:	**133**	**145**
				Total:	**66.43**	**60.13**	**58.67**	**53.96**	**61.88**	**62.40**	55 dBA:	**287**	**312**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 WITH PROJECT CONDITIONS **Project Name: San Ramon City Center**

Vehicle Type	Vehicle Mix (Arterial) Day	Evening	Night	Daily	Vehicle Mix (Collector or local) Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: San Ramon Valley Boulevard **Segment: South of Bollinger Canyon Road**

Average Daily Traffic: 28935 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)

Vehicle Type	Noise Adjustments: REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Unmitigated Noise Levels: Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)	Ldn	CNEL
Automobiles	67.36	2.93	-4.43	-1.20	64.66	62.29	61.00	54.94	63.37	64.00	70 dBA:	**41**	**45**
Medium Trucks	76.31	-11.36	-4.43	-1.20	59.33	39.54	31.76	40.97	47.12	47.15	65 dBA:	**89**	**97**
Heavy Trucks	81.16	-9.72	-4.43	-1.20	65.81	48.82	41.04	50.25	56.40	56.44	60 dBA:	**192**	**208**
				Total:	**68.80**	**62.50**	**61.04**	**56.34**	**64.25**	**64.78**	55 dBA:	**414**	**449**

Road Name: San Ramon Valley Boulevard **Segment: South of Montevideo Drive**

Average Daily Traffic: 21727 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)

Vehicle Type	Noise Adjustments: REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Unmitigated Noise Levels: Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)	Ldn	CNEL
Automobiles	67.36	1.68	-4.43	-1.20	63.42	61.04	59.75	53.70	62.13	62.76	70 dBA:	**34**	**37**
Medium Trucks	76.31	-12.60	-4.43	-1.20	58.08	38.29	30.51	39.72	45.88	45.91	65 dBA:	**74**	**80**
Heavy Trucks	81.16	-10.97	-4.43	-1.20	64.57	47.58	39.80	49.00	55.16	55.19	60 dBA:	**159**	**172**
				Total:	**67.56**	**61.26**	**59.80**	**55.09**	**63.01**	**63.54**	55 dBA:	**342**	**371**

Road Name: Sunset Drive **Segment: South of Bishop Drive**

Average Daily Traffic: 15017 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)

Vehicle Type	Noise Adjustments: REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Unmitigated Noise Levels: Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)	Ldn	CNEL
Automobiles	65.11	0.91	-4.43	-1.20	60.39	58.27	56.95	50.94	59.36	59.99	70 dBA:	**20**	**22**
Medium Trucks	74.83	-16.33	-4.43	-1.20	52.87	31.62	37.64	19.35	32.49	35.24	65 dBA:	**42**	**47**
Heavy Trucks	80.05	-20.29	-4.43	-1.20	54.13	28.78	25.38	30.03	36.23	36.33	60 dBA:	**91**	**100**
				Total:	**61.89**	**58.28**	**57.01**	**50.98**	**59.39**	**60.02**	55 dBA:	**196**	**216**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 WITH PROJECT CONDITIONS **Project Name: San Ramon City Center**

Vehicle Type	Vehicle Mix (Arterial) Day	Evening	Night	Daily	Vehicle Mix (Collector or local) Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Sunset Drive **Segment: North of Bollinger Canyon Road**

Average Daily Traffic: 23246 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)

Vehicle Type	Noise Adjustments REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Unmitigated Noise Levels Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)	Ldn	CNEL
Automobiles	65.11	2.80	-4.43	-1.20	62.29	60.16	58.85	52.84	61.26	61.89	70 dBA:	**26**	**29**
Medium Trucks	74.83	-14.43	-4.43	-1.20	54.77	33.52	39.54	21.25	34.39	37.14	65 dBA:	**57**	**62**
Heavy Trucks	80.05	-18.39	-4.43	-1.20	56.03	30.68	27.28	31.93	38.13	38.22	60 dBA:	**122**	**134**
				Total:	**63.79**	**60.18**	**58.90**	**52.88**	**61.29**	**61.92**	55 dBA:	**263**	**289**

Road Name: Camino Ramon **Segment: North of Crow Canyon Road**

Average Daily Traffic: 11553 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)

Vehicle Type	Noise Adjustments REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Unmitigated Noise Levels Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)	Ldn	CNEL
Automobiles	65.11	-0.23	-4.43	-1.20	59.25	57.13	55.81	49.80	58.22	58.85	70 dBA:	**16**	**18**
Medium Trucks	74.83	-17.47	-4.43	-1.20	51.73	30.48	36.50	18.21	31.35	34.11	65 dBA:	**35**	**39**
Heavy Trucks	80.05	-21.43	-4.43	-1.20	52.99	27.64	24.24	28.89	35.09	35.19	60 dBA:	**76**	**84**
				Total:	**60.75**	**57.14**	**55.87**	**49.84**	**58.25**	**58.88**	55 dBA:	**165**	**181**

Road Name: Camino Ramon **Segment: North of Norris Canyon Road**

Average Daily Traffic: 22033 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)

Vehicle Type	Noise Adjustments REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Unmitigated Noise Levels Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)	Ldn	CNEL
Automobiles	65.11	2.57	-4.43	-1.20	62.05	59.93	58.62	52.61	61.03	61.65	70 dBA:	**25**	**28**
Medium Trucks	74.83	-14.67	-4.43	-1.20	54.54	33.29	39.31	21.01	34.16	36.91	65 dBA:	**55**	**60**
Heavy Trucks	80.05	-18.62	-4.43	-1.20	55.80	30.45	27.05	31.70	37.89	37.99	60 dBA:	**118**	**130**
				Total:	**63.56**	**59.95**	**58.67**	**52.64**	**61.06**	**61.69**	55 dBA:	**253**	**279**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 WITH PROJECT CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Camino Ramon **Segment: North of Executive Parkway**

Average Daily Traffic: 21509 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	2.47	-4.43	-1.20	61.95	59.83	58.51	52.50	60.92	61.55	70 dBA:	**25**	**27**
Medium Trucks	74.83	-14.77	-4.43	-1.20	54.43	33.18	39.20	20.91	34.05	36.81	65 dBA:	**54**	**59**
Heavy Trucks	80.05	-18.73	-4.43	-1.20	55.69	30.34	26.94	31.59	37.79	37.89	60 dBA:	**116**	**127**
				Total:	**63.45**	**59.84**	**58.57**	**52.54**	**60.95**	**61.58**	55 dBA:	**249**	**275**

Road Name: Camino Ramon **Segment: North of Bishop Drive**

Average Daily Traffic: 21533 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	2.47	-4.43	-1.20	61.95	59.83	58.52	52.51	60.93	61.55	70 dBA:	**25**	**27**
Medium Trucks	74.83	-14.77	-4.43	-1.20	54.44	33.19	39.21	20.91	34.06	36.81	65 dBA:	**54**	**59**
Heavy Trucks	80.05	-18.72	-4.43	-1.20	55.70	30.35	26.95	31.60	37.80	37.89	60 dBA:	**116**	**128**
				Total:	**63.46**	**59.85**	**58.57**	**52.54**	**60.96**	**61.59**	55 dBA:	**250**	**275**

Road Name: Camino Ramon **Segment: North of Bollinger Canyon Road**

Average Daily Traffic: 14410 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	0.73	-4.43	-1.20	60.21	58.09	56.77	50.76	59.18	59.81	70 dBA:	**19**	**21**
Medium Trucks	74.83	-16.51	-4.43	-1.20	52.69	31.44	37.46	19.17	32.31	35.07	65 dBA:	**41**	**45**
Heavy Trucks	80.05	-20.47	-4.43	-1.20	53.95	28.60	25.20	29.85	36.05	36.15	60 dBA:	**89**	**98**
				Total:	**61.71**	**58.10**	**56.83**	**50.80**	**59.21**	**59.84**	55 dBA:	**191**	**210**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 WITH PROJECT CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Camino Ramon **Segment: South of Bollinger Canyon Road**

Average Daily Traffic: 9454 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-1.10	-4.43	-1.20	58.38	56.26	54.94	48.93	57.35	57.98	70 dBA:	**14**	**16**
Medium Trucks	74.83	-18.34	-4.43	-1.20	50.86	29.61	35.63	17.34	30.48	33.24	65 dBA:	**31**	**34**
Heavy Trucks	80.05	-22.30	-4.43	-1.20	52.12	26.77	23.37	28.02	34.22	34.32	60 dBA:	**67**	**74**
				Total:	**59.88**	**56.27**	**55.00**	**48.97**	**57.38**	**58.01**	55 dBA:	**144**	**159**

Road Name: Bishop Ranch East **Segment: South of Bollinger Canyon Road**

Average Daily Traffic: 4787 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 2 Roadway Classification: 2-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 99.15 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-3.39	-4.56	-1.20	53.36	51.24	49.92	43.91	52.33	52.96	70 dBA:	**7**	**7**
Medium Trucks	73.11	-21.30	-4.56	-1.20	46.05	25.47	31.49	13.20	26.35	29.10	65 dBA:	**14**	**16**
Heavy Trucks	80.26	-24.58	-4.56	-1.20	49.91	24.56	21.16	25.81	32.01	32.11	60 dBA:	**31**	**34**
				Total:	**55.50**	**51.26**	**49.99**	**43.98**	**52.38**	**53.01**	55 dBA:	**67**	**74**

Road Name: Market **Segment: South of Bollinger Canyon Road**

Average Daily Traffic: 9071 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-1.28	-4.43	-1.20	58.20	56.08	54.76	48.75	57.17	57.80	70 dBA:	**14**	**15**
Medium Trucks	74.83	-18.52	-4.43	-1.20	50.68	29.43	35.45	17.16	30.30	33.06	65 dBA:	**30**	**33**
Heavy Trucks	80.05	-22.48	-4.43	-1.20	51.94	26.59	23.19	27.84	34.04	34.14	60 dBA:	**65**	**72**
				Total:	**59.70**	**56.09**	**54.82**	**48.79**	**57.20**	**57.83**	55 dBA:	**140**	**154**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 WITH PROJECT CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Alcosta Boulevard **Segment: North of Norris Canyon Road**
Average Daily Traffic: 19574 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	1.48	-4.43	-1.20	63.21	61.09	59.77	53.76	62.18	62.81	70 dBA:	**30**	**33**
Medium Trucks	76.31	-15.18	-4.43	-1.20	55.51	33.68	39.70	21.40	34.55	37.30	65 dBA:	**65**	**72**
Heavy Trucks	81.16	-19.72	-4.43	-1.20	55.82	30.47	27.07	31.72	37.91	38.01	60 dBA:	**140**	**155**
				Total:	**64.52**	**61.10**	**59.82**	**53.79**	**62.21**	**62.84**	55 dBA:	**302**	**333**

Road Name: Alcosta Boulevard **Segment: North of Bollinger Canyon Road**
Average Daily Traffic: 20414 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	1.41	-4.43	-1.20	63.15	60.77	59.48	53.43	61.86	62.49	70 dBA:	**33**	**36**
Medium Trucks	76.31	-12.88	-4.43	-1.20	57.81	38.02	30.24	39.45	45.60	45.64	65 dBA:	**71**	**77**
Heavy Trucks	81.16	-11.24	-4.43	-1.20	64.30	47.31	39.53	48.73	54.89	54.92	60 dBA:	**152**	**165**
				Total:	**67.29**	**60.99**	**59.53**	**54.82**	**62.74**	**63.26**	55 dBA:	**328**	**356**

Road Name: Alcosta Boulevard **Segment: South of Bollinger Canyon Road**
Average Daily Traffic: 24474 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	2.20	-4.43	-1.20	63.93	61.56	60.27	54.21	62.65	63.28	70 dBA:	**37**	**40**
Medium Trucks	76.31	-12.09	-4.43	-1.20	58.60	38.81	31.03	40.24	46.39	46.43	65 dBA:	**80**	**86**
Heavy Trucks	81.16	-10.45	-4.43	-1.20	65.08	48.10	40.31	49.52	55.68	55.71	60 dBA:	**172**	**186**
				Total:	**68.08**	**61.77**	**60.32**	**55.61**	**63.53**	**64.05**	55 dBA:	**370**	**401**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 WITH PROJECT CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Alcosta Boulevard **Segment: South of Montevideo Drive**

Average Daily Traffic: 13198 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE				(Equiv. Lane Dist: 97.08 ft)						**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	-0.48	-4.43	-1.20	61.25	58.88	57.59	51.53	59.96	60.59	70 dBA:	**25**	**27**
Medium Trucks	76.31	-14.77	-4.43	-1.20	55.92	36.13	28.35	37.56	43.71	43.74	65 dBA:	**53**	**57**
Heavy Trucks	81.16	-13.13	-4.43	-1.20	62.40	45.41	37.63	46.84	52.99	53.03	60 dBA:	**114**	**123**
				Total:	**65.40**	**59.09**	**57.63**	**52.93**	**60.84**	**61.37**	55 dBA:	**245**	**266**

Road Name: Alcosta Boulevard **Segment: North of Old Ranch Road**

Average Daily Traffic: 11173 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE				(Equiv. Lane Dist: 97.08 ft)						**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	-1.21	-4.43	-1.20	60.53	58.16	56.86	50.81	59.24	59.87	70 dBA:	**22**	**24**
Medium Trucks	76.31	-15.49	-4.43	-1.20	55.19	35.41	27.62	36.83	42.99	43.02	65 dBA:	**47**	**51**
Heavy Trucks	81.16	-13.85	-4.43	-1.20	61.68	44.69	36.91	46.12	52.27	52.30	60 dBA:	**102**	**110**
				Total:	**64.67**	**58.37**	**56.91**	**52.21**	**60.12**	**60.65**	55 dBA:	**219**	**238**

Road Name: Alcosta Boulevard **Segment: South of Old Ranch Road**

Average Daily Traffic: 10819 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE				(Equiv. Lane Dist: 97.08 ft)						**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	-1.35	-4.43	-1.20	60.39	58.02	56.72	50.67	59.10	59.73	70 dBA:	**21**	**23**
Medium Trucks	76.31	-15.63	-4.43	-1.20	55.05	35.27	27.48	36.69	42.85	42.88	65 dBA:	**46**	**50**
Heavy Trucks	81.16	-13.99	-4.43	-1.20	61.54	44.55	36.77	45.98	52.13	52.16	60 dBA:	**100**	**108**
				Total:	**64.53**	**58.23**	**56.77**	**52.07**	**59.98**	**60.51**	55 dBA:	**215**	**233**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 WITH PROJECT CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Canyon Lakes Road **Segment: North of Bollinger Canyon Road**

Average Daily Traffic: 7525 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: 2-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 99.15 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-1.67	-4.56	-1.20	55.08	52.70	51.41	45.36	53.79	54.42	70 dBA:	**11**	**12**
Medium Trucks	73.11	-17.21	-4.56	-1.20	50.14	31.60	23.82	33.03	39.18	39.22	65 dBA:	**24**	**25**
Heavy Trucks	80.26	-14.32	-4.56	-1.20	60.18	43.19	35.40	44.61	50.77	50.80	60 dBA:	**51**	**55**
				Total:	**61.66**	**53.19**	**51.52**	**48.15**	**55.64**	**56.08**	55 dBA:	**110**	**118**

Road Name: Doughterty Road **Segment: South of Crow Canyon Road**

Average Daily Traffic: 19084 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	1.37	-4.08	-1.20	63.44	61.32	60.01	54.00	62.42	63.04	70 dBA:	**31**	**35**
Medium Trucks	76.31	-15.29	-4.08	-1.20	55.74	33.91	39.93	21.64	34.78	37.53	65 dBA:	**68**	**74**
Heavy Trucks	81.16	-19.83	-4.08	-1.20	56.05	30.70	27.30	31.95	38.15	38.24	60 dBA:	**145**	**160**
				Total:	**64.75**	**61.33**	**60.05**	**54.03**	**62.44**	**63.07**	55 dBA:	**313**	**345**

Road Name: Doughterty Road **Segment: North of Bollinger Canyon Road**

Average Daily Traffic: 32384 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	3.42	-4.08	-1.20	65.49	63.12	61.83	55.77	64.21	64.84	70 dBA:	**47**	**51**
Medium Trucks	76.31	-10.87	-4.08	-1.20	60.16	40.37	32.59	41.80	47.95	47.99	65 dBA:	**101**	**110**
Heavy Trucks	81.16	-9.23	-4.08	-1.20	66.65	49.66	41.87	51.08	57.24	57.27	60 dBA:	**218**	**237**
				Total:	**69.64**	**63.33**	**61.88**	**57.17**	**65.09**	**65.61**	55 dBA:	**470**	**510**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 WITH PROJECT CONDITIONS | **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Doughterty Road **Segment: North of Old Ranch Road**

Average Daily Traffic: 24955 Vehicles | Vehicle Speed: 40 MPH | Vehicle Mix: 1 | Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	2.28	-4.08	-1.20	64.36	61.99	60.70	54.64	63.07	63.70	70 dBA:	**40**	**43**
Medium Trucks	76.31	-12.00	-4.08	-1.20	59.03	39.24	31.46	40.67	46.82	46.85	65 dBA:	**85**	**92**
Heavy Trucks	81.16	-10.36	-4.08	-1.20	65.51	48.52	40.74	49.95	56.10	56.14	60 dBA:	**183**	**199**
				Total:	**68.51**	**62.20**	**60.75**	**56.04**	**63.95**	**64.48**	55 dBA:	**395**	**429**

Road Name: Doughterty Road **Segment: South of Old Ranch Road**

Average Daily Traffic: 26374 Vehicles | Vehicle Speed: 40 MPH | Vehicle Mix: 1 | Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	2.52	-4.08	-1.20	64.60	62.23	60.94	54.88	63.31	63.94	70 dBA:	**41**	**44**
Medium Trucks	76.31	-11.76	-4.08	-1.20	59.27	39.48	31.70	40.91	47.06	47.10	65 dBA:	**88**	**96**
Heavy Trucks	81.16	-10.12	-4.08	-1.20	65.75	48.76	40.98	50.19	56.34	56.38	60 dBA:	**190**	**206**
				Total:	**68.75**	**62.44**	**60.99**	**56.28**	**64.19**	**64.72**	55 dBA:	**410**	**445**

Road Name: Crow Canyon Road **Segment: West of Bollinger Canyon Road**

Average Daily Traffic: 26868 Vehicles | Vehicle Speed: 40 MPH | Vehicle Mix: 1 | Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	2.60	-4.43	-1.20	64.34	61.97	60.67	54.62	63.05	63.68	70 dBA:	**39**	**43**
Medium Trucks	76.31	-11.68	-4.43	-1.20	59.00	39.22	31.44	40.64	46.80	46.83	65 dBA:	**85**	**92**
Heavy Trucks	81.16	-10.04	-4.43	-1.20	65.49	48.50	40.72	49.93	56.08	56.12	60 dBA:	**183**	**198**
				Total:	**68.48**	**62.18**	**60.72**	**56.02**	**63.93**	**64.46**	55 dBA:	**394**	**427**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 WITH PROJECT CONDITIONS **Project Name: San Ramon City Center**

Site Conditions: Soft

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Road Name: Crow Canyon Road **Segment: East of Bollinger Canyon Road**

Average Daily Traffic: 25154 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	2.32	-4.08	-1.20	64.40	62.02	60.73	54.68	63.11	63.74	70 dBA:	**40**	**43**
Medium Trucks	76.31	-11.97	-4.08	-1.20	59.06	39.27	31.49	40.70	46.86	46.89	65 dBA:	**86**	**93**
Heavy Trucks	81.16	-10.33	-4.08	-1.20	65.55	48.56	40.78	49.98	56.14	56.17	60 dBA:	**184**	**200**
				Total:	**68.54**	**62.24**	**60.78**	**56.07**	**63.99**	**64.52**	55 dBA:	**397**	**431**

Road Name: Crow Canyon Road **Segment: West of San Ramon Valley Boulevard**

Average Daily Traffic: 34454 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	3.68	-4.08	-1.20	65.76	63.39	62.10	56.04	64.47	65.11	70 dBA:	**49**	**53**
Medium Trucks	76.31	-10.60	-4.08	-1.20	60.43	40.64	32.86	42.07	48.22	48.26	65 dBA:	**106**	**115**
Heavy Trucks	81.16	-8.96	-4.08	-1.20	66.91	49.92	42.14	51.35	57.51	57.54	60 dBA:	**228**	**247**
				Total:	**69.91**	**63.60**	**62.15**	**57.44**	**65.35**	**65.88**	55 dBA:	**490**	**531**

Road Name: Crow Canyon Road **Segment: West of Camino Ramon**

Average Daily Traffic: 45936 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 8-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 86.02 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	4.93	-3.64	-1.20	67.46	65.08	63.79	57.74	66.17	66.80	70 dBA:	**64**	**69**
Medium Trucks	76.31	-9.35	-3.64	-1.20	62.12	42.33	34.55	43.76	49.91	49.95	65 dBA:	**137**	**148**
Heavy Trucks	81.16	-7.71	-3.64	-1.20	68.61	51.62	43.84	53.04	59.20	59.23	60 dBA:	**295**	**320**
				Total:	**71.60**	**65.30**	**63.84**	**59.13**	**67.05**	**67.58**	55 dBA:	**636**	**689**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 WITH PROJECT CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Crow Canyon Road **Segment: East of Camino Ramon**

Average Daily Traffic: 42524 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 8-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE				(Equiv. Lane Dist: 86.02 ft)						**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	4.60	-3.64	-1.20	67.12	64.75	63.46	57.40	65.83	66.46	70 dBA:	**60**	**65**
Medium Trucks	76.31	-9.69	-3.64	-1.20	61.79	42.00	34.22	43.43	49.58	49.61	65 dBA:	**130**	**141**
Heavy Trucks	81.16	-8.05	-3.64	-1.20	68.27	51.28	43.50	52.71	58.86	58.90	60 dBA:	**280**	**304**
				Total:	**71.26**	**64.96**	**63.50**	**58.80**	**66.71**	**67.24**	55 dBA:	**604**	**655**

Road Name: Crow Canyon Road **Segment: East of Alcosta Boulevard**

Average Daily Traffic: 41468 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE				(Equiv. Lane Dist: 92.08 ft)						**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	4.49	-4.08	-1.20	66.57	64.20	62.90	56.85	65.28	65.91	70 dBA:	**55**	**60**
Medium Trucks	76.31	-9.80	-4.08	-1.20	61.23	41.45	33.66	42.87	49.03	49.06	65 dBA:	**119**	**130**
Heavy Trucks	81.16	-8.16	-4.08	-1.20	67.72	50.73	42.95	52.16	58.31	58.34	60 dBA:	**257**	**279**
				Total:	**70.71**	**64.41**	**62.95**	**58.25**	**66.16**	**66.69**	55 dBA:	**555**	**601**

Road Name: Crow Canyon Road **Segment: West of Dougherty Road**

Average Daily Traffic: 25233 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE				(Equiv. Lane Dist: 92.08 ft)						**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	2.33	-4.08	-1.20	64.41	62.04	60.74	54.69	63.12	63.75	70 dBA:	**40**	**43**
Medium Trucks	76.31	-11.96	-4.08	-1.20	59.08	39.29	31.51	40.71	46.87	46.90	65 dBA:	**86**	**93**
Heavy Trucks	81.16	-10.32	-4.08	-1.20	65.56	48.57	40.79	50.00	56.15	56.19	60 dBA:	**185**	**200**
				Total:	**68.55**	**62.25**	**60.79**	**56.09**	**64.00**	**64.53**	55 dBA:	**398**	**432**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 WITH PROJECT CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Crow Canyon Road **Segment: East of Dougherty Road**

Average Daily Traffic: 36209 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	3.90	-4.08	-1.20	65.98	63.61	62.31	56.26	64.69	65.32	70 dBA:	**51**	**55**
Medium Trucks	76.31	-10.39	-4.08	-1.20	60.64	40.86	33.07	42.28	48.44	48.47	65 dBA:	**109**	**118**
Heavy Trucks	81.16	-8.75	-4.08	-1.20	67.13	50.14	42.36	51.57	57.72	57.76	60 dBA:	**235**	**255**
				Total:	**70.12**	**63.82**	**62.36**	**57.66**	**65.57**	**66.10**	55 dBA:	**507**	**549**

Road Name: Norris Canyon Road **Segment: West of Bollinger Canyon Road**

Average Daily Traffic: 6856 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: 2-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 99.15 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-2.08	-4.56	-1.20	54.67	52.30	51.01	44.95	53.38	54.01	70 dBA:	**10**	**11**
Medium Trucks	73.11	-17.61	-4.56	-1.20	49.74	31.20	23.42	32.62	38.78	38.81	65 dBA:	**22**	**24**
Heavy Trucks	80.26	-14.73	-4.56	-1.20	59.77	42.78	35.00	44.21	50.36	50.40	60 dBA:	**48**	**51**
				Total:	**61.26**	**52.79**	**51.12**	**47.74**	**55.24**	**55.67**	55 dBA:	**104**	**111**

Road Name: Norris Canyon Road **Segment: West of San Ramon Valley Boulevard**

Average Daily Traffic: 12501 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	0.11	-4.43	-1.20	59.59	57.47	56.16	50.15	58.56	59.19	70 dBA:	**17**	**19**
Medium Trucks	74.83	-17.13	-4.43	-1.20	52.07	30.82	36.85	18.55	31.70	34.45	65 dBA:	**37**	**41**
Heavy Trucks	80.05	-21.08	-4.43	-1.20	53.34	27.99	24.59	29.23	35.43	35.53	60 dBA:	**81**	**89**
				Total:	**61.10**	**57.48**	**56.21**	**50.18**	**58.59**	**59.22**	55 dBA:	**174**	**191**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 WITH PROJECT CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Norris Canyon Road **Segment: West of Camino Ramon**

Average Daily Traffic: 13256 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	0.36	-4.43	-1.20	59.85	57.72	56.41	50.40	58.82	59.45	70 dBA:	**18**	**20**
Medium Trucks	74.83	-16.87	-4.43	-1.20	52.33	31.08	37.10	18.81	31.95	34.70	65 dBA:	**39**	**43**
Heavy Trucks	80.05	-20.83	-4.43	-1.20	53.59	28.24	24.84	29.49	35.69	35.78	60 dBA:	**84**	**92**
				Total:	**61.35**	**57.74**	**56.47**	**50.44**	**58.85**	**59.48**	55 dBA:	**181**	**199**

Road Name: Bishop Drive **Segment: West of Sunset Drive**

Average Daily Traffic: 6478 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-2.75	-4.43	-1.20	56.74	54.62	53.30	47.29	55.71	56.34	70 dBA:	**11**	**12**
Medium Trucks	74.83	-19.98	-4.43	-1.20	49.22	27.97	33.99	15.70	28.84	31.59	65 dBA:	**24**	**27**
Heavy Trucks	80.05	-23.94	-4.43	-1.20	50.48	25.13	21.73	26.38	32.58	32.67	60 dBA:	**52**	**57**
				Total:	**58.24**	**54.63**	**53.36**	**47.33**	**55.74**	**56.37**	55 dBA:	**112**	**123**

Road Name: Bishop Drive **Segment: West of Camino Ramon**

Average Daily Traffic: 9565 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-1.05	-4.43	-1.20	58.43	56.31	54.99	48.98	57.40	58.03	70 dBA:	**15**	**16**
Medium Trucks	74.83	-18.29	-4.43	-1.20	50.91	29.66	35.68	17.39	30.53	33.29	65 dBA:	**31**	**34**
Heavy Trucks	80.05	-22.25	-4.43	-1.20	52.17	26.82	23.42	28.07	34.27	34.37	60 dBA:	**67**	**74**
				Total:	**59.93**	**56.32**	**55.05**	**49.02**	**57.43**	**58.06**	55 dBA:	**145**	**160**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 WITH PROJECT CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Bishop Drive **Segment: East of Camino Ramon**

Average Daily Traffic: 12707 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	0.18	-4.43	-1.20	59.66	57.54	56.23	50.22	58.64	59.26	70 dBA:	**18**	**19**
Medium Trucks	74.83	-17.06	-4.43	-1.20	52.15	30.90	36.92	18.62	31.77	34.52	65 dBA:	**38**	**42**
Heavy Trucks	80.05	-21.01	-4.43	-1.20	53.41	28.06	24.66	29.31	35.50	35.60	60 dBA:	**81**	**90**
				Total:	**61.17**	**57.56**	**56.28**	**50.25**	**58.67**	**59.30**	55 dBA:	**176**	**193**

Road Name: Bollinger Canyon Road **Segment: West of San Ramon Valley Boulevard**

Average Daily Traffic: 17429 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	0.97	-4.43	-1.20	62.71	60.58	59.27	53.26	61.68	62.31	70 dBA:	**28**	**31**
Medium Trucks	76.31	-15.69	-4.43	-1.20	55.00	33.17	39.19	20.90	34.04	36.80	65 dBA:	**60**	**66**
Heavy Trucks	81.16	-20.22	-4.43	-1.20	55.31	29.96	26.56	31.21	37.41	37.51	60 dBA:	**130**	**143**
				Total:	**64.02**	**60.60**	**59.32**	**53.29**	**61.70**	**62.33**	55 dBA:	**280**	**308**

Road Name: Bollinger Canyon Road **Segment: West of Sunset Drive**

Average Daily Traffic: 69306 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 8-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 86.02 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	6.72	-3.64	-1.20	69.24	66.87	65.58	59.52	67.95	68.58	70 dBA:	**84**	**91**
Medium Trucks	76.31	-7.57	-3.64	-1.20	63.91	44.12	36.34	45.55	51.70	51.73	65 dBA:	**180**	**195**
Heavy Trucks	81.16	-5.93	-3.64	-1.20	70.39	53.40	45.62	54.83	60.98	61.02	60 dBA:	**388**	**421**
				Total:	**73.39**	**67.08**	**65.63**	**60.92**	**68.83**	**69.36**	55 dBA:	**836**	**907**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 WITH PROJECT CONDITIONS **Project Name: San Ramon City Center**

Vehicle Type	Vehicle Mix (Arterial) Day	Evening	Night	Daily	Vehicle Mix (Collector or local) Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Bollinger Canyon Road **Segment: West of Camino Ramon**
Average Daily Traffic: 50619 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 8-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 86.02 ft)											**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**									
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL			Ldn	CNEL
Automobiles	67.36	5.36	-3.64	-1.20	67.88	65.51	64.21	58.16	66.59	67.22		70 dBA:	**68**	**74**
Medium Trucks	76.31	-8.93	-3.64	-1.20	62.54	42.76	34.97	44.18	50.34	50.37		65 dBA:	**146**	**158**
Heavy Trucks	81.16	-7.29	-3.64	-1.20	69.03	52.04	44.26	53.47	59.62	59.65		60 dBA:	**315**	**341**
				Total:	**72.02**	**65.72**	**64.26**	**59.55**	**67.47**	**68.00**		55 dBA:	**678**	**735**

Road Name: Bollinger Canyon Road **Segment: East of Camino Ramon**
Average Daily Traffic: 39659 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 8-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 86.02 ft)											**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**									
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL			Ldn	CNEL
Automobiles	67.36	4.30	-3.64	-1.20	66.82	64.45	63.15	57.10	65.53	66.16		70 dBA:	**58**	**62**
Medium Trucks	76.31	-9.99	-3.64	-1.20	61.48	41.70	33.91	43.12	49.28	49.31		65 dBA:	**124**	**135**
Heavy Trucks	81.16	-8.35	-3.64	-1.20	67.97	50.98	43.20	52.41	58.56	58.59		60 dBA:	**267**	**290**
				Total:	**70.96**	**64.66**	**63.20**	**58.50**	**66.41**	**66.94**		55 dBA:	**576**	**625**

Road Name: Bollinger Canyon Road **Segment: East of Bishop Ranch East**
Average Daily Traffic: 49178 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 8-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 86.02 ft)											**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**									
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL			Ldn	CNEL
Automobiles	67.36	5.23	-3.64	-1.20	67.75	65.38	64.09	58.03	66.46	67.09		70 dBA:	**67**	**72**
Medium Trucks	76.31	-9.06	-3.64	-1.20	62.42	42.63	34.85	44.06	50.21	50.24		65 dBA:	**143**	**155**
Heavy Trucks	81.16	-7.42	-3.64	-1.20	68.90	51.91	44.13	53.34	59.49	59.53		60 dBA:	**309**	**335**
				Total:	**71.90**	**65.59**	**64.14**	**59.43**	**67.34**	**67.87**		55 dBA:	**665**	**721**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 WITH PROJECT CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Bollinger Canyon Road **Segment: East of Market**

Average Daily Traffic: 42737 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 8-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 86.02 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	4.62	-3.64	-1.20	67.14	64.77	63.48	57.42	65.85	66.48	70 dBA:	**61**	**66**
Medium Trucks	76.31	-9.67	-3.64	-1.20	61.81	42.02	34.24	43.45	49.60	49.64	65 dBA:	**130**	**142**
Heavy Trucks	81.16	-8.03	-3.64	-1.20	68.29	51.30	43.52	52.73	58.88	58.92	60 dBA:	**281**	**305**
				Total:	**71.29**	**64.98**	**63.53**	**58.82**	**66.73**	**67.26**	55 dBA:	**606**	**657**

Road Name: Bollinger Canyon Road **Segment: East of Alcosta Boulevard**

Average Daily Traffic: 43533 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	4.70	-4.08	-1.20	66.78	64.41	63.11	57.06	65.49	66.12	70 dBA:	**57**	**62**
Medium Trucks	76.31	-9.59	-4.08	-1.20	61.44	41.66	33.88	43.08	49.24	49.27	65 dBA:	**123**	**134**
Heavy Trucks	81.16	-7.95	-4.08	-1.20	67.93	50.94	43.16	52.37	58.52	58.56	60 dBA:	**266**	**288**
				Total:	**70.92**	**64.62**	**63.16**	**58.46**	**66.37**	**66.90**	55 dBA:	**573**	**621**

Road Name: Bollinger Canyon Road **Segment: East of Canyon Lakes Drive**

Average Daily Traffic: 30615 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	3.17	-4.08	-1.20	65.25	62.88	61.58	55.53	63.96	64.59	70 dBA:	**45**	**49**
Medium Trucks	76.31	-11.12	-4.08	-1.20	59.92	40.13	32.35	41.55	47.71	47.74	65 dBA:	**98**	**106**
Heavy Trucks	81.16	-9.48	-4.08	-1.20	66.40	49.41	41.63	50.84	56.99	57.03	60 dBA:	**210**	**228**
				Total:	**69.39**	**63.09**	**61.63**	**56.93**	**64.84**	**65.37**	55 dBA:	**453**	**491**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 WITH PROJECT CONDITIONS **Project Name: San Ramon City Center**

Site Conditions: Soft

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Road Name: Bollinger Canyon Road **Segment: West of Dougherty Road**

Average Daily Traffic: 29534 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	3.02	-4.08	-1.20	65.09	62.72	61.43	55.37	63.81	64.44	70 dBA:	**44**	**48**
Medium Trucks	76.31	-11.27	-4.08	-1.20	59.76	39.97	32.19	41.40	47.55	47.59	65 dBA:	**95**	**103**
Heavy Trucks	81.16	-9.63	-4.08	-1.20	66.25	49.26	41.47	50.68	56.84	56.87	60 dBA:	**205**	**223**
				Total:	**69.24**	**62.93**	**61.48**	**56.77**	**64.69**	**65.21**	55 dBA:	**442**	**480**

Road Name: Bollinger Canyon Road **Segment: East of Dougherty Road**

Average Daily Traffic: 28197 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 6-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	2.81	-4.08	-1.20	64.89	62.52	61.23	55.17	63.60	64.24	70 dBA:	**43**	**46**
Medium Trucks	76.31	-11.47	-4.08	-1.20	59.56	39.77	31.99	41.20	47.35	47.39	65 dBA:	**92**	**100**
Heavy Trucks	81.16	-9.83	-4.08	-1.20	66.04	49.05	41.27	50.48	56.64	56.67	60 dBA:	**199**	**216**
				Total:	**69.04**	**62.73**	**61.28**	**56.57**	**64.48**	**65.01**	55 dBA:	**429**	**465**

Road Name: Montevideo Drive **Segment: East of San Ramon Valley Boulevard**

Average Daily Traffic: 18280 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: 2-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 99.15 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	2.18	-4.56	-1.20	58.93	56.56	55.26	49.21	57.64	58.27	70 dBA:	**20**	**21**
Medium Trucks	73.11	-13.36	-4.56	-1.20	54.00	35.46	27.68	36.88	43.04	43.07	65 dBA:	**43**	**46**
Heavy Trucks	80.26	-10.47	-4.56	-1.20	64.03	47.04	39.26	48.47	54.62	54.66	60 dBA:	**93**	**99**
				Total:	**65.52**	**57.05**	**55.38**	**52.00**	**59.50**	**59.93**	55 dBA:	**199**	**213**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2020 WITH PROJECT CONDITIONS **Project Name: San Ramon City Center**

	Vehicle Mix (Arterial)				Vehicle Mix (Collector or local)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%
Medium Trucks	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%	0.35%	0.04%	0.35%	0.74%

Site Conditions: Soft

Road Name: Montevideo Drive **Segment: West of Alcosta Boulevard**

Average Daily Traffic: 7151 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 2 Roadway Classification: 2-lane Collector

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 99.15 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-1.65	-4.56	-1.20	55.10	52.98	51.67	45.65	54.07	54.70	70 dBA:	**9**	**10**
Medium Trucks	73.11	-19.55	-4.56	-1.20	47.80	27.22	33.24	14.94	28.09	30.84	65 dBA:	**19**	**21**
Heavy Trucks	80.26	-22.84	-4.56	-1.20	51.66	26.31	22.91	27.56	33.75	33.85	60 dBA:	**41**	**45**
				Total:	**57.25**	**53.00**	**51.73**	**45.72**	**54.12**	**54.75**	55 dBA:	**87**	**96**

Road Name: Old Ranch Road **Segment: East of Alcosta Boulevard**

Average Daily Traffic: 9489 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	-1.67	-4.43	-1.20	60.07	57.94	56.63	50.62	59.04	59.66	70 dBA:	**19**	**21**
Medium Trucks	76.31	-18.33	-4.43	-1.20	52.36	30.53	36.55	18.26	31.40	34.16	65 dBA:	**40**	**44**
Heavy Trucks	81.16	-22.86	-4.43	-1.20	52.67	27.32	23.92	28.57	34.77	34.87	60 dBA:	**87**	**95**
				Total:	**61.38**	**57.95**	**56.68**	**50.65**	**59.06**	**59.69**	55 dBA:	**187**	**205**

Road Name: Old Ranch Road **Segment: West of Dougherty Road**

Average Daily Traffic: 7269 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-lane Arterial

	NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 97.08 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	-3.07	-4.43	-1.20	58.66	56.29	55.00	48.94	57.37	58.00	70 dBA:	**16**	**18**
Medium Trucks	76.31	-17.36	-4.43	-1.20	53.33	33.54	25.76	34.97	41.12	41.15	65 dBA:	**35**	**38**
Heavy Trucks	81.16	-15.72	-4.43	-1.20	59.81	42.82	35.04	44.25	50.40	50.44	60 dBA:	**76**	**83**
				Total:	**62.80**	**56.50**	**55.04**	**50.34**	**58.25**	**58.78**	55 dBA:	**165**	**179**

Appendix F: Project Vicinity Traffic and Parking Lot Noise Impact Calculations

San Ramon City Center
Assessed receiver levels - Existing

Name	Usage	CNEL dB(A)	Lday dB(A)	Leve dB(A)	Lnight dB(A)	
Iron Horse Middle	GR	44.2	40.3	43.46	47.09	
Site 3	GR	68.2	65.2	68.34	70.55	
Site 4	GR	71.0	65.9	68.08	74.58	
Site 5	GR	56.4	52.9	56.72	58.87	
Site 6	GR	71.8	65.4	70.22	75.41	
Site A	GR	55.9	51.2	53.77	59.30	
Site B	GR	58.5	55.3	58.90	60.93	

San Ramon City Center
Assessed receiver levels - 2020 Base

Name	Floor	X	Dir	Y	Z	CNEL	Lday	Leve	Lnight
		m		m	m	dB(A)	dB(A)	dB(A)	dB(A)
East Apartment1	1. Floor	885.0	W	242.5	132.6	51.4	47.5	50.4	54.4
	2. Floor				135.4	52.5	48.4	51.3	55.5
East Apartment2	1. Floor	889.6	W	133.9	131.9	50.1	46.3	49.5	52.9
	2. Floor				134.7	51.2	47.4	50.5	54.2
East Singl-family1	1. Floor	884.1	W	75.3	131.9	49.9	46.1	49.5	52.7
	2. Floor				134.7	51.0	47.3	50.5	53.9
East Single-family2	1. Floor	896.4	W	44.4	131.8	49.0	45.4	48.8	51.7
	2. Floor				134.6	50.2	46.5	49.9	52.9
East Single-family3	1. Floor	898.4	W	12.0	131.7	49.8	46.1	49.4	52.6
	2. Floor				134.5	50.8	47.0	50.3	53.6
Iron Horse Middle	1. Floor	1190.0		1230.0	138.5	44.7	40.8	43.9	47.7
Mariott Residence Inn 3	1. Floor	862.6	W	584.3	135.2	60.9	56.1	58.4	64.3
	2. Floor				138.0	61.4	56.5	58.9	64.9
Mariott Residence Inn 6	1. Floor	866.2	W	463.9	134.2	54.7	50.0	52.8	58.1
	2. Floor				137.0	56.1	51.4	54.0	59.5
South Single-family1	1. Floor	750.2	N	1.6	131.9	52.7	48.9	52.6	55.4
	2. Floor				134.7	53.5	49.7	53.3	56.3
South single-family2	1. Floor	642.2	N	-7.2	131.3	52.1	48.7	52.4	54.6
	2. Floor				134.1	53.6	50.2	53.6	56.1
South single-family3	1. Floor	424.5	N	-3.7	132.8	59.4	55.9	59.3	62.1
	2. Floor				135.6	59.7	56.2	59.5	62.4

San Ramon City Center
Assessed receiver levels - 2020 With Project

Name	Floor	X	Dir	Y	Z	CNEL	Lday	Leve	Lnight
		m		m	m	dB(A)	dB(A)	dB(A)	dB(A)
Building A1 South	1. Floor	396.7	S	772.7	140.5	59.1	55.6	58.3	61.9
	2. Floor				143.3	59.9	56.5	59.2	62.7
	3. Floor				146.1	60.8	57.3	60.1	63.6
	4. Floor				148.9	61.6	58.1	60.9	64.4
	5. Floor				151.7	62.9	59.3	62.1	65.8
Building B North	1. Floor	511.8	N	855.0	140.0	61.3	58.0	60.7	64.0
	2. Floor				142.8	61.7	58.4	61.1	64.4
	3. Floor				145.6	62.2	58.9	61.6	64.9
	4. Floor				148.4	62.7	59.4	62.1	65.4
	5. Floor				151.2	62.9	59.6	62.4	65.6
Building B West	1. Floor	503.2	W	815.9	137.8	57.4	53.6	56.2	60.4
	2. Floor				140.6	57.6	53.8	56.4	60.6
	3. Floor				143.4	57.7	53.9	56.5	60.7
	4. Floor				146.2	57.7	54.0	56.5	60.7
	5. Floor				149.0	57.8	54.1	56.6	60.8
Building D2	1. Floor	482.6	E	664.5	140.2	65.8	61.1	63.4	69.3
	2. Floor				142.9	66.1	61.5	63.8	69.5
	3. Floor				145.7	66.2	61.6	63.9	69.6
	4. Floor				148.5	66.3	61.7	64.0	69.7
	5. Floor				151.3	66.4	61.7	64.1	69.8
Building E1 West	1. Floor	617.3	W	835.7	139.9	62.6	59.2	61.7	65.5
	2. Floor				142.7	62.8	59.4	61.8	65.6
	3. Floor				145.5	63.0	59.5	62.0	65.8
	4. Floor				148.3	63.1	59.6	62.1	65.9
	5. Floor				151.1	63.3	59.8	62.3	66.1

San Ramon City Center
Assessed receiver levels - 2020 With Project

Name	Floor	X m	Dir	Y m	Z m	CNEL dB(A)	Lday dB(A)	Leve dB(A)	Lnight dB(A)
	6. Floor				153.9	63.3	59.9	62.4	66.2
Building F North	1. Floor	761.9	N	854.7	139.8	61.1	57.5	60.3	64.0
	2. Floor				142.5	61.3	57.6	60.4	64.1
	3. Floor				145.3	61.4	57.7	60.5	64.3
	4. Floor				148.1	61.5	57.9	60.7	64.4
	5. Floor				150.9	61.8	58.1	60.9	64.6
	6. Floor				153.7	61.9	58.3	61.1	64.8
	7. Floor				156.5	62.0	58.4	61.2	64.8
	8. Floor				159.3	61.9	58.3	61.1	64.8
	9. Floor				162.1	62.5	58.9	61.6	65.3
Building F West	1. Floor	732.9	W	848.3	139.8	61.4	57.7	61.1	64.1
	2. Floor				142.5	61.6	57.9	61.3	64.3
	3. Floor				145.3	61.8	58.1	61.5	64.5
	4. Floor				148.1	61.9	58.3	61.6	64.7
	5. Floor				150.9	62.1	58.5	61.8	64.9
	6. Floor				153.7	62.3	58.7	62.0	65.1
	7. Floor				156.5	62.3	58.7	62.0	65.1
	8. Floor				159.3	62.5	58.9	62.2	65.3
	9. Floor				162.1	63.0	59.4	62.6	65.8
Building G East	1. Floor	790.0	E	700.2	139.8	64.5	59.9	62.1	68.0
	2. Floor				142.5	64.8	60.2	62.4	68.2
	3. Floor				145.3	64.9	60.3	62.5	68.3
	4. Floor				148.1	64.8	60.2	62.5	68.2
	5. Floor				150.9	64.9	60.3	62.5	68.3
	6. Floor				153.7	64.8	60.2	62.4	68.1

Name	Floor	X m	Dir	Y m	Z m	CNEL dB(A)	Lday dB(A)	Leve dB(A)	Lnight dB(A)
	7. Floor				156.5	64.8	60.2	62.4	68.1
	8. Floor				159.3	64.7	60.2	62.4	68.1
	9. Floor				162.1	66.0	61.4	63.6	69.4
Building G South	1. Floor	761.2	S	673.6	139.8	68.5	63.6	65.8	72.0
	2. Floor				142.5	68.7	63.9	66.1	72.2
	3. Floor				145.3	68.8	64.0	66.2	72.3
	4. Floor				148.1	68.8	64.0	66.3	72.3
	5. Floor				150.9	68.9	64.1	66.4	72.4
	6. Floor				153.7	68.9	64.1	66.4	72.4
	7. Floor				156.5	68.9	64.2	66.4	72.4
	8. Floor				159.3	68.9	64.2	66.4	72.4
	9. Floor				162.1	69.0	64.3	66.6	72.5
Building G West	1. Floor	732.6	W	682.1	137.6	64.8	60.0	62.3	68.3
	2. Floor				140.3	65.0	60.2	62.5	68.5
	3. Floor				143.1	65.0	60.3	62.5	68.5
	4. Floor				145.9	65.0	60.2	62.5	68.4
	5. Floor				148.7	64.5	59.8	62.1	68.0
	6. Floor				151.5	65.1	60.4	62.8	68.5
	7. Floor				154.3	65.1	60.5	62.9	68.5
	8. Floor				157.1	65.2	60.6	63.0	68.6
	9. Floor				159.9	65.3	60.7	63.2	68.7
East Apartment1	1. Floor	885.0	W	242.5	132.6	55.9	52.6	56.1	58.4
	2. Floor				135.4	56.4	53.0	56.5	59.0
East Apartment2	1. Floor	889.6	W	133.9	131.9	53.5	50.2	53.8	56.0
	2. Floor				134.7	54.2	50.8	54.3	56.8

Name	Floor	X m	Dir	Y m	Z m	CNEL dB(A)	Lday dB(A)	Leve dB(A)	Lnight dB(A)
East Singl-family1	1. Floor	884.1	W	75.3	131.9	52.5	49.1	52.7	55.0
	2. Floor				134.7	53.2	49.8	53.3	55.8
East Single-family2	1. Floor	896.4	W	44.4	131.8	51.0	47.6	51.2	53.5
	2. Floor				134.6	51.9	48.5	52.0	54.5
East Single-family3	1. Floor	898.4	W	12.0	131.7	51.5	48.1	51.6	54.1
	2. Floor				134.5	52.3	48.8	52.2	54.9
Iron Horse Middle	1. Floor	1190.0		1230.0	138.5	43.8	40.0	43.2	46.7
Mariott Residence	1. Floor	862.6	W	584.3	135.2	61.7	56.8	59.0	65.2
	2. Floor				138.0	62.2	57.3	59.6	65.7
Mariott Residence	1. Floor	866.2	W	463.9	134.2	57.0	52.5	55.9	60.2
	2. Floor				137.0	58.2	53.7	57.2	61.4
South Single-family1	1. Floor	750.2	N	1.6	131.9	53.9	50.2	54.0	56.5
	2. Floor				134.7	54.5	50.9	54.6	57.2
South single-family2	1. Floor	642.2	N	-7.2	131.3	53.0	49.7	53.3	55.4
	2. Floor				134.1	54.3	50.9	54.5	56.8
South single-family3	1. Floor	424.5	N	-3.7	132.8	59.7	56.2	59.5	62.4
	2. Floor				135.6	60.0	56.5	59.8	62.7

San Ramon City Center
source level parking lots - 2020 With Project

Parking lot	Number	Movings day car/h	Movings night car/h	Addition "Taktmax" dB	Addition P-Type dB	Addition lanes dB	TL	Lw day dB(A)	Lw night dB(A)
Bishop Ranch 3 Southern Parking	1000.00	5.00	1.00		0.00	0.00		100.0	93.0
At&T SE Parking Lot	900.00	5.00	1.00		0.00	0.00		99.5	92.5
AT&T S Parking Lot	500.00	5.00	1.00		0.00	0.00		97.0	90.0
Bishop Ranch Shops Parking Lot S	550.00	31.00	2.00		0.00	0.00		105.3	93.4
Bishop Ranch Shops N Parking Lot	150.00	31.00	2.00		0.00	0.00		99.7	87.8
Chevron NE Parking Lot	500.00	11.00	1.00		0.00	0.00		100.4	90.0
Chevron N Parking Lot	500.00	12.00	1.00		0.00	0.00		100.8	90.0
Bishop Ranch 1 S Parking Lot	1000.00	4.00	1.00		0.00	0.00		99.0	93.0
Bishop Ranch 1A West	200.00	6.00	1.00		0.00	0.00		93.8	86.0
Chevron East	300.00	5.00	1.00		0.00	0.00		94.8	87.8
Chevron Southeast	600.00	5.00	2.00		0.00	0.00		97.8	93.8
Bishop 1 East Parking Structure	1300.00	5.00	1.00		0.00	0.00		101.1	94.1
Block D Parking	500.00	6.00	2.00		0.00	0.00		97.8	93.0
Block E Parking	600.00	6.00	2.00		0.00	0.00		98.6	93.8
Bishop Ranch 1A Shared Lot	450.00	7.00	2.00		0.00	0.00		98.0	92.5
Bishop 1 Parking Structure	2119.00	5.00	1.00		0.00	0.00		103.3	96.3
City Hall Parking Structure	422.00	7.00	2.00		0.00	0.00		97.7	92.3
Bishop 1A Visitor Lot	120.00	10.00	2.00		0.00	0.00		93.8	86.8
Bishop 1A Southwest Lot	150.00	7.00	1.50		0.00	0.00		93.2	86.5
Block A Parking	800.00	6.00	2.00		0.00	0.00		99.8	95.0

Appendix H: Public Services Letters

Michael Brandman Associates

ENVIRONMENTAL SERVICES • PLANNING • NATURAL RESOURCES MANAGEMENT

May 17, 2007

Craig Bowen, Fire Chief
San Ramon Valley Fire Protection District
1500 Bollinger Canyon Road
San Ramon, CA 94583

Subject: San Ramon City Center - Environmental Impact Report

Dear Chief Bowen:

Michael Brandman Associates has been retained by the City of San Ramon to prepare an Environmental Impact Report (EIR) for the proposed San Ramon City Center project. As part of the environmental review process, we are consulting with public service providers to determine potential project impacts on their ability to deliver services to the community. A Project Description and graphics are enclosed to provide you with an overview of the proposed project.

Enclosed with this letter is a questionnaire containing several questions concerning potential impacts on the San Ramon Valley Fire Protection District. We would appreciate it if you or one of your staff would complete the questionnaire on Fire District letterhead and return it to us by Friday, June 8, 2007. We acknowledge that the Fire District has been engaged in the City Center planning process, and the purpose of this inquiry is to “close the loop” in terms of ensuring that the EIR accurately and completely reflects the Fire District’s existing and future resources and its potential concerns about the project.

If you have any questions or concerns about this letter or project, please call me at (925) 830-2733.

Sincerely,

Grant Gruber, Assistant Project Manager
Michael Brandman Associates
Bishop Ranch 3
2633 Camino Ramon, Suite 460
San Ramon CA 94583

Enclosures: Questionnaire
Project Description
Context Plan
Illustrative Site Plan
Land Use Diagram

San Ramon Valley Fire Protection District Questionnaire

1. The narrative below has been compiled from information provided on the San Ramon Valley Fire Protection District website. Please confirm its accuracy. Where information is incorrect or incomplete, please provide the correct or additional information.

Fire Protection and Emergency Medical Services

The San Ramon Valley Fire Protection District (Fire District) provides fire protection and emergency medical services (EMS) to a 155-square-mile area encompassing the City of San Ramon, the Town of Danville, and the unincorporated communities of Alamo, Blackhawk, Diablo, Southern Morgan Territory, and Tassajara Valley. The Fire District is an autonomous special district governed by an elected Board of Directors. The Fire District is headquartered at 1500 Bollinger Canyon Road, San Ramon, adjacent to Station No. 38.

Stations and Facilities

The Fire District operates 10 fire stations, including four in San Ramon. The four San Ramon stations, along with apparatus and staffing, are summarized in Table 1. The Fire District has plans to relocate Station No. 36 from 6100 Tassajara Road to the corner of Camino Tassajara and Lusitano. Construction is scheduled to begin in September 2007 and the station is expected to open in Fall 2008.

Table 1: Fire Station Summary

Station No.	Address	Distance From Project Site	Apparatus		Staffing
			Quantity	Equipment	
34	12599 Alcosta Boulevard	0.7 mile	1	Type 1 Engines	Two Company station (6 personnel) cross staff equipment
			1	Ladder Truck	
			1	Type 3 Engine	
			1	Ambulance	
			1	Urban Search and Rescue Vehicle	

Table 1 (Cont.): Fire Station Summary

Station No.	Address	Distance From Project Site	Apparatus		Staffing
			Quantity	Equipment	
38	1600 Bollinger Canyon Road	2.7 miles	1	Type 1 Engine	One Company station (3 personnel) cross staff equipment
			1	Ambulance	
			1	Water Tender	
39	9399 Fircrest Lane	3.4 miles	1	Type 1 Engine	One Company station (5 personnel) cross staff equipment
			1	Ambulance	
			1	Type 3 Engine	
30	11445 Windemere Parkway	3.6 miles	1	Type 1 Engine	Single company station (3 personnel) cross staff equipment. Station is designed to accommodate two companies
			1	Type 3 Engine	
Source: San Ramon Valley Fire Protection District, 2007.					

The City Center site will also be served by emergency personnel responding from Stations 31 and 35 in Danville. In addition, the Fire District operates its own Communications Center, located at Station 31 in Danville. The Communications Center is staffed with two dispatchers, one supervising dispatcher, and a mobile command post supported by 11 volunteers.

Apparatus

The Fire District's urban apparatus is summarized in Table 2.

Table 2: Urban Apparatus Summary

Apparatus	Quantity	Notes
Type 1 Engines	19	Equipped with Advanced Life Support emergency medical equipment (oxygen, defibrillator units, and medications)
Type 1 Ladder Trucks	3	Each truck equipped with a 100-foot ladder
Type 2 Ladder Truck	1	Truck equipped with a 55-foot ladder

Table 2 (Cont.): Urban Apparatus Summary

Apparatus	Quantity	Notes
Type 3 and Type 4 Engines	11	Type 3 Engines equipped with Advanced Life Support medical equipment; Assigned to Wildland Unit
Rescue Medic Ambulance Units	5	Equipped with Advanced Life Support medical equipment, Hurst tools, and rope rescue equipment
Reserve Ambulance Units	4	Can be placed into action immediately to cover maintenance needs or assist in large-scale incidents
Multi-Casualty Unit	1	Used for large-scale incidents
Breathing Support Unit	1	Used to fill high- and low-pressure air bottles; also equipped with large pop-up scene lights, salvage equipment, and medical supplies
Hazardous Materials Modular Response Vehicle	1	Equipped with hazardous material detection equipment and supplies and computer-linked to hazardous material information sources
Urban Search and Rescue Vehicle	1	Equipped with ropes, hardware and rescue baskets
Source: San Ramon Valley Fire Protection District, 2007.		

Staffing

The Fire District employs 182 personnel, in addition to approximately 50 reserves. Of these, 148 personnel are assigned to the Suppression Division, which serves as the first responder to most calls for service. Suppression personnel include the following:

- 3 battalion chiefs

- 39 captains
- 42 engineers
- 55 firefighters (50 of whom are paramedics)
- 9 dispatchers

Paid personnel staff nine of the Fire District's 10 stations, with reserves staffing Station 37 in Southern Morgan Territory. Reserves also augment paid staffing at the other stations. All Suppression Division personnel, excluding dispatchers, are trained Emergency Medical Technicians 1As (EMT-1As) and State Certified Firefighter I and II with specialized defibrillator training. At least one member assigned to each company is a certified single provider Advanced Life Support Paramedic.

The Fire District currently staffs 13 companies on a daily basis and has plans to add an additional ALS Ambulance with two personnel in July of 2007. These personnel cross-staff nine engines, three trucks, five transport Advanced Life Support ambulances and the other specialized vehicles based upon the type of call.

Specialized Units

Rescue Team
The Rescue Team consists of approximately 30 members. The Rescue Team is a proactive organization whose main purposes are to provide immediately available, high-quality technical rescue resources managed by skilled and dedicated personnel; and to provide Fire District-wide, rescue-related training. The team is based at Station 34 on Alcosta Boulevard because of its central location and proximity to Interstate 680.

Hazardous Materials Team
The Hazmat Team is based out of Station 35 in Blackhawk and is made up of 26 State Certified Hazardous Materials Technician/Specialists. The Hazmat Team is capable of specialized entry, chemical analysis, and hazard mitigation.

Response Times and Protocols

The Fire District's goal is an overall response time of 5 minutes 95 percent of the time. When the first units for a structure fire are dispatched from the 13 staffed emergency response companies, the three closest engines, a ladder truck and the shift Battalion Chief are automatically assigned. In addition, a rescue medic ambulance can be dispatched in the event one of the occupants of the structure or Fire District personnel needs medical assistance at the scene.

Performance

The Insurance Services Office (ISO) Public Protection Classification Program currently rates the Fire District a 2 on a scale of 1 to 10, with 1 being the highest possible rating and 10 being the lowest. The ISO rating measures individual fire protection agencies against a Fire Suppression Rating Schedule, which includes such criteria as facilities and support for handling and dispatching fire alarms, first-alarm response and initial attack, and adequacy of local water supply for fire-suppression purposes. The ISO ratings are subsequently used to establish fire insurance premiums. Only 5 percent of the more than 44,000 fire agencies in the United States receive an ISO 2 rating or higher.

2. Please provide the current average response times for first alarm calls for the Fire District as a whole, and for the four stations nearest the project site (Station Nos. 30, 34, 38, and 39).

For Fiscal Year 2005 – 2006 the average emergency response time for the District as a whole was 4 minutes 54 seconds.

The average response time for each station over the last four years is as follows:

30 5 minutes 05 seconds*
34 4 minutes 56 seconds*
38 4 minutes 48 seconds*
39 4 minutes 32 seconds*

* Includes response times to all emergency calls in the station area regardless of the location of the apparatus dispatched.

3. Please provide an estimate of the annual number of calls for service the proposed project would be expected generate. Please also provide an estimate by type of call (e.g., EMS, fire, etc.).

This information is not available at this time.

4. Please provide information about any mutual aid agreements the Fire District has with other agencies.

The District exchanges mutual aid with the four adjacent fire agencies and CALFIRE. During the 2005 – 2006 fiscal year we extended mutual aid 252 time and received it 45 times.

5. Please provide information about the residential and non-residential development fee schedule.

There are no development fees assessed by the fire district.

6. Please describe any significant challenges the proposed project may present to the Fire District. This includes concerns related to response times, staffing, apparatus, fire stations, etc. For any significant concerns, please describe what measures you would recommend to reduce the potential impact.

Please reference our NOP response letter to the City of San Ramon dated 5/1/07.

7. If a Needs Assessment or Municipal Service Review of the Fire District has recently been prepared, and if you are willing to provide us with a copy, it would be appreciated.

   There is no current Needs Assessment or Municipal Services Reviews.

8. Please feel free to provide any additional information you believe to be relevant to the proposed project.

Thank you for taking the time to respond to this questionnaire.

Please return the completed questionnaire on Fire District letterhead by June 8, 2007 to:

Michael Brandman Associates
Bishop Ranch 3
2633 Camino Ramon, Suite 460
San Ramon, CA 94583
Attn: Grant Gruber

Phone: (925) 830-2733
Fax: (925) 830-2715
E-mail: ggruber@brandman.com

San Ramon
CALIFORNIA
INCORPORATED 1983

CITY OF SAN RAMON

2222 CAMINO RAMON
SAN RAMON, CALIFORNIA 94583
PHONE: (925) 973-2500
WEB SITE: www.sanramon.ca.gov

June 5, 2007

Michael Brandman Associates
Bishop Ranch 3
2633 Camino Ramon, Suite 460
San Ramon, CA 94583
Attn: Grant Gruber

Dear Grant,

Below is the information you requested for the San Ramon City Center – Environmental Impact Report:

#1 Our 2006 Annual Report was delivered to your office. Should you have any questions regarding the information please feel free to contact me.

#2 Our current response times to all calls for service are meeting the guidelines set by the City. With the Police Department being located in the City Center the response times should decrease as the location is more centrally located within the city boundaries. Responses to calls for service within the City Center itself will definitely be quick based upon the location of the new Police Department.

#3 It is difficult to estimate the number of service calls the City Center Project would generate. However, based upon average calls for our City and its population I would estimate the City Center would generate 1500-2000 calls for service each year. This includes both the residential portion of the project and the commercial portions as well. By comparison, we responded to approximately 51,000 calls for service in 2006 for the entire City of San Ramon. Based on our averages 28% of the calls would be considered Priority and 72% Non-Priority calls for service.

#4 The facility itself should include the following:

- 12,000 – 15,000 sq. ft. Dedicated to the Police Department to accommodate 100 – 125 FTE's. Our current FTE is 76 and based upon the growth of the City 100-125 is projected by 2015.

- A lobby and front counter
- Administrative Offices to include a Police Records Bureau and Investigations Division
- Male and Female Locker Rooms with restroom and shower facilities
- A secure area for a Police Armory
- A secure evidence storage area
- A separate entrance for Police Personnel
- A discreet entrance to allow officers to bring arrested persons into the building for processing. This area should be in close proximity to the parking area to minimize the distance from the patrol vehicle to the entrance to the building.
- A large room (approximately 30'x30') for training and police briefings
- Secured parking for all police vehicles

The existing Police Building is extremely inadequate and the department is forced to lease additional space away from the current City Hall. The new building will allow for centralization and provide for better operations and public access.

#5 I do not foresee any alarming challenges that the project will create. Obviously any new development will require additional resources. As mentioned earlier, I believe that based on the location itself, response times will be improved. Additional staff will be necessary and I would project an additional four to five officers and two civilian parking enforcement personnel. When examining the challenges, the benefit of the project far outweighs any challenges.

#6 I do not deal with the developmental fee schedule and I am under the impression that this project is no different than any other project in the City. I see no need to make any changes to the fees.

Hopefully I have addressed the necessary information needed for your report. If you need further information please feel free to contact me at (925) 973-2701.

Sincerely,

Scott Holder

Scott Holder
Chief of Police
City of San Ramon

SAN RAMON VALLEY UNIFIED SCHOOL DISTRICT
2430 Camino Ramon, Suite 240, San Ramon, CA 94583
FACILITIES DEVELOPMENT
Office (925) 552-5986 FAX (925) 328-0560

June 19, 2007

Michael Brandman Associates
Bishop Ranch 3
2633 Camino Ramon, Suite 460
San Ramon, CA 94583

RE: San Ramon City Center – Environmental Impact Report

Thank you for the opportunity to provide some preliminary information regarding the potential impact of the San Ramon City Center project on the San Ramon Valley Unified School District.

San Ramon Valley Unified School District Questionnaire

Question 1*: The proposed project would include 487 high-density residential units, ranging in size from 750 to 2,000 square feet. Please provide estimated student generation rates for these residential units.*

Response: In May of 2007 the San Ramon Unified School District completed its *School Facilities Needs Analysis* as required by Government Code §65995.6, student generation factors were determined by developing a database of the addresses of new housing constructed in the District within the past five years, and matching these addresses to the addresses of enrolled students. The table below reflects the number of students expected to be generated by 487 high-density residential units.

Grade Level	Student Generation Factors For Multi-Family	Students Generated
K-5	.23	112
6-8	.04	19
9-12	.05	24
Total	**.33**	**155**

Question 2: *Please indicate what elementary, middle, and high schools would serve the proposed project. Also, please indicate if these schools would have adequate capacity to accommodate students from the proposed project.*

Response: Currently, the San Ramon City Center project is located within the Twin Creeks Elementary, Iron Horse Middle and California High school boundaries. There are a number of new and proposed residential developments that would also feed into these schools, namely the Faria Ranch, Chu property and Crow Canyon Specific Plan. If these new and proposed residential developments materialize they will significantly affect our ability to house students generated from these developments within the current boundaries. In order to accommodate the students being generated by these residential developments the District will need to reevaluate its current school boundaries.

The enrollment at Twin Creeks Elementary School as of May 2007 is 512 students with a master planned capacity of 540 students. Iron Horse has an enrollment of 920 students with a master planned capacity of 960 students and California High School has an enrollment of 2526 with a master planned capacity of 2400. With the build out of the above-mentioned projects, including City Center, the enrollment could potentially increase by 499 elementary, 100 middle and 133 high school students. Based on the current enrollments and master planned capacities these students could not be accommodated by their currently assigned schools.

Question 3: *Please provide information about how SRVUSD plans to accommodate additional enrollment generated by planned development within the District's boundaries. This includes information pertaining to the location and capacity of new or expanded schools and how SRVUSD plans to finance capital improvements.*

Response: As stated above, there is not enough capacity at the assigned resident schools to house students from all the new and proposed developments. Therefore, the District would likely consider boundary changes that will affect some of these developments. In some instances the students may be diverted to other schools in the district or portables/additions may be added to existing campuses to provide for additional housing. These portables/additions would be paid for out of developer fees collected by new residential and commercial development.

Question 4: *Please provide information about the residential and non-residential development fee schedule.*

Response: By rules and law underlying the collection of the basic statutory fees based on Government Code §65995 and Education Code§17620, districts can currently collect $2.63 per square foot for residential construction and $0.42 for commercial/industrial and senior housing, these fees are referred to as Level 1 Fees. The San Ramon Valley Unified School District has met the statutory eligibility requirements to collect Level 2 Fees by submitting a timely application to the State Allocation Board for new construction funding, and by satisfying two of four cost-reduction options required as of January 2000. As stated in the *School Facilities Needs Analysis* (dated May 2007), the District has satisfied the requirements under Government Code §65995.5 and §65995.6 to charge the Level 2 Fees and therefore, on June 26, if approved by the Board of Education, the Level 2 Fees for the SRVUSD will be increased from $6.85 to $6.93 per square foot for new residential construction.

Question 5: *Iron Horse Middle School is located within one-quarter-mile of the City Center project site. Please indicate if SRVUSD has any concerns related to construction or operational activities associated with the City Center project as it relates to Iron Horse Middle School.*

Response: As always with any type of construction we are always concerned with the safety of our students and community. Of utmost concern with the City Center project would be construction traffic, noise and dust. Traffic congestion could be significantly mitigated if the hours of delivery of supplies, building materials, concrete etc. could be limited to the hours when the students are in school and the parents dropping off and picking up have had time to leave the vicinity of the school. Due to the size of the City Center project there may also be a concern regarding contractors parking in the school parking lots and walking through campus to the Iron Horse Trail to the job site. State Law mandates that contractors hired by the District be finger printed and District policy mandates that anyone entering the school grounds during school hours must check into the office. Therefore, it would not be appropriate for contractors to park in the school parking lot and walk through campus. This type of action would be strictly forbidden. Any loud and persistent noise associated with the construction project would need to be scheduled during winter or spring breaks or during the summer in order to minimize its impact on academic activities. Plans could be made to hold summer school in a neighboring school if necessary. Keeping the surrounding streets clean of dirt and debris and the dust level down would also be of concern. If a utility shut down were required we would need a minimum of 48 hours of notice, more if possible.
As with our own construction projects we are sensitive to the testing dates and we make sure that it is written into our contracts with the contractors that noise and construction be at a minimum on these days so as not to disrupt the students. School calendars are published on the Internet and would be a good resource for information on school days, holidays and testing dates.

Again, we appreciate the opportunity to respond on the City Center project and look forward to receiving a copy of the Initial Environmental Impact Report. Should you have any questions regarding our responses please do not hesitate to contact me at 925-552-2969 or e-mail me at tperaul@srvusd.net.

Sincerely,

Tina Perault

Tina Perault
Senior Planning and Development Manager

SAN RAMON VALLEY UNIFIED SCHOOL DISTRICT
2430 Camino Ramon, Suite 240, San Ramon, CA 94583
FACILITIES DEVELOPMENT
Office (925) 552-5986 FAX (925) 328-0560

June 19, 2007

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Sincerely,

Tina Perault

Tina Perault
Senior Planning and Development Manager

Pacific Gas and Electric Company®

Service Planning
Mission Division -- Area 2

998 Murrieta Boulevard
Livermore, CA 94550
Fax: 925.373.2602

May 17, 2007

To: Ave' Florance
Michael Brandman Associates
2633 Camino Ramon, Suite 460
San Ramon, CA 94583

Dear Ms. Florance:

RE: Proposed Mix Use Project of four parcels on all four quadrants of Bollinger Canyon Road and Camino Ramon, San Ramon, CA - Will Serve

Gas and electric service is available to your proposed project on all four quadrants of Bollinger Canyon Road and Camino Ramon, San Ramon, CA
Extension of these facilities will be made in accordance with our gas and electric rules and regulations on file with the State of California Public Utilities Commission at the time the applicant applies for gas and electric service.

Any relocation or re-arrangement of existing facilities would be done at the applicants expense.

If you have any questions, please call me at (925) 373-2603.

Sincerely

Terry Mullings
Project Manager

Central Contra Costa Sanitary District Questionnaire

1. *If available, please provide a copy (electronic is preferred) of the most recent Annual Report. We plan to use the Annual Report as the basis for our description of Central San.*

CCCSD does not produce an annual report. There are recent descriptions of CCCSD in other City of San Ramon environmental documents, including the Northwest Specific Plan EIR and the Crow Canyon Specific Plan EIR.

2. *Central San's website indicates that its wastewater treatment plant in Martinez has a dry weather capacity of 55 million gallons per day (mgd) and a wet weather capacity of 240 mgd. The website also indicates that it has an average dry weather flow of 45 mgd. Please confirm that these numbers are correct. Also, please indicate if the treatment plant is in compliance with all applicable federal and state environmental health and safety standards for treated wastewater.*

CCCSD's average dry weather flow (ADWF) effluent discharge limit is 53.8 million gallons per day (MGD) and there is no wet weather limit. The 2006 ADWF processed was 39.1 MGD. The treatment plant is in compliance with all applicable federal and state environmental health and safety standards for treated wastewater.

3. *If available, please provide wastewater generation rates for the proposed project based on square footage.*

See the accompanying Development Capacity Analysis completed by CCCSD. The wastewater generation of the project would be about 88,500 hundred cubic feet (HCF) per year or about 181,935 gallons per day (less than 0.2 MGD).

4. *Please briefly describe any future expansion or upgrade plans for the treatment plant or the wastewater collection trunk system in the San Ramon area. Please also indicate the potential sources of funding for these improvements.*

CCCSD's 10-Year Capital Improvement Plan and FY 2007-2008 Capital Improvement Budget include various improvements to the treatment plant for regulatory compliance, safety, renovations, process improvement, and expansion, none of which are needed due to the proposed City Center project. Likewise, CCCSD plans to complete the final phase of its San Ramon Interceptor project in FY 2007-2008 (approximately two miles of 36-inch diameter gravity sewer in the Iron Horse Trail, from Norris Canyon Road in San Ramon to St. James Court in Danville). This project has been planned since the mid-1980s and also is not directly related to the proposed City Center project.

5. *Please indicate if Central San would have adequate wastewater treatment capacity to serve the proposed project.*

CCCSD has adequate wastewater treatment capacity to serve the proposed project. The project's wastewater generation represents only about one percent of the remaining effluent discharge quantity available under CCCSD's current discharge permit.

6. *Please feel free to provide any additional information you believe to be relevant to the proposed project.*

None.

Thank you for taking the time to respond to this questionnaire.

Please return the completed questionnaire on Central San letterhead by June 8, 2007 to:

Michael Brandman Associates
Bishop Ranch 3
2633 Camino Ramon, Suite 460
San Ramon, CA 94583
Attn: Grant Gruber

Phone: (925) 830-2733
Fax: (925) 830-2715
E-mail: ggruber@brandman.com

Central Contra Costa Sanitary District

June 21, 2007

TO: RUSSELL LEAVITT

VIA: GAIL CHESLER gc

FROM: JAMES KONG gc for jjk

SUBJECT: DEVELOPMENT CAPACITY ANALYSIS ON THE SAN RAMON CITY CENTER MIXED USE PROJECT

MAP: 102B6, 102B7, 102C7

APN: 213-133-063
213-120-009
213-133-086
213-120-013

Summary

A capacity study has been performed for the San Ramon City Center Mixed Use Project. The ArcSNAP modeling results show that under both a 5-year storm event and a 20-year storm event, the sewer system studied will be less than one hundred percent full. The existing sewer system has sufficient capacity to handle the additional flow from this project.

Analysis

The San Ramon City Center Mixed Use Project consists of four parcels on Bollinger Canyon Road west of the Iron Horse Trail. The project involves tearing down an existing property on one of the parcels and constructing a new mixed-use city center, office buildings, and residential units. The conversion of various building types into point source in hundred cubic feet per year, which can be input into ArcSNAP, is shown in the Attachment. A capacity analysis was performed for the downstream pipe sections for both a 5-year storm event and a 20-year storm event using the ArcSNAP program.

Figure 1 and Table 1 show the ArcSNAP results for a 20-year storm event after the proposed development. The results show that under a 20-year storm event, the sewer system studied has sufficient capacity and would not have any overflow problems. The run for a 5-year storm event shows similar results, which are not included here.

Scenario Name: SanRamon_CityCenter_20yr_af
Scenario Year: 2008
I/I Multiplier: 1.56

Flow Routing Detail Report

Printed: 6/11/2007

Pipe ID	Dia (in)	Man N	Slope (ft/ft)	Len (ft)	Full Pipe Cap (mgd)	Velocity (fps) Full	Velocity (fps) Flush	Split Flow Rule	Split Flow Factor	BWF (mgd) Avg	BWF (mgd) Peak Factor	BWF (mgd) Peak	RDI/I (mgd) Avg	RDI/I (mgd) Atten Factor	RDI/I (mgd) Atten	GWI (mgd)	Design Flow (mgd)		Pipe Design Capacity (mgd)	Design Criteria (%)	Percent Full Pipe Capacity (%)	Excess Available Design Capacity (mgd)
102B6 M 22 102B6 M 21	10	0.013	0.0148	495	1.72	4.9	3.0	D	100.0	0.19	3.74	0.72	0.00	1.00	0.00	0.00	0.72	(2)	1.33	77.0	41.8	0.61
102B6 M 21 102B6 M 20	10	0.013	0.0110	82	1.49	4.2	2.7-	D	100.0	0.19	3.74	0.72	0.00	1.00	0.00	0.00	0.72	(2)	1.14	77.0	48.5	0.42
102B6 M 20 102B6 M 19	10	0.013	0.0056	78	1.06	3.0	2.3-	D	100.0	0.24	3.65	0.88	0.01	1.00	0.01	0.00	0.89	(2)	0.82	77.0	83.8	-0.07
102B6 M 19 102B6 M 18	10	0.013	0.0057	23	1.07	3.0	2.3-	D	100.0	0.24	3.65	0.88	0.01	1.00	0.01	0.00	0.89	(2)	0.82	77.0	83.1	-0.06
102B6 M 18 102B6 M 17	10	0.013	0.0058	242	1.08	3.1	2.3-	D	100.0	0.24	3.65	0.88	0.01	1.00	0.01	0.00	0.89	(2)	0.83	77.0	82.4	-0.06
102B6 M 17 102B6 M 14	10	0.013	0.0057	432	1.07	3.0	2.3-	D	100.0	0.24	3.65	0.88	0.01	1.00	0.01	0.00	0.89	(2)	0.82	77.0	83.2	-0.07
102B6 M 14 102B6 M 13	10	0.013	0.0057	332	1.07	3.0	2.4-	D	100.0	0.28	3.59	1.02	0.01	1.00	0.01	0.01	1.02	(2)	0.82	77.0	95.7	-0.20
102B6 M 13 102B6 M 12	10	0.013	0.0057	365	1.07	3.0	2.4-	D	100.0	0.28	3.59	1.02	0.01	1.00	0.01	0.01	1.02	(2)	0.82	77.0	95.7	-0.20
102B6 M 12 102B6 42	12	0.013	0.0040	16	1.46	2.9	2.1	D	100.0	0.28	3.59	1.02	0.01	1.00	0.01	0.01	1.02	(2)	1.46	100.0	70.2	0.43
102B6 42 102B6 43	12	0.013	0.0040	100	1.46	2.9	2.1	D	100.0	0.28	3.59	1.02	0.01	1.00	0.01	0.01	1.02	(2)	1.46	100.0	70.2	0.43
102B6 43 102B6 M 11	12	0.013	0.0040	15	1.46	2.9	2.1	D	100.0	0.28	3.59	1.02	0.01	1.00	0.01	0.01	1.02	(2)	1.46	100.0	70.2	0.43
102B6 M 11 102B6 M 10	12	0.013	0.0040	523	1.46	2.9	2.2	D	100.0	0.35	3.51	1.23	0.01	1.00	0.01	0.01	1.24	(2)	1.46	100.0	85.2	0.22
102B6 M 10 102B6 M 9	12	0.013	0.0049	500	1.61	3.2	2.4	D	100.0	0.35	3.51	1.23	0.01	1.00	0.01	0.01	1.24	(2)	1.61	100.0	77.0	0.37
102B6 M 9 102B7 M 17	12	0.013	0.0049	500	1.61	3.2	2.4	D	100.0	0.37	3.49	1.29	0.01	1.00	0.01	0.01	1.30	(2)	1.61	100.0	80.8	0.31
102B7 M 17 102B7 M 16	12	0.013	0.0043	500	1.51	3.0	2.3	D	100.0	0.38	3.48	1.32	0.02	1.00	0.02	0.01	1.33	(2)	1.51	100.0	88.2	0.18
102B7 M 16 102B7 85	15	0.013	0.0040	30	2.64	3.3	2.5	D	100.0	0.57	3.34	1.89	0.13	1.00	0.13	0.02	1.91	(2)	2.64	100.0	72.4	0.73
102B7 85 102B7 86	15	0.013	0.0040	45	2.64	3.3	2.5	D	100.0	0.57	3.34	1.89	0.13	1.00	0.13	0.02	1.91	(2)	2.64	100.0	72.4	0.73
102B7 86 102B7 M 1	15	0.013	0.0040	53	2.64	3.3	2.5	D	100.0	0.57	3.34	1.89	0.13	1.00	0.13	0.02	1.91	(2)	2.64	100.0	72.4	0.73
102B7 M 1 102C7 M 6	15	0.013	0.0040	397	2.64	3.3	2.5	D	100.0	0.57	3.34	1.89	0.13	1.00	0.13	0.02	1.91	(2)	2.64	100.0	72.5	0.73
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102C7 M 4 102C7 M 3	18	0.013	0.0045	134	4.55	4.0	2.6	D	100.0	0.57	3.34	1.89	0.13	1.00	0.13	0.02	1.91	(2)	4.55	100.0	42.0	2.64

Velocity Flags: (-) Flow is below design velocity
(+) Flow is above design velocity
Pipe improvements/costs assume existing slope

Design flow is the greater of the two design rules:
(1) - (BWF * 1.2) + (ARDI/I * 1) + (GWI * 1)
(2) - (PBWF * 1) + (GWI * 1)

Split Flow Rules: D=Default, %=Percent, 1-5=Priority
Split Flow Factors: If code=D or % then factor is a percentage, otherwise factor shows flow limit.
Design capacity is based on design criteria.

Table 1. San Ramon City Center Mixed Use Project, 20 Year Storm Event

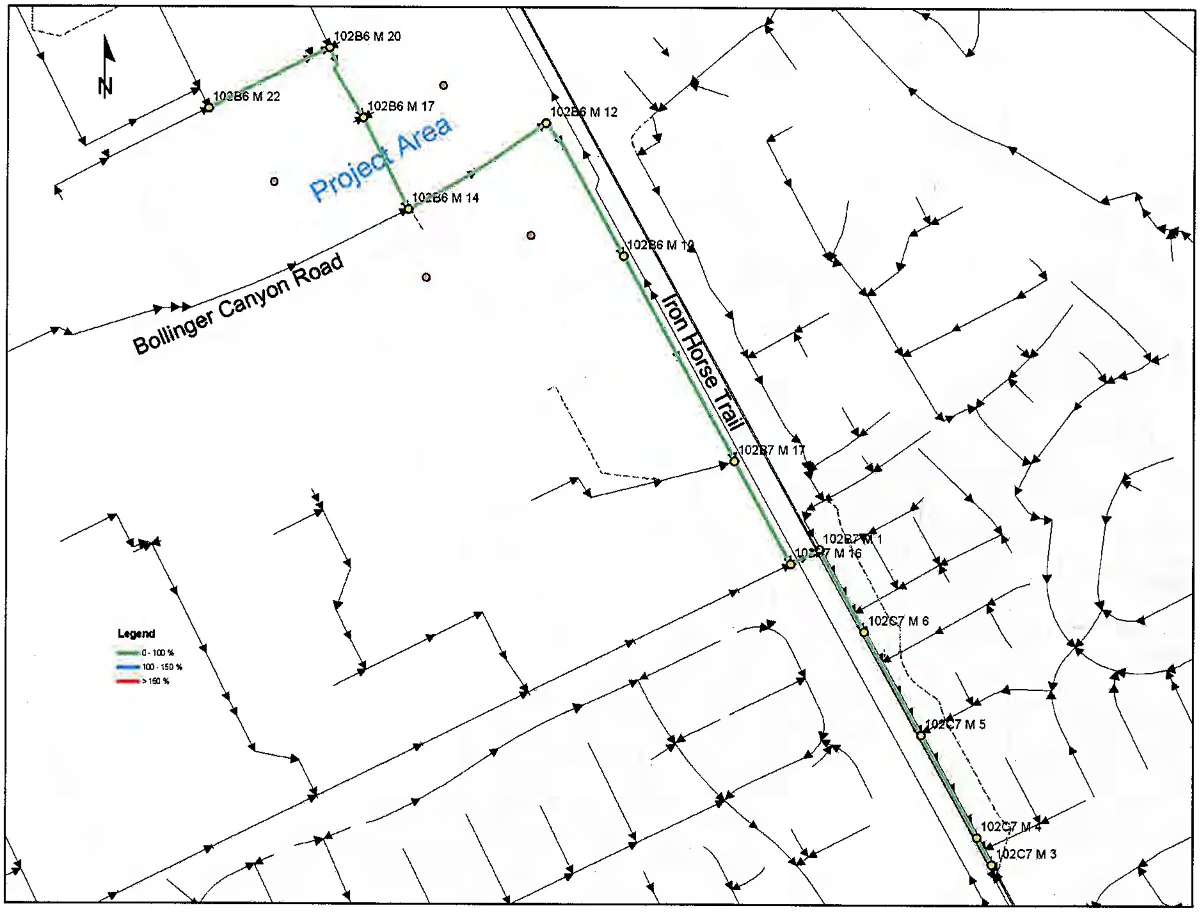

Figure 1. San Ramon City Center Mix Use Project, 20-Year Storm Event.

Recommendation

Based on the ArcSNAP analysis results, we conclude that the existing sewer system has sufficient capacity to handle the additional sewer flow from the San Ramon City Center Mix Use Project.

JK/mvp

Attachments

File: CSPlanning/ ArcSNAP/ Development Capacity Analysis

Appendix. Conversion of various building types into point source

Bishop Ranch 1B, 2, and 3A

	area (thousand ft^2)	RUE/area	Dwelling units	RUE/Dwelling Unit	Total RUE	GPD/RUE	Total GPD	HCF/YR
Retail/Cinema	635.042	0.3			190.51	200	38103	18593
Hotel	139.867	1.272			177.91	200	35582	17363
Retail Flex	50.142	0.3			15.04	200	3009	1468
Residential			488	1	488.00	200	97600	47626
City Hall/Library	110.49	0.32			35.36	200	7071	3451
							Total Point Source (HCF/YR)	88500

Bishop Ranch 1A (not converted)

Class A office	682

Conversion factor from GPD to HCF/YR 0.49

Appendix I: Traffic Operations Evaluation

FINAL REPORT

TRAFFIC OPERATIONS EVALUATION FOR SAN RAMON CITY CENTER PROJECT

Prepared for:

SUNSET DEVELOPMENT COMPANY

Prepared by:

DMJM HARRIS | AECOM

1570 The Alameda, Suite 222
San Jose, CA 95126

July 2007

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EXECUTIVE SUMMARY

This study analyzes the traffic impacts of the San Ramon City Center project located along Bollinger Canyon Road in San Ramon. The project is the construction of 488 condominium units, a 169-room hotel, 681,769 square feet of office park, 663,339 square feet of retail, a 6-screen cinema, 75,150 square feet for City Hall, and a 35,340 square foot library.

The analysis looked at four traffic operations conditions, Existing, Existing plus Project, 2020, and 2020 plus Project. The 2020 traffic conditions were developed using the modest recent version of the Contra Costa Transportation Authority Countywide Travel Demand Model.

The City of San Ramon's General Plan 2020 was passed by voters in 2002. The General Plan articulates a vision for the City and it is the final plan that guides all land use decisions made throughout the City to the year 2020. The General Plan has evolved into a long-range planning document that includes performance standards as well as Capital Improvements, Development Mitigation, and fee financing programs. It also includes an Urban Growth Boundary (UGB), urban mixed-use center and an open space plan. The traffic analysis completed for the General Plan 2020 EIR used the Contra Costa approved travel demand model and included a 20-year horizon.

The City Center project is an in-fill development project and because the General Plan 2020 provided a long-range plan for 2020, the traffic analysis for the City Center project includes a comprehensive traffic analysis for Horizon Year 2020. The City Center traffic analysis is consistent with the City's Growth Management Program and meets the goals and objectives of the Contra Costa Transportation Authority Growth Management Program and Technical Procedures.

San Ramon's growth management policies and initiatives are also consistent with the Contra Costa Transportation Improvement and Growth Management Program (Measure C) and includes:

- Adopt and apply traffic level of service standards to the local roadway system,
- Adopt performance standards for police, fire, parks, water, flood control, and sanitary sewer facilities,
- Adopt and implement Transportation Demand Management (TDM) ordinance,
- Adopt a five-year capital improvement program that lists projects, costs and funding mechanisms,
- Ensure that new development "pays its own way" through the adoption and implementation of mitigation fees,
- Address housing options and job opportunities at the local, regional, and county level, and
- Participate in cooperative, multi-jurisdictional planning process to reduce cumulative regional traffic impacts of development.

In addition, the General Plan 2020 includes several elements all required by State law (Land Use, Housing, Circulation, Open Space, Conservation, Safety and Noise). Four other elements that address local concerns and regional requirements (Growth Management, Economic Development, Public Facilities, and Parks) are also included in the plan.

The proposed project will generate 1,668 AM peak hour trips, 2,995 PM peak hour trips, and 30,127 daily trips. Because the existing BR 2 development will be demolished as part of the project, the assigned Existing plus Project traffic are 1,353 AM peak hour trips, 2,711 PM peak hour trips, and 28,105 daily trips. For 2020, there is 328,200 square feet of office space that is a part of the project, but is already entitled and included in the 2020 projections. The assigned traffic for 2020 is 865 AM peak hour trips, 2,293 PM peak hour trips, and 24,926 daily trips.

The analysis identified three locations where the project would result in a significant traffic impact for the Existing plus Project condition. These locations are Bollinger Canyon Road/San Ramon Valley Boulevard, Bollinger Canyon Road/Sunset Drive, and Bollinger Canyon Road/Alcosta Boulevard. All of these locations can be mitigated to an acceptable level of service. At Bollinger Canyon Road/San Ramon Valley Boulevard, the addition of a northbound right turn lane, a part of the City's Capital Improvement Program for this intersection, would mitigate the impact. At Bollinger Canyon Road/Sunset Drive, the modification of the intersection to have a free-flowing southbound right turn lane for traffic destined to northbound I-680 would mitigate the impact. At Bollinger Canyon Road/Alcosta Boulevard the addition of a third eastbound and westbound through lane on Bollinger Canyon Road, a project the City will advertise in Summer 2007, will mitigate the impact.

The analysis identified two locations where the project would result in a significant traffic impact for the 2020 plus Project condition. These locations are Bollinger Canyon Road/Norris Canyon Road and Bollinger Canyon Road/Sunset Drive. Both of these locations can be mitigated to an acceptable level of service. At Bollinger Canyon Road / Sunset Drive the modification of the intersection to have a free-flowing southbound right turn lane for traffic destined to northbound I-680 would mitigate the impact. To provide additional congestion relief to the Bollinger Canyon Road / Sunset Drive intersection the southbound curb lane on Camino Ramon approaching Bishop Drive would be signed to allow a through movement during the AM and PM peak hours. At Camino Ramon/Bollinger Canyon Road the southbound through lane would also allow right turns. At Bollinger Canyon Road / Norris Canyon Road the installation of a traffic signal, an improvement planned as part of the City's Capital Improvement Program, would mitigate the impact.

Several I-680 freeway segments operate at level of service F for the Existing and for the 2020 conditions. The project will add traffic to I-680. By definition, the addition of project traffic to a LOS F segment is a significant impact. Improving the level of service to acceptable operations would require widening of the freeway mainline for several miles. Widening of the freeway is considered impracticable because of right-of-way limitations.

The project will satisfactorily accommodate other modes of travel. Sufficient parking is proposed to accommodate the project demand. The project will also provide sufficient bicycle and motorcycle parking. The project will safely accommodate pedestrians and will enhance pedestrian treatments in the area. The bicycle lane on Bishop Drive that currently ends at Sunset Drive will be extended to the Iron Horse Trail. Improved access to the Iron Horse Trail will be made at the signalized intersections along the eastern frontage of the project. Part of the project will be the addition of a new transit center as part of City Hall. Transit accessibility will be advanced with the new transit center.

1.0 INTRODUCTION

This study analyzes the traffic impacts of the San Ramon City Center project. The proposed project contains office space development that replaces the existing Bishop Ranch 2 (BR2) complex, plus additional office development. Bishop Ranch 2 comprises of 194,652 square feet of existing development and existing traffic generation. Therefore, for the project condition scenarios, 194,652 square feet of office development has been netted out of the analyses and the traffic generation.

Three project alternatives were analyzed:

- Flex Retail
  488 Condominium units
  169-room Hotel
  487,117 square feet Office Park (681,769 square feet less 194,652 square feet)
  663,339 square feet Retail
  6-screen Cinema (21,945 square feet)
  75,150 square feet Civic Center
  35,340 square feet Library
- Flex Office
  Same as Flex Retail but 50,142 square feet of Retail space is converted to Office.
- Flex Retail No Civic Center
  Same as Flex Retail but 75,150 square feet Civic Center plus 35,340 square feet Library is converted to 110,490 square feet Office.

BR 2 located in the northwest quadrant of Bollinger Canyon Road and Camino Ramon, is an existing 194,652 square foot office complex. BR2 would be demolished as part of this development proposal. Replacement office space would be constructed in the southeast quadrant of the Bollinger Canyon Road/Camino Ramon intersection. The replacement office space would be 681,769 square feet, for a total net expansion of 487,117 square feet over existing office space. The retail expansion would be 663,339 square feet located north of Bollinger Canyon Road on both sides of Camino Ramon. The retail expansion will include a six-screen cinema. A 169-room hotel and 488 condominium units would also be a part of the redevelopment on the north side of Bollinger Canyon Road on both sides of Camino Ramon. A 75,150-square foot civic center and 35,340-square foot library would also be developed on the south side of Bollinger Canyon Road. Some flexibility exists in the project description. Potentially, 50,142 square feet of the retail expansion may become office space and, similarly, the Civic Center and Library may be replaced with 110,490 square feet of office space. These potential changes were explored in the analysis and the results are provided in this document.

In addition to the development space, the project also includes a new Transit Center at the southwest quadrant of the Bollinger Canyon/Camino Ramon intersection. It was also desired to retain Camino Ramon between Bishop Drive and Bollinger Canyon Road in its current cross section during commute hours, but reduce the cross section during non-commute hours and allow on-street parking adjacent to the retail outlets. This will facilitate pedestrian crossing between retail components of the project. The city is exploring opportunities to accommodate on-street parking while avoiding negative impacts to traffic circulation and roadway capacity.

The analysis will include investigations of limited duration parking concepts designed around peak use and commuter patterns.

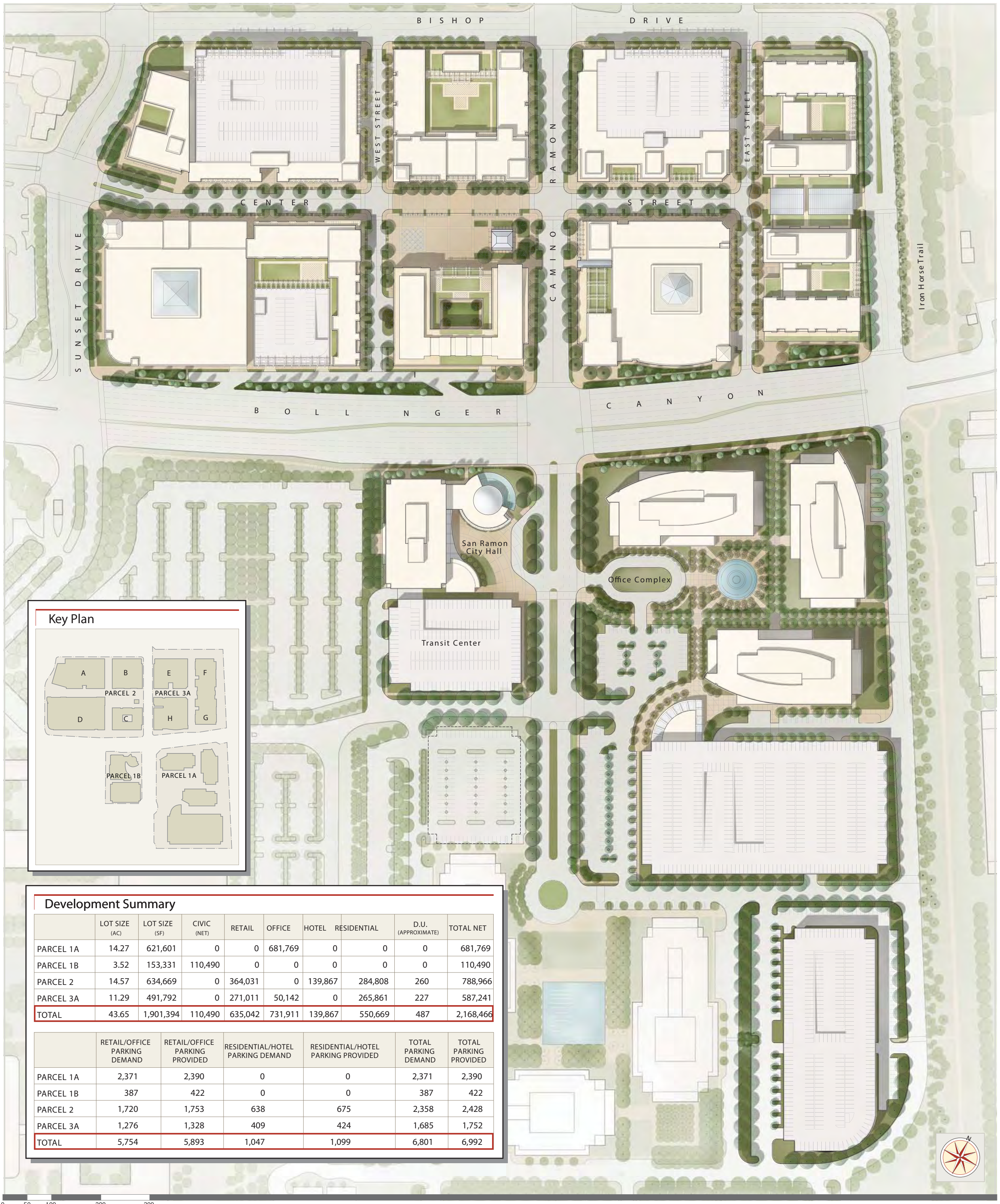
The project site and the distribution of the project components are shown on Figure 1. Figure 2 shows the location of the project in the City of San Ramon and also shows the study intersections.

1.1 Analysis Scenarios

Four analysis scenarios are included in the traffic operations analysis. These scenarios are as follows:

- Existing Conditions for the AM and PM peak hours. Traffic counts were conducted between May 2006 and February 2007 to serve as the existing conditions in the area.
- Existing Plus Project Conditions, considering three different project scenarios. First, the Flex Retail condition refers to the addition of traffic from 487,117 square feet of new office park, 663,339 square feet of retail space plus a six-screen cinema of 21,945 square feet, a 169-room hotel, 488 condominium units, a 75,150 square foot civic center, and a 35,340 square foot library. In the second condition, referred to as Flex Office, 50,142 square feet of retail space is changed to office space. The third condition, referred to as Flex Retail No Civic Center, is the same as the first, but with the civic center and library replaced with 110,490 square feet of office space. Because the Flex Retail condition is expected to generate the most traffic during the critical PM peak hour this scenario was added to the AM and PM peak hour existing conditions.
- 2020 Conditions with the build-out of the City's General Plan, approximately in the year 2020. In addition to growth within San Ramon, additional regional growth is also assumed. The 2020 traffic volumes were developed from the most recent Contra Costa Transportation Authority Countywide Travel Demand Model. This scenario includes the effect of a median HOV connector at Norris Canyon Road.
- 2020 Plus Project Conditions consists of the previous scenario with the addition of traffic from the Flex Retail alternative project condition, as described in the existing plus project conditions above. The office development in the project was reduced by 328,220 square feet for each of the project scenarios in 2020 to account for the existing entitlements (Chevron) that are included in the background 2020 scenario.

The addition of project traffic includes modifications to the intersections of Camino Ramon/Bishop Drive and Camino Ramon/Bollinger Canyon Road. A southbound left turn lane will be added to Camino Ramon/Bishop Drive and a southbound left turn lane removed from Camino Ramon/Bollinger Canyon Road. A two-phase signal will be placed on Camino Ramon approximately mid-way between Bishop Drive and Bollinger Canyon Road at Center Street to facilitate crossing Camino Ramon by vehicles and pedestrians. Bishop Drive will also be completed to the east and wrap around the project to connect with Bishop Ranch One East at Bollinger Canyon Road. Minimizing the width of Camino Ramon between Bishop Drive and Bollinger Canyon Road will facilitate its crossing by pedestrians. At Bollinger Canyon



Development Summary

	LOT SIZE (AC)	LOT SIZE (SF)	CIVIC (NET)	RETAIL	OFFICE	HOTEL	RESIDENTIAL	D.U. (APPROXIMATE)	TOTAL NET
PARCEL 1A	14.27	621,601	0	0	681,769	0	0	0	681,769
PARCEL 1B	3.52	153,331	110,490	0	0	0	0	0	110,490
PARCEL 2	14.57	634,669	0	364,031	0	139,867	284,808	260	788,966
PARCEL 3A	11.29	491,792	0	271,011	50,142	0	265,861	227	587,241
TOTAL	43.65	1,901,394	110,490	635,042	731,911	139,867	550,669	487	2,168,466

	RETAIL/OFFICE PARKING DEMAND	RETAIL/OFFICE PARKING PROVIDED	RESIDENTIAL/HOTEL PARKING DEMAND	RESIDENTIAL/HOTEL PARKING PROVIDED	TOTAL PARKING DEMAND	TOTAL PARKING PROVIDED
PARCEL 1A	2,371	2,390	0	0	2,371	2,390
PARCEL 1B	387	422	0	0	387	422
PARCEL 2	1,720	1,753	638	675	2,358	2,428
PARCEL 3A	1,276	1,328	409	424	1,685	1,752
TOTAL	5,754	5,893	1,047	1,099	6,801	6,992

Illustrative Site Plan

Source: Cooper, Robertson & Partners
Architecture, Urban Design

April 2007 Site Plan.ai

SAN RAMON CITY CENTER PROJECT

Figure 1

ILLUSTRATIVE SITE PLAN

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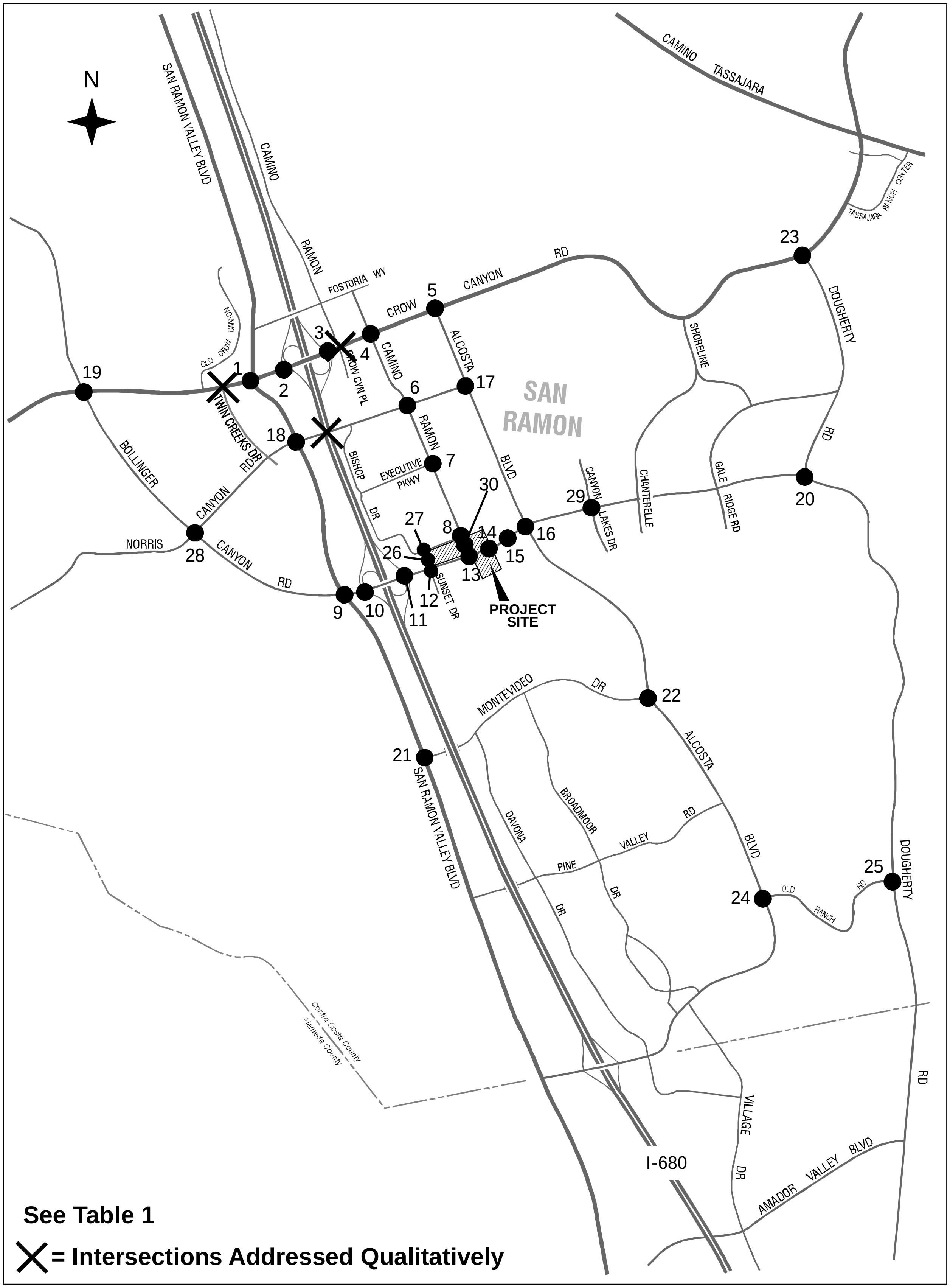

See Table 1

X = Intersections Addressed Qualitatively

SAN RAMON CITY CENTER PROJECT

Figure 2

VICINITY MAP AND STUDY AREA INTERSECTIONS

Road/Bishop Drive a westbound right turn is added to facilitate the traffic movement from Bollinger Canyon Road to the new extension of Bishop Drive. An additional improvement is a second northbound left turn lane at Camino Ramon/Bollinger Canyon Road. The current traffic volumes for this left turn exceed 300 vehicles per hour, a generally accepted threshold for dual left turn lanes. These modifications were considered in all scenarios where project traffic was added by adjusting traffic volumes at the intersections that would be affected by these project improvements. Additional discussion of the roadway modifications is contained in Chapter 4 along with a graphic showing the recommended changes (Figure 16). The details of these modifications need to be coordinated with City staff through the design process.

1.2 Project Study Area

Figure 2 shows the project site and the analyzed intersections. The analysis of these intersections provides an assessment of the effect of the proposed development. The project study area included the following 30 intersections. These locations were reviewed with the City of San Ramon and agreed upon as the appropriate study area.

1. Crow Canyon Rd./ San Ramon Valley Blvd.
2. Crow Canyon Rd./I-680 Southbound Ramps
3. Crow Canyon Rd./I-680 Northbound Ramps
4. Crow Canyon Rd./Camino Ramon
5. Crow Canyon Rd./Alcosta Blvd.
6. Camino Ramon/Norris Canyon Rd.
7. Camino Ramon/Executive Parkway
8. Camino Ramon/Bishop Dr.
9. Bollinger Canyon Rd./San Ramon Valley Blvd.
10. Bollinger Canyon Rd./I-680 Southbound Ramps
11. Bollinger Canyon Rd./I-680 Northbound Ramps
12. Bollinger Canyon Rd./Sunset/Chevron Park West
13. Bollinger Canyon /Camino Ramon
14. Bollinger Canyon/Bishop Ranch East
15. Bollinger Canyon Rd./Market Place
16. Bollinger Canyon Rd./Alcosta Blvd.
17. Alcosta Blvd./Norris Canyon Rd.
18. San Ramon Valley Blvd./Norris Canyon Rd.
19. Bollinger Canyon Rd./Crow Canyon Rd.
20. Bollinger Canyon Rd./Dougherty Valley Rd.
21. San Ramon Valley Blvd./Montevideo Dr.
22. Alcosta Blvd./Montevideo Dr.
23. Crow Canyon Rd./Dougherty Valley Rd.
24. Alcosta Blvd./Old Ranch Rd.
25. Old Ranch Rd./Dougherty Valley Rd.
26. Sunset Dr./Shopping Center
27. Bishop Dr./Sunset Dr.
28. Bollinger Canyon Rd./Norris Canyon Rd.
29. Bollinger Canyon Rd.,/Canyon Lakes Dr.
30. Camino Ramon/Center St., (future)

In addition to these 30 study intersections, three intersections were analyzed qualitatively. These intersections are Crow Canyon Road/Twin Creeks Road and Crow Canyon Road/Crow Canyon Place, and Norris Canyon Road (future intersection). While these intersections are important locations in the City's circulation system, the traffic operations at these locations can be estimated from surrounding locations. Therefore, specific traffic operations were not performed at these locations.

1.3 Roadway Systems

The highways and arterials noted below are designated routes of Regional Significance by the Contra Costa Transportation Authority and the Tri-Valley Transportation Action Plan. A Route of Regional Significance is a component of the cooperative multi-jurisdictional planning required first by Measure C and continued in Measure J. Routes of Regional Significance are roads that serve regional mobility, or act as reliever routes for the regional systems, and serve more than one jurisdiction. A route of Regional Significance is required to meet designated Traffic Service Objectives (TSO). Within San Ramon, the City's level of service standards exceed the TSO's.

Freeways serve regional and intercity trips and are under the jurisdiction of the State of California Department of Transportation (Caltrans). In the vicinity of the San Ramon City Center project, I-680 is a north/south freeway serving the San Ramon Valley. I-680 has three mixed flow lanes and one high occupancy vehicle lane (HOV) in each direction. Auxiliary lanes have recently been constructed on I-680 between Bollinger Canyon Road and Crow Canyon Road. Auxiliary lanes were also recently constructed on I-680 through Danville between Diablo Road and Sycamore Valley Road. There are two interchanges that service the San Ramon City Center project from I-680, Crow Canyon Road and Bollinger Canyon Road. This is a route of regional significance.

Arterials handle high traffic volumes provide intra-city circulation, and serve to a limited degree local land use. These facilities provide access to major activity centers and to freeways.

Within the vicinity of the San Ramon City Center project the following roadways are arterials and are Routes of Regional Significance:

- Crow Canyon Road (4 to 6 lanes)
- Bollinger Canyon Road (6 to 8 lanes)
- Alcosta Boulevard (4 lanes)
- San Ramon Valley Boulevard (4 lanes)
- Dougherty Road (6 lanes)

Note that Crow Canyon Road will be 8 lanes from I-680 to Alcosta Boulevard with the completion of construction in summer 2007. A Plan Line study has been prepared for Bollinger Canyon Road. A Plan Line study establishes the need for future widening along a corridor and then determines how that widening can occur through lane transitions and right-of-way acquisition. The Plan Line study for Bollinger Canyon Road widens the corridor to 8 lanes with additional turn lanes at intersections.

Collector Streets are the next in the hierarchy of street classifications. They carry less traffic than arterials and provide a higher level of access to local land uses. Within the vicinity of the San Ramon City Center project the following roadways are collector streets:

- Norris Canyon Road (2 to 4 lanes)
- Camino Ramon (4 lanes)
- Montevideo Drive (2 lanes)

Local roadways following collector streets in the hierarchy of street classifications. Local streets carry the least amount of traffic, but provide the highest level of local access. Near the San Ramon City Center project the following streets are local streets:

- Executive Parkway (2 lanes)
- Bishop Drive (2 lanes)
- Chevron Park Circle (2 to 4 lanes)
- Sunset Drive (4 lanes)
- Market Place (2 lanes)

2.0 EXISTING CONDITIONS

2.1 Existing Traffic Operations

Table 2-1 shows the count dates for each of the analyzed intersections. All of the counts were obtained between May 2006 and February 2007.

Table 2-1 Intersection Count Dates

Intersection	Count Dates AM Peak Hour/PM Peak Hour
1. Crow Canyon Rd./San Ramon Valley Blvd.	May 2006/May 2006
2. Crow Canyon Rd./I-680 SB Ramps	May 2006/May 2006
3. Crow Canyon Rd./I-680 NB Ramps	May 2006/May 2006
4. Crow Canyon Rd./Camino Ramon	May 2006/May 2006
5. Crow Canyon Rd./Alcosta Blvd.	May 2006/May 2006
6. Camino Ramon/Norris Canyon Rd.	May 2006/May 2006
7. Camino Ramon/Executive Parkway	May 2006/May 2006
8. Camino Ramon/Bishop Drive	May 2006/May 2006
9. Bollinger Canyon Rd./ San Ramon Valley Blvd.	May 2006/May 2006
10. Bollinger Canyon Rd./I-680 SB Ramps	May 2006/May 2006
11. Bollinger Canyon Rd./I-680 NB Ramps	May 2006/May 2006
12. Bollinger Canyon Rd./ Sunset/Chevron Park W.	May 2006/May 2006
13. Bollinger Canyon Rd./Camino Ramon	May 2006/May 2006
14. Bollinger Canyon Rd./Bishop Ranch 1 E	May 2006/May 2006
15. Bollinger Canyon Rd./Market Place	May 2006/May 2006
16. Bollinger Canyon Rd./Alcosta Blvd.	May 2006/May 2006
17. Alcosta Blvd./Norris Canyon Rd.	May 2006/May 2006
18. San Ramon Valley Blvd./Norris Canyon Rd.	May 2006/May 2006
19. Bollinger Canyon Rd./Crow Canyon Rd.	May 2006/May 2006
20. Bollinger Canyon Rd./Dougherty Valley Rd.	May 2006/May 2006
21. San Ramon Valley Blvd./Montevideo Dr.	February 2007/February 2007
22. Alcosta Blvd./Montevideo Drive	February 2007/February 2007
23. Crow Canyon Rd./Dougherty Valley Rd.	May 2006/May 2006
24. Alcosta Blvd./Old Ranch Rd.	February 2007/February 2007
25. Old Ranch Rd./Dougherty Valley Rd.	February 2007/February 2007
26. Sunset Drive/Shopping C.	May 2006/May 2006
27. Bishop Drive/Sunset Drive	May 2006/May 2006
28. Bollinger Canyon Road/Norris Canyon Road	February 2007/February 2007
29. Bollinger Canyon Road/Canyon Lakes Dr.	May 2006/May 2006

2.1.1 Methodology

The City of San Ramon uses the intersection Level of Service (LOS) analysis methodology required by CCTA's Technical Procedures, termed "CCTALOS" (Contra Costa Transportation Authority Level of Service), which relates service level grades to a volume to capacity ratio (v/c). The volume to capacity ratio relates the total traffic volumes for critical opposing movements to the theoretical capacity for those movements. This methodology can only be used for signalized intersections. Table 2-2 describes each service level grade and associated volume to capacity ratio for signalized intersections. Table 2-3 describes the level of service grade and associated control delay for all way stop controlled intersections.

Table 2-2 CCTALOS Intersection Level of Service Definitions

Level of Service	Description	Volume/Capacity Ratio (V/C)
A	Free flow with no delays. Users are virtually unaffected by others in the traffic stream.	< 0.61
B	Stable traffic. Traffic flows smoothly with few delays.	0.61 – 0.70
C	Stable flow but the operation of individual users becomes affected by other vehicles. Modest delays.	0.71 – 0.80
D	Approaching unstable flow. Operation of individual users becomes significantly affected by other vehicles. Delays may be more than one cycle during peak hours.	0.81 – 0.90
E	Unstable flow with operating conditions at or near the capacity level. Long delays and vehicle queuing.	0.91 – 1.0
F	Forced or breakdown flow that causes reduced capacity. Stop and go traffic conditions. Excessive long delays and vehicle queuing.	> 1.0

Source: Contra Costa Transportation Authority (CCTA)

Table 2-3 Level of Service Criteria for AWSC Intersections

Level of Service	Control Delay (s/veh)
A	0-10
B	> 10-15
C	> 15-25
D	> 25-35
E	> 35-50
F	> 50

Source: Highway Capacity manual (HCM)

2.1.2 Existing Levels of Service

The existing volumes are shown in Figure 3A and Figure 3B. The existing intersection geometry is shown in Figure 4A and Figure 4B. Table 2-4 summarizes the existing traffic operations during the AM and PM peak hours for the study area intersections. As noted in Table 2-4, all intersections operate at level of service C or better during both peak hours with the exception of the Bollinger Canyon Road/San Ramon Valley Boulevard, Bollinger Canyon Road/Alcosta Boulevard and San Ramon Valley Boulevard/Montevideo Drive intersections, which operate at level of service D during the PM peak hour. Two existing intersections are evaluated quantitatively. Crow Canyon Road and Crow Canyon Place is expected to operate as well as or better than Crow Canyon Road and Camino Ramon. Likewise, Crow Canyon Road and Twin Creeks Drive is expected to operate as well or better than Crow Canyon Road and San Ramon Valley Boulevard. The existing traffic operations are well within the City's thresholds for acceptable operations. The CCTALOS output is included in the Appendix.

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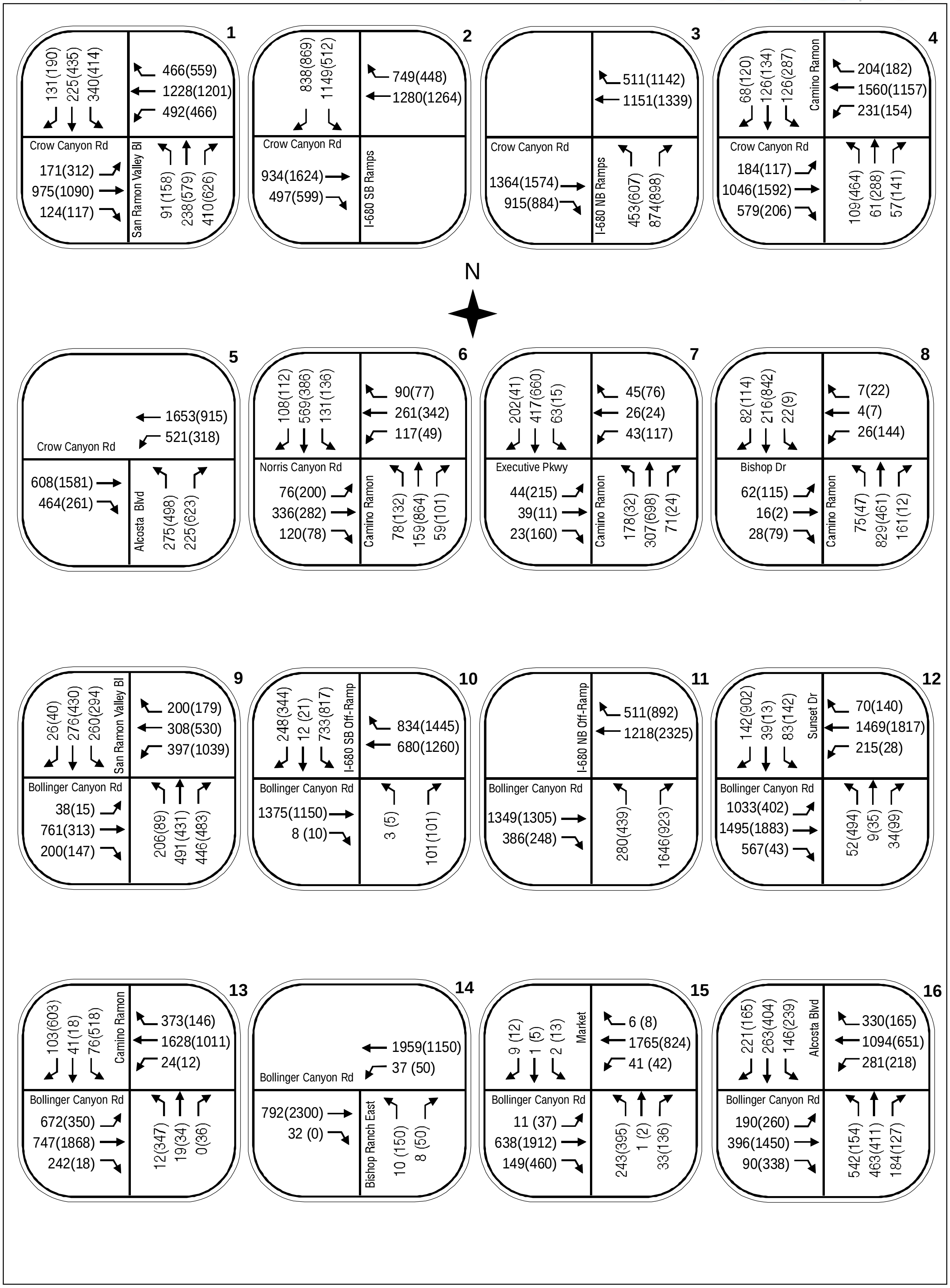

Existing vols Rev 2.cdr

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Figure 3A

EXISTING TRAFFIC VOLUMES

AM (PM) Peak Hour

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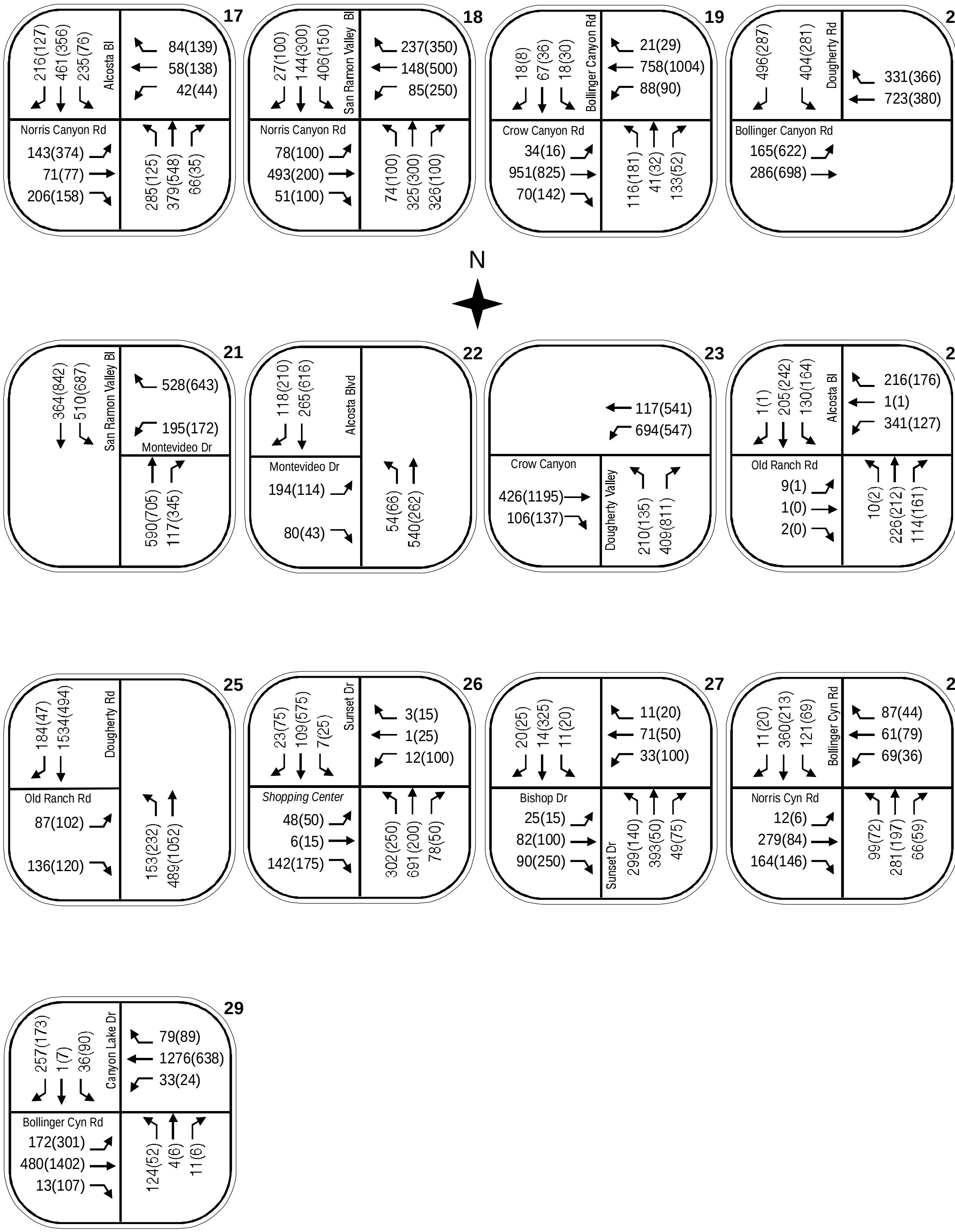

Existing Vols Rev 2.cdr

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Figure 3B

EXISTING TRAFFIC VOLUMES

AM (PM) Peak Hour

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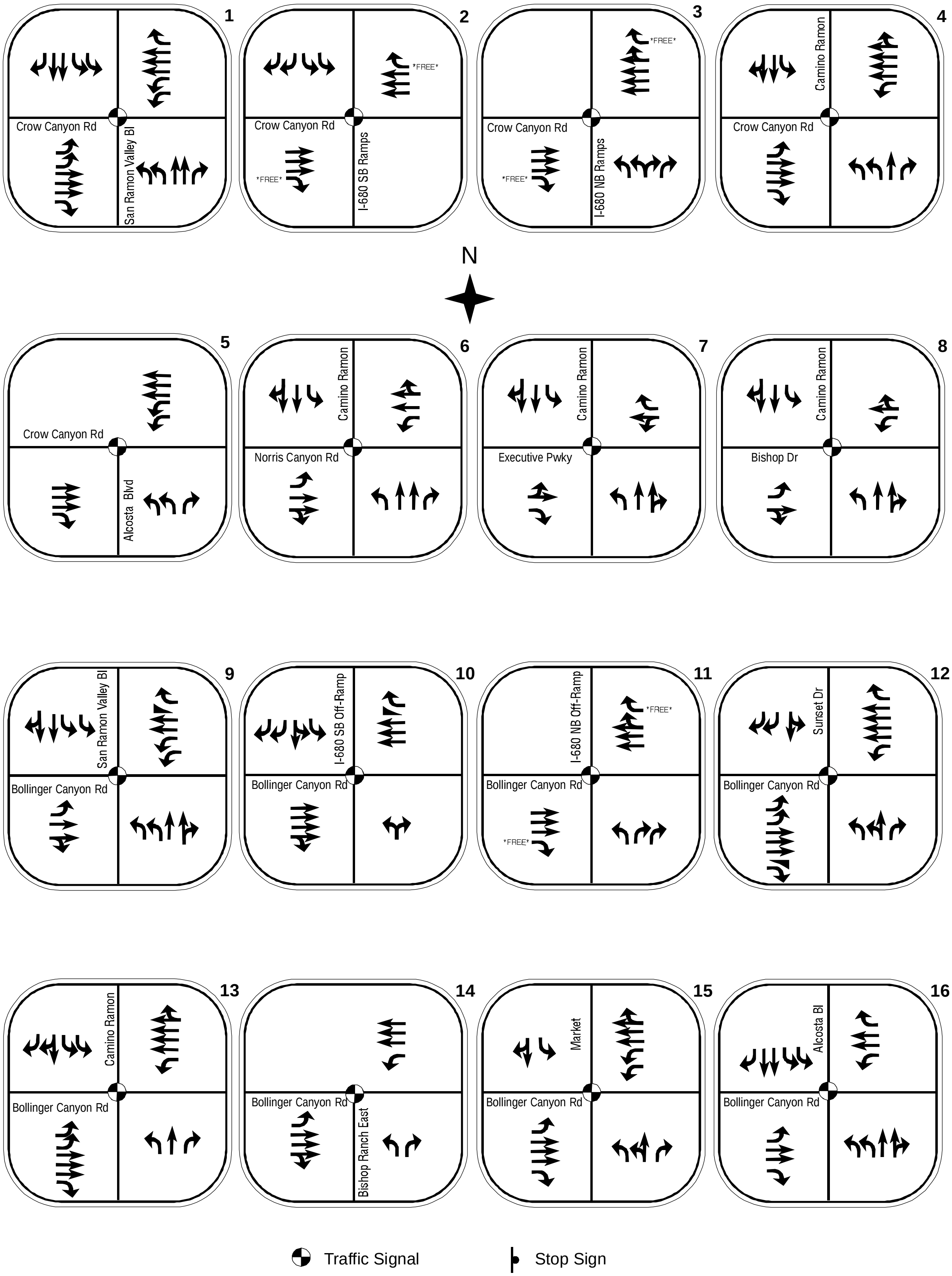

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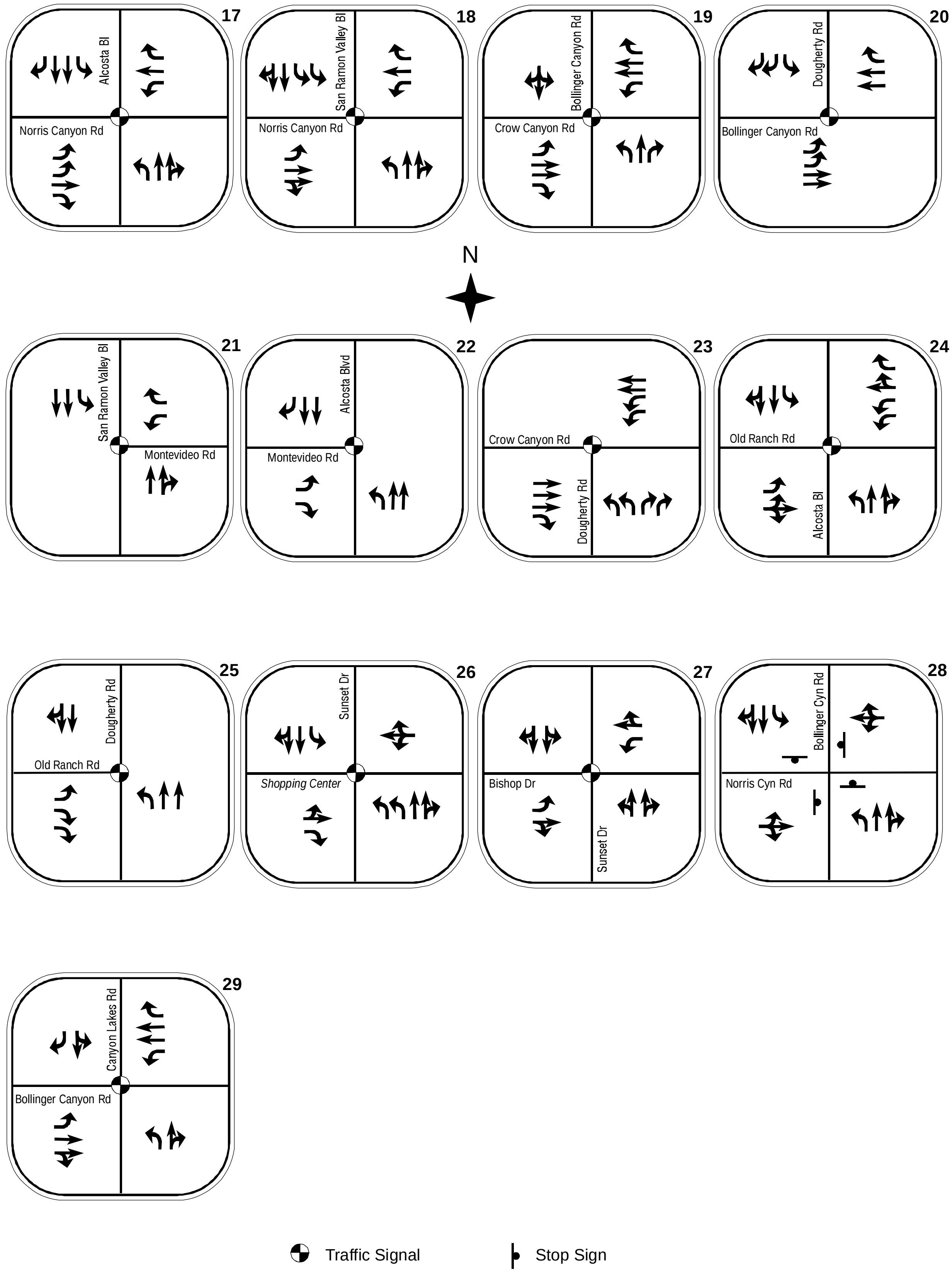
Figure 4A

EXISTING GEOMETRY



Existing Geometry rev 1.cdr

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Figure 4B

EXISTING GEOMETRY

Table 2-4 Existing Intersection Levels of Service

Intersection	Existing (With Existing Lane Configurations)			
	AM Peak Hour		PM Peak Hour	
	V/C Ratio	LOS	V/C Ratio	LOS
1. Crow Canyon Rd./San Ramon Valley Blvd.	0.56	A	0.74	C
2. Crow Canyon Rd./I-680 SB Ramps	0.59	A	0.57	A
3. Crow Canyon Rd./I-680 NB Ramps	0.52	A	0.60	A
4. Crow Canyon Rd./Camino Ramon	0.57	A	0.76	C
5. Crow Canyon Rd./Alcosta Blvd.	0.44	A	0.67	B
6. Norris Canyon Rd./Camino Ramon	0.46	A	0.59	A
7. Camino Ramon/Executive Parkway	0.36	A	0.43	A
8. Camino Ramon/Bishop Drive	0.36	A	0.46	A
9. San Ramon Valley Blvd./ Bollinger Canyon Rd.	0.79	C	0.88	D
10. Bollinger Canyon Rd./I-680 SB Ramps	0.50	A	0.57	A
11. Bollinger Canyon Rd./I-680 NB Ramps	0.75	C	0.71	C
12. Bollinger Canyon Rd./ Sunset/Chevron Park W.	0.66	B	0.68	B
13. Bollinger Canyon Rd./Camino Ramon	0.56	A	0.74	C
14. Bollinger Canyon Rd./Bishop Ranch 1 E	0.39	A	0.56	A
15. Bollinger Canyon Rd./Market Place	0.45	A	0.54	A
16. Bollinger Canyon Rd./Alcosta Blvd.	0.71	C	0.81	D
17. Norris Canyon Rd./Alcosta Blvd.	0.40	A	0.43	A
18. San Ramon Valley Blvd./Norris Canyon Rd.	0.55	A	0.55	A
19. Crow Canyon Rd./Bollinger Canyon Rd.	0.46	A	0.45	A
20. Bollinger Canyon Rd./Dougherty Valley Rd.	0.50	A	0.47	A
21. San Ramon Valley Blvd./Montevideo Dr.	0.62	B	0.81	D
22. Alcosta Blvd./Montevideo Drive	0.27	A	0.28	A
23. Crow Canyon Rd./Dougherty Valley Rd.	0.41	A	0.57	A
24. Alcosta Blvd./Old Ranch Rd.	0.30	A	0.26	A
25. Dougherty Valley Rd./Old Ranch Rd.	0.64	B	0.37	A
26. Sunset Drive/Shopping C.	0.30	A	0.38	A
27. Bishop Drive/Sunset Drive	0.36	A	0.47	A
28. Bollinger Canyon Road/Norris Canyon Road	0.86*	C*	0.37*	B*
29. Bollinger Canyon Road/Canyon Lakes Dr.	0.59	A	0.55	A

V/C = volume to capacity ratio
LOS = level of service
* = Highway Capacity Manual (HCM) unsignalized intersection analysis

2.1.3 Thresholds of Significance

Thresholds of significance relate to the City's policies regarding traffic circulation, bicycle and pedestrian circulation, and transit service. According to the General Plan 2020, traffic service criteria are quantifiable, but the pedestrian, bicycle, and transit service criteria are qualitative and are intended to provide a basis against which to evaluate the City's policies for these modes of travel.

A proposed development project would have significant impacts on the transportation system if it would:

- Cause a study intersection to exceed the City's standard of LEVEL OF SERVICE C, with level of service D (volume to capacity ratio less than or equal to 0.90) for no more than three hours of the day (a.m., noon and p.m. peak hours). This criterion is consistent with, and slightly more stringent than, the CCTA Transportation Service Objective for intersections on Routes of Regional Significance.

- Fail to provide for reasonably efficient pedestrian and bicycle circulation, through the implementation of City standards and the General Plan 2020 proposed bicycle and trail network or General Plan 2020 policies related to pedestrian and bicycle circulation.
- Create a condition, either by design or by the generation of traffic, that provides a barrier to, or unsafe condition for, pedestrian and bicycle circulation.
- Create a transit demand that would exceed currently planned transit service.

In addition to the General Plan 2020 policies establishing standards of significance, the City entered into an annexation and development agreement (Dougherty Valley Settlement Agreement) that defines specific traffic performance requirements to minimize the impact to City of San Ramon employees and visitors. These requirements are consistent with General Plan 2020 policies:

- Strive to maintain traffic level of service C or better as the standard at all intersections, with level of service D during no more than three hours of the day for the morning, noon, and afternoon peak hours.
- Accept level of service D during two-hour peak periods, with the possibility of intersections at or closely approximating the limits of level of service D only on arterial routes bordered by non-residential development where improvements to meet the City's standard would be prohibitively costly or disruptive.

The agreement stipulates that the City of San Ramon shall not change or approve land use designations, densities, or circulation systems in the City's Outlying Areas if it would cause (unless mitigated) the General Plan 2020 traffic service standards to be exceeded on the following streets and specific intersections:

- Bollinger Canyon Road from San Ramon Valley Boulevard to Alcosta Boulevard
- Camino Ramon from Bollinger Canyon Road to Crow Canyon Road
- Norris Canyon Road from San Ramon Valley Boulevard to Alcosta Boulevard
- Bollinger Canyon Road at Alcosta Boulevard, Camino Ramon, Sunset Drive, and San Ramon Valley Boulevard
- Camino Ramon at Bishop Drive and Executive Parkway
- Norris Canyon Road at Alcosta Boulevard, Camino Ramon, Bishop Drive, and San Ramon Valley Boulevard.

2.2 Existing Freeway Analysis

2.2.1 Existing Freeway Operations

The freeway analysis was conducted using 2000 Highway Capacity Manual (HCM) software for the study section of I-680 north and south of Bollinger Canyon Road. The analysis includes both the freeway mainline and on-and off-ramps to and from Bollinger Canyon.

This analysis included four freeway sections: 1) northbound north of the I-680 Bollinger interchange, 2) southbound north of the I-680 Bollinger interchange, 3) northbound south of the I-680 Bollinger interchange, and 4) southbound south of the I-680 Bollinger interchange. A ramp analysis was also completed at five ramps on the I-680 Bollinger interchange: 1) northbound off-ramp, 2) southbound off-ramp, 3) southbound on-ramp, 4) southbound on-ramp (loop), and 5) northbound on-ramp (loop). The northbound on-ramp is analyzed as a roadway because of the auxiliary lane which begins at Bollinger Canyon Road and extends to Crow Canyon Road. Auxiliary lanes are analyzed as weaving sections up to 2,500 feet long. Beyond that length, weaving does not apply. The analysis of a single lane addition, the case for the northbound Bollinger Canyon Road on-ramp, is simply considered to be a basic freeway segment with an additional lane. Therefore, Table 2-7 includes the auxiliary lane in the basic freeway segment analysis. Also, Table 2-8 includes the northbound on-ramp as a ramp as a roadway analysis.

Level of Service is a quality measure describing operation conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Six levels of service are defined for each type of facility that has analysis procedures available. Letters designate each level, from A to F, with level of service A representing the best operating conditions and level of service F the worst. Each level of service represents a range of operating conditions and the driver's perception of those conditions. The level of service for a basic freeway segment is based on density given in units of passenger cars per mile per lane. These level of service thresholds are given in Table 2-5. Table 2-6 provides level of service thresholds for merge and diverge areas, which are also based on density.

Table 2-5 Level of Service Threshold for a Basic Freeway Segment

Level of Service	Density Range (pc/mi/ln)
A	0 - 11
B	> 11 - 18
C	> 18 - 26
D	> 26 – 35
E	> 35 – 45
F	> 45

pc/mi/ln = passenger cars per mile per lane.`**Table 2-6Level of Service Threshold for Merge and Diverge Areas**

Level of Service	Density Range (pc/mi/ln)
A	0 – 10
B	> 10 – 20
C	> 20 - 28
D	> 28 – 35
E	> 35
F	Demand Exceeds Capacity

pc/mi/ln = passenger cars per mile per lane.

The results of the existing freeway analysis are provided in Table 2-7. The results of the ramp analysis are provided in Table 2-8. South of Bollinger Canyon Road, I-680 operates at level of service F in the southbound direction. South of Bollinger Canyon Road in the northbound direction the level of service is E. In both directions north of Bollinger Canyon Road, I-680 operates at LOS C and D.

The Bollinger Canyon Road/I-680 ramps operate at level of service F in the AM peak hour except the northbound loop on-ramp which operates at level of service C and the northbound on-ramp which operates at level of service A. During the PM peak hour the southbound on ramps, both the diagonal and loop ramps operate at level of service F today except for the northbound on-ramps which operate at acceptable levels.

Table 2-7 HCS Freeway Section Level of Service Analysis

Freeway Section Peak Hour		NB South of Bollinger Interchange		SB South of Bollinger Interchange		NB North of Bollinger Interchange		SB North of Bollinger Interchange	
		AM	PM	AM	PM	AM	PM	AM	PM
2006 Existing	LOS	E	E	F	F	C	C	D	D
	Density (pc/mi/hr)	44.7	36.0	*	*	23.1	23.7	30.5	34.1
	Avg. pc Speed (mph)	52.4	59.0	*	*	65.0	65.0	62.7	60.4

*Density and average speed are not determined if LOS F.
pc/mi/ln = passenger cars per mile per lane.
HCS = Highway Capacity Software
NB = Northbound
SB = Southbound

Table 2-8 HCS Ramp LOS Analysis

I-680 Bollinger Canyon Road Interchange	2006 Existing			
	AM		PM	
	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)
Northbound Off-Ramp	F	*	C	20.4
Southbound Off-Ramp	F	*	F	*
Southbound On-Ramp	F	*	F	*
Southbound On-Ramp (loop)	F	*	F	*
Northbound On-Ramp (loop)	C	27.9	C	26.3
Northbound On-Ramp**	A	V/C = 0.26	B	V/C = 0.45

*Density not determined if LOS F.
**Only the volume capacity ratio of the ramp is provided due to the auxiliary lane configuration.
pc/mi/ln = passenger cars per mile per lane.
HCS = Highway Capacity Software

2.3 Transit Service

2.3.1 Existing Transit Service

Central Contra Costa Transit Authority (County Connection) provides transit services in the vicinity of the project site. Figure 5 shows the existing transit services in the area. The project site is located about 0.4 miles from the San Ramon Transit Center, which is situated near the intersection of Executive Parkway and Camino Ramon, adjacent to the Iron Horse Trail. Several bus routes serve the transit center and the surrounding area, namely Routes 121, 135, 221, 920, 960B, 960C, 970B, and 970C. The routes are briefly described below.

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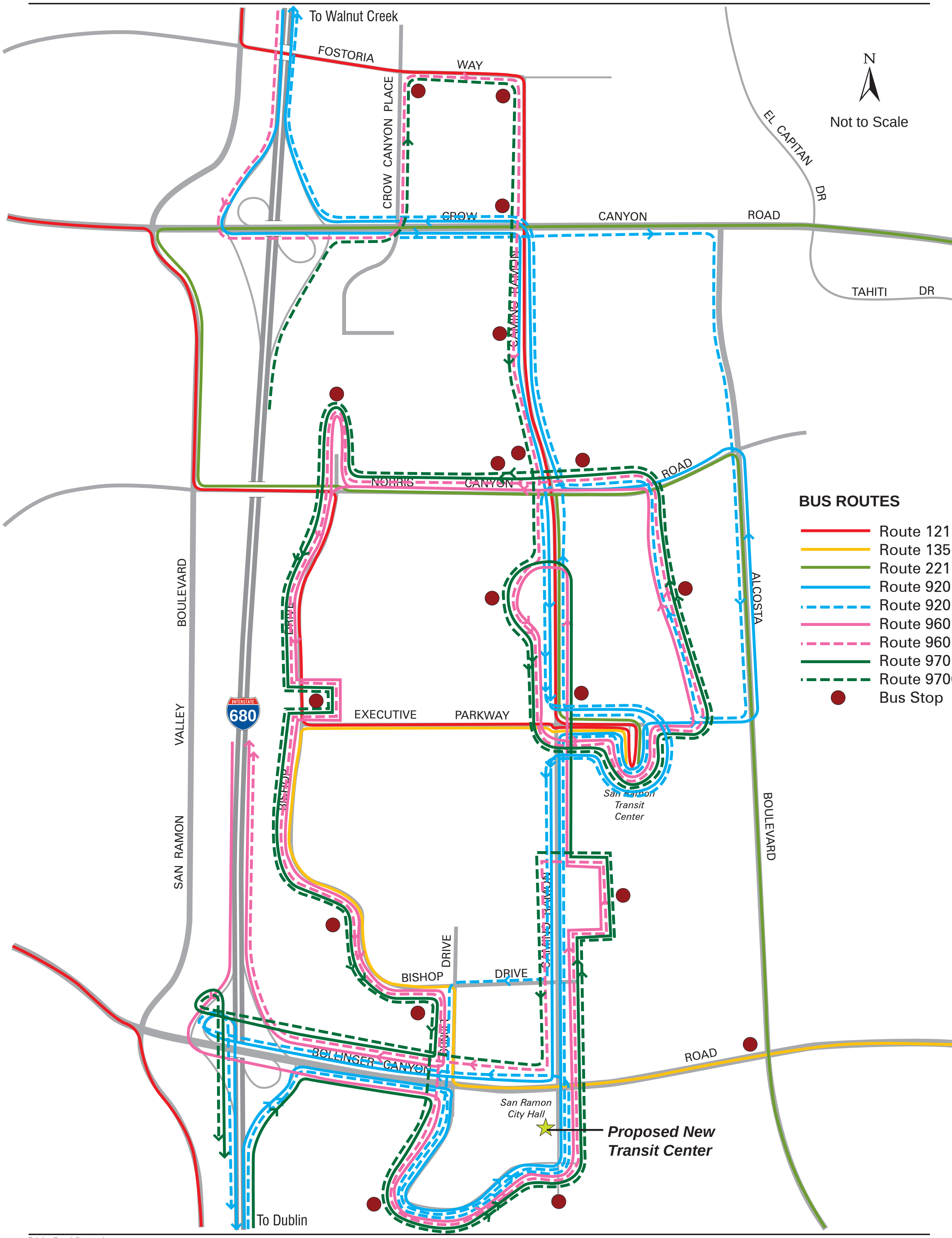

Existing Transit Routes.ai

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Figure 5

EXISTING TRANSIT ROUTES

Route 121 provides local service seven days a week throughout the San Ramon Valley, including the Study Area, between the Walnut Creek BART and the Dublin/Pleasanton BART Station. In San Ramon, Route 121 provides service along Camino Ramon and San Ramon Valley Boulevard (paralleling I-680) with deviations along Crow Canyon Road, Bollinger Canyon, Bishop Ranch Business Park and the San Ramon Transit Center. Weekday frequencies on Route 121 are approximately every 30 minutes during peak hours and every 60 minutes during midday and evening hours. Weekend frequencies are every hour. Weekday service begins on Route 121 at approximately 5:15 AM and ends at approximately midnight. Saturday service begins at approximately 7:00 AM and runs until 10:30 PM. Sunday service begins at approximately 8:40 AM and ends at 6:30 PM.

Route 135 provides service between the San Ramon Transit Center and Dublin/Pleasanton BART Stations along Bollinger Canyon Road through the Dougherty Valley. During the peak hour, service is provided every 20 minutes and the off-peak hours service is provided every 45 minutes. In addition to a stop at the San Ramon Transit Center the route includes stops at Sunset Drive and Bollinger Canyon Road at the Marketplace.

Route 221 provides limited peak hour service on weekdays between Alamo and San Ramon. In San Ramon, service is provided on Crow Canyon Road (east of I-680), San Ramon Valley Boulevard (between Crow Canyon Road and Norris Canyon Road) and Annabel Lane in Bishop Ranch. Select trips also travel south of Annabel Lane to serve the San Ramon Transit Center, Alcosta Boulevard, Montevideo Drive and Broadmoor Drive. Morning service on Route 221 begins at approximately 6:00 AM and ends at 8:00 AM. Afternoon service begins at approximately 2:30 PM and ends at 4:00 PM

Route 920 operates on weekdays between Walnut Creek (Mitchell Drive park-and-ride lot) and the ACE station in Pleasanton and from the ACE station to Bishop Ranch. The service runs five times (twice in the AM and three times in the PM) in the southbound direction and six times (three times in the AM and PM) in the northbound direction. In the vicinity of the project site, the route stops at the San Ramon Transit Center, at the stop located eastbound at Chevron, at eastbound Bishop Ranch 1 south of Bollinger Canyon Road near Camino Ramon, and at the AT&T site, depending on the direction of travel and peak hour.

Routes 960 B/C and Routes 970 B/C – A long-standing financial agreement between the Bishop Ranch Transportation Association (Sunset Development, Chevron and Marriott), provide enhanced and expanded service to and from San Ramon Valley. Routes 960 B/C and Routes 970 B/C provide service for commuters traveling to/from the Bishop Ranch Business Park, Walnut Creek and Dublin/Pleasanton BART Station. However, service is also available to the general public. These routes are designed to connect the Bishop Ranch area with BART Stations to the south and north along I-680. Route 960 provides connections to and from Walnut Creek BART Station and Route 970 provides connections to and from Dublin/Pleasanton BART Station. During the peak hours, service is provided every 15-20 minutes and the off-peak hour's service is provided every 45 minutes. Service is designed to meet every peak hour BART train in the AM and PM hours, beginning at 6:00 AM and ending at approximately 8:00 PM.

Bishop Ranch employees ride all San Ramon Valley routes (121, 135, 960, 970 and 920) free with an Express Pass.

The existing bus schedules are included in the Appendix.

2.4 Existing Pedestrian and Bicycle Facilities

2.4.1 Existing Bicycle Facilities

The Contra Costa Comprehensive Countywide Transportation Plan includes pedestrian and bicycle facilities as an important part of meeting the diverse needs of Contra Costa County.

Similar to transit, bicycle system is an important component of the overall transportation system because, among other factors, it provides another means of access for people who do not own a motor vehicle. Bicycle systems are generally classified using the following classes of bicycle facilities:

- Class I (bike path) provides and exclusive right-of-way for bicyclists and pedestrians, with cross flows of motorists minimized.
- Class II (bike lane) provides a restricted right-of-way designated for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with vehicle parking and cross flows by pedestrians and motorists permitted.
- Class III (bike route) provides a right-of-way designated by signs or permanent markings that is shared by pedestrians and motorists.

An example of Class I facility is the Iron Horse Trail that runs immediately to the east of the proposed project site. The Iron Horse Trail is a 23-mile bicycle/pedestrian off-road regional trail developed and operated by the East Bay Regional Park District. This trail serves both recreational and transportation functions. Near the project site, Class II facilities, or bike lanes, exist west of Sunset Drive on Bishop Drive, on Alcosta Boulevard, and on San Ramon Valley Boulevard. Bollinger Canyon Road west of San Ramon Valley Boulevard also has Class II bike lanes. West of San Ramon Valley Boulevard, Bollinger Canyon Road becomes a Class III bicycle facility and extends on the south edge of Bollinger Canyon Road to the Iron Horse Trail. Class III bicycle facilities on Bollinger Canyon Road should be used by experienced bicyclists only since the roadway has relatively high speeds and significant automobile traffic demand.

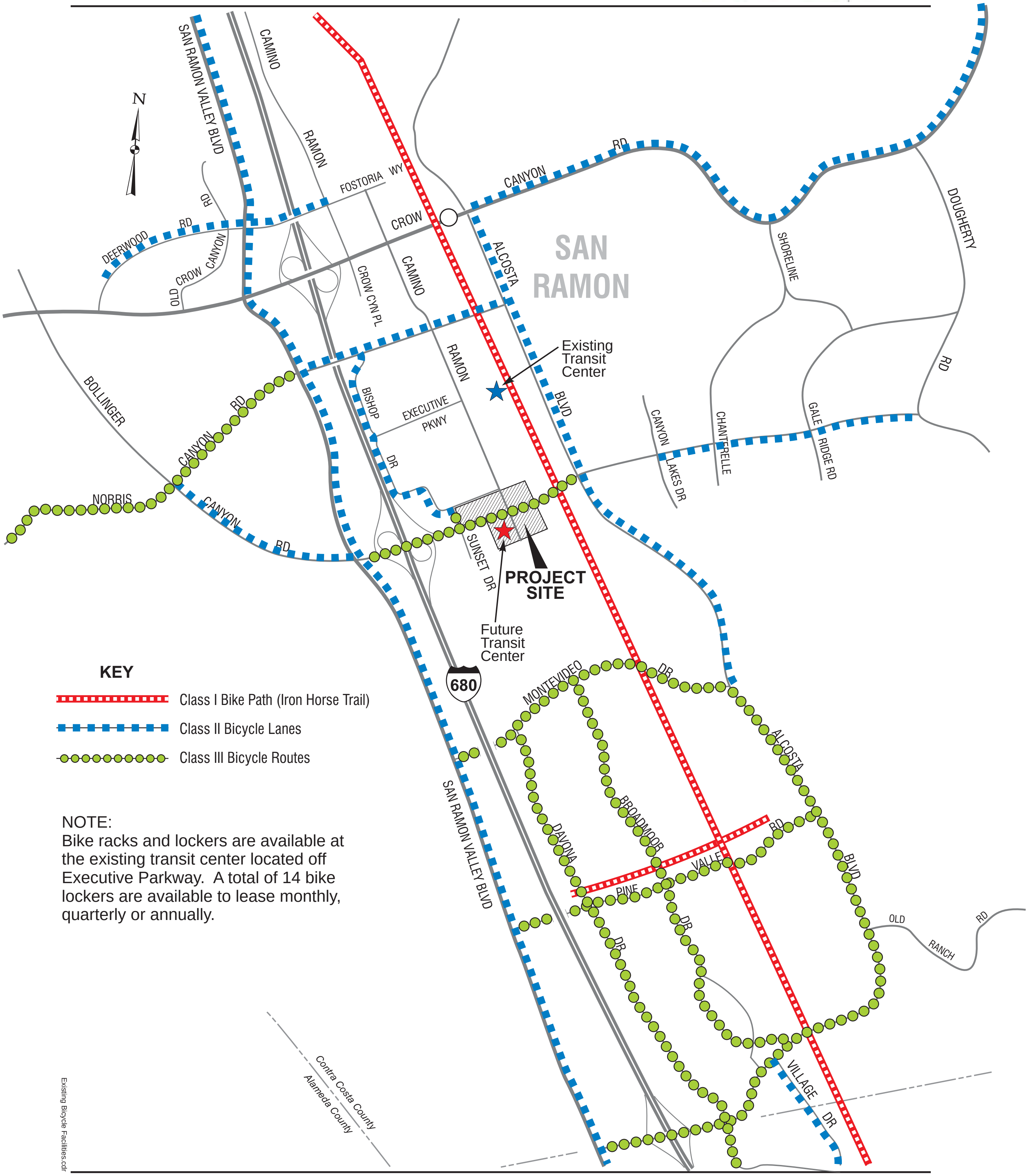
Figure 6 shows the existing bicycle transportation network near the planned project site.

2.4.2 Existing Pedestrian Facilities

Pedestrian facilities in the vicinity of the project site include striped crosswalks, sidewalks, and an off-street trail.

Figure 7 shows the existing pedestrian facilities in the area surrounding the proposed project. Signalized intersections near the project site provide pedestrian signal indications using pedestrian countdown signal heads and audio signals for visually impaired. Pedestrian phases are actuated with pushbuttons.

A pedestrian sidewalk runs along the south edge of Bishop Drive from west of the project site to Sunset Drive where the sidewalk terminates. A meandering sidewalk runs on the north edge of Bishop Drive to Camino Ramon where it ends. A short stretch of sidewalk is available on the



NOTE:
Bike racks and lockers are available at the existing transit center located off Executive Parkway. A total of 14 bike lockers are available to lease monthly, quarterly or annually.

Figure 6

EXISTING BICYCLE FACILITIES

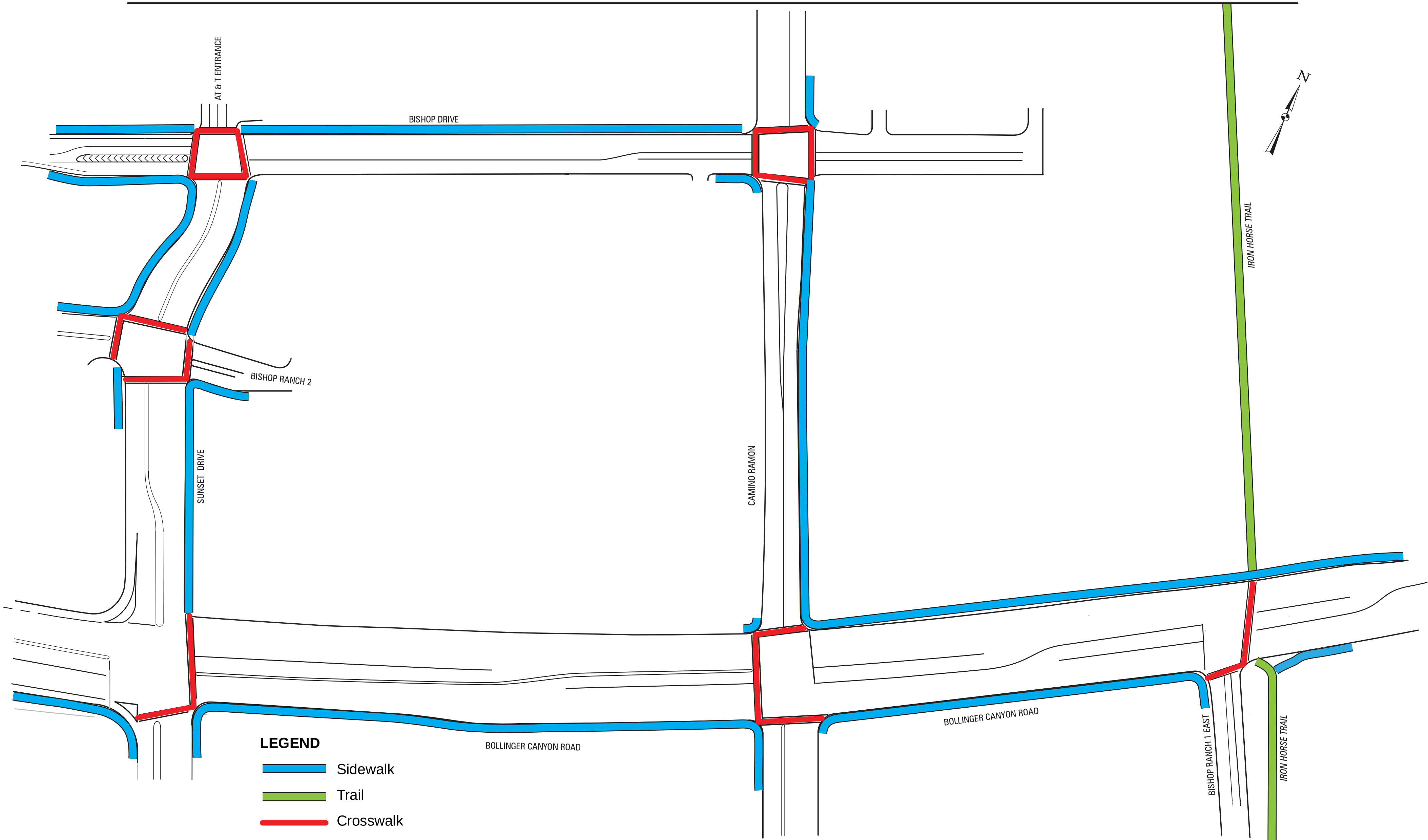


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Figure 7

EXISTING PEDESTRIAN FACILITIES

south side of Bishop Drive between Camino Ramon and a parking lot access just west of Bishop Drive and Camino Ramon intersection. Currently, no sidewalks exist on Bishop Drive west of Camino Ramon.

In the project vicinity, a sidewalk extends along the south edge of Bollinger Canyon Road from west of Sunset Drive to east of the Iron Horse Trail. On the north edge of the road, a sidewalk runs east from Camino Ramon. The sidewalks connect to the Iron Horse Trail just east of the proposed project site.

Sunset Drive has a sidewalk on the west edge of the roadway from Bollinger Canyon Road to Bishop Ranch 2/Center Street access. North of Bishop Ranch 2/Center Street access, sidewalks extend on both sides of the roadway to Bishop Drive, where they connect with a meandering sidewalk situated on the north edge of Bishop Drive.

Bishop Ranch 2/Center Street access has a sidewalk on its south side extending east of the Sunset Drive. To the west of the Sunset Drive, the access has sidewalks on both sides of the roadway.

A sidewalk runs on the east edge of Camino Ramon, extending from north of Bishop Drive to Bollinger Canyon Road. South of Bollinger Canyon Road a sidewalk runs on the west edge of Camino Ramon.

Bishop Ranch 1 East has a sidewalk along its west edge and the Iron Horse Trail running to the east.

Figure 7 shows the locations of crosswalks at the intersections near the project site. All legs of Bishop Drive and Sunset Drive, Bishop Ranch 2/Shops at Bishop Ranch and Sunset Drive, and Bishop Drive and Camino Ramon intersections have pedestrian crosswalks. The intersections of Bollinger Canyon Road with Sunset Drive and Bishop Ranch 1 East have crosswalks only across their south and east legs. Bollinger Canyon Road and Camino Ramon intersection has no crosswalk on its east leg.

2.5 Planned and Proposed Transportation Improvements

This section summarizes planned improvements to streets and intersections within San Ramon that are outlined in planning documents prepared by and/or for local jurisdictions.

2.5.1 San Ramon General Plan 2020, approved by voters in 2002.

The San Ramon General Plan 2020 provides a long-term vision for the City. The General Plan 2020 focuses on achievable goals that can be implemented by 2020. The General Plan 2020 includes a Traffic and Circulation component. Chapter 5 specifies the following improvements for the study area.

Arterial Roadways

- Crow Canyon Road: Widen to eight lanes from I-680 to Alcosta Boulevard (being constructed as of summer 2007). Widen to six lanes from Alcosta Boulevard to Danville Town limits. Preserve right-of-way for widening to four lanes from Bollinger Canyon Road to Alameda County line.

- Dougherty Road: Support construction to six lanes from Crow Canyon Road to Alameda County line.
- Bollinger Canyon Road: Widen to eight lanes from I-680 to Alcosta Boulevard. Construct to six lanes from Alcosta Boulevard to Dougherty Road (North). Construct to four lanes from Dougherty Road (North) to Dougherty Road (South).
- San Ramon Valley Boulevard: Complete construction to four lanes from Montevideo Drive to Alcosta Boulevard.
- Alcosta Boulevard Extension: Extend Alcosta Boulevard north from Crow Canyon Road to Fostoria Parkway as a four-lane street. Widen and construct Fostoria Parkway as a four-lane roadway from Camino Ramon east to Alcosta Boulevard extension. (These streets are partially within the Danville Town limits, and these projects would require the support and participation of the Town of Danville.)

<u>Collector and Local Roadways</u>

- Deerwood Road: Widen to four lanes from San Ramon Valley Boulevard to Crow Canyon Road.
- Camino Ramon: Widen to four lanes from Crow Canyon Road to Fostoria Parkway.
- Twin Creeks Drive: Extend and construct as a four-lane street from Crow Canyon Road to Old Crow Canyon Road.

<u>Bicycle and Pedestrian Facilities</u>

- Study the feasibility of bicycle/pedestrian overcrossings on the Iron Horse Trail at Bollinger Canyon Road and Crow Canyon Road. (This study is currently underway.)
- Designate Fostoria Parkway as a Class III bicycle facility from Crow Canyon Place to Iron Horse Trail (to be constructed).
- Provide new Class II bike lanes on Dougherty Road.

2.5.2 Bollinger Canyon Road Plan Line Study

This project prepared a Plan Line Study for the ultimate geometric alignment of Bollinger Canyon Road from San Ramon Valley Boulevard to Canyon Lakes Drive. The Plan Line Study is currently in the design phase and will be finalized and adopted by the end of 2007.

2.5.3 Contra Costa Countywide Comprehensive Transportation Plan (CTP 2004 Update)

The CTP 2004 Update is a 20-year plan developed by the Contra Costa Transportation Authority (CCTA) that will serve as a long-range transportation-planning document for Contra Costa County. During the development of the CTP 2004, the CCTA has identified a range of projects, with several of the projects being located in the study area. The following is a list of improvements in the vicinity of the project site, excluding the improvements already described elsewhere in this section.

- Development of an Iron Horse Trail Corridor Concept Plan for Bollinger Canyon, Crow Canyon, and Sycamore Valley Road. Concept Plan will study the feasibility of constructing pedestrian/bicycle overcrossing(s) along the corridor at the three identified locations.

- Installation of Iron Horse Trail signage for bicyclists and pedestrians along the entire length of Iron Horse Trail.
- Widening of San Ramon Valley Boulevard from Sycamore Valley Road to Crow Canyon Road from 2 to 4 lanes.
- Crow Canyon Road and Dougherty Road intersection modification: Reconfigure the eastbound approach on Crow Canyon Road to three through lanes and one right-turn lane and reconfigure the southbound Dougherty Road south of the intersection to include an acceleration lane for vehicles that have made right-turns from the eastbound Crow Canyon Road.

2.5.4 Tri-Valley Transportation Plan/Action Plan (Year 2000 Update)

In 1994, seven jurisdictions comprised of Alameda County, Contra Costa County, Dublin, Pleasanton, Livermore, Danville and San Ramon formed the Tri-Valley Transportation Council (TVTC). In 1995, the TVTC adopted the Tri-Valley Transportation Plan/Action Plan for Routes of Regional Significance. The TVTC created a Joint Exercise of Powers Agreement (JEPA) and a Tri-Valley Transportation Development Fee was adopted and signed by all TVTC jurisdictions in 1998. In addition, the TVTC identified 11 transportation improvement projects as "high priority" for the region, including:

1. The I-580/I-680 interchange – completed.

2a. SR 84 – I-580 to I-680 Expressway.

2b. SR 84 – Isabel/Rte. 84 interchange at I-580.

3. I-680 Auxiliary Lane Project–Contra Costa–Segments 1 and 3 completed.
4. West Dublin BART Station – currently under construction.
5. I-580 HOV Project.
6. I-680 HOV Project-SR 84 to Sunol Grade.
7. Foothill/San Ramon at I-580 interchange.
8. Alcosta/I-680 interchange – completed.
9. Crow Canyon Road-Alameda County portion.
10. Vasco Road improvements – Alameda County portion.
11. Express Bus Service – Alameda County (LAVTA).

2.5.5 I-680 Investment Options Study (2003)

In 2003, DKS Associates in association with CH2M Hill prepared this study for the Contra Costa Transportation Authority. The study examined several long-term investment options for the I-680 corridor. The recommended option contained numerous improvements along I-680 in the study area. These improvements are referenced below.

- New Express Bus Service: Additional service between the study area and Martinez, East County, and Fremont/San Jose consistent with the Enhanced Scenario recommendations from the Express Bus Study; eight new buses in this service area; and expansion of the existing CCCTA maintenance facility to accommodate additional buses. The additional express bus service would not replace or compete with existing bus service.

- A Project Study Report (PSR) for the Norris Canyon Project has been initiated. The Contra Costa Transportation Authority, in concert with San Ramon and Caltrans, will develop and finalize a PSR that will confirm the scope, schedule and estimated costs of the Norris Canyon project. The Project will provide convenient and direct access for transit, car/vanpools to and from the San Ramon Transit Center and will improve safety due to the reduction in the amount of weaving by HOV's entering or exiting the freeway. Figure 8 illustrates the HOV ramp concept. The PSR is anticipated to be completed by August 2008.
- San Ramon Transit Center Enhancements: Includes expanded parking to be achieved through lease agreements with adjacent properties.
- HOV Lane Extension South (Alcosta Boulevard to south of the I-580 Junction): Includes re-striping the median and widening the outside shoulder to create the width necessary to extend the HOV lanes through the interchange. May require design exemption to accommodate additional lane. The major part of the costs is for improvements in Alameda County.
- Northbound HOV Lane Extension: North (Livorna Road to North Main Street): Through the SR 24 junction. A PSR is currently underway.
- Sycamore Valley Road Direct HOV Ramps: Includes reconstruction of interchange, widening of median, and construction of new HOV-only on- and off-ramps in both the northbound and southbound directions.

2.5.6 Measure J

Contra Costa's Transportation Sales Tax Expenditure Plan, adopted by Contra Costa voters in 2004, will continue with the County's existing ½-cent transportation sales tax to 2034. The Expenditure Plan includes Capital Improvement Projects and Programs ranging from the Caldecott Tunnel Fourth Bore, Highways 4 expansion, intersection improvements on I-680 and State Route 242, adding express bus service from Central Contra Costa to the San Ramon Valley, a San Ramon School Bus Program, Pedestrian, Bicycle and Trail Facilities, to name a few.

A critical capital improvement project for the San Ramon Valley includes: "Interstate 680 Carpool Lane Gap Closures/Transit Corridor Improvement." The Project will extend existing bus/carpool/vanpool lanes on southbound I-680 from North Main Street to Livorna Road and northbound from North Main Street to north of SR 242. Construct bus/carpool on-and-off ramps at Norris Canyon Road and/or Sycamore Valley Road, and other transit corridor improvements.

2.5.7 The County Connection Fiscal Years 2005-2014 Short Range Transit Plan

A short-range transit plan addresses transit improvements expected over the next 5 +/- years. The Plan justifies the County Connection's funding requests and outlines likely changes in services and operations in the future. The Plan is based on the current information and subject to change as new data becomes available. The changes listed below are divided in two groups: Track I and Track II. Track I changes are expected to be implemented in the foreseeable future.

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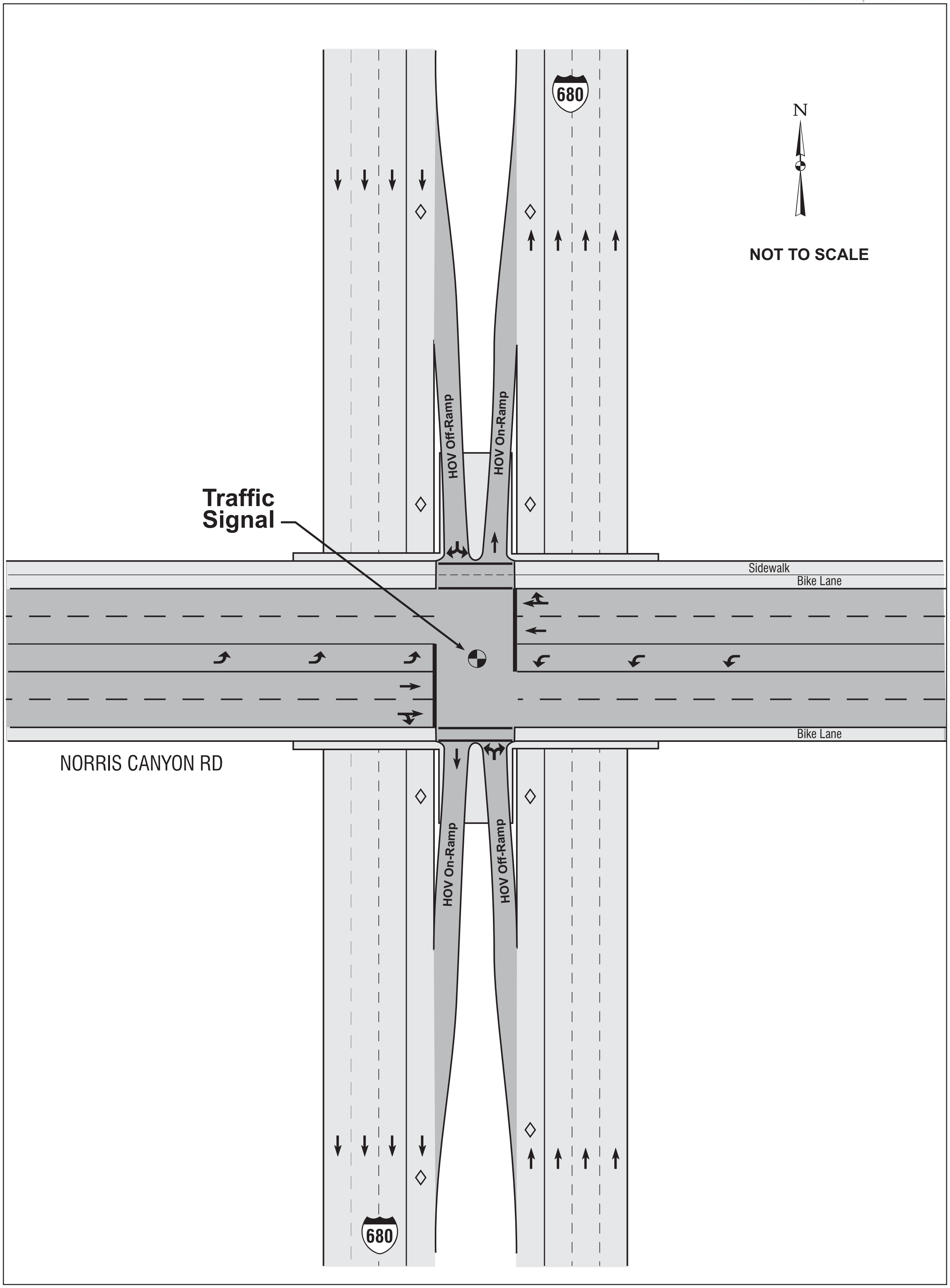

Norris HOV Ramps.cdr

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Figure 8

NORRIS CANYON ROAD HOV RAMP CONCEPT

Track II changes depend on the availability of funding and may or may not be implemented within a reasonable time frame.

Track I Planned Service Changes

- Route 121 Alignment Changes
- New Service Using Out-of Service Bus Trips: This project will review current out-of service bus trips for the potential of operating this trips or portions of these trips as regular in-service trips. Each day County Connection buses travel between the operations facility and the starting points of the routes. These trips could provide service between San Ramon and Dublin, between Downtown Concord and North Concord industrial area.

Track II Proposed Service Changes

- Dougherty Valley Transit Service: This transit plan recommends the creation of an all day route serving Dougherty Valley and Dublin BART, changes to existing Route 121 and the creation of a new local San Ramon bus route. The highest priority has been the new Dougherty Valley route and some of the changes on Route 121. The inauguration of Dougherty Valley Transit Service took place in December 2006.
- CCCTA Route 920 service expansion to serve hypothetical Altamont Commuter Express fourth train. Currently, per agreement with ACE, County Connection provides service to each of ACE's three morning and afternoon trains. Route 920 links the Pleasanton Train Station to Bishop Ranch in San Ramon as well as Walnut Creek.
- Provide limited holiday service on New Year's Day, Labor Day, Fourth of July, Memorial Day, Thanksgiving, or Christmas Day. Currently, no service is provided during these holidays.
- Provide restructured weekend service designed to link major weekend traffic generators with more densely developed residential areas. This improvement would mostly focus on restoring Saturday service to areas that had their Saturday service eliminated as part of the recent efforts to reduce the Authority's operating budget deficit.
- Paratransit is expanded to provide ADA parallel service during the same times and days as Track II fixed-route projects.
- Increased express bus service (various routes).

2.5.8 San Ramon Transit Plan

In 2004, San Ramon embarked on a public transit analysis to provide an objective assessment and overview of the multiple transit services and operational alternatives available to the City. The final plan, adopted by the San Ramon City Council in April 2005, is a transit-planning tool to assist and guide the City's policy makers toward the pursuit of improved and expanded transit service throughout San Ramon.

The San Ramon Transit Plan articulates a vision for public transit services for residents, seniors, youth, commuters and the business community. San Ramon's vision of transit service includes:

- Fixed Route Circulator Service.
- Service to south San Ramon, including California High School, Pine Valley Middle School and the San Ramon Senior center.
- Expanded weekend service.
- Service to Activity Centers along the Northwest corridor of San Ramon Valley Blvd.
- Maximize the existing regional transit routes to effectively meet the needs of all San Ramon residents and commuters.
- Maximize the use of transit funds.

2.5.9 The Contra Costa Countywide Bicycle

This Plan describes bicycle and pedestrian needs in the Contra Costa County and outlines goals and strategies as they apply to bicycling and walking. The Plan seeks to encourage local efforts to improve bicycle and pedestrian facilities facilitating safety and attractiveness of bicycling and walking. The Plan lists several projects proposed in the study area including already listed above Iron Horse Trail overcrossing at Bollinger Canyon Road as well as Old Ranch Road Bicycle Trail running from Old Ranch Park to Stage Coach Road.

2.5.10 BART Fiscal Year 2006 to 2015 Short Range Transit Plan and Capital Improvement Program

This report identifies a new West Dublin/Pleasanton station that is planned to be constructed on Blue Line between Castro Valley and Dublin/Pleasanton stations in the median of I-580. The station is projected to open in fiscal year 2009.

3.0 PROJECT ANALYSIS

3.1 Trip Generation

The addition of 487,117 square feet of office space, 663,339 square feet of retail space, a six screen cinema of 21,945 square feet, a 169 room hotel, 488 condominium units, a 75,150-square foot civic center, a 35,340-square foot library, and any alternate project conditions would add traffic to the study area intersections. Trip generation of the proposed development was calculated using statistics from the Institute of Transportation Engineers and the Civic Center traffic report prepared for the City of San Ramon. The ITE publication Trip Generation, 7th Edition, was used to determine the trip rates for the project. Trip generation and the subsequent traffic operations analysis is conducted for the typical AM and PM peak hours. Traffic volumes and impacts at other times, such as noon or the afternoon school peak hour, would be less. Table 3-1, Table 3-2, and Table 3-3 summarize the trip generation expected for the three project conditions, respectively.

Reductions to the standard trip generation rates have been made to reflect how the project will actually generate traffic once it is built and occupied. Two types of reductions have been made. First, reductions have been made because of the interaction between the various land uses of the project. Second, percentage reductions have been taken into account for proximity to the proposed transit center, pass-by traffic that would otherwise still be on the roadway network, and travel demand management programs that are in place in Bishop Ranch.

For internal trip reductions, adjustments were made to the retail, office park, condominium, and hotel land use trip generations based on the ITE methodology for determining the internal capture associated with multi-use development. The calculation sheets are included in the appendix. Retail, office park, condominium, and hotel were assumed to generate internal trips at the City Center development. Guests at the hotel are expected to use the adjacent retail services and interact with the adjacent office space similar to residents in the condominium units. The internal trips were subtracted from the single-use trip generation estimate to determine the external trips for each land use. Additional percentage based reductions were made, and these reductions were applied to the external trips, not the single-use trip generation estimate.

The additional percentage based reductions include proximity to the proposed transit center, retail pass-by trips, TDM (transportation demand management), and a PM walk mode. A two percent reduction was made for the condominiums and hotel for residential development near a major transit facility and a similar two percent reduction of the office trip generation was made for employment near a major transit facility. These reductions were adapted from the Santa Clara County Congestion Management Plan for development within 2,000 feet of a major bus stop. Data was adapted from Santa Clara County in the absence of any guidelines from Contra Costa County. The retail pass-by trip reduction was determined based on the fitted curve equation from the ITE pass-by methodology. The TDM reduction of 15 percent is based on historic data from the City and the Bishop Ranch Business Park TDM programs. The City of San Ramon’s TDM program was originally established in February 1989. Over the years, the program has evolved into one of three regional TDM programs known as 511 Contra Costa. The City provides administrative oversight and implements the 511 Southern Contra Costa County TDM programs.

Table 3-1 Flex Retail Condition Trip Generation

Description	ITE Code	Size	Units	Trip Generation Rates							Trips						
				AM			PM			Daily	AM			PM			Daily
				In	Out	Total	In	Out	Total		In	Out	Total	In	Out	Total	
Condo	230	488	Per/Unit	0.07	0.36	0.44	0.35	0.17	0.52	5.06	37	178	215	170	84	254	2,469
Internal Trip Adjustment											-11	-27	-38	-56	-45	-101	-913
External Trips											26	151	177	114	39	153	1,556
TC Red. (2%)											-1	-3	-4	-2	-1	-3	-31
Condo New											25	148	173	112	38	150	1,525
Hotel	310	169	Per/Room	0.34	0.22	0.56	0.31	0.28	0.59	6.74	58	37	95	53	47	100	1,139
Internal Trip Adjustment											-19	-20	-39	-17	-25	-42	-422
External Trips											39	17	56	36	22	58	717
TC Red. (2%)											-1	0	-1	-1	0	-1	-14
Hotel New											38	17	55	35	21	57	703
Retail	820	663.34	KSF	0.45	0.29	0.73	1.58	1.71	3.29	35.02	297	190	487	1,048	1,135	2,182	23,231
Internal Trip Adjustment											-53	-35	-88	-91	-103	-194	-2,094
External Trips											244	155	399	957	1,032	1,988	21,137
Red. For Retail Pass-by (22%)[1]											-34	-34	-68	-210	-210	-421	-4,650
Retail New											210	121	331	746	821	1,568	16,487
Cinema[2]	444	6	Per/Screen	0.00	0.00	0.00	8.09	12.13	20.22	58.06	0	0	0	49	73	121	348
Office Park	750	681.77	KSF	1.42	0.18	1.59	0.19	1.17	1.37	11.02	967	120	1,087	130	801	931	7,513
Internal Trip Adjustment											-6	-8	-14	-34	-25	-59	-867
External Trips											961	112	1,073	96	776	872	6,646
Red. TDM (15%)											-144	-17	-161	-14	-116	-131	-997
TC Red. (2%)											-19	-2	-21	-2	-16	-17	-133
Office New											798	93	891	80	644	724	5,516
Library[6]	*	35.34	KSF	0.70	0.30	1.00	2.50	2.50	5.00	39.75	25	11	36	88	88	177	1,405
Red (25% for PM Walk Mode)											0	0	0	-22	-22	-44	0
Library New											25	11	36	66	66	133	1,405
City Hall[6]	*	75.15	KSF	2.43	0.27	2.7	1.08	2.52	3.6	61.25	183	20	203	81	189	271	4,603
Transit/TDM Red. (10%)											-18	-2	-20	-8	-19	-27	-460
City Hall New											165	18	183	73	170	243	4,143
TOTAL NEW TRIPS NO ADJUSTMENTS											1,566	556	2,122	1,619	2,417	4,035	40,709
TOTAL NEW TRIPS WITH ADJUSTMENTS											1,261	407	1,668	1,161	1,834	2,995	30,127

Footnotes: (1) Used ITE Pass-by trip percentage equation for the PM peak period and applied this percentage to the AM peak hour outbound and PM peak hour inbound, with the same number of inbound and outbound pass-by trips during each peak hour.
(2) Daily is a Friday based on only one observation.
(3) An internal traffic reduction was applied to condo, hotel, retail, and office park based on the ITE methodology.
(4) Condo, hotel and office traffic is reduced by 2 percent to reflect the new location of the transit center.
(5) Office traffic is reduced by 15 percent and city hall by 10% to reflect the existing TDM program.
(6) Trip generation for the library and city hall are based on the Civic Center Report. Daily trip rates at the library and the city hall were determined based on the ratio of the average AM PM peak hour from the Civic Center Report to the ITE Trip Generation for library and government office building. The ratio was multiplied by the ITE Trip Generation daily rate for the library and government office building, respectively, to determine an appropriate daily rate consistent with the Civic Center Report.
TC = transit center
TDM = transportation demand management
KSF = 1,000 square feet

Table 3-2 Flex Office Condition Trip Generation

Description	ITE Code	Size	Units	Trip Generation Rates							Trips						
				AM			PM			Daily	AM			PM			Daily
				In	Out	Total	In	Out	Total		In	Out	Total	In	Out	Total	
Condo	230	488	Per/Unit	0.07	0.37	0.44	0.35	0.17	0.52	5.06	37	178	215	170	84	254	2,469
Internal Trip Adjustment											-12	-25	-37	-58	-45	-103	-921
External Trips											25	153	178	112	39	151	1,548
TC Red. (2%)											0	-3	-4	-2	-1	-3	-31
Condo New											24	150	174	110	38	148	1,518
Hotel	310	169	Per/Room	0.34	0.22	0.56	0.31	0.28	0.59	6.74	58	37	95	53	47	100	1,139
Internal Trip Adjustment											-20	-20	-40	-18	-25	-43	-430
External Trips											38	17	55	35	22	57	709
TC Red. (2%)											-1	0	-1	-1	0	-1	-14
Hotel New											37	17	54	34	21	56	695
Retail	820	613.20	KSF	0.46	0.30	0.76	1.62	1.76	3.38	36.00	283	181	465	995	1,077	2,072	22,074
Internal Trip Adjustment											-54	-39	-93	-110	-108	-218	-2,198
External Trips											229	142	372	885	969	1,854	19,876
Red. For Retail Pass-by (22%)											-31	-31	-63	-195	-195	-389	-4,373
Retail New											198	111	309	690	775	1,465	15,503
Flex Office	710	50.14	KSF	1.90	0.26	2.15	0.46	2.23	2.69	15.64	95	13	108	23	112	135	784
Internal Trip Adjustment											-6	-3	-9	-8	-24	-32	-177
External Trips											89	10	99	15	88	103	607
Red. TDM (15%)											-13	-1	-15	-2	-13	-15	-91
TC Red. (2%)											-2	0	-2	0	-2	-2	-12
Flex Office New											74	8	82	12	73	85	504
Cinema	444	6	Per/Screen	0.00	0.00	0.00	8.09	12.13	20.22	6.95	0	0	0	49	73	121	348
Office	750	681.77	KSF	1.42	0.18	1.59	0.19	1.17	1.37		967	120	1,087	130	801	931	7,513
Internal Trip Adjustment											-5	-10	-15	-33	-25	-58	-842
External Trips											962	110	1,072	97	776	873	6,671
Red. TDM (15%)											-144	-16	-161	-15	-116	-131	-1,001
TC Red. (2%)											-19	-2	-21	-2	-16	-17	-133
Office New											799	91	890	81	644	725	5,537
Library	*	35.34	KSF	0.70	0.30	1.00	2.50	2.50	5.00	39.75	25	11	36	88	88	177	1,405
Red (25% for PM Walk Mode)											0	0	0	-22	-22	-44	0
Library New											25	11	36	66	66	133	1,405
City Hall[6]	*	75.15	KSF	2.43	0.27	2.7	1.08	2.52	3.6	61.25	183	20	203	81	189	271	4,603
Transit/TDM Red. (10%)											-18	-2	-20	-8	-19	-27	-460
City Hall New											165	18	183	73	170	243	4,143
TOTAL NEW TRIPS NO ADJUSTMENTS											1,648	560	2,208	1,589	2,471	4,060	40,336
TOTAL NEW TRIPS WITH ADJUSTMENTS											1,322	406	1,727	1,115	1,861	2,976	29,653

Table 3-3 Flex Civic Center

Description	ITE Code	Size	Units	Trip Generation Rates							Trips						
				AM			PM			Daily	AM			PM			Daily
				In	Out	Total	In	Out	Total		In	Out	Total	In	Out	Total	
Condo	230	488	Per/Unit	0.07	0.37	0.44	0.35	0.17	0.52	5.06	37	178	215	170	84	254	2,469
Internal Trip Adjustment											-12	-27	-39	-56	-45	-101	-913
External Trips											25	151	176	114	39	153	1,556
TC Red. (2%)											0	-3	-4	-2	-1	-3	-31
Condo New											24	148	172	112	38	150	1,525
Hotel	310	169	Per/Room	0.34	0.22	0.56	0.31	0.28	0.59	6.74	58	37	95	53	47	100	1,139
Internal Trip Adjustment											-19	-20	-39	-17	-25	-42	-422
External Trips											39	17	56	36	22	58	717
TC Red. (2%)											-1	0	-1	-1	0	-1	-14
Hotel New											38	17	55	35	21	57	703
Retail	820	663.34	KSF	0.45	0.29	0.73	1.58	1.71	3.29	35.02	297	190	487	1,047	1,135	2,182	23,231
Internal Trip Adjustment											-53	-35	-88	-91	-103	-194	-2,094
External Trips											244	155	399	956	1,032	1,988	21,137
Red. For Retail Pass-by (25%)											-39	-39	-77	-239	-239	-478	-4,650
Retail New											205	116	322	717	793	1,510	16,487
Cinema	444	6	Per/Screen	0.00	0.00	0.00	8.09	12.13	20.22	58.06	0	0	0	49	73	121	348
Office	750	792.26	KSF	1.39	0.17	1.56	0.19	1.16	1.34	10.94	1,097	136	1,233	149	916	1,065	8,664
Internal Trip Adjustment											-6	-8	-14	-34	-25	-59	-867
External Trips											1,091	128	1,219	115	891	1,006	7,797
Red. TDM (15%)											-164	-19	-183	-17	-134	-151	-1,170
TC Red. (2%)											-22	-3	-24	-2	-18	-20	-156
Office New											906	106	1,012	96	739	835	6,472
TOTAL NEW TRIPS NO ADJUSTMENTS											1,489	541	2,029	1,468	2,254	3,722	35,852
TOTAL NEW TRIPS WITH ADJUSTMENTS											1,173	387	1,560	1,008	1,664	2,672	25,535

TDM is a series of measures promoting alternatives to the single occupant vehicle for reducing traffic congestion and improving air quality by maximizing the use of the existing transportation infrastructure. These measures include carpooling, vanpooling, transit, walking, bicycling, telecommuting, compressed workweeks, etc. The primary goal of the City's Employer TDM program is to reduce traffic congestion and improve air quality through the reduction of work-related car trips.

As part of this endeavor, the City facilitates a TDM Advisory Committee, which is comprised of five (5) business members appointed by the City Council to make recommendations to the staff, and City Council on the delivery of TDM programs, activities, services, and policies. The TDM committee is responsible for the following:

1. Coordinate and monitor the implementation of the Regional and Citywide TDM efforts in order to achieve reductions in employment-related single occupant vehicle traffic.
2. Recommend to City Council improvements in City services and facilities to assist employers in reducing single occupant vehicles.
3. Develop and implement commute alternative programs in concert with 511 Contra Costa and the Contra Costa Transportation Authority.
4. Coordinate TDM efforts with all employers and complexes in the City.
5. Coordinate TDM efforts with local and regional agencies as designated by the City.
6. Serve as liaison between the City and business community.

The Bishop Ranch Transportation Association has been an active member of the City's TDM program since the program's inception. Bishop Ranch has been recognized a multiple number of times at the local, regional, state, and federal level for their leadership and contribution to reduce the number of single occupant vehicles and encourage commuters to carpool, ride transit, vanpool, walk, bicycle, etc., to work.

Bishop Ranch also continues to create and implement unique, creative and successful TDM strategies that improve air pollution by significantly reducing traffic congestion.

Since 1989, the City has collected data related to commute patterns from businesses throughout the City including the Bishop Ranch Business Park. Over the years, the survey data has included information and survey results from Bishop Ranch Business Park and the City of San Ramon. Recent survey data from the City's TDM program includes:

Number of surveys distributed

	1997	1999	2001	2003	2006
Number of surveys distributed:	22,684	23,601	24,726	21,336	18,332
Number of surveys returned:	3,874	3,701	4,905	6,718	6,953
Response Rate:	17%	16%	20%	31%	38%

Commute Modes 2003

Commute Mode	Percent
Drive alone	77.7%
Carpool	10.5%
Vanpool	3.4%
BART & bus	2.6%
Bus	1.2%
Motorcycle	0.4%
ACE	0.6%
Bicycle	0.6%
Walk	0.4%
Telecommute	1.5%
Compressed day off	1.2%
Total	100%

Commute Modes 2006

Commute Mode	Percent
Drive alone	68.8%
Carpool	9.5%
Vanpool	3.3%
BART & bus	2.4%
Bus	2.5%
Motorcycle	0.6%
ACE	0.9%
Bicycle	1.2%
Walk	0.6%
Telecommute	2.2%
Compressed day off	1.7%
Other	6.3%
Total	100.%

Two reductions were made for the city hall and library. A transit/TDM reduction of 10 percent was made for the city hall and library PM peak hour traffic was reduced by 25 percent for walking. These percentages are consistent with the prior environmental review for these projects in 2003.

The amount of traffic expected to be generated by the 488 planned condominiums would be 173 trips in the AM peak hour, 150 trips in the PM peak hour, and 1,525 daily trips as noted in Table 3-1. Reductions for internal trips and the two percent transit center reduction were assumed in this forecast.

The amount of traffic expected from the hotel would be 55 trips in the AM peak hour, 57 trips in the PM peak hour, and 703 daily trips. Reductions for internal trips and the two percent transit center reduction were assumed.

Table 3-1 also documents the amount of traffic that would be generated by the 663,340 square feet of retail development in the project. The retail component would generate 331 trips in the AM peak hour, 1,568 trips in the PM peak hour, and 16,487 daily trips. An internal trip reduction was applied. The external retail traffic was also reduced by 22 percent to account for pass-by traffic. Pass-by trips are trips passing by on adjacent streets and stopping at the project as an intermediate stop between the original origin and destination. The 22 percent adjustment was applied to the daily traffic, and the AM peak hour outbound traffic and the PM peak hour inbound traffic (which are the non-peak directions during the peak commuter hours). No TDM or transit center reduction was applied to the traffic forecast for the retail component of the project.

The six-screen cinema is not expected to generate trips during the AM peak hour, but will generate 121 trips during the PM peak hour and 348 daily trips. No reduction was made to the cinema-generated traffic.

As noted in Table 3-1, the 681,770 square-foot office park is expected to generate 891 trips in the AM peak hour, 724 in the PM peak hour, and 5516 daily trips. During the AM peak hour the majority of these trips, 89 percent, would be inbound. During the PM peak hour, the majority of the office trips, 86 percent, would be outbound. An internal trip reduction was applied. The external trips were reduced by 15 percent to reflect the successful TDM program in place within the Bishop Ranch Business Park. In addition, a two percent reduction has been assumed for the proposed transit center.

The amount of traffic expected from the library would be 36 trips in the AM peak hour, 133 trips in the PM peak hour, and 1,405 daily trips. During the AM peak hour, 70 percent of these trips would be inbound and during the PM peak hour the directional distribution would be evenly split. The total PM peak hour trip generation has been reduced by 25 percent to reflect the anticipated amount of people that would walk to the library during this period.

The amount of traffic expected from the City Hall would be 183 trips in the AM peak hour, 243 trips in the PM peak hour, and 4,143. During the AM peak hour, 90 percent of these trips would be inbound and during the PM peak hour, 70 percent of these trips would be outbound. The total trip generation has been reduced by 10 percent to reflect the successful TDM program in place within the Bishop Ranch Business Park. The trip generation rates and the trip reduction assumptions for the library and City Hall are consistent with Civic Center traffic report completed in 2003.

The Flex Office project condition trip generation provided in Table 3-2 differs from the first project condition in that 50,142 square feet of the retail would be converted to office space (Flex Office). All other assumptions and reductions were applied in a similar manner to the Flex Retail scenario.

The Flex Civic Center project condition trip generation provided in Table 3-3 differs from the first project condition in that the civic center and library are turned into office and included in the office park since the office park is planned adjacent to these uses. All other assumptions and reductions were applied in a similar manner to the Flex Retail scenario.

Only the Flex Retail scenario was analyzed since it produces the highest number of PM peak hour trips and the PM peak hour is the critical period. In addition, the difference between the trip generations of the project scenarios is small and differences in analysis results are anticipated to negligible. The Flex Retail Scenario is expected to generate 2,995 PM peak hour trips compared to 2,976 for the Flex Office and 2,672 for the Flex Civic Center Scenarios during the PM peak hour.

3.2 Office Trip Generation Methodology

Two types of credit were applied to the office use trip generation. The first trip generation deduct is a “replacement” deduct as it accounts for the teardown of 194,652 square feet of the existing BR2 office building. The second trip generation deduct is regarding a “previous entitlement” 328,220 square feet of future office space in the southeast quadrant of the project (BR1A) has been entitled, and “grandfathered in,” under an existing development, but has yet to be constructed.

The proposed office development in the southeast quadrant of the project (BR 1A) consists of 681,769 square feet. BR2, consisting of 194,652 square feet, currently exists and its traffic generation is included in the existing traffic volumes. BR2 will be torn down. Since its traffic generation is already in existing traffic volume, 194,652 square feet of trip generation was applied as a deduct against the proposed square footage of office development in BR1A of

681,769 square feet, leaving a net increase of 487,117 square feet of office for the project. The increase of an additional 487,117 square feet is used in the Existing Plus Project Condition Analysis for this traffic study. Table 3-4 shows the traffic volumes from the existing office space to be deducted from the roadway network. Table 3-5 shows the resulting trip generation for the existing condition with the removal of the existing office space.

The second trip generation credit relates to existing entitlement on the southeast quadrant land use that has been incorporated into the City's General Plan 2020. When Sunset obtained the southeast quadrant property from Chevron that purchase also included the right and entitlement to construct 1,056,311 square feet of office development. The traffic associated with the development of 1,056,311 square feet was included in the build-out traffic analysis prepared for the General Plan 2020 Environmental Impact Report. Of the 1,056,311 square feet, Sunset Development subsequently developed 728,091 square feet of office development, BR1, and retained the right to build the remaining 328,220 square feet of office space in the future. This right and entitlement is memorialized in the Second Amendment, dated May 28, 2002, to the assumed Chevron Development Agreement. Since the 328,220 square feet of office trip generation was already planned for in the General Plan 2020 trip generation analysis, this amount of credit was taken in the 2020 Level of Service plus project condition analysis leaving a net increase of 353,550 square feet. Removing the existing BR2 office space reduces the net increase further to 158,898 square feet. Table 3-6 illustrates the traffic volumes generated by the entitled office development. Table 3-7 shows the resulting trip generation for the project condition with both the existing office space and the entitled office space subtracted.

3.3 Trip Distribution

Trip distribution is the pattern of travel to and from the project during the peak hours. Since the project has land uses that attract traffic both locally and regionally, the traffic analysis uses three distribution patterns. The office component would generally attract regional travel from the surrounding Tri-Valley community. The retail component would attract travel from the surrounding office park and residents living in the area. Other retail trips would be from the Tri-Valley regional area and would travel longer distances to the site. The residential component would produce regional travel destined to and from the freeways for the surrounding Tri-Valley community. The library component would have locally generated traffic, and the civic center would attract trips regionally. Table 3-8 summarizes the distribution patterns used in the analysis. TRAFFIX software has been utilized to assign the project traffic to the study area intersections. The resultant project trips for the Flex Retail project conditions are shown in Figures 9A and 9B. Some movements noted on Figures 9a and 9B are negative. Negative trips are the result of demolishing the existing BR 2 office space. The trip distribution patterns shown in Table 3-8 were developed from the CCTA's Regional Travel Demand Forecasting Model.

Table 3-4 Traffic Forecast for the Demolition of the Existing Office Uses

Description	ITE Code	Size	Units	Trip Generation Rates							Trips						
				AM			PM			Daily	AM			PM			Daily
				In	Out	Total	In	Out	Total		In	Out	Total	In	Out	Total	
Existing Office Park	750	194.6	KSF	1.73	0.21	1.95	0.25	1.51	1.76	12.52	337	42	379	48	294	342	2,437
Red. TDM (15%)											-51	-6	-57	-7	-44	-51	-366
TC Red. (2%)											-7	-1	-8	-1	-6	-7	-49
Existing Office Park Trips Removed											280	35	315	40	244	284	2,023

Table 3-5 Flex Retail Project Traffic Existing Analysis Summary

Description	AM			PM			Daily
	In	Out	Total	In	Out	Total	
Adjusted New Project Trips	1,261	407	1,668	1,161	1,834	2,995	30,127
Existing Office Removed	-280	-35	-315	-40	-244	-284	-2,023
Net New Project Trips (Existing)	981	372	1353	1121	1590	2711	28,105

Table 3-6 Current Office Park Entitlement

Description	ITE Code	Size	Units	Trip Generation Rates							Trips						
				AM			PM			Daily	AM			PM			Daily
				In	Out	Total	In	Out	Total		In	Out	Total	In	Out	Total	
Office Park	750	328.2	KSF	1.59	0.20	1.79	0.21	1.32	1.53	11.67	523	65	588	70	433	503	3,829
Red. TDM (15%)											-78	-10	-88	-10	-65	-75	-574
TC Red. (2%)											-10	-1	-12	-1	-9	-10	-77
Office Park Trips removed in 2020											434	54	488	59	359	418	3,178

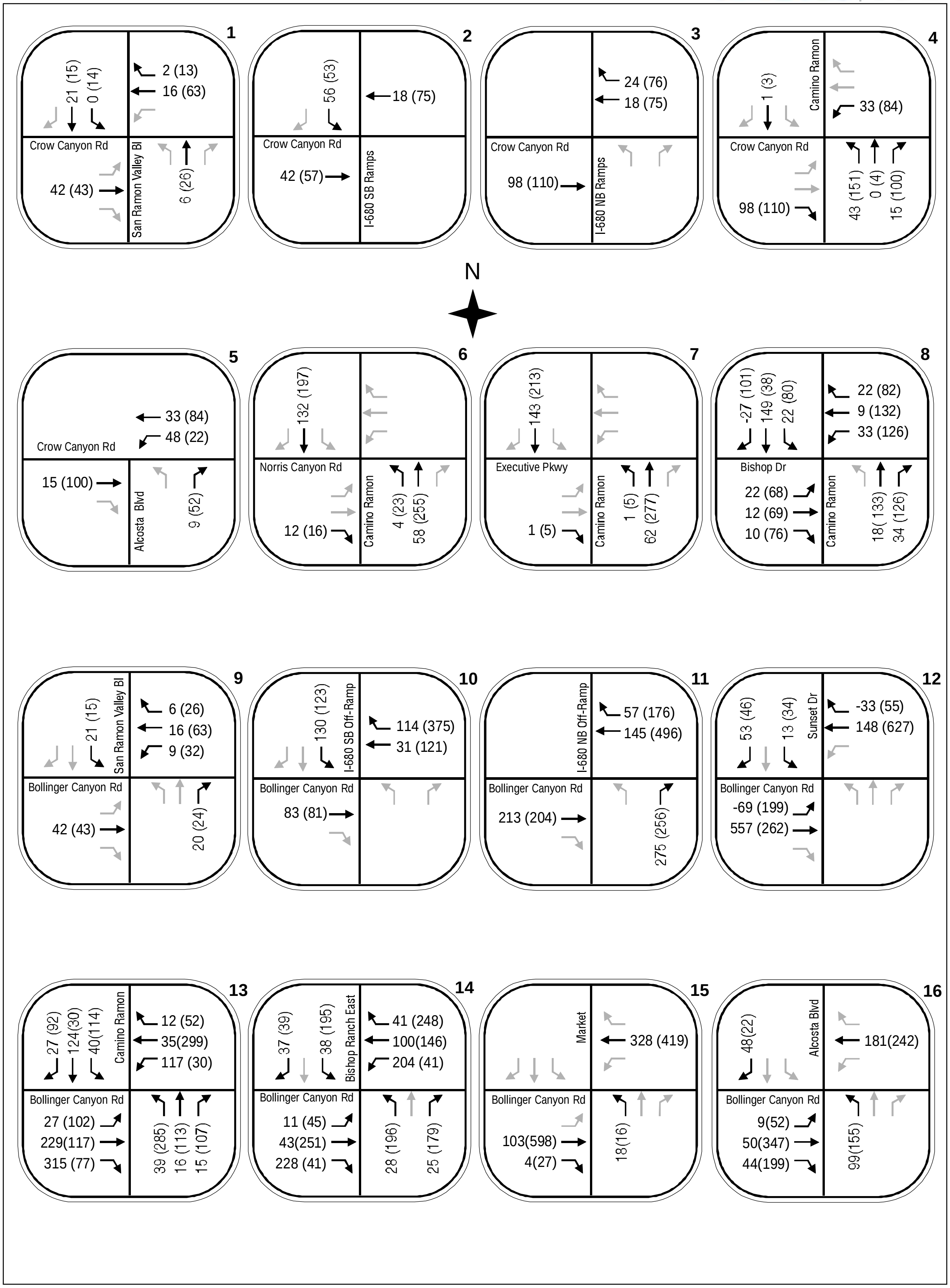
Table 3-7 Flex Retail Project Traffic 2020 Analysis Summary

Description	AM			PM			Daily
	In	Out	Total	In	Out	Total	
Adjusted New Project Trips	1,261	407	1,668	1,161	1,834	2,995	30,127
Minus Office Entitlement	-434	-54	-488	-59	-359	-418	-3,178
Subtotal (New Project Trips – Entitlement)	827	353	1,180	1,102	1,475	2,577	26,949
Existing Office Removed	-280	-35	-315	-40	-244	-284	-2,023
Net New Project Trips Above Current Entitlement	547	318	865	1,062	1,231	2,293	24,926

KSF = 1,000 square feet
TC = transit center
TDM = transportation demand management

Table 3-8 Trip Distribution Assumptions

Gateway	Local Distribution Pattern (Applies to Library & 40% of Retail)	Regional Distribution Pattern (Applies to Civic Center, Office and 60% of Retail)	Regional Distribution Pattern (Applies to Residential)
I-680 North	0%	20%	30%
I-680 South	0%	30%	40%
San Ramon Valley Boulevard S	2%	2%	3%
Crow Canyon Road West	4%	9%	9%
Bollinger Canyon Road East	31%	18%	2%
San Ramon Valley Boulevard N.	4%	2%	2%
Fostoria Way	1%	0%	0%
Bishop Ranch East	1%	0%	0%
Bishop Ranch West	1%	0%	0%
Neighborhoods West of I-680 north of Bollinger	5%	1%	1%
Neighborhoods West of I-680 south of Bollinger	6%	1%	1%
Chevron Park	0%	0%	0%
Market Place	1%	2%	0%
Crow Canyon Road East	7%	5%	2%
Canyon Lakes North	5%	2%	0%
Canyon Lakes South	5%	0%	0%
Alcosta Road South	27%	8%	10%



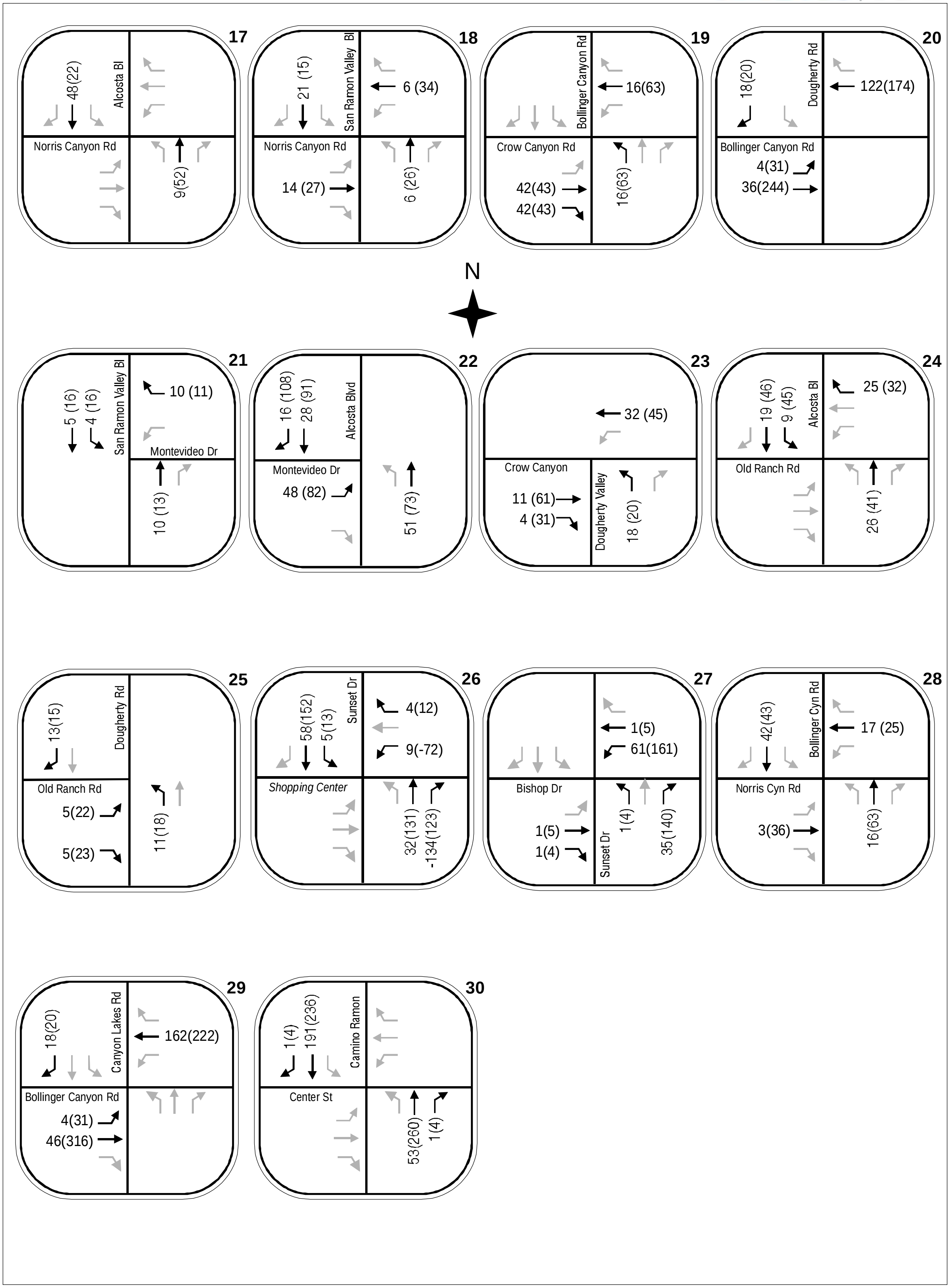
Flex Retail Proj Vols.cdr

SAN RAMON CITY CENTER PROJECT

Figure 9A

FLEX RETAIL PROJECT TRAFFIC VOLUMES

AM (PM) Peak Hour



Flex Retail Proj Vols.cdr

SAN RAMON CITY CENTER PROJECT

Figure 9B

FLEX RETAIL PROJECT TRAFFIC VOLUMES

AM (PM) Peak Hour

4.0 PROJECT EVALUATION

4.1 Project Traffic Operations

4.1.1 Existing Plus Project Peak Hour Traffic Operations

The trip generation for the Flex Retail project condition was added to the surrounding roadway network according to the trip distribution patterns. These new trips were then added to the existing traffic volumes to arrive at the Existing Plus Project traffic volumes. In the trip generation a reduction for pass-by trips was assumed for the retail project. These trips were not assigned to the external network. However, they were accounted for at the immediate project accesses. A figure showing how the pass-by trips were accounted for is included in the appendix. Adjustments were also made to the traffic distribution to reflect improvements associated with the project. These volume adjustments are presented in the appendix. The CCTALOS methodology was used to evaluate the Existing Plus Project conditions. Figures 10A and 10B show the Existing Plus Project traffic volumes for the Flex Retail project conditions.

Table 4-1 summarizes the expected traffic operations when the Flex Retail traffic is added to existing traffic volumes. For comparison purposes, the table also includes the traffic operations based on existing traffic volumes only and the anticipated change in the volume to capacity ratio (V/C) with the addition of project traffic. As noted in the table most intersections would continue to operate at level of service C or better. Several intersections are projected to operate at a level of service D. The intersections of Bollinger Canyon Road/San Ramon Valley Boulevard and Bollinger Canyon Road/Alcosta Boulevard are anticipated to operate at a level of service E during the PM peak hour. However, the volume to capacity ratio would remain below 0.94. The implementation of a portion of the planned improvements on Bollinger Canyon Road and intersecting roads would improve the service level from level of service E to level of service C as noted in the footnotes in Table 4-1. At Alcosta / Bollinger three through lanes in each direction on Bollinger Canyon Road are needed. The City will advertise a construction project in summer 2007 to make this improvement. At Bollinger/San Ramon Valley a northbound right turn lane is required as called for in the Bollinger Canyon Road Plan Line study. The Bollinger Canyon Road / Sunset / Chevron Park West intersection is forecast to deteriorate to level of service F during the PM peak hour with the addition of project traffic. The addition of a free southbound right turn lane on Sunset will improve the operation to level of service D. The free southbound right turn lane would be signed and physically restricted to access northbound I-680 only. Right turning traffic to other destinations would use the right turn lane under signal control.

4.1.2 2020 Peak Hour Traffic Operations

The 2020 background projections were derived from the most recent version of the Contra Costa County Travel Demand Model and are consistent with San Ramon’s General Plan 2020. Figures 11A and 11B shows the peak hour 2020 background traffic volumes. The volumes from the model incorporated into this analysis were without the City Center mixed use project. The appendix contains a section on modeling procedures which documents the population and employment adjustments made to the model to reflect the No Project condition. The trip

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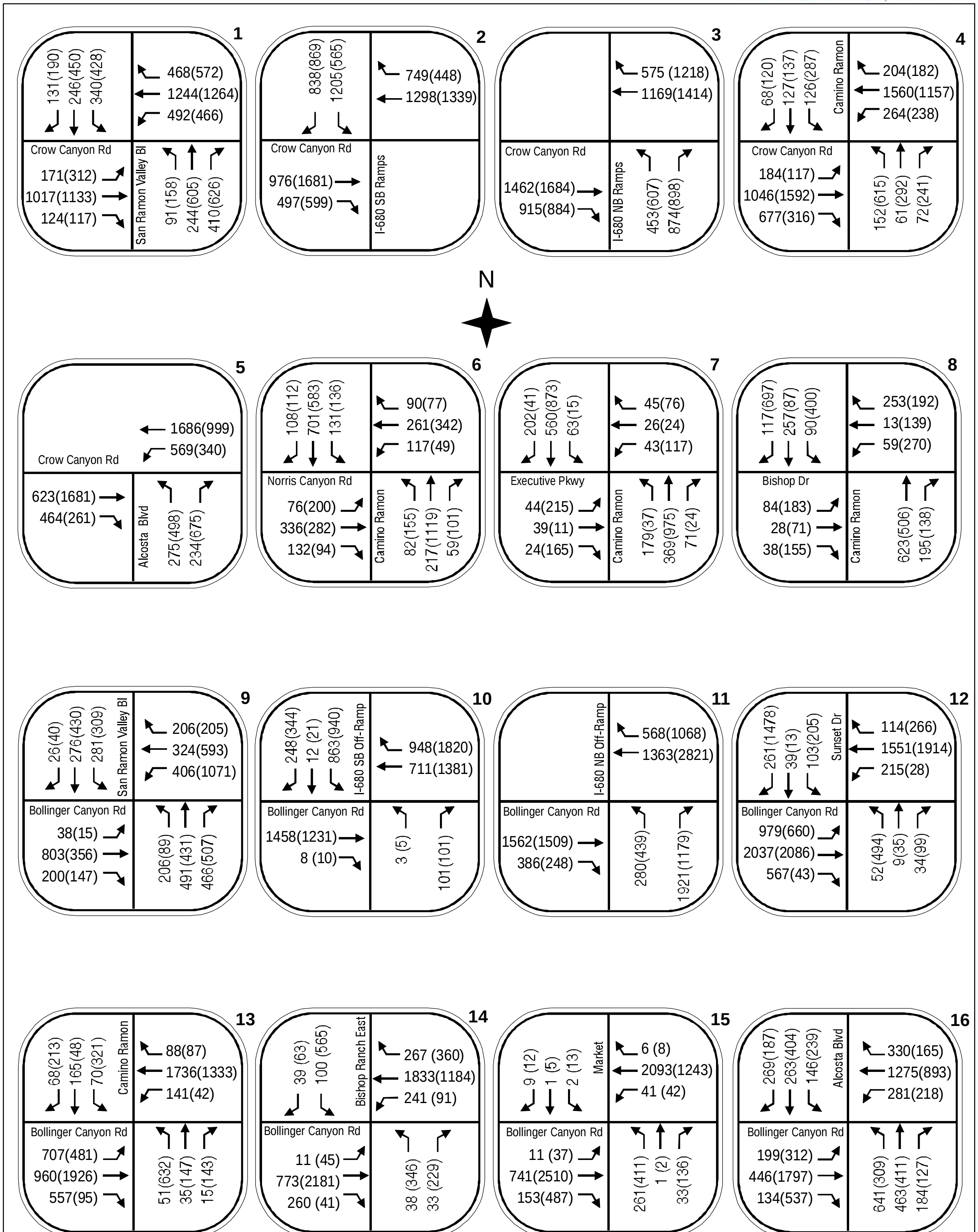

Existing + Flex Retail Vols.cdr

SAN RAMON CITY CENTER PROJECT

Figure 10A

EXISTING + FLEX RETAIL PROJECT TRAFFIC VOLUMES

AM (PM) Peak Hour

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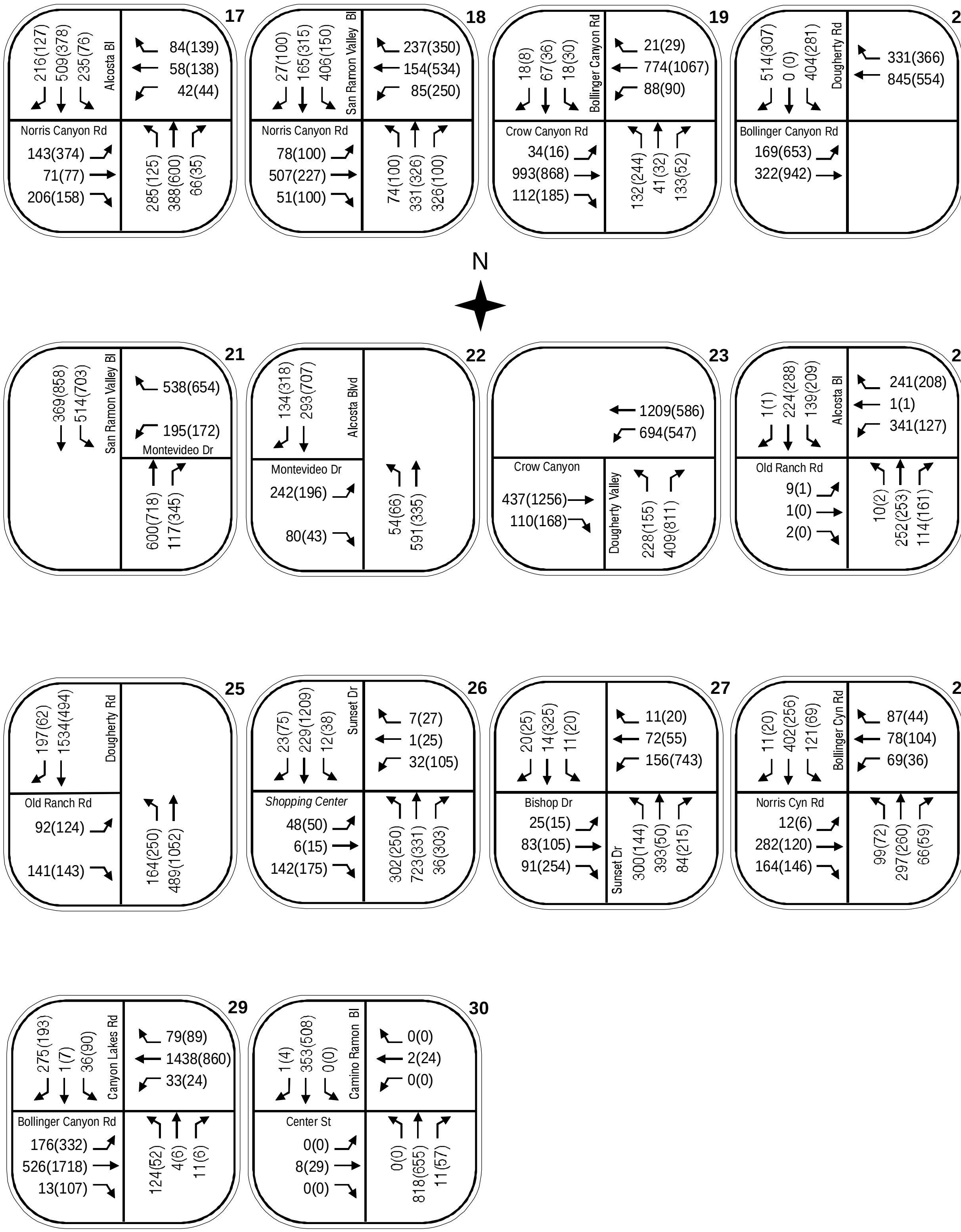

Existing + Flex Retail Vols.cdr

SAN RAMON CITY CENTER PROJECT

Figure 10B

EXISTING + FLEX RETAIL PROJECT TRAFFIC VOLUMES

AM (PM) Peak Hour

Table 4-1 Existing Level of Service Plus Flex Retail Project Condition

Intersection	Existing (Ext Geometry)				Ext + Flex Retail Project Condition				V/C Ratio Difference	
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
	V/C Ratio	LOS	V/C Ratio	LOS	V/C Ratio	LOS	V/C Ratio	LOS	AM	PM
1. Crow Canyon Rd./San Ramon Valley Blvd.	0.56	A	0.74	C	0.57	A	0.75	C	0.01	0.01
2. Crow Canyon Rd./I-680 SB Ramps	0.59	A	0.57	A	0.61	B	0.58	A	0.02	0.01
3. Crow Canyon Rd./I-680 NB Ramps	0.52	A	0.60	A	0.54	A	0.62	A	0.02	0.02
4. Crow Canyon Rd./Camino Ramon	0.57	A	0.76	C	0.63	B	0.82	D	0.06	0.06
5. Crow Canyon Rd./Alcosta Blvd.	0.44	A	0.67	B	0.45	A	0.72	C	0.01	0.05
6. Camino Ramon /Norris Canyon Rd.	0.46	A	0.59	A	0.51	A	0.67	B	0.05	0.08
7. Camino Ramon/Executive Parkway	0.36	A	0.43	A	0.40	A	0.51	A	0.04	0.08
8. Camino Ramon/Bishop Drive	0.36	A	0.46	A	0.45	A	0.59	A	0.09	0.13
9. Bollinger Canyon Rd./ San Ramon Valley Blvd.	0.79	C	0.88	D	0.82 (0.68)[1]	D (B)[1]	0.92 (0.74)[1]	E (C)[1]	0.03 (-0.11)	0.04 (-0.14)
10. Bollinger Canyon Rd./I-680 SB Ramps	0.50	A	0.57	A	0.55	A	0.64	B	0.05	0.07
11. Bollinger Canyon Rd./I-680 NB Ramps	0.75	C	0.71	C	0.88	D	0.88	D	0.13	0.17
12. Bollinger Canyon Rd./ Sunset/Chevron Park W.	0.66	B	0.68	B	0.67 (0.67)[2]	B (B)[2]	1.06 (0.87)[2]	F D[2]	0.01 (0.01)	0.38 (0.19)
13. Bollinger Canyon Rd./Camino Ramon	0.56	A	0.74	C	0.63	B	0.70	B	0.07	-0.04
14. Bollinger Canyon Rd./Bishop Ranch 1 E	0.39	A	0.56	A	0.43	A	0.83	D	0.04	0.27
15. Bollinger Canyon Rd./Market Place	0.45	A	0.54	A	0.52	A	0.67	B	0.07	0.13
16. Bollinger Canyon Rd./Alcosta Blvd.	0.71	C	0.81	D	0.80 (0.80)[3]	D (D)[3]	0.92 (0.74)[3]	E (C)[3]	0.09 (0.09)	0.11 (-0.07)
17. Alcosta Blvd./Norris Canyon Rd.	0.40	A	0.43	A	0.41	A	0.45	A	0.01	0.02
18. San Ramon Valley Blvd./Norris Canyon Rd.	0.55	A	0.55	A	0.56	A	0.57	A	0.01	0.02
19. Bollinger Canyon Rd./Crow Canyon Rd.	0.46	A	0.45	A	0.48	A	0.50	A	0.02	0.05
20. Bollinger Canyon Rd./Dougherty Valley Rd.	0.50	A	0.47	A	0.54	A	0.53	A	0.04	0.06
21. San Ramon Valley Blvd./Montevideo Dr.	0.62	B	0.81	D	0.62	B	0.82	D	0.00	0.01
22. Alcosta Blvd./Montevideo Drive	0.27	A	0.28	A	0.31	A	0.36	A	0.04	0.08
23. Crow Canyon Rd./Dougherty Valley Rd.	0.41	A	0.57	A	0.42	A	0.58	B	0.01	0.01
24. Alcosta Blvd./Old Ranch Rd.	0.30	A	0.26	A	0.32	A	0.30	A	0.02	0.04
25. Old Ranch Rd./Dougherty Valley Rd.	0.64	B	0.37	A	0.65	B	0.38	A	0.01	0.01
26. Sunset Drive/Shopping C.	0.30	A	0.38	A	0.27	A	0.65	B	0.03	0.27
27. Bishop Drive/Sunset Drive	0.36	A	0.47	A	0.41	A	0.67	B	0.05	0.20
28. Bollinger Canyon Road/Norris Canyon Road	0.86*	C*	0.37*	B*	0.90*	C*	0.45*	B*	0.04*	0.08*
29. Bollinger Canyon Road/Canyon Lakes Dr.	0.59	A	0.54	A	0.65	B	0.63	B	0.06	0.09
30. Camino Ramon/Center Street	--	--	--	--	0.26	A	0.23	A	NA	NA

1 – Values with addition of a northbound right turn lane.

2 – Values with one free southbound right turn lane.

3 – Values with addition of eastbound and westbound through lanes, to be advertised in Summer 2007.

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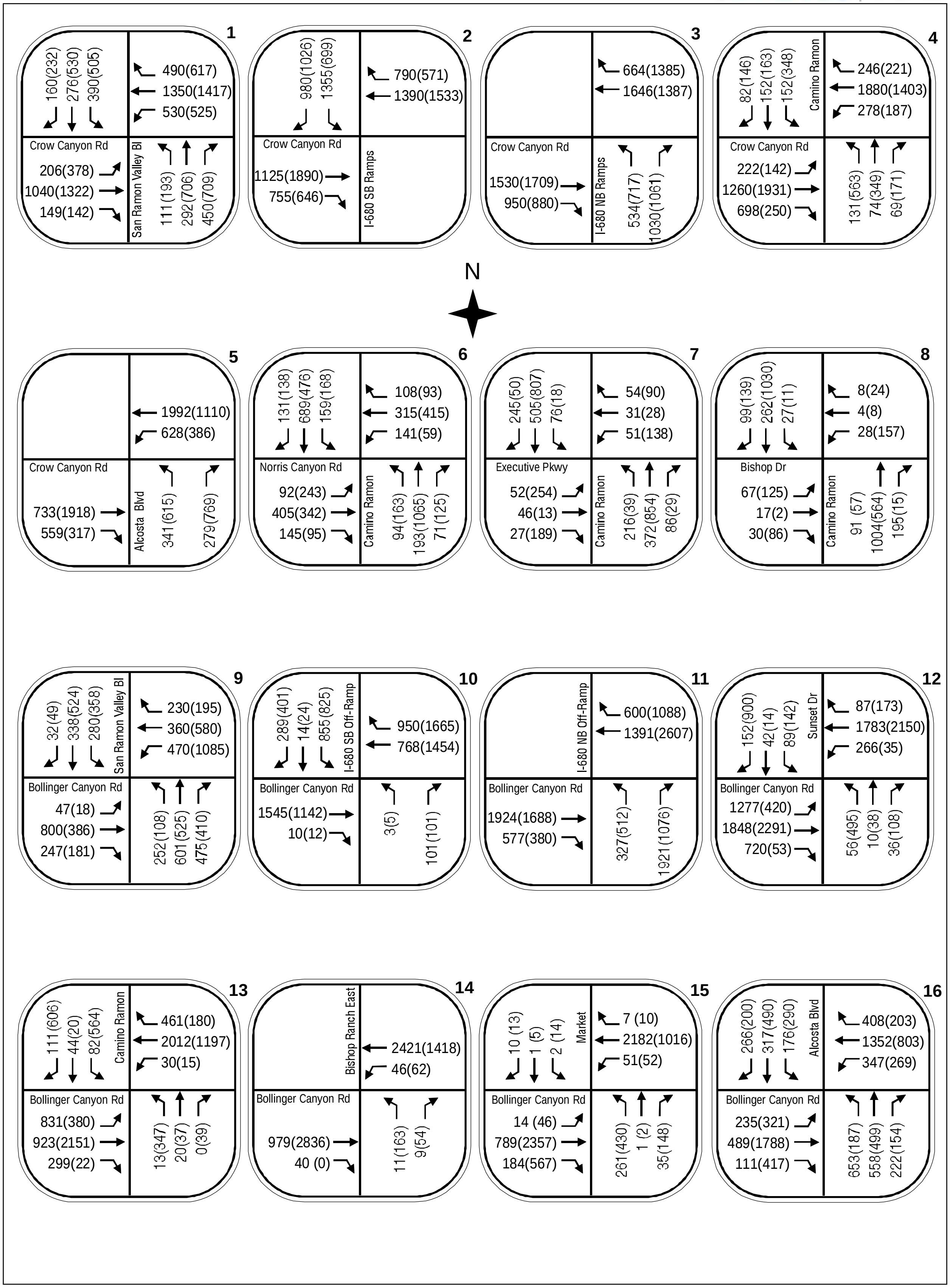

SAN RAMON CITY CENTER PROJECT

Figure 11A

YEAR 2020 BACKGROUND TRAFFIC VOLUMES

AM (PM) Peak Hour

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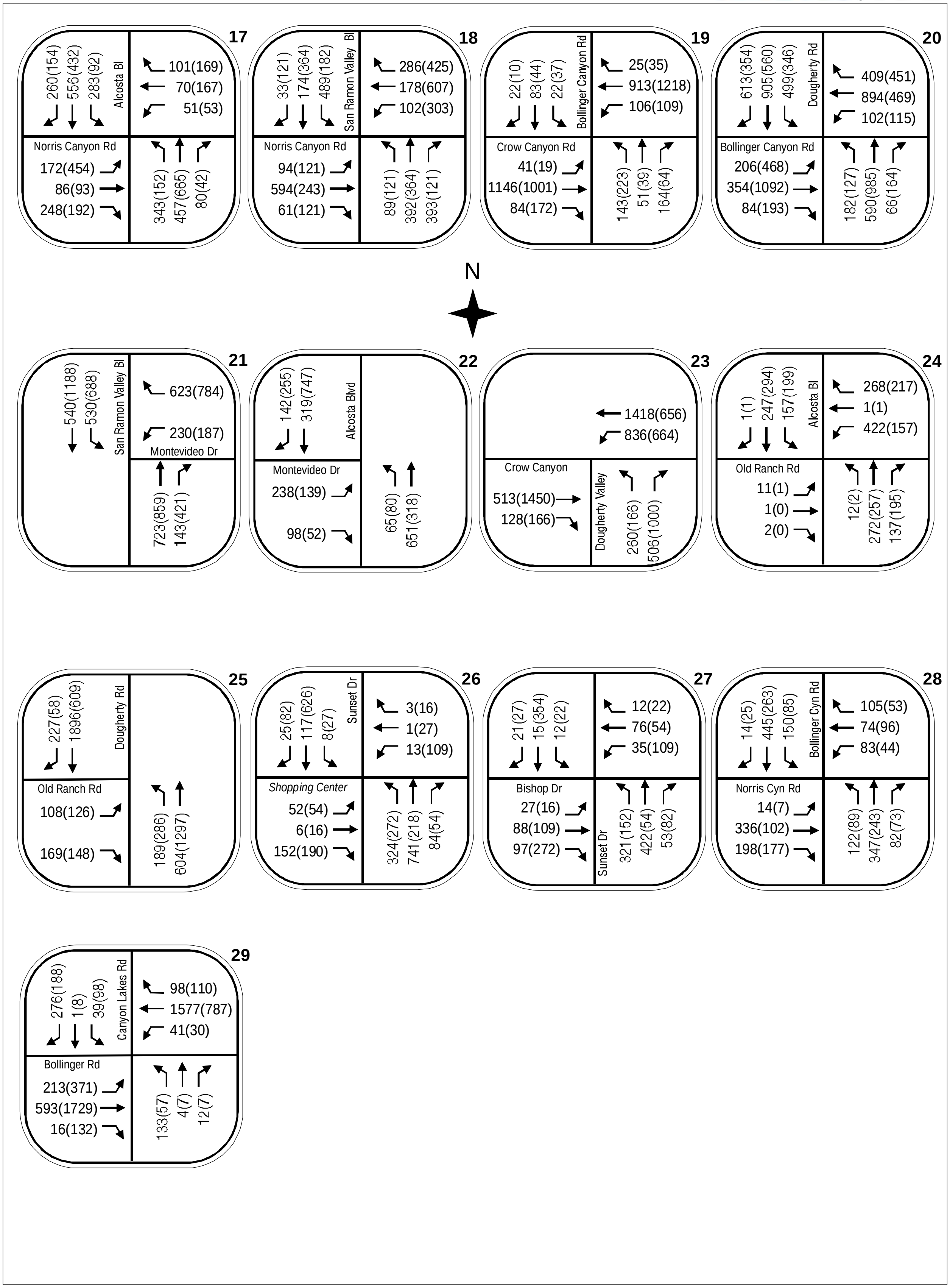

Yr 2020 Vols.cdr

SAN RAMON CITY CENTER PROJECT

Figure 11B

YEAR 2020 BACKGROUND TRAFFIC VOLUMES

AM (PM) Peak Hour

generation and trip distribution used in the Existing Plus Project analyses were also used in the 2020 analyses with the exception of the entitled office space already included in the 2020 traffic volumes. Figures 12A and 12B illustrate the peak hour 2020 Plus Flex Retail traffic volumes. Figures 13A and Figure 13B show the CIP geometrics, noting the improvements from existing conditions to build out of the CIP. Most of the CIP improvements are along Crow Canyon Road and Bollinger Canyon Road. The improvements to Crow Canyon Road and Bollinger Canyon Road are included in the City of San Ramon's 2020 Capital Improvement Program. The 2020 traffic analysis assumes that the CIP improvements identified in Figures 13A and 13B are completed.

Table 4-2 summarizes the 2020 traffic operations with and without the project traffic. As noted in Table 4-2, for 2020 without the project, four intersections would operate at level of service D, Crow Canyon/San Ramon Valley, San Ramon Valley/Bollinger Canyon, Bollinger Canyon/Sunset/Chevron Park West and San Ramon Valley/Montevideo, during the PM peak hour. The Bollinger Canyon/Sunset/Chevron Park West intersection is also forecast to operate at level of service D during the AM peak hour.

Bollinger Canyon Road/Norris Canyon Road would operate at level of service E in the AM peak without project traffic as an unsignalized intersection. All other intersections are projected to operate at level of service C or better for the 2020 No Project condition.

For the 2020 Plus Project condition two intersections are forecast to operate at an unacceptable level of service (level of service E or F). The Bollinger Canyon Road/Sunset/Chevron Park intersection is forecast to operate at level of service F during the PM peak hour and Bollinger Canyon Road/Norris Canyon Road is forecast to operate at level of service E during the AM peak hour. The addition of a free southbound right turn lane on Sunset at Bollinger Canyon will improve the level of service during the PM peak hour to level of service D, and the installation of a traffic signal at the Bollinger Canyon Road/Norris Canyon Road intersection will improve conditions to level of service C or better. The need for this signal is caused by the build-out of the 2020 General Plan, not the City Center project. A traffic signal at the intersection of Bollinger Canyon Road and Norris Canyon Road is planned in the City Capital Improvement Program and will be installed when warranted. The traffic signal warrant sheets for the Bollinger Canyon Road/Norris Canyon Road intersection are included in the appendix.

In the 2020 horizon, three intersections were assessed qualitatively. Crow Canyon Road/Crow Canyon Place would be expected to operate at the same level or better as Crow Canyon Road/Camino Ramon. Crow Canyon Road/Twin Creeks Drive would be expected to operate at the same level or better as Crow Canyon Road/San Ramon Valley Boulevard. The new HOV off-ramp intersection with Norris Canyon Road would be expected to operate at the same level or better as San Ramon Valley Boulevard/Norris Canyon Road.

4.1.3 Daily Traffic Volumes

Existing and 2020 daily traffic volumes were calculated based on AM and PM peak hour volumes. The average of the AM and PM peak hour volumes were summed and multiplied by 10 to obtain a daily two-way count for each leg of each intersection. The peak hour is typically 8 to 12 percent of daily traffic volumes. The daily project traffic forecast was distributed in the Traffix model using the same distribution used for the peak hour analyses. These volumes were

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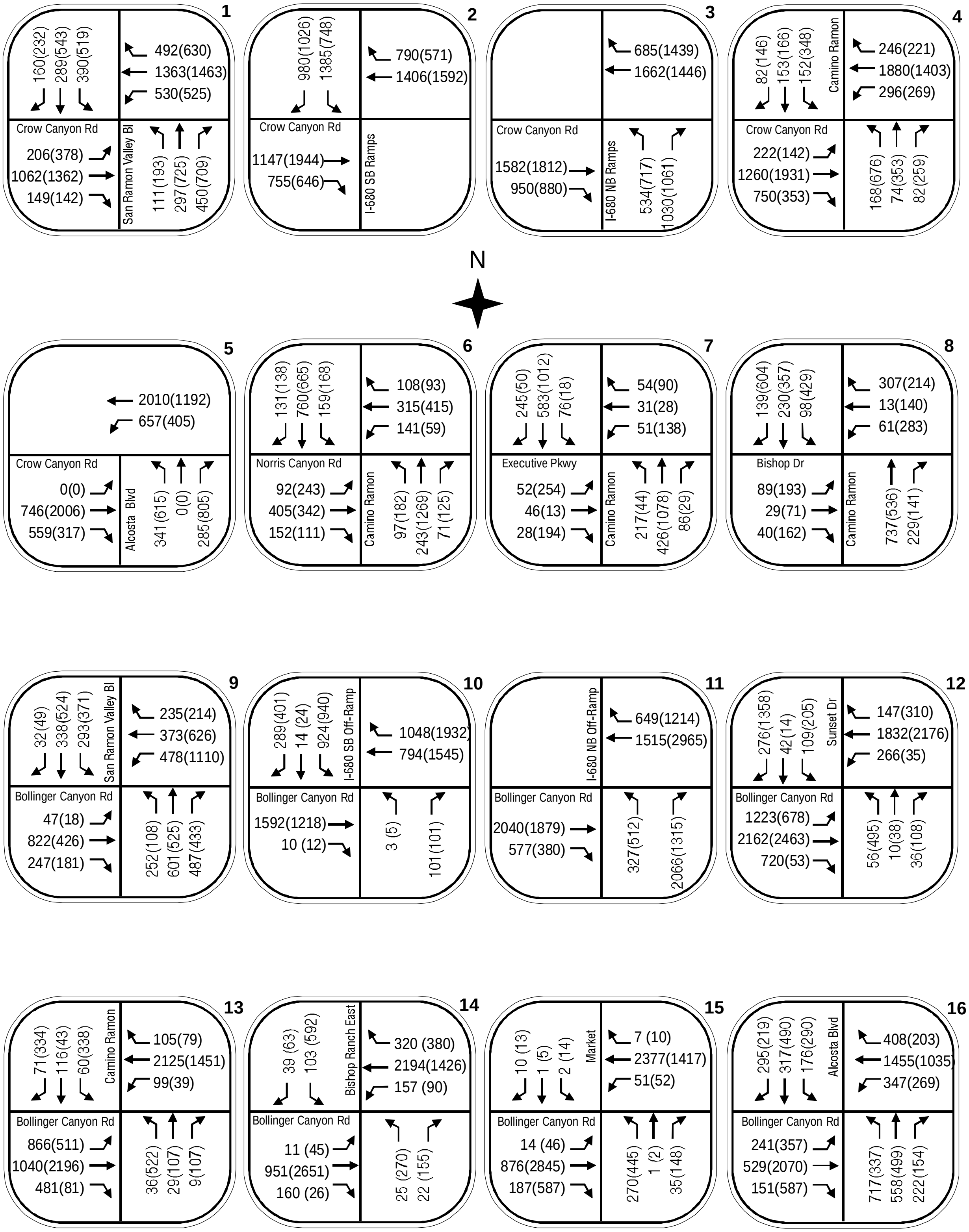

Yr 2020+Flex Retail Vols.cdr

SAN RAMON CITY CENTER PROJECT

Figure 12A

YEAR 2020 PLUS PROJECT FLEX RETAIL TRAFFIC VOLUMES

AM (PM) Peak Hour

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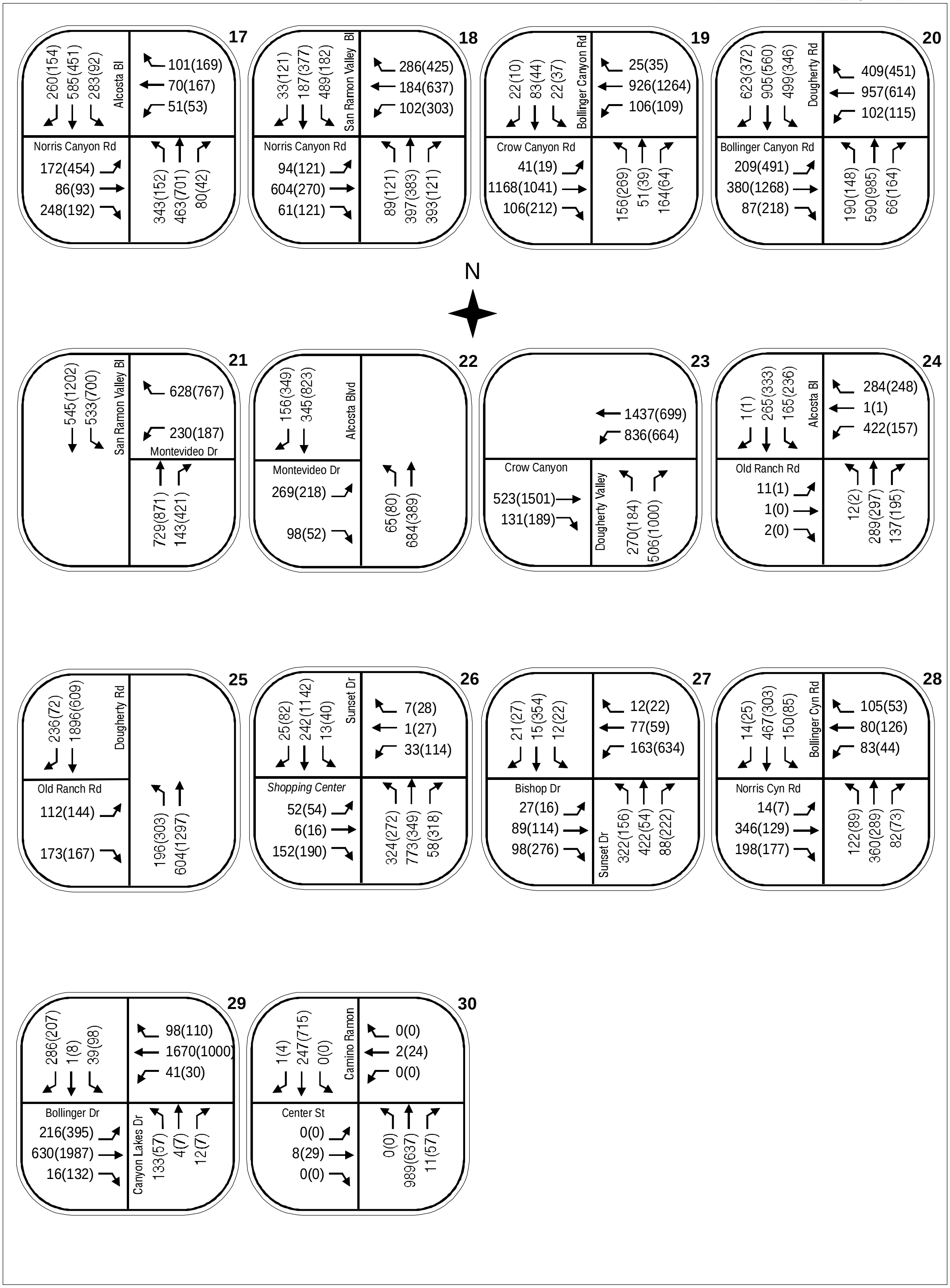

Yr 2020+Flex Retail Vols.cdr

SAN RAMON CITY CENTER PROJECT

Figure 12B

YEAR 2020 PLUS PROJECT FLEX RETAIL TRAFFIC VOLUMES

AM (PM) Peak Hour

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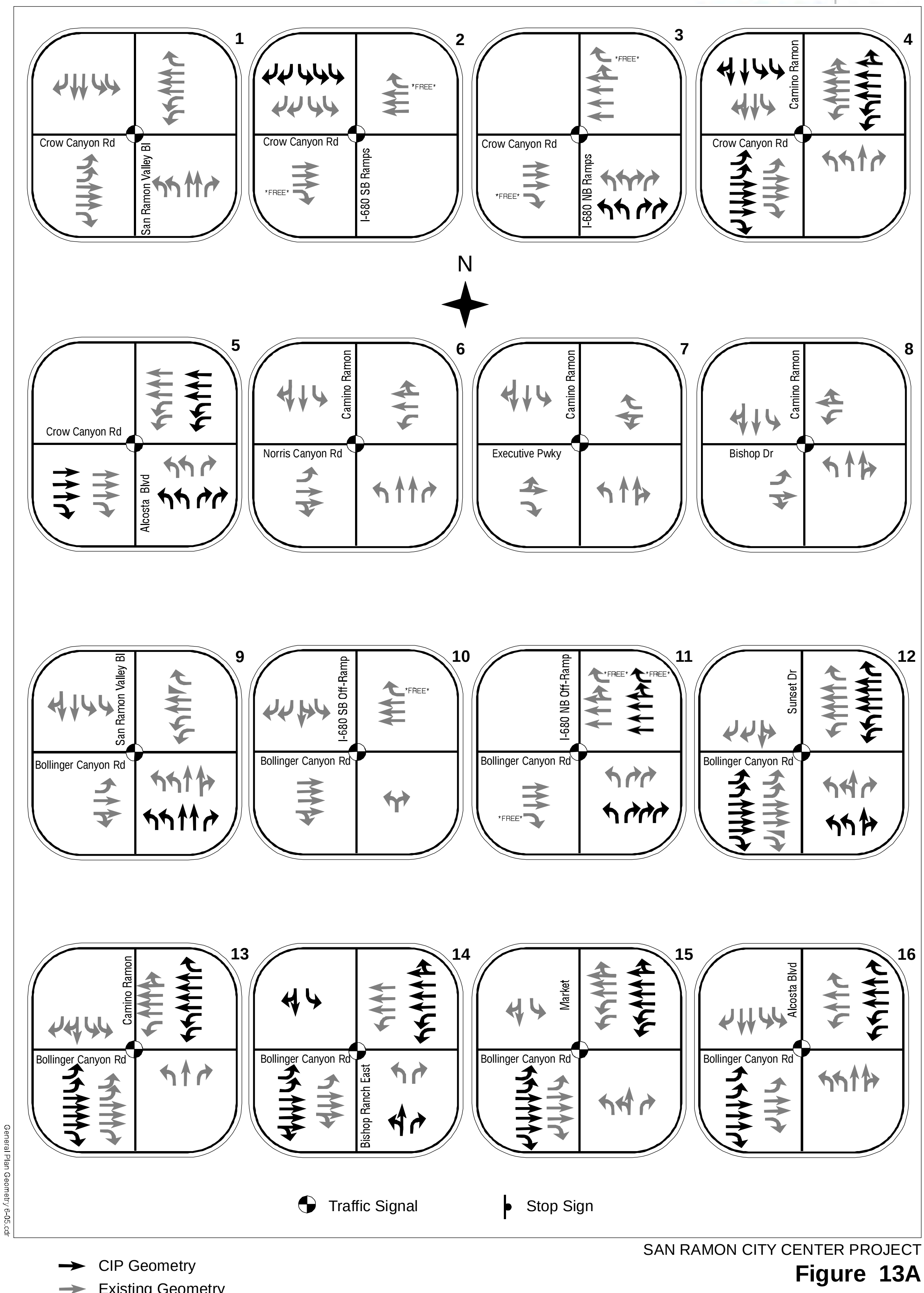
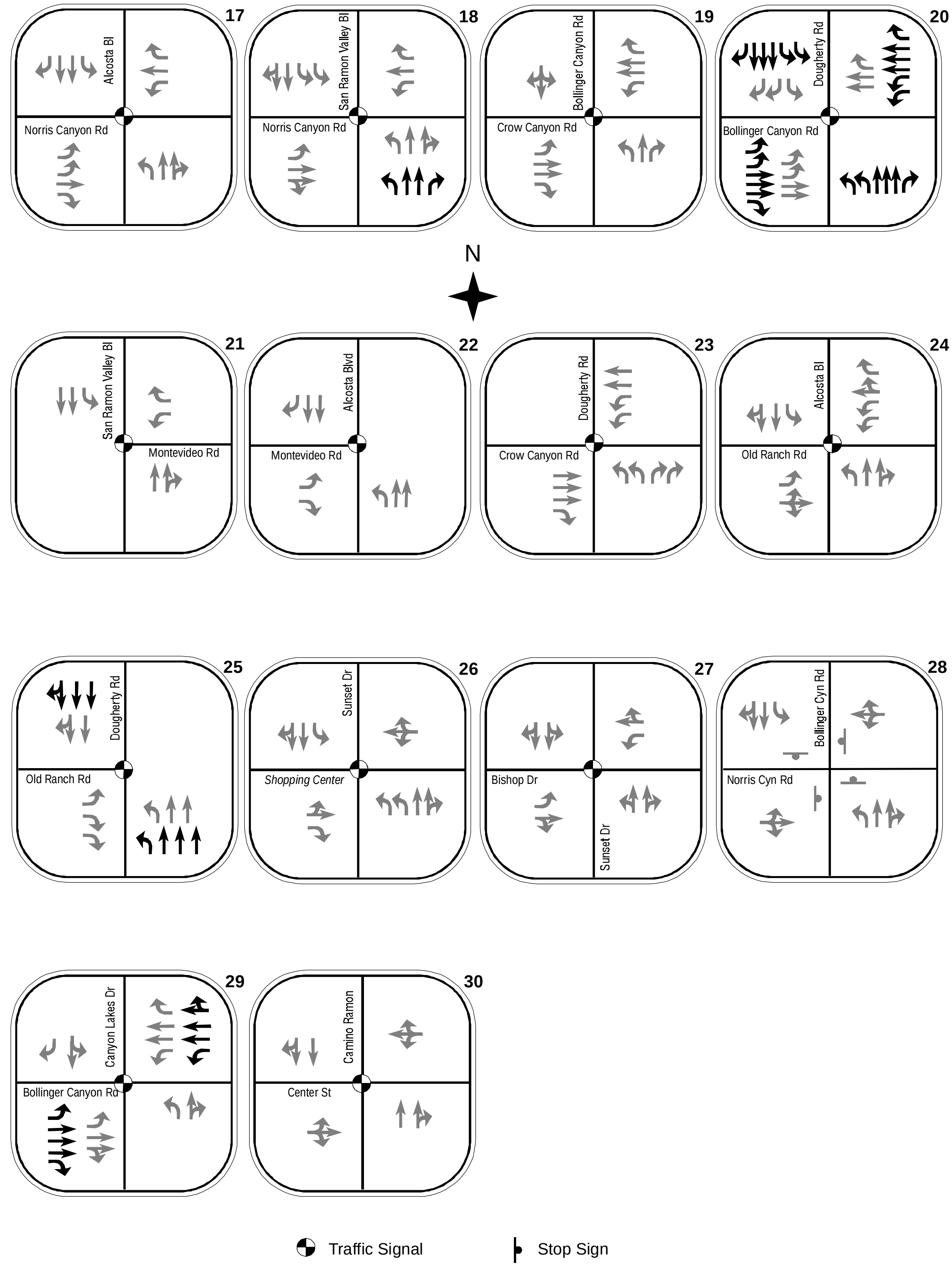


SAN RAMON CITY CENTER PROJECT

Figure 13A

CIP GEOMETRY



General Plan Geometry.cdr

CIP Geometry
Existing Geometry

SAN RAMON CITY CENTER PROJECT

Figure 13B

CIP GEOMETRY

Table 4-2 2020 Level of Service Plus Flex Retail Project Condition

Intersection	2020 (CIP Geometry)				2020 + Flex Retail Project Condition (CIP Geo + Project Mitigation)				V/C Ratio Difference	
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
	V/C Ratio	LOS	V/C Ratio	LOS	V/C Ratio	LOS	V/C Ratio	LOS	AM	PM
1. Crow Canyon Rd./San Ramon Valley Blvd.	0.61	B	0.87	D	0.62	B	0.88	D	0.01	0.01
2. Crow Canyon Rd./I-680 SB Ramps	0.56	A	0.66	B	0.56	A	0.67	B	0.00	0.01
3. Crow Canyon Rd./I-680 NB Ramps	0.60	B	0.64	B	0.61	B	0.66	B	0.01	0.02
4. Crow Canyon Rd./Camino Ramon	0.59	A	0.68	B	0.62	B	0.71	C	0.03	0.03
5. Crow Canyon Rd./Alcosta Blvd.	0.53	A	0.69	B	0.54	A	0.72	C	0.01	0.03
6. Norris Canyon Rd./Camino Ramon	0.56	A	0.73	C	0.58	A	0.79	C	0.02	0.06
7. Camino Ramon/Executive Parkway	0.43	A	0.52	A	0.45	A	0.58	A	0.02	0.06
8. Camino Ramon/Bishop Drive	0.43	A	0.54	A	0.53	A	0.62	B	0.10	0.08
9. San Ramon Valley Blvd./ Bollinger Canyon Rd.	0.75	C	0.81	D	0.76	C	0.84	D	0.01	0.03
10. Bollinger Canyon Rd./I-680 SB Ramps	0.56	A	0.62	B	0.59	A	0.67	B	0.03	0.05
11. Bollinger Canyon Rd./I-680 NB Ramps	0.77	C	0.70	C	0.82	D	0.75	C	0.05	0.05
12. Bollinger Canyon Rd/Sunset/Chevron Park W.	0.80	D	0.85	D	0.80 (0.80)[1]	D (D)[1]	1.05 (0.87)[1]	F (D)[1]	(0.0) (0.0)	(0.20) (0.02)
13. Bollinger Canyon Rd./Camino Ramon	0.62	B	0.68	B	0.69	B	0.66	B	0.07	-0.02
14. Bollinger Canyon Rd./Bishop Ranch 1 E	0.36	A	0.53	A	0.39	A	0.80	C	0.03	0.27
15. Bollinger Canyon Rd./Market Place	0.43	A	0.53	A	0.46	A	0.61	B	0.03	0.08
16. Bollinger Canyon Rd./Alcosta Blvd.	0.67	B	0.75	C	0.71	C	0.80	D	0.04	0.05
17. Norris Canyon Rd./Alcosta Blvd.	0.48	A	0.52	A	0.49	A	0.53	A	0.01	0.01
18. San Ramon Valley Blvd./Norris Canyon Rd.	0.60	A	0.66	B	0.60	B	0.68	B	0.00	0.02
19. Crow Canyon Rd./Bollinger Canyon Rd.	0.55	A	0.55	A	0.57	A	0.59	A	0.02	0.04
20. Bollinger Canyon Rd./Dougherty Valley Rd.	0.61	B	0.63	B	0.63	B	0.64	B	0.02	0.01
21 San Ramon Valley Blvd./Montevideo Dr.	0.69	B	0.88	D	0.70	B	0.89	D	0.01	0.01
22. Alcosta Blvd./Montevideo Drive	0.33	A	0.35	A	0.36	A	0.41	A	0.03	0.06
23. Crow Canyon Rd./Dougherty Valley Rd.	0.50	A	0.55	A	0.50	A	0.56	A	0.00	0.01
24. Alcosta Blvd./Old Ranch Rd.	0.37	A	0.31	A	0.38	A	0.35	A	0.01	0.04
25. Dougherty Valley Rd./Old Ranch Rd.	0.58	A	0.37	A	0.59	A	0.39	A	0.01	0.02
26. Sunset Drive/Shopping C.	0.28	A	0.41	A	0.23	A	0.55	A	-0.05	0.14
27. Bishop Drive/Sunset Drive	0.39	A	0.51	A	0.44	A	0.66	B	0.05	0.15
28. Bollinger Canyon Road/Norris Canyon Road	1.13*	E*	0.49*	B*	1.17* (0.72)[2]	E* (C)[2]	0.57* (0.49)[2]	B* (A)[2]	0.04 (N/A)	0.08 (N/A)
29. Bollinger Canyon Road/Canyon Lakes Road	0.59	A	0.50	A	0.61	B	0.56	A	0.02	0.06
30. Camino Ramon Blvd/Center Street	--	--	--	--	0.31	A	0.24	A	N/A	N/A

1 – Values with one free southbound right turn lane.

2 – Values with addition of signalized intersection control.

* - Highway Capacity Manual (HCM) unsignalized intersection analysis.

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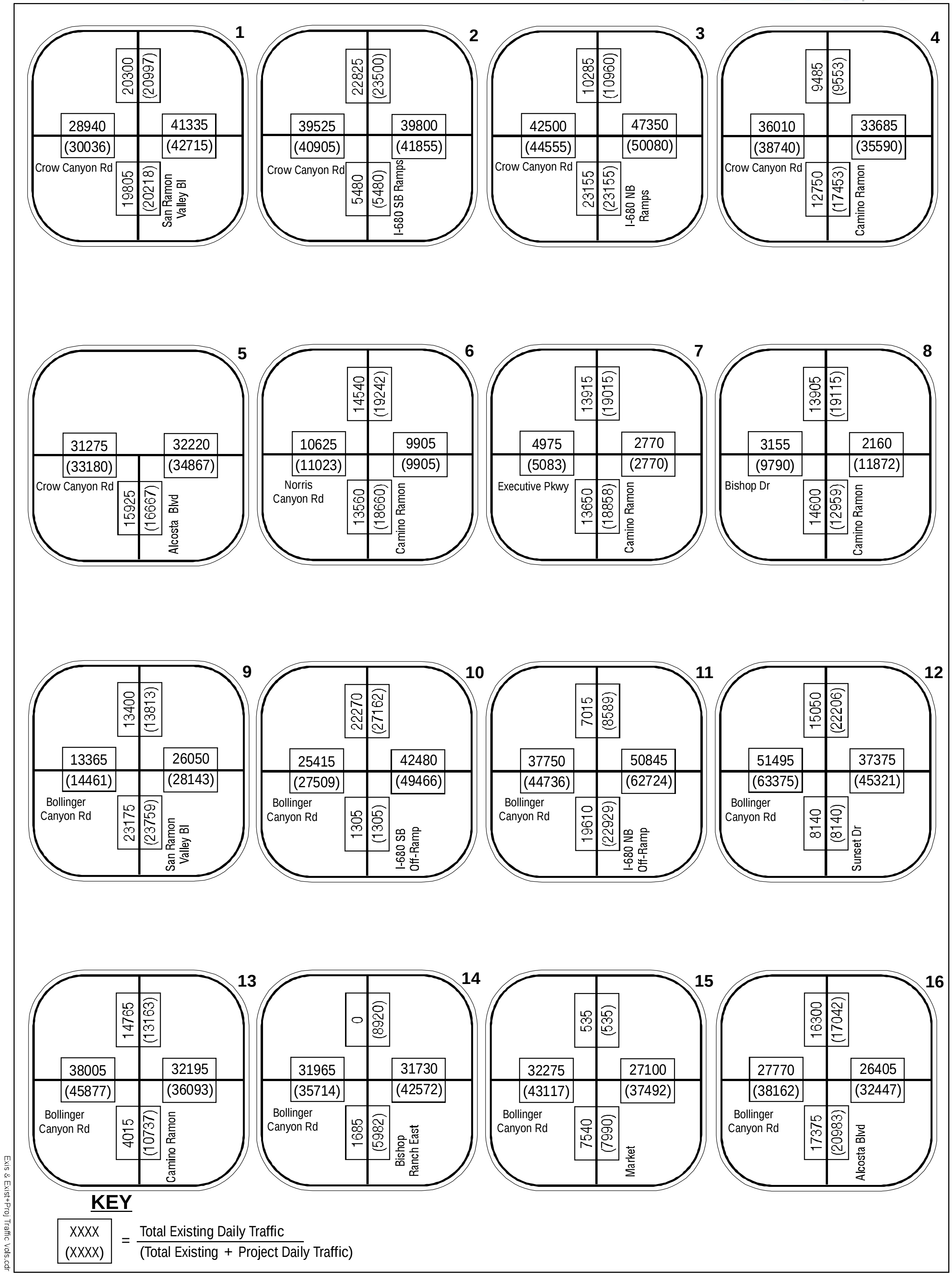
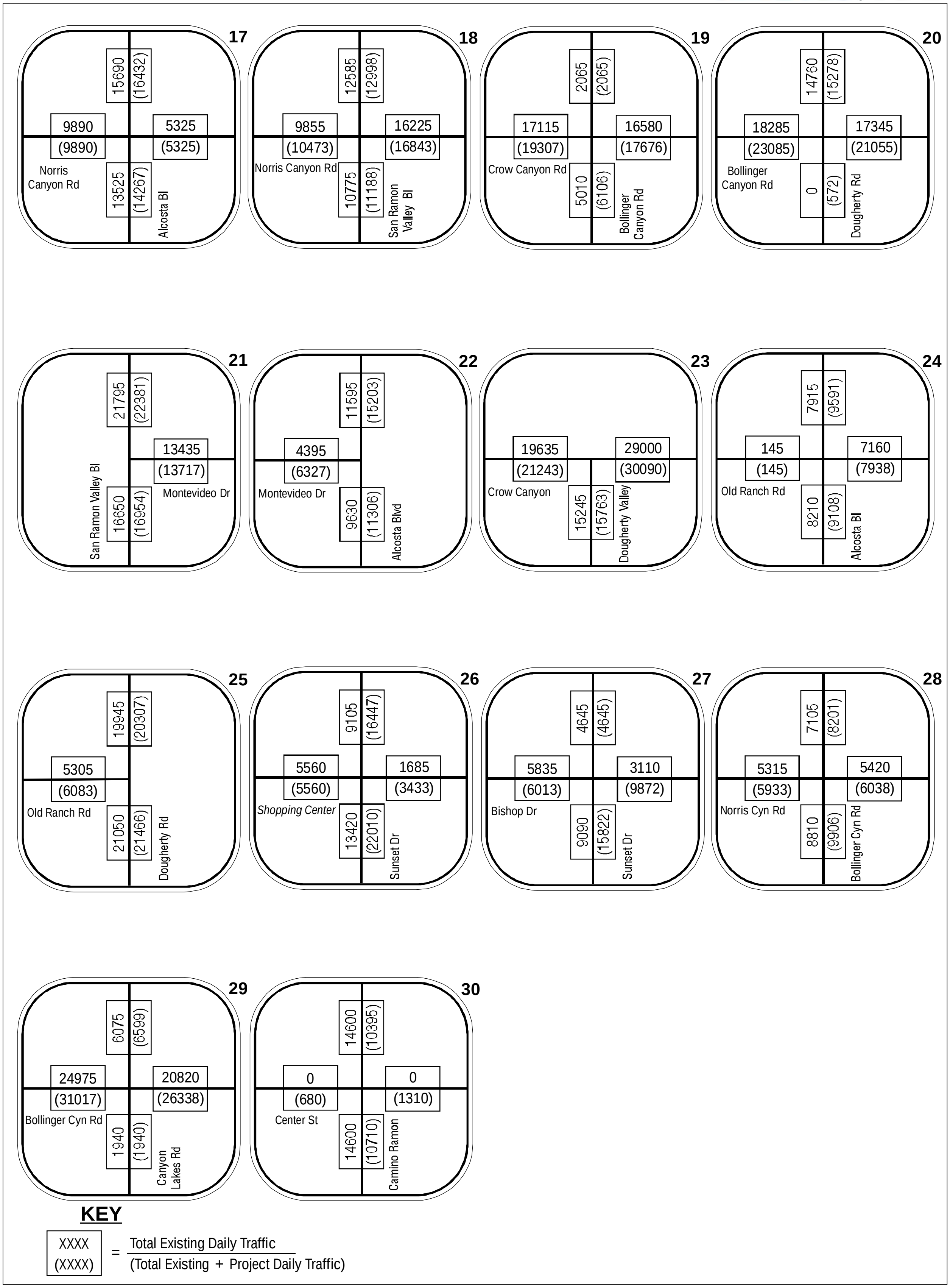


SAN RAMON CITY CENTER PROJECT

Figure 14A

EXISTING & EXISTING PLUS PROJECT DAILY TRAFFIC VOLUMES

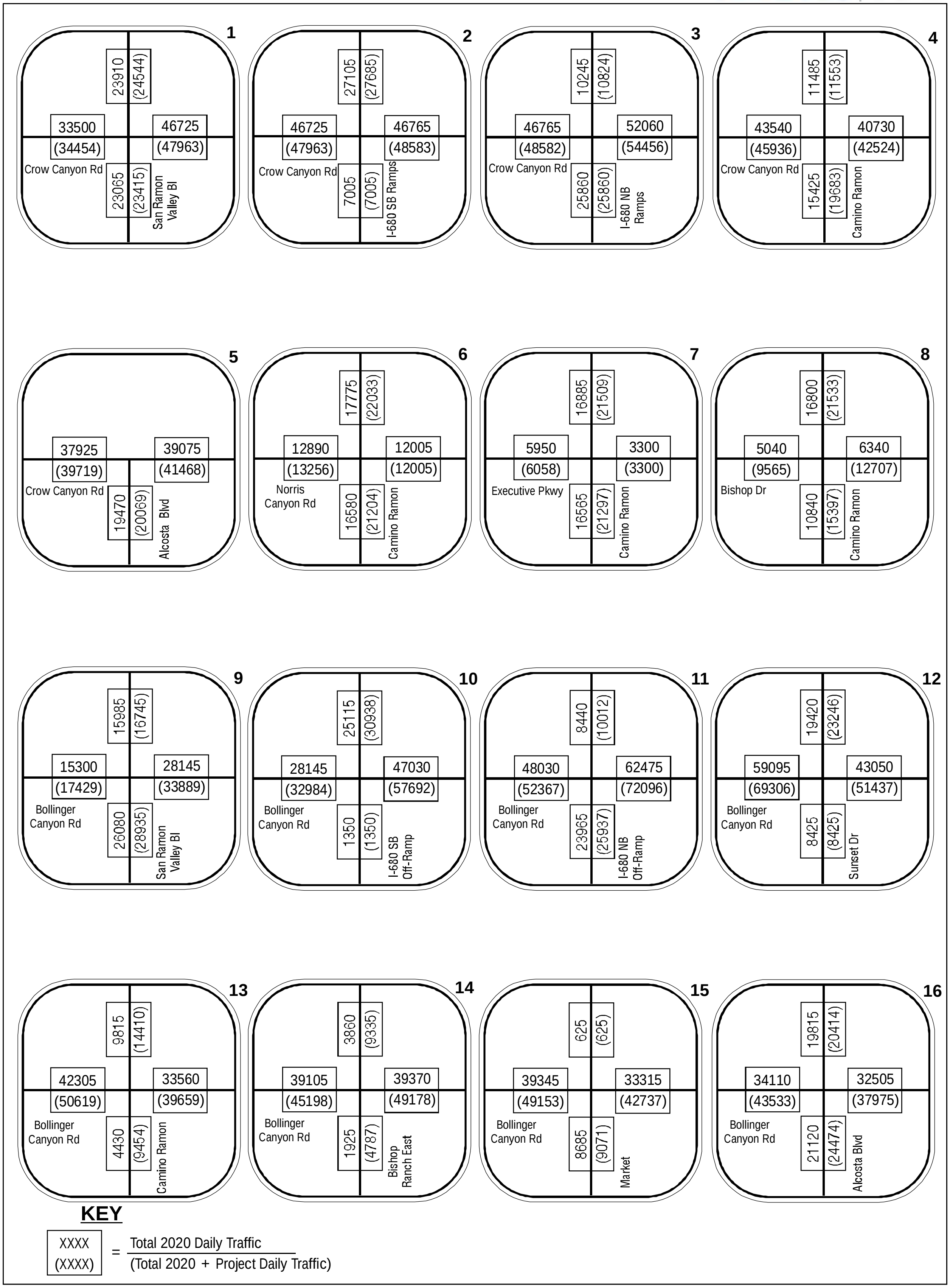


SAN RAMON CITY CENTER PROJECT

Figure 14B

EXISTING & EXISTING PLUS PROJECT DAILY TRAFFIC VOLUMES

DMJM HARRIS | AECOM

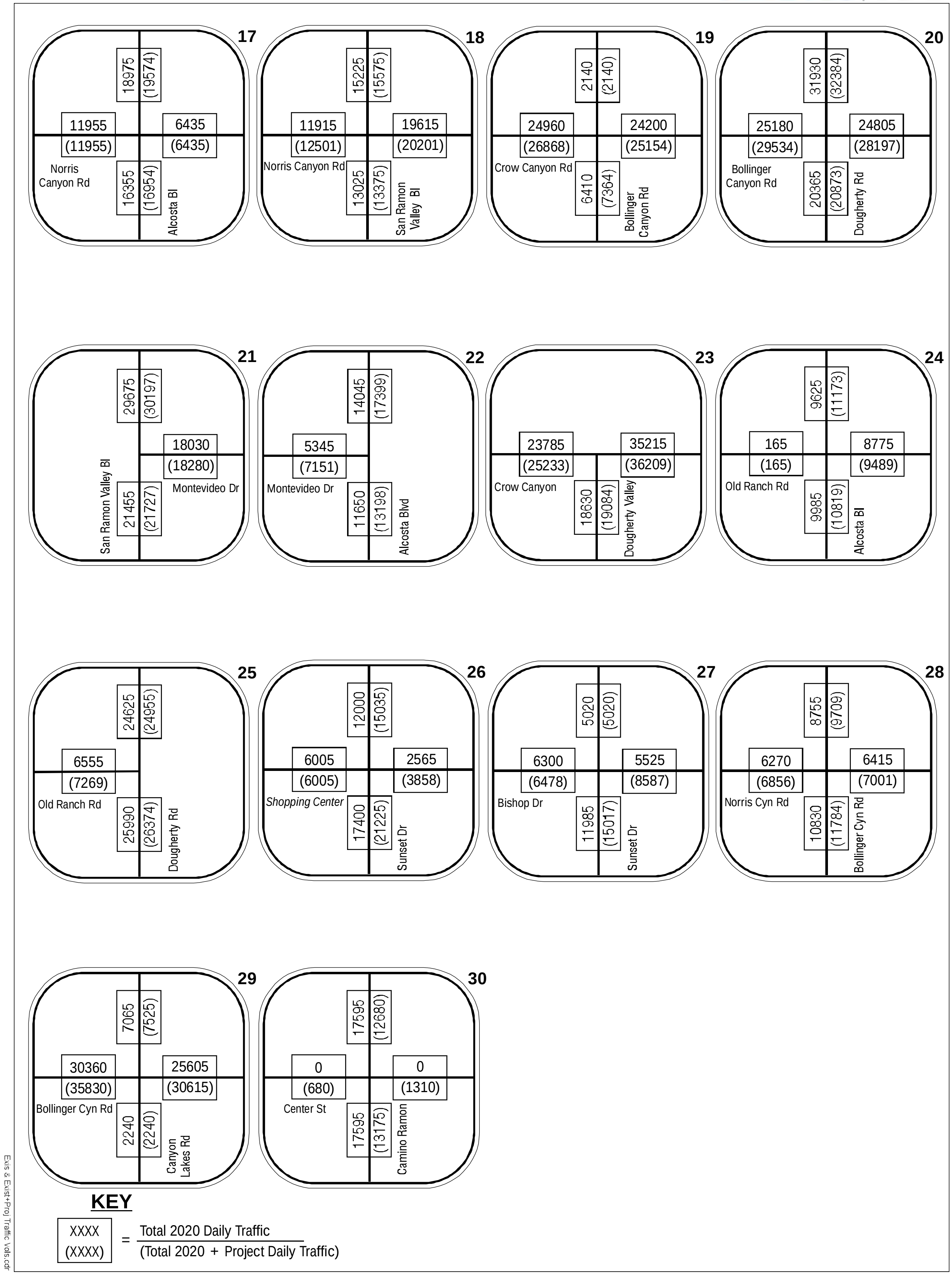


SAN RAMON CITY CENTER PROJECT

Figure 15A

2020 & 2020 PLUS PROJECT DAILY TRAFFIC VOLUMES

DMJM HARRIS | AECOM



SAN RAMON CITY CENTER PROJECT

Figure 15B

2020 & 2020 PLUS PROJECT DAILY TRAFFIC VOLUMES

then added to the corresponding scenarios to obtain existing plus project and 2020 plus project daily traffic values. The daily project traffic was determined based on trip generation data. Figures 14A and 14B illustrate the existing and existing plus project daily traffic volumes, and Figures 15A and 15B show the 2020 and 2020 plus project daily traffic volumes.

4.2 Queuing Analysis

A queuing analysis was performed, using Synchro software, at intersections surrounding the project site. The locations analyzed include:

• Bishop Drive/Camino Ramon, • Bollinger Canyon Road/Sunset Drive, • Bollinger Canyon Road/Camino Ramon,	• Bollinger Canyon Road/ Bishop Drive, • Sunset Drive/Center Street, and • Sunset Drive/Bishop Drive.

The results of the queuing analysis are provided in Table 4-3. The analysis was completed for the 2020 Background Plus Project scenario during the AM and PM peak hours. The 95th percentile queue lengths were determined and are displayed along side the available storage lengths. In most cases the storage length is adequate to accommodate the 95th percentile queue; however, some intersections do not currently have sufficient storage length. The lengths presented in bold indicate when the storage length is exceeded by the calculated 95th percentile queue. The Synchro worksheets are included in Appendix H: Queuing Analysis.

The available storage at these six key intersections near the project is also illustrated graphically in Figure 17 which is discussed later in this report. Some of the existing left turn pockets on Bollinger Canyon are expected to be modified with future planned improvements. These improvements include lengthening the eastbound left turn lane on Bollinger Canyon at Camino Ramon from 300 feet to 500 feet by removing the existing landscaped median and adding a second westbound left turn lane at Sunset Drive and decreasing the westbound left turn pocket at Sunset from 360 feet to 250 feet.

The available storage accommodates the 95th percentile queue at all locations for the 2020 AM plus project scenario except for the southbound through/left and eastbound left at the Bollinger Canyon/Sunset Drive intersection. As shown in Table 4-3 the addition of a separate southbound left turn lane would mitigate this potential queuing problem during the peak periods. The existing 600 foot eastbound left turn lanes at this intersection can be extended up to 1,100 feet by removing the existing landscaped median if additional storage is required in the future.

The available storage accommodates the anticipated 95th percentile queue in 2020 at full build out of the project during the PM peak hour at each location except at the Bollinger Canyon Road/Camino Ramon southbound left, discussed above, and the westbound left on Bishop Drive at Sunset Drive. As shown in Figure 17, one of the westbound through lanes on Bishop Drive becomes a westbound left turn lane at Sunset Drive so additional storage above the 230 feet presented in Table 4-3 is available without significantly impacting traffic operations. Based on this 2020 Synchro analysis no significant queuing problems are anticipated with full build out of the project and the implementation of the following two improvements: 1) add a southbound left turn lane on Sunset Drive at Bollinger Canyon Road, and 2) when required extend the length of the dual eastbound left turn lanes on Bollinger Canyon Road at Sunset Drive.

Table 4-3 AM and PM Peak Hour 2020 Plus Project Queuing Analysis

#	Intersection	Movement	2020 AM + Project		2020 PM + Project	
			95th (ft)	Available (ft)	95th (ft)	Available (ft)
8	Bishop Drive @ Camino Ramon	Southbound Left	30	180	#147	180
		Westbound Left	25	200	98	200
		Eastbound Left	33	180	67	180
12	Bollinger Canyon Road @ Sunset Drive	Southbound Through-Left	**#247** (132) [1]	**170**	**218** *(117) [1]	**170**
		Eastbound Left	**#883**	**600**	#581	600
		Westbound Left	169	250	38	250
13	Bollinger Canyon Road @ Camino Ramon	Southbound Left	#113	490	#338	490
		Northbound Left	27	445	217	445
		Westbound Left	57	225	28	225
		Eastbound Left	#416	500	#278	500
14	Bollinger Canyon Road @ Bishop Drive	Southbound Left	27	175	#173	175
		Northbound Left	20	325	#156	325
		Westbound Left	52	150	35	150
		Eastbound Left	6	200	15	200
26	Sunset Drive @ Center Street	Southbound Left	*20	80	*30	80
		Northbound Left	*122	150	*92	150
		Westbound Left-	35	100	93	100
27	Sunset Drive @ Bishop Drive	Northbound Left	44	280	212	280
		Westbound Left	110	230	**348**	**230**

#95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
*Volume for 95th percentile queue is metered by upstream signal.
1 Assumes the addition of a southbound left turn lane.

4.3 Freeway Analysis

4.3.1 Existing Plus Project Analysis

The freeway analysis for the I-680 mainline, north and south of the Bollinger Canyon Road interchange, and the Bollinger Canyon Road interchange ramps was conducted for the Existing and Existing plus Project conditions. Table 4-4 shows the freeway mainline analysis for Existing and for Existing plus project. While there is a slight increase in density and decrease in speed for the project condition, the only change in level of service occurs for northbound I-680 south of Bollinger Canyon Road in the AM peak hour and southbound I-680 north of Bollinger Canyon Road in the PM peak hour.

Table 4-5 shows the ramp analysis for Existing and Existing Plus Project Conditions. While there is a slight increase in density for the Project Condition, there is not a change in level of service.

Table 4-4 HCS Freeway Section Level of Service Analysis Results

Freeway Section Peak Hour		NB South of Bollinger Interchange		SB South of Bollinger Interchange		NB North of Bollinger Interchange		SB North of Bollinger Interchange	
		AM	PM	AM	PM	AM	PM	AM	PM
2006 Existing	LOS	E	E	F	F	C	C	D	D
	Density (pc/mi/ln)	44.7	36.0	*	*	23.1	23.7	30.5	34.1
	Avg. Speed (mph)	52.4	59.0	*	*	65.0	65.0	62.7	60.4
2006 Existing Plus Project	LOS	F	E	F	F	C	C	D	E
	Density (pc/mi/ln)	*	38.9	*	*	23.3	24.4	31.2	35.0
	Avg. Speed (mph)	*	56.8	*	*	65.0	64.9	62.3	59.7

*Density and average speed are not determined if LOS F.
pc/mi/ln = passenger cars/mile/lane
HCS = Highway Capacity Software
NB = Northbound
SB = Southbound

Table 4-5 HCS Ramp LOS Analysis Results

I-680 Bollinger Canyon Road Interchange	2006 Existing				Existing Plus Project			
	AM		PM		AM		PM	
	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)
Northbound Off-Ramp	F	*	C	20.4	F	*	C	22.9
Southbound Off-Ramp	F	*	F	*	F	*	F	*
Southbound On-Ramp	F	*	F	*	F	*	F	*
Southbound On-Ramp (loop)	F	*	F	*	F	*	F	*
Northbound On-Ramp (loop)	F	27.9	C	26.3	C	27.9	C	26.3
Northbound On-Ramp**	A	v/c = 0.26	B	v/c = 0.45	A	v/c = 0.28	B	v/c = 0.53

* Density not determined for LOS F.
**Only the volume capacity ratio of the ramp is provided due to the auxiliary lane configuration.
pc/mi/ln = passenger cars/mile/lane.
HCS = Highway Capacity Software
NB = Northbound
SB = Southbound

4.3.2 2020 Freeway Analysis

The freeway analysis for the I-680 mainline, north and south of the Bollinger Canyon Road interchange, and the Bollinger Canyon Road interchange ramps was conducted for the 2020 Background condition and for the 2020 plus Project condition. Table 4-6 shows the freeway mainline analysis for 2020 and for 2020 plus project. While there is a slight increase in density and decrease in speed for the project condition, the level of service does not change.

Table 4-7 shows the ramp analysis for 2020 Background and for 2020 Background plus project. While there is a slight increase in density for the Project condition, the level of services does not change.

Table 4-6 HCS Freeway Section Level of Service Analysis Results

Freeway Section Peak Hour		NB South of Bollinger Interchange		SB South of Bollinger Interchange		NB North of Bollinger Interchange		SB North of Bollinger Interchange	
		AM	PM	AM	PM	AM	PM	AM	PM
2020 Background	LOS	F	F	F	F	D	D	F	F
	Density (pc/mi/ln)	*	*	*	*	29.1	30.0	*	*
	Avg. Speed (mph)	*	*	*	*	63.5	63.0	*	*
2020 Background Plus Project	LOS	F	F	F	F	D	D	F	F
	Density (pc/mi/ln)	*	*	*	*	29.9	30.8	*	*
	Avg. Speed (mph)	*	*	*	*	63.1	62.6	*	*

*Density and average speed are not determined if LOS F.
pc/mi/ln = passenger cars/mile/lane
HCS = Highway Capacity Software
NB = Northbound
SB = Southbound

Table 4-7 HCS Ramp LOS Analysis Results

I-680 Bollinger Canyon Road Interchange	2020 Background				2020 Background Plus Project			
	AM		PM		AM		PM	
	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/hr)	LOS	Density (pc/mi/hr)	LOS	Density (pc/mi/ln)
Northbound Off-Ramp	F	*	F	*	F	*	F	*
Southbound Off-Ramp	F	*	F	*	F	*	F	*
Southbound On-Ramp	F	*	F	*	F	*	F	*
Southbound On-Ramp (loop)	F	*	F	*	F	*	F	*
Northbound On-Ramp (loop)	D	34.2	D	32.5	D	34.2	D	32.5
Northbound On-Ramp	A	v/c = 0.30	B	v/c = 0.54	A	v/c = 0.32	B	v/c = 0.61

* Density not determined for LOS F.
**Only the volume capacity ratio of the ramp is provided due to the auxiliary lane configuration.
pc/mi/ln = passenger cars/mile/lane.
HCS = Highway Capacity Software
NB = Northbound
SB = Southbound

4.4 Project Parking Analysis

4.4.1 Parking Demand

Table 4-8 shows the parking demand for the various components of the project. Parking demand is calculated separately for the uses on the north side of Bollinger Canyon Road and for the uses on the south side of Bollinger Canyon Road. The parking rates for specific land use categories were obtained from the City's Zoning Ordinance. Two adjustments to the rates are included in Table 4-8. Parking for multi-family residential is based on the number of bedrooms. One parking space is required for studios and 1 bedroom units and 2 spaces are required for 2 or 3 bedroom units. The exact bedroom mix has not been determined. A weighted average of 1.8 parking spaces per unit has been used. The office parking rate is also adjusted from 4.0 spaces per 1,000 square feet to 3.5 spaces per 1,000 square feet. This adjustment reflects the effective transportation demand management program in place in Bishop Ranch.

Table 4-8 City Center Parking Analysis Parking Demand

Locaton[1]	Land Use	Size	Parking Rate[2]	Parking Demand
Retail Complex (north side of Bollinger)	Retail	613,197 s.f.	1 space/250 s.f.	2,453
	Theater	250 seats[3]	1 space/4 seats	63
	Multi-Family Residential	488 units	1.8 spaces[4]/unit	878
	Hotel	169 rooms	1.2 spaces/room	203
	Office	50,142 s.f.	3.5 spaces[5]/1,000 s.f.	175
Subtotal North side				**3,772**
Office/Civic Center (south side of Bollinger)	Office	681,769 s.f.	3.5 spaces[5]/1,000 s.f.	2386
	Civic Center	75,150 s.f.	3.5 spaces[5]/1,000 s.f.	263
	Library	35,340 s.f.	3.0 spaces/1,000 s.f.	106
Subtotal South side				**2,755**

1) Parking is aggregated by the north side of Bollinger and by the south side of Bollinger.
2) Parking rate is according to the City of San Ramon Zoning Ordinance unless otherwise noted.
3) The size of the theater is 21,945 s.f. and 6 screens. The City bases parking on spaces per seat. The project architect estimates the total seats at 250.
4) City zoning ordinance requires 1 space per 1 bedroom units and 2 spaces for 2 and 3-bedroom units. Weighted average of 1.8 spaces per total units used.
5) City zoning ordinance requires 4.0 spaces per 1,000 s.f. This requirement has been adjusted to 3.5 spaces per 1,000 s.f. for Bishop Ranch to reflect the successful TDM program.

As noted on Table 4-8 the total parking demand on the north side of Bollinger Canyon Road is 3,772 parking spaces. The total parking demand on the south side of Bollinger Canyon Road is 2,755 parking spaces.

4.4.2 Parking Supply

Table 4-9 shows the parking supply as currently proposed. Parking supply is also calculated separately for the uses on the north side of Bollinger Canyon Road and for the uses on the south side of Bollinger Canyon Road. Total parking on the north side of Bollinger Canyon Road is 4,124 spaces. These spaces are allocated between the various land uses. It is expected that the residential parking and the hotel parking will be specifically designated for those uses. The 4,124 spaces are allocated into 3,068 spaces for retail and office uses, 896 spaces for residential uses, and 160 spaces for hotel uses.

Total parking on the south side of Bollinger Canyon Road is 2,786 spaces. All of the spaces are associated with the office, city hall, and library uses proposed on the south side. The area on the south side is separated in BR1A and BR1B. BR1A is the office space proposed for in the southeast quadrant of Bollinger Canyon Road and Camino Ramon. Between the parking structure and the surface lot, a total of 2,390 parking spaces are proposed (2,119 in the structure and 271 on the surface). BR1B represents the city hall and library in the southwest quadrant of Bollinger Canyon Road and Camino Ramon. Parking supply for BR1B is 396 total spaces (387 in the structure and 9 on the surface).

Table 4-9 City Center Parking Analysis Parking Supply

Location	Parking Facility	Total Parking	Parking Allocation		
			Retail/Office	Residential	Hotel
Retail Complex (north side of Bollinger)	Structure A	1,471	1,322	149	
	Structure B	171		171	
	Structure C	160			160
	Structure D	542	377	165	
	On-Street-west side	79	79		
	Structure E	1,069	930	139	
	Structure F	282	125	157	
	Structure G	289	174	115	
	On-Street east side	61	61		
Subtotal North Side		**4,124**	**3,068**	**896**	**160**
Office/Civic Center (south side of Bollinger)	BR 1A Structure	2,119	2,119		
	BR 1A Surface	271	271		
	BR 1B Structure	387	387		
	BR 1B Surface	9	9		
Subtotal South Side		**2,786**	**2,786**		

4.4.3 Bicycle Parking

Within the City of San Ramon each multi-family and non-residential project shall provide the following bicycle parking:

- The number of spaces for bicycle parking shall equal to a minimum of one bicycle space for every 10 motor vehicles spaces, with a minimum of two bicycle spaces.
- Bicycle parking shall be located near the primary entrance of each structure they are intended to service.
- Each bicycle parking space shall include a stationary parking device to adequately secure the bicycle, shall be a minimum of two feet in width and six feet in length, installed and maintained in compliance with City standards. Overhead clearance shall be a minimum of seven feet.

Bicycle parking for the City Center project shall total 412 spaces for the north side of Bollinger Canyon Road and 279 spaces for the south side of Bollinger Canyon Road.

4.4.4 Motorcycle Parking

The City of San Ramon Zoning Ordinance also requires motorcycle parking. Each parking lot with 50 or more motor vehicle parking spaces shall provide motorcycle parking spaces conveniently located near the primary entrance of a structure, accessed by the same aisles that provide access to the motor vehicle parking spaces in the parking lot.

- A minimum of one motorcycle parking space for each 50 motor vehicle spaces.
- A motorcycle parking space shall have minimum dimensions of four feet by seven feet.

Motorcycle parking for the City Center project shall total 83 spaces for the north side of Bollinger Canyon Road and 56 spaces for the south side of Bollinger Canyon Road.

4.4.5 Conclusions of Parking Analysis

There is adequate parking proposed to serve the proposed development. On the north side of Bollinger Canyon Road the total demand is 3,772 spaces and the total supply is 4,124 spaces. The parking on the north side of Bollinger Canyon Road is distributed throughout six parking structures and also includes limited on-street parking. Parking will be convenient to all uses. The parking allocated to the hotel is slightly less than required by the Zoning Ordinance. Hotel parking in Structure D must be expanded to meet the demand, approximately 43 spaces.

On the south side of Bollinger Canyon Road the parking demand is 2,755 spaces and the parking supply is 2,786 spaces. The parking supply on each side of Camino Ramon also meets demand. BR1A has a demand for 2,386 spaces and a supply of 2,390 spaces. BR1B has a demand of 369 spaces and a supply of 396 spaces. Additional parking may be constructed in the future on the surface lot immediately south of the proposed transit center.

4.5 Intersections and Roadways Modification

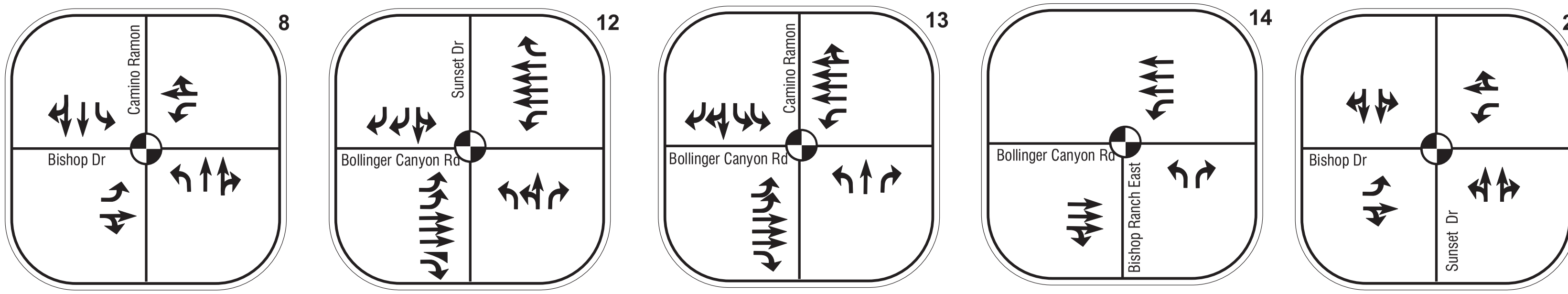
The 2020 horizon year with the San Ramon City Center Project is anticipated to modify the roadway network to improve traffic operations and improve pedestrian and vehicle circulation. The roadway modifications have been designed to avoid widening Camino Ramon within the retail site boundary. Project retail would span both sides of Camino Ramon. Maintaining the existing roadway section would allow pedestrians easier access across the street. The improvements required to maintain acceptable level of service, other than the CIP improvements, will be funded by the project applicant.

Table 4-10 summarizes the modified roadway geometry. The existing, 2020 CIP, and project intersection roadway geometry is illustrated in Figure 16. The following is a summary of proposed project intersection improvements by each approach.

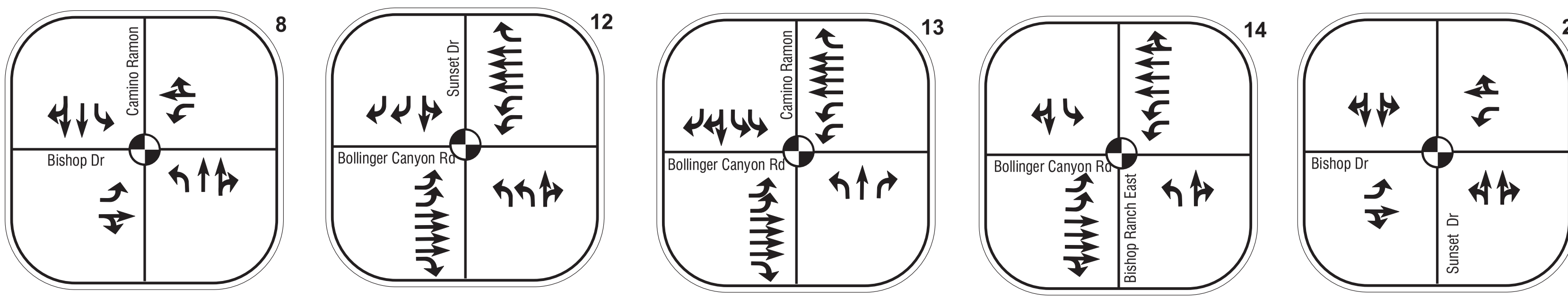
Table 4-10 Modified Intersection Geometry

Intersection	Existing Geometry				2020 CIP Geometry				Modified Geometry			
	East-Bound	West-Bound	North-Bound	South-Bound	East-Bound	West-Bound	North-Bound	South-Bound	East-Bound	West-Bound	North-Bound	South-Bound
Camino Ramon/ Bishop Drive	1L & 1T-R	1L & 1T-R	1L, 1T & 1T-R	1L, 1T & 1T-R	Same as ext	Same as ext	Same as ext	Same as ext	1L, 1T & 1R	1L & 1T & 1R	1T & 1 T-R	2L, 1T & 1 R
Bollinger Canyon Rd./ Sunset Drive	2L, 3T, & 1R	1L, 4T, & 1R	1L, 1L-T, & 1R	1L-T, & 2R	2L, 4T, & 1R	2L, 4T, & 1R	2L, 1T-R	Same as ext	Same as 2020	Same as 2020	Same as 2020	Same as ext
Bollinger Canyon Rd./ Camino Ramon	2L, 3T & 1R	1L, 3T & 1T-R	1L, 1T & 1R	2L, 1T-R & 1R	2L, 4T & 1R	2L, 4T & 1R	Same as ext	Same as ext.	Same as 2020	Same as 2020	2L, 1T, & 1R	1L, 1T & 1R
Bollinger Canyon Road/ Bishop Ranch 1 East	2T, & 1T-R	1L, & 3T	1L & 1R	N/A	2L, 3T, 1T-R	2L, 3T, 1T-R	1L, 1T-R	1L, 1T-R	Same as 2020	2L, 4T, & 1R	Same as 2020	2L & 1T-R
Bishop Drive/ Sunset	1L & 1T-R	1L & 1T-R	1L-T & 1T-R	1L-T & 1T-R	Same as ext	Same as ext	Same as ext	Same as ext	Widen by 12 feet for alignment	2L & 1T-R	1L, 1T-R, & 1R	Same as ext

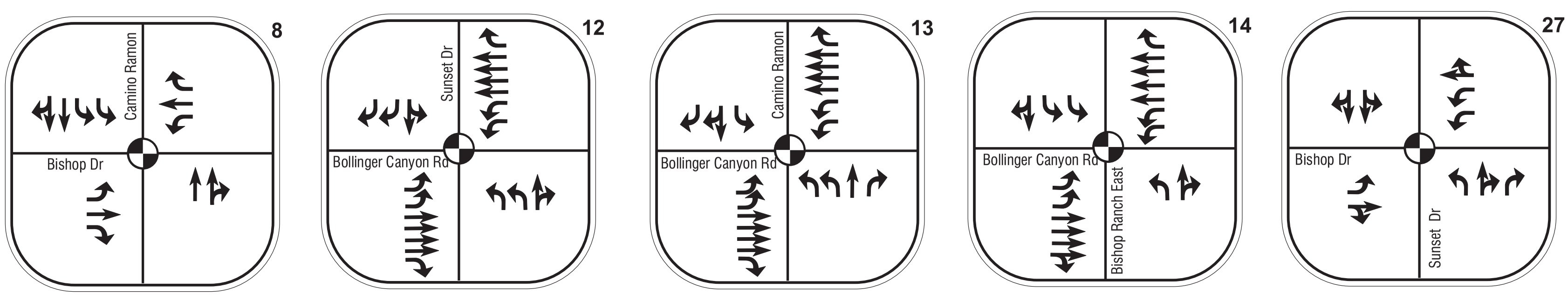
EXISTING GEOMETRY



CIP GEOMETRY



INTERSECTION MODIFICATIONS



Intersection Modifications.cdr

SAN RAMON CITY CENTER PROJECT

Figure 16

INTERSECTION MODIFICATIONS

Camino Ramon/Bishop Drive

The proposed intersection geometry for Camino Ramon/Bishop Drive is noted on Figure 16 and Figure 17. The following is a description of the recommended geometry.

Northbound Approach: The existing northbound left turn lane would be removed. Traffic turning left at this intersection can instead turn right at Bollinger Canyon/Bishop Ranch 1 East and then travel though in a westbound direction at Camino Ramon/Bishop. The reduced roadway width will facilitate pedestrians crossing this intersection on the south leg.

Southbound Approach: The southbound approach would require dual left turn lanes to route traffic off Camino Ramon and around the BR2 site. Widening would be required to the west, approximately 12 feet wide for a distance of 200 feet plus a 90-foot taper. The curb lane would be a right turn only lane onto Bishop Drive. The capacity of the right turn lane would be maximized by overlapping with the east/west left turns. Eastbound U-turns would not be allowed. Sufficient green time would need to be given to the dual southbound left turns to divert traffic off Camino Ramon.

Eastbound Approach: The eastbound approach would be a left, a through and a right turn. Widening approximately 24 feet into the BR2 site would be required to achieve the necessary alignment through the intersection.

Westbound Approach: The westbound approach would be widened to include a right turn lane, a through, and a left turn lane. All widening is assumed to be toward the south. Dual eastbound lanes will also be required to receive the dual southbound left turn lanes.

The proposed geometry at Camino Ramon/Bishop Drive would enable Camino Ramon between Bishop Drive and Bollinger Canyon Road to remain at its current configuration. With the geometric improvements noted above, the project impact at this intersection would be less than significant.

Bishop Drive/Sunset Drive

Because additional right turn traffic would be added from southbound Camino Ramon to westbound Bishop Drive, dual left turns would be needed from Bishop Drive to southbound Sunset Drive. These intersection geometrics are shown on Figure 16 and Figure 17. The following is the specific geometry for Bishop Drive/Sunset Drive.

Northbound Approach: A third through lane is proposed from Bollinger Canyon Road to Bishop Drive. This widening would take place to the east into the BR2 site. The purpose of this lane is to provide additional capacity through the Sunset Drive/BR2 intersection. The added northbound lane would be right turn only at Bishop Drive.

Southbound Approach: No changes are proposed for the AT&T driveway.

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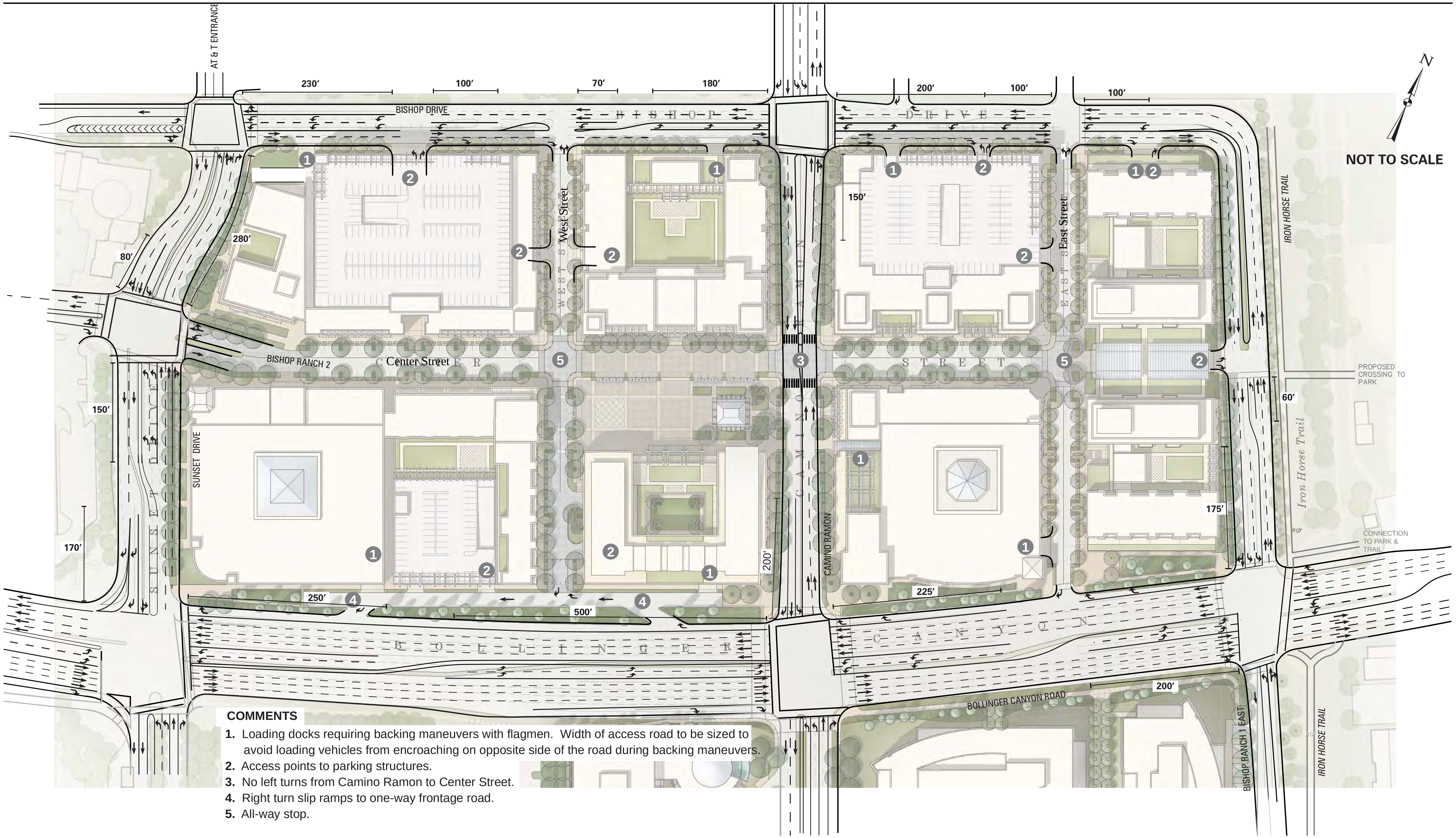

COMMENTS

1. Loading docks requiring backing maneuvers with flagmen. Width of access road to be sized to avoid loading vehicles from encroaching on opposite side of the road during backing maneuvers.
2. Access points to parking structures.
3. No left turns from Camino Ramon to Center Street.
4. Right turn slip ramps to one-way frontage road.
5. All-way stop.

SAN RAMON CITY CENTER PROJECT

Figure 17

ROADWAY CONCEPT PLAN

Eastbound Approach: No changes are proposed for the geometry, however, widening to the south would be necessary to achieve an alignment through the intersection. This widening would be 12 feet for approximately 150 feet.

Westbound Approach: The westbound approach would be widened by 12 feet to accommodate dual left turns onto southbound Sunset Drive. Widening would be to the south.

With the geometric improvements noted above, the project impact at this intersection would be less than significant.

Sunset Drive/Bollinger Canyon Road

No changes are proposed to this intersection except for the added northbound lane leaving the intersection noted above. The 2020 traffic operations assume the Plan Line geometry improvements to Bollinger Canyon Road. These improvements are illustrated on Figure 16 and Figure 17. As noted in operational analysis, traffic operations improve slightly at this intersection because prior westbound through traffic has been shifted to southbound right turn traffic. While the addition of a third northbound lane is not needed for traffic operations at Sunset/Bollinger, it is carried to Sunset/Bishop to maintain traffic operations at that intersection.

Camino Ramon/Bollinger Canyon Road

No changes are proposed to this intersection except for the Plan Line geometry improvements to Bollinger Canyon Road and the southbound approach is reduced to three lanes (1 left, 1 thought, and 1 right turn lane) as noted on Figure 16 and Figure 17. Level of service D can be achieved with these improvements and no significant impacts occur.

Bollinger Canyon Road/Bishop Ranch 1 East

The north leg of this intersection would be created. The north leg would have a southbound right/through lane and dual lefts. The north leg would also have two northbound lanes. The only other changes to this intersection are the Plan Line improvements to Bollinger Canyon Road. Level of service D can be achieved with these improvements which are shown on Figure 16 and Figure 17 and no significant impacts occur.

In addition to the intersection improvements, the following describes the roadway links surrounding BR2.

Sunset Drive

The Bishop Ranch 2/Sunset Drive intersection should be maintained at its current location and provide access to the proposed retail project. Widening at Sunset Drive to three northbound lanes is recommended to relieve the current congestion experienced at the BR2/Shops at Bishop Ranch intersection. Figure 16 notes the third northbound lane.

Bishop Drive (west of Camino Ramon)

Bishop Drive will have a 5-lane cross section along the northern boundary of the project. The proposed geometry is noted on Figure 17, providing access to the project and turn lanes at the external intersections.

Bishop Drive (east of Camino Ramon)

Bishop Drive between Camino Ramon and Bollinger Canyon Road is proposed with a five-lane cross section, providing two travel lanes in each direction and a left turn lane for access into the project and at external intersection. The roadway geometry is noted on Figure 16.

Camino Ramon

No widening of Camino Ramon between Bishop Drive and Bollinger Canyon Road is proposed. The completion of Bishop Drive to Bollinger Canyon Road will relieve traffic from Camino Ramon. A two-phase signal is proposed on Camino Ramon to the central internal street for the project. No left turns from Camino Ramon to the project are proposed at this intersection. Figure 17 notes the Camino Ramon geometry. During non-peak hours, on-street parking along Camino Ramon is proposed between Bishop Drive and Bollinger Canyon Road. However, during the AM and PM peak hours Camino Ramon from Bishop Drive to Bollinger Canyon will have two travel lanes in each direction. During the off-peak hours, parallel parking on Camino Ramon must be located for safe sight distances and minimum distances from both the Bishop Drive and the Bollinger Canyon Road intersections for merging traffic to one through lane during non-commute hours, including appropriate signage.

Bishop Ranch 1 East

An access into the retail project from BR1 East is planned. Left turn access would be permitted at this access.

4.6 Loading Dock Access

Figure 17 notes the preliminary loading docks for the project. The loading docks along Bishop Drive would require a temporary blockage of traffic while the truck backs into the loading dock. Access to the loading docks will be restricted to off-peak hours and will require flagmen to control traffic. The width of the loading dock shall be wide enough to enable the truck to back into the dock without encroaching into the opposite travel direction.

4.7 Vehicle Access to the Project

Vehicle access to the project is noted on Figure 17. The following discussion notes the access allowed and the expected traffic control.

Sunset Drive

The signal project access is at Center Street. This access will be signalized and will allow all movements.

Bishop Drive

The westernmost access along Bishop Drive is into Parking Structure A. This access will be full movement and will be stopped controlled for the minor movement out of the garage.

The next access on Bishop Drive is at West Street. This access will allow all movements and West Street will be stopped controlled.

The next access on Bishop Drive is into Parking Structure E between Camino Ramon and East Street. This access will allow all movements and will be stopped controlled for the minor movement out of the garage

The next access on Bishop Drive is East Street. This access will allow all movements and East Street will be stopped controlled.

The final access on east/west Bishop Drive will be immediately east of East Street. This access will not permit lefts outs because of limited sight distance to the east. Traffic control will be stopped for the minor movement.

A single access is noted for north/south Bishop Drive into Parking Structure F and G. This access will allow for full movements. This location is a major access into the project and is expected to be signalized.

South of Bollinger Canyon Road, Bishop Ranch 1 East will provide access to the office park parking structures. Three accesses, all stop controlled for the minor movements, are proposed.

Bollinger Canyon Road

The easternmost access along Bollinger Canyon Road is a right turn only access at East Street. To facilitate movement into and out of this intersection, an auxiliary lane is proposed between Bishop Drive and Camino Ramon.

Two access points are noted along Bollinger Canyon Road between Camino Ramon and Sunset Drive. The first access (easternmost) in a right in from an auxiliary lane on Bollinger Canyon Road. The second access is a right out onto Bollinger Canyon Road, also into an auxiliary lane.

Camino Ramon

A single access point into the project occurs along Camino Ramon at Center Street approximately half way between Bollinger Canyon Road and Bishop Drive. This access point will be signalized and will be the pedestrian crossing between the west half and east half of the project. Right turns will be accommodated from Camino Ramon, but left turns will not. Also movements will be accommodated for the Center Street legs of the intersection.

Camino Ramon south of Bollinger Canyon Road will provide access to the City Hall/Library complex and the proposed office space. The northern access will serve as drop-off space. The southern access will be the primary ingress/egress for the parking structures. The two intersections are proposed as stop controlled for the side street legs.

4.8 Transit Service

The existing transit service is expected to continue to serve the proposed San Ramon City Center project. A transit center is proposed to be constructed as part of the City Center Project in the southwest quadrant of Bollinger Canyon Road and Camino Ramon within the City Hall complex. Many of the current bus routes stop near the area proposed for the transit center and would serve the transit center in the future. Additional transit improvements are not necessary to serve the proposed project and the project would not have any significant impacts to transit service.

5.0 PROJECT IMPACTS AND MITIGATION

The thresholds of significance have previously been documented in Chapter 2. All transportation modes are evaluated against the significance thresholds.

5.1 Traffic Impacts on the City Street Network

5.1.1 Existing Plus Project

The existing plus Project condition identifies three intersections that would deteriorate from an acceptable LOS to level of service E or F with the addition of Project traffic. These intersections are noted below along with the necessary mitigation measures.

- Bollinger Canyon Road/ San Ramon Valley Boulevard. The Existing PM peak hour level of service is D and the Existing plus Project PM peak hour level of service is E. The addition of a northbound right turn lane, a part of the City's Capital Improvement Program for this intersection, improves the level of service to C.
- Bollinger Canyon Road/Sunset Drive. The Existing PM peak hour level of service is D and the Existing plus Project PM peak hour level of service is F. The modification of the intersection to have a free southbound right turn lane improves the level of service to D. The southbound curb lane along Sunset Drive would be signed for northbound I-680 only. This lane would be free-flowing into the westbound curb lane on Bollinger Canyon Road. The adjacent lane on Bollinger Canyon Road would be physically separated from the curb lane to prevent weaving between Sunset Drive and the northbound I-680 on-ramp. Through traffic on westbound Bollinger Canyon Road or northbound left turn traffic from Chevron, destined for northbound I-680, would use the southern most right turn lane to access northbound I-680.
- Bollinger Canyon Road/Alcosta Boulevard. The Existing PM peak hour level of service is D and the Existing plus Project PM peak hour level of service is E. The addition of a third eastbound and westbound through lane on Bollinger Canyon Road improves the level of service to C. The City expects to advertise this project for construction in Summer 2007.

5.1.2 2020 Plus Project

The 2020 plus Project condition identifies two intersections that would deteriorate from an acceptable LOS to level of service E or F with the addition of Project traffic. These intersections are noted below along with the necessary mitigation measures.

- Bollinger Canyon Road/Sunset Drive. The 2020 PM peak hour level of service is D and the 2020 plus Project PM peak hour level of service is F. The modification of the intersection to have a free southbound right turn lane improves the level of service to D. To provide additional congestion relief to the Bollinger Canyon Road/Sunset Drive intersection during the AM and PM peak hours slight modifications to the intersection geometrics noted on Figure 17 should be made. Signage should be added to southbound Camino Ramon approaching the Bishop Drive intersection to allow the curb lane to be a through/right turn lane during peak hours. Also the southbound through lane should be a through/right at Camino Ramon/Bollinger Canyon Road.

- Bollinger Canyon Road/Norris Canyon Road. The 2020 AM peak hour level of service is E and the 2020 plus Project AM peak hour level of service is E. Signalization of the intersection improves the level of service to C. A traffic signal at this intersection is planned in the City Capital Improvement Program.

5.2 Queuing Impacts

The queuing analysis indicates that some left turn bays may experience traffic volumes that exceed the capacity of the turn bay. In the AM peak hour for 2020 plus Project the southbound left turn bay and the eastbound left turn bay at Bollinger Canyon/Sunset would exceed capacity. The southbound queue can be accommodated by adding another southbound left turn in the existing median. The eastbound left turn storage can also be extended the necessary length back toward the interchange.

In the PM peak hour for 2020 plus Project the southbound left turn bay at Bollinger Canyon/Sunset and the westbound left turn bay at Bishop/Sunset would exceed capacity. The mitigation at Bollinger Canyon/Sunset for the southbound bay would be identical to the AM mitigation. At Bishop/Sunset one of the through lanes becomes a left turn lane providing additional storage back to the West Street intersection.

5.3 Traffic Impacts to Freeway Network

The project's traffic under existing plus project conditions did not change the level of service on I-680 for the mainline analysis, weaving sections, or merge/diverge points except for a change from level of service A to level of service B for the northbound off-ramp in the PM peak hour. For the 2020 plus project condition during the AM peak hour the I-680 Bollinger northbound off-ramp moves from a level of service B to C. Whenever a freeway facility operates at level of service F, the addition of any project traffic constitutes a significant and unavoidable impact.

Improving the level of service to acceptable operations would require widening of the freeway mainline for several miles. Widening of the freeway is considered impracticable because of right-of-way limitations.

5.4 Parking Impacts

The project parking is separated into spaces provided on the north side of Bollinger Canyon Road to support the retail/office/cinema space, the residential units, and the hotel and parking provided on the south side of Bollinger Canyon Road to support the office space and the civic center. A total of 4,124 spaces are provided on the north side of Bollinger Canyon Road, separated into 3,068 spaces for retail/office/cinema, 896 for residential, and 160 for hotel. The parking supply is distributed to both parcels on the east and west sides of Camino Ramon, making the parking convenient to the individual land uses. A total of 2,786 spaces are provided on the south side of Bollinger Canyon Road.

The parking supply will be shared by the various land uses within the project. The only specifically assigned parking will be the hotel parking in structure C and the residential parking distributed throughout the project.

Parking demand on the north side of Bollinger Canyon Road is 2,453 spaces for retail, 63 spaces for the cinema, 175 spaces for office, 878 spaces for residential, and 203 spaces for the hotel. The retail/office/cinema is over-parked with a demand for 2,691 spaces and a supply of 3,068 spaces. The hotel is slightly under-parked with a demand of 203 spaces and a supply of 160 spaces. Some of the retail spaces in parking structure D need to be allocated to support the hotel. With this change there are not significant parking impacts on the north side of Bollinger Canyon.

Parking demand on the south side of Bollinger Canyon Road is 2,386 spaces for the office space, 263 spaces for the civic center and 106 spaces for the library. The total demand on the south side of Bollinger Canyon Road is 2,755 spaces. Parking supply exceeds parking supply by 31spaces. There is no significant impact for parking on the south side of Bollinger Canyon Road.

The project also must supply adequate motorcycle parking. Motorcycle parking shall total 83 spaces for the area north of Bollinger Canyon Road and 56 spaces for the area south of Bollinger Canyon Road.

5.5 Pedestrian Impacts

Existing pedestrian facilities in the vicinity of the proposed San Ramon Civic Center were documented in the Existing Conditions analysis. Pedestrian access will be enhanced with the project. Sidewalks will be provided along all project frontages to the City street network. The streets internal to the project will also have sidewalks. Intersections internal to the project and the pedestrian crossing at Center Street of Camino Ramon will include pavement treatment which enhances the definition of the pedestrian space.

A signalized intersection is proposed along Bishop Drive along the eastern side of the project to access the Building F and G parking structure. This intersection will also provide a pedestrian connection to the Iron Horse Trail. An intersection will also be created at Bishop Drive and East Street. A crosswalk will be placed on the east side of this intersection to cross to the north side of Bishop Drive. A sidewalk will be provided along the north side of Bishop Drive from East Street to the Iron Horse Trail. Finally, a full intersection will be created at Bollinger Canyon Road/Bishop Drive Extension/Bishop Ranch 1 East. A crosswalk will be added across the northern leg of this intersection providing a third connection from the project to the Iron Horse Trail.

Pedestrian crosswalks crossing Bollinger Canyon Road at Sunset Drive, Camino Ramon, and Bishop Ranch 1 East will be maintained as existing (the east leg at Sunset, the west leg at Camino Ramon, and the east leg at Bishop Ranch 1 East). Pedestrian walk indications will be adjusted as necessary to accommodate the pedestrian volume and the additional roadway width associated with the implementation of the plan line for Bollinger Canyon Road.

The proposed project improvements to pedestrian access will accommodate the anticipated pedestrian traffic. No additional pedestrian improvements above those proposed are required.

5.6 Bicycle Impacts

The project will generate bicycle travel. Additionally, the project site is located between existing bicycle facilities and connections between these facilities should be provided by the project. The existing bicycle network in the vicinity of the project is limited. Bicycle lanes (Class II) exist on Bishop Drive, San Ramon Valley Boulevard, and Alcosta Boulevard. The bicycle lanes on Bishop Drive currently end at Sunset Drive and do not continue along the project frontage. Bollinger Canyon Road is designated as a bicycle route (Class III). The Iron Horse Trail is a Class I bicycle path.

The project will make improvements to the bicycle network to enhance bicycle connections. The bicycle lanes on Bishop Drive will be continued from their current terminus at Sunset Drive to the Bollinger Canyon Road/Bishop Ranch 1 East intersection. The connections from these bicycled lanes to the Iron Horse Trail will be consistent with the pedestrian connections noted above.

The project will also provide bicycle parking as required by the City's Zoning Ordinance. A total of 691 bicycle spaces will be required. These spaces will be conveniently located through the project.

With these improvements no additional bicycle improvements will be needed.

5.7 Transit Impacts

The project could generate between 100 and 150 transit trips during each of the AM and PM peak hours. Equal amounts of transit travel would also be created during the other fringe hours off the peak periods. Lesser transit traffic would be generated throughout other hours of the day. The project site is currently served by seven bus routes. These bus routes stop at the existing stops surrounding the site. The project proposes to increase transit accessible through the construction of a new transit center (the existing transit center will remain) as part of the Civic Center project. The transit center will be located in the southwest quadrant of Bollinger Canyon Road and Camino Ramon. All of the bus routes that currently serve the site are expected to be routed through the new transit center. Increased transit ridership is a benefit to the overall transportation network by replacing automobile travel.

The projects estimated transit ridership is not expected to exceed the capacity of the bus system. If, however, the capacity of the system is exceeded, the project will add additional bus service during the critical peak hours to accommodate the demand.

5.8 Construction Truck Traffic Impacts

Construction truck traffic would consist of removal of the existing demolished building, off-haul of excavated material, and on-hall of new construction materials. Construction traffic will be limited to I-680 to Bollinger Canyon Road and then to Sunset, Camino Ramon, Bishop Drive Extension. Construction truck traffic would not be permitted east of Bollinger Canyon Road/Bishop Ranch 1 East or north of Bishop Drive. With these restrictions, construction truck traffic's impacts to the surrounding area will be minimized.

APPENDIX

APPENDIX A

MODEL PROCEDURES

DMJM HARRIS | AECOM

Korve Engineering, a division of DMJM Harris
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Memorandum

Date:	May 23, 2007
To:	Lisa Bobadilla
From:	Jeffrey Chan
Subject:	San Ramon Travel Demand Modeling / Forecasting Procedures For Intersection Turning Movement Volumes

This memorandum describes the procedures and the methodology used to derive the 2020 AM and PM peak hour intersection turning movement volumes. The procedures and methodology described below are consistent with those published in the Contra Costa Transportation Authority's *Technical Procedures Final Update*, published on July 19, 2006.

Forecasting Future Year Intersection Approach Link Volume and Intersection Turning Movement Volumes

The differences between base-year model output link volumes and future year model output link volumes were calculated for each study intersection approach link (2020 Model Link Volumes – 2000 Model Link Volumes), and are defined as the model "deltas" by each intersection approach arrival link and intersection departure link. The model "deltas" were then calculated and expressed as a percentage per annum growth rate of the base year model output link volumes. The growth rates by link were applied to the existing year AM and PM peak hour intersection turning movement volumes to derive year 2020 AM and PM peak hour intersection turning movement volumes.

To obtain reasonable intersection turning movements from the model, adjustments of the raw model output were performed, and the resulting intersection turning movement volumes was balanced using a technique known as the Furness method. This adjustment process is summarized below:

1. Determine the forecast AM and PM peak hour approach and departure volumes by intersection link for each study intersection;
2. Develop turning movement volumes that are consistent with the approach and departure volumes by balancing of projected turning movements with actual turning movement volumes using an iterative process; and,
3. Check reasonableness by comparing adjusted turning movement volumes with both the existing count data and the raw model output.

Projected intersection approach link volumes were then checked for reasonableness, and those forecasts that did not appear reasonable were manually revised and revised.

This manual adjustment process was necessary to avoid over-stating the anticipated growth due to:

- The location of a centroid connector at or near the study intersections on the model network;
- The future model network has an addition of one or more intersection approaches at any study intersection; and,
- The addition of a major new roadway that is located near an intersection.

In the first case, the network coding was carefully checked in the study area, and approach link volumes near zone centroid connectors that had unreasonably high projected volumes were removed from calculating the model "delta";

The second exception case provided a more difficult challenge and required additional engineering judgment because there were no existing data that can be used to validate the approach volume for a new leg to an intersection. Therefore, a growth rate was applied to the entire intersection (all approaches) and manual adjustments were performed as appropriate; and,

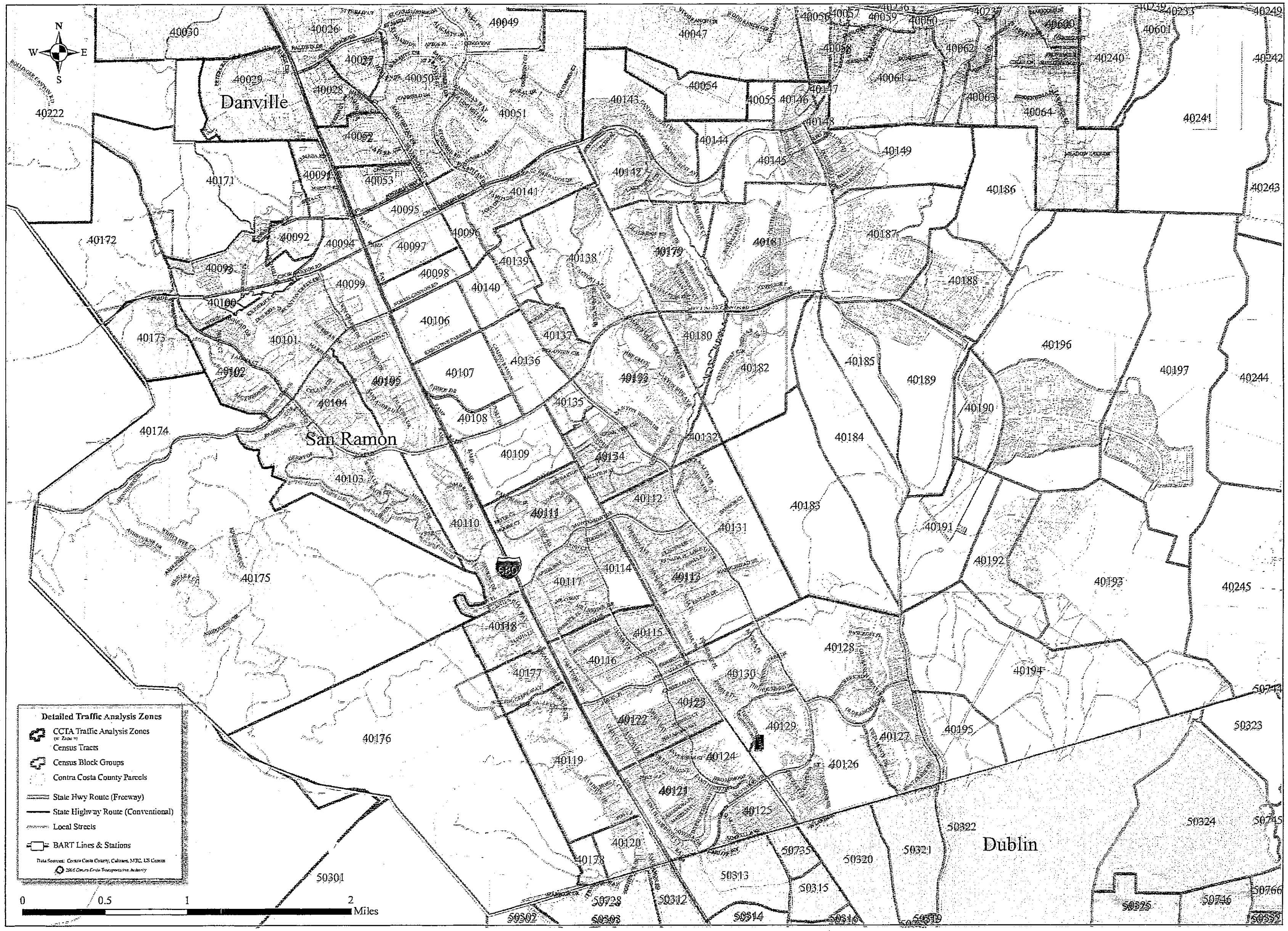
In the third case, when the model included a major new roadway near any study intersection, manual adjustments were needed where the distribution of forecast approach and departure volumes change significantly.

Generally, a uniform growth rate was calculated along each arterial corridor (e.g. Crow Canyon Road and Bollinger Canyon Road), in the east-west travel direction. This manual adjustment process would ensure conservation of traffic flow, thus avoiding "disappearance" of cars between closely spaced intersections.

Adjustments to Land Use

The land use in the 2020 was adjusted to remove population and employment forecasts associated with the City Center project. In anticipation of the project, the City provided CCCTA with land use forecasts for 2020. The land use associated with the project is removed to create the No Project assignment to which the with Project analysis can be compared. The City Center project is contained within three TAZs. The following land use adjustments were made to those TAZs.

TAZ	Population Adjustment	Employment Adjustment
40108	251 changed to 0	3340 changed to 1848
40109	No change	7935 changed to 5865
40136	400 changed to 0	1840 changed to 230


Danville
San Ramon
Dublin
N
W
E
S
Detailed Traffic Analysis Zones
CCTA Traffic Analysis Zones
Census Tracts
Census Block Groups
Contra Costa County Parcels
State Hwy Route (Freeway)
State Highway Route (Conventional)
Local Streets
BART Lines & Stations
0
0.5
1
2
Miles
680
40030
40026
40049
40047
40029
40027
40028
40050
40051
40054
40055
40146
40147
40148
40061
40062
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APPENDIX B

PROJECT TRIP GENERATION

Trip Generation Methodology

Civic Center/Library Trip Generation from 2003 Analysis

Pass-By Trip Assignment

City's TDM Ordinance

Santa Clara VTA's TIA Guidelines for Trip Reduction

511 Contra Costa TDM Program Brochures

PROJECT TRIP GENERATION

Trip Generation Methodology

Korve Engineering

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OAKLAND • LOS ANGELES • SACRAMENTO • SAN JOSE • SAN BERNARDINO • SALT LAKE CITY

DRAFT MEMORANDUM

TO: LISA BOBADILLA, CITY OF SAN RAMON

FROM: DENNIS STRUECKER, PE

DATE: MAY 16, 2007

SUBJECT: TRIP GENERATION FOR CITY CENTER PROJECT

Introduction

This memorandum is in response to comments from the review of the trip generation associated with the City Center development and describes recommended modifications based on these comments. Two types of reductions have been made. First, reductions have been made because of the interaction between the various land uses of the project. Second, percentage reductions have been taken to account for proximity to the proposed transit center, pass-by traffic, and travel demand management programs that are in place in Bishop Ranch.

Internal Trip Reductions

As was suggested by KHA, reductions made to the Retail, Office Park, Condo, and Hotel land use trip generations were made based on the ITE (Institute of Transportation Engineers) methodology for determining the internal capture associated with multi-use development. The calculation sheets are attached. This methodology uses data collected at a limited number of multi-use sites in Florida. Data is only available to accommodate developments that include retail, residential, and office land uses. In addition, data is only available for the weekday midday peak hour, weekday PM peak hour, and weekday daily trips. The weekday PM peak hour data was used in our calculations for both the AM and PM peak hours.

The ITE methodology to determine internal capture allows for a maximum of four land uses. Retail, Office Park, Condo, and Hotel were assumed to generate internal trips at the City Center development. The Hotel land use was assumed to produce internal trips in like manner as the Condo land use; however, it was assumed that no internal trips would be made between the Condo and the Hotel. Guests at the Hotel are expected to exhibit trip making behavior similar to residents in the Condo units. Guests at the Hotel are expected to use the adjacent retail services and a few of the hotel guests could be expected to stay at the hotel because of the businesses in the office park.

The internal trips were subtracted from the single-use trip generation estimate to determine the external trips for each land use. Additional percentage based reductions were made, and these reductions were applied to the external trips not the single-use trip generation estimate.

Additional Percentage Reductions

The additional percentage based reductions include proximity to the proposed transit center, retail pass-by trips, TDM (Transportation Demand Management), and a PM walk mode. A 2 percent reduction was made for the Condos and Hotel for residential development near a major transit facility and a similar 2 percent reduction of the office trip generation was made for employment near a major transit facility. These reductions were adapted from the Santa Clara County Congestion Management Plan for development within 2,000 feet of a major bus stop. Data was adapted from Santa Clara County in the absence of any guidelines from Contra Costa County. The retail pass-by trip reduction was determined based on the fitted curve equation, Ln(T)=-0.291Ln(X)+5.001, from the ITE pass-by methodology. The TDM reduction of 15 percent is based on historic data and was coordinated with Marcie McGuire the Bishop Ranch Transportation Manager. Two reductions were made to the Civic Center and Library. A transit/TDM reduction of 10 percent was made for the Civic Center and the Library PM peak hour traffic was reduced by 25 percent for walking. Both of these percentages are consistent with the traffic analysis prepared for these projects in 2003.

The attached Table 1 summarizes the peak hour trip generation forecast for the project and the trip adjustments discussed above. As shown in the final row of Table 1, the new development proposed in the City Center Project is forecast to generate 1,668 a.m. peak hour trips (1,261 inbound and 407 outbound) and 2,996 p.m. peak hour trips trips (1,161 inbound and 1,835 outbound).

Currently there is a 194,600 square-foot office park on the site that will be removed to construct the proposed project. The amount of peak hour traffic generated by the existing office uses that will be removed is presented in Table 2. The same TDM and transit center (TC) trip reductions used in the project traffic forecast were also applied to the existing uses that will be removed. Table 3 summarizes the peak hour trips that were assigned to the Traffix network to analyze the potential traffic impacts associated with the project based on existing conditions. The adjusted new project trips were assigned to the study intersections and then the existing office park trips were removed, resulting in the net new project trips shown in the final row in Table 3.

Currently the project has an entitlement to build 328,200 additional square feet of office park development and this entitlement is included in the 2020 modeling. Therefore, the adjusted new project trips were reduced to account for the current entitlement and the trips shown in the row in Table 5 labeled 2020 Traffix Project Trips were assigned to the study intersections. Then, similar to the existing traffic analysis, the existing office uses that will be removed were subtracted from the Traffix network. The City Center project is expected to produce 865 a.m. peak hour trips (547 inbound and 318 outbound) and 2,294 p.m. peak hour trips (1,062 inbound and 1,232 outbound) above the traffic generated by the existing and entitled uses on the project site as shown in the final row of Table 5.

Table 1 - Flex Retail Condition Trip Generation				Trip Generation Rates							Trips						
				AM			PM				AM			PM			
Facility	ITE Code	Size	Units	In	Out	Total	In	Out	Total	Daily	In	Out	Total	In	Out	Total	Daily
Condo	230	488	Per/Unit	0.07	0.365	0.44	0.35	0.172	0.52	5.06	37	178	215	170	84	254	2469
Internal Trip Adjustment											-11	-27	-38	-56	-45	-101	-913
External Trips											26	151	177	114	39	153	1556
TC Red. (2%)											-1	-3	-4	-2	-1	-3	-31
Condo New											25	148	173	112	38	150	1525
Hotel	310	169	Per/Room	0.34	0.22	0.56	0.31	0.28	0.59	6.74	58	37	95	53	47	100	1139
Internal Trip Adjustment											-19	-20	-39	-17	-25	-42	-422
External Trips											39	17	56	36	22	58	717
TC Red. (2%)											-1	0	-1	-1	0	-1	-14
Hotel New											38	17	55	35	21	57	703
Retail	820	663.34	KSF	0.45	0.29	0.73	1.58	1.71	3.29	35.02	297	190	487	1048	1135	2182	23231
Internal Trip Adjustment											-53	-35	-88	-91	-103	-194	-2094
External Trips											244	155	399	957	1032	1988	21137
Red. For Retail Passby (22%)[1]											-34	-34	-68	-210	-210	-421	-4650
Retail New											210	121	331	746	821	1568	16487
Cinema[2]	444	6	Per/Screen	0.00	0.00	0.00	8.09	12.13	20.22	58.06	0	0	0	49	73	121	348
Office	750	681.77	KSF	1.42	0.18	1.59	0.19	1.17	1.37	11.02	967	120	1087	130	801	931	7513
Internal Trip Adjustment											-6	-8	-14	-34	-25	-59	-867
External Trips											961	112	1073	96	776	872	6646
Red. TDM (15%)											-144	-17	-161	-14	-116	-131	-997
TC Red. (2%)											-19	-2	-21	-2	-16	-17	-133
Office New											798	93	891	80	644	724	5516
Library	*	35.34	KSF	0.70	0.30	1.00	2.50	2.50	5.00	39.75	25	11	36	88	88	177	1405
Red (25% for PM Walk Mode)											0	0	0	-22	-22	-44	0
New Library											25	11	36	66	66	133	1405
City Hall	*	75.15	KSF	2.43	0.27	2.7	1.08	2.52	3.6	61.25	183	20	203	81	189	271	4603
Transit/TDM Red. (10%)											-18	-2	-20	-8	-19	-27	-460
New											165	18	183	73	170	243	4143
TOTAL NEW TRIPS NO ADJUSTMENTS											**1566**	**556**	**2122**	**1618**	**2417**	**4035**	**40709**
TOTAL NEW TRIPS WITH ADJUSTMENTS											**1261**	**407**	**1668**	**1161**	**1834**	**2995**	**30127**

*From Civic Center Report

1 Used ITE Pass-by trip percentage equation for the PM peak period and applied this percentage to the AM peak hour outbound and PM peak hour inbound, with the same number of inbound and outbound pass-by trips during each peak hour.

2 Daily is a Friday based on only one observation.

Table 2 - Demolition of Existing Office Uses With the Proposed Project				Trip Generation Rates						Trips					
				AM			PM			AM			PM		
Facility	**ITE Code**	**Size**	**Units**	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Existing Office Park	750	194.6	KSF	1.73	0.21	1.95	0.25	1.51	1.76	337	42	379	48	294	342
Red. TDM (15%)										-51	-6	-57	-7	-44	-51
TC Red. (2%)										-7	-1	-8	-1	-6	-7
Existing Office Park Trips Removed										280	35	315	40	244	284

Table 3 - Flex Retail Project Traffic Summary Existing Analysis	AM			PM		
	In	**Out**	**Total**	**In**	**Out**	**Total**
Adjusted New Project Trips	1261	407	1668	1161	1835	2996
Existing Office Removed	-280	-35	-315	-40	-244	-284
Net New Project Trips (Existing)	981	372	1353	1121	1591	2712

Table 4 - Current Office Park Entitlement				Trip Generation Rates						Trips					
				AM			PM			AM			PM		
Facility	**ITE Code**	**Size**	**Units**	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Office Park	750	328.2	KSF	1.59	0.20	1.79	0.21	1.32	1.53	523	65	588	70	433	503
Red. TDM (15%)										-78	-10	-88	-10	-65	-75
TC Red. (2%)										-10	-1	-12	-1	-9	-10
Office Park Trips removed in 2020										434	54	488	59	359	418

Table 5 - Flex Retail Project Traffic Summary 2020 Analysis	AM			PM		
	In	**Out**	**Total**	**In**	**Out**	**Total**
Adjusted New Project Trips	1261	407	1668	1161	1835	2996
Minus Office Entitlement	-434	-54	-488	-59	-359	-418
2020 Traffix Project Trips	827	353	1180	1102	1476	2578
Existing Office Removed	-280	-35	-315	-40	-244	-284
Net New Project Trips Above Current Entitlement	547	318	865	1062	1232	2294

Flex Retail

Analyst Luke Seegmiller
Date May 10, 2007

MULTI- USE DEVELOPMENT TRIP GENERATION AND INTERNAL CAPTURE SUMMARY

Name of Dvlpt ____
Time Period AM Peak

LAND USE A Retail

ITE LU Code 820
Size 663,339 ft²

	Total	Internal	External
Enter	297	53	244
Exit	190	35	155
Total	487	88	399
%	100%	18%	82%

Exit to External 155
Enter from External 237

LAND USE B Office Park

ITE LU Code 750
Size 681,769 ft²

	Total	Internal	External
Enter	967	6	961
Exit	120	8	112
Total	1087	14	1073
%	100%	1%	99%

Enter from External 961
Exit to External 112

A – B (upper row): Demand 2% 6 · Balanced 6 · Demand 23% 28
A – B (lower row): Demand 3% 6 · Balanced 6 · Demand 31% 300

A – C (left column): Demand 12% 23 · Balanced 11 · Demand 31% 11
A – C (right column): Demand 9% 27 · Balanced 27 · Demand 53% 94

A – D: Demand 12% 23 · Balanced 18 · Demand 31% 18
A – D: Demand 9% 27 · Balanced 20 · Demand 53% 20

B – C: Demand 2% 2 · Balanced 1 · Demand 2% 1
B – C: Demand 0% 0 · Balanced 0 · Demand 0% 0

B – D (left column): Demand 2% 2 · Balanced 1 · Demand 2% 1
B – D (right column): Demand 0% 0 · Balanced 0 · Demand 0% 0

LAND USE C Condo

ITE LU Code 230
Size 488 Units

	Total	Internal	External
Enter	37	11	26
Exit	178	27	151
Total	215	38	177
%	100%	18%	82%

Exit to External 151
Enter from External 26

C – D (upper row): Demand 0% 0 · Balanced -0 · Demand 0% 0
C – D (lower row): Demand 0% 0 · Balanced 0 · Demand 0% 0

LAND USE D Hotel

ITE LU Code 310
Size 169 Units

	Total	Internal	External
Enter	58	19	39
Exit	37	20	17
Total	95	39	56
%	100%	41%	59%

Enter from External 39
Exit to External 17

Net External Trips for Multi-Use Development

	LAND USE A	LAND USE B	LAND USE C	LAND USE D	TOTAL
Enter	244	961	26	39	1270
Exit	155	112	151	17	435
Total	399	1073	177	56	1705
Single-Use Trip Gen. Est.	487	1087	215	95	1884

Source: Kaku Associates, Inc.

INTERNAL CAPTURE 10%

* Used the same percentages as the PM peak hour

Flex Retail

Analyst Luke Seegmiller
Date May 23, 2007

MULTI- USE DEVELOPMENT TRIP GENERATION AND INTERNAL CAPTURE SUMMARY

Name of Dvlpt ____________
Time Period PM Peak

LAND USE A Retail

ITE LU Code 820
Size 663, 339 ft²

	Total	Internal	External
Enter	1047	91	956
Exit	1135	103	1032
Total	2182	194	1988
%	100%	9%	91%

Exit to External 1032
Enter from External 956

LAND USE B Office Park

ITE LU Code 750
Size 681, 769 ft²

	Total	Internal	External
Enter	130	34	96
Exit	801	25	776
Total	931	59	872
%	100%	6%	94%

Enter from External 96
Exit to External 776

LAND USE C Condo

ITE LU Code 230
Size 488 Units

	Total	Internal	External
Enter	170	56	114
Exit	84	45	39
Total	254	101	153
%	100%	40%	60%

Exit to External 39
Enter from External 114

LAND USE D Hotel

ITE LU Code 310
Size 169 Units

	Total	Internal	External
Enter	53	17	36
Exit	47	25	22
Total	100	42	58
%	100%	42%	58%

Enter from External 36
Exit to External 22

Between A and B:
Demand 2% 21 | Balanced 21 | Demand 23% 184
Demand 3% 34 | Balanced 34 | Demand 31% 40

Between A and C:
Demand 12% 136 | Balanced 53 | Demand 31% 53
Demand 9% 14 | Balanced 45 | Demand 53% 45

Between A and D:
Demand 12% 136 | Balanced 16 | Demand 31% 16
Demand 9% 94 | Balanced 25 | Demand 53% 25

Between B and C:
Demand 2% 16 | Balanced 3 | Demand 2% 3
Demand 0% 0 | Balanced 6 | Demand 0% 0

Between B and D:
Demand 2% 16 | Balanced 1 | Demand 2% 1
Demand 0% 0 | Balanced 0 | Demand 0% 0

Between C and D:
Demand 0% 0 | Balanced 0 | Demand 0% 0
Demand 0% 0 | Balanced 0 | Demand 0% 0

Net External Trips for Multi-Use Development

	LAND USE A	LAND USE B	LAND USE C	LAND USE D	TOTAL
Enter					
Exit					
Total					
Single-Use Trip Gen. Est.					

INTERNAL CAPTURE

Source: Kaku Associates, Inc.

Analyst Luke Seegmiller
Date May 24, 2007

MULTI- USE DEVELOPMENT TRIP GENERATION AND INTERNAL CAPTURE SUMMARY

Flex Retail

Name of Dvlpt
Time Period Daily

LAND USE A Retail

ITE LU Code 820
Size 663,339 ft²

	Total	Internal	External
Enter	11,615	1151	10464
Exit	11,616	943	10673
Total	23231	2094	21137
%	100%	9%	91%

Exit to External 10673
Enter from External 10464

LAND USE B Office Park

ITE LU Code 750
Size 681,769 ft²

	Total	Internal	External
Enter	3756	348	3408
Exit	3757	519	3238
Total	7513	867	6646
%	100%	12%	88%

Enter from External 3408
Exit to External 3238

A ↔ B:
Demand 4 % 465 — Balanced 465 — Demand 22% 827
Demand 3 % 348 — Balanced 348 — Demand 15 % 563

A ↔ C:
Demand 11 % 1278 — Balanced 407 — Demand 33 % 407
Demand 9 % 1045 — Balanced 469 — Demand 38% 469

A ↔ D:
Demand 11 % 1278 — Balanced 188 — Demand 33% 188
Demand 9 % 1045 — Balanced 217 — Demand 38% 217

B ↔ C:
Demand 2 % 75 — Balanced 37 — Demand 3 % 37
Demand 0 % 0 — Balanced 0 — Demand 0 % 0

B ↔ D:
Demand 2 % 75 — Balanced 17 — Demand 3 % 17
Demand 0 % 0 — Balanced 0 — Demand 0 % 0

LAND USE C Condo

ITE LU Code 230
Size 488 Units

	Total	Internal	External
Enter	1234	444	790
Exit	1235	469	766
Total	2469	913	1556
%	100%	37%	63%

Exit to External
Enter from External

C ↔ D:
Demand 0 % 0 — Balanced 0 — Demand 0 % 0
Demand 0 % 0 — Balanced 0 — Demand 0 % 0

LAND USE D Hotel

ITE LU Code 310
Size 169 Units

	Total	Internal	External
Enter	569	205	364
Exit	570	217	359
Total	1139	422	717
%	100%	37%	63%

Enter from External 364
Exit to External 359

Net External Trips for Multi-Use Development

	LAND USE A	LAND USE B	LAND USE C	LAND USE D	TOTAL
Enter					
Exit					
Total					
Single-Use Trip Gen. Est.					

INTERNAL CAPTURE

Source: Kaku Associates, Inc.

PROJECT TRIP GENERATION

Civic Center/Library Trip Generation from 2003 Analysis

PROJECT TRIP GENERATION

Trip Generation

Trip generation is the estimation of the traffic generated by land uses within a specific timeframe, such as the morning and evening commute peak hours. For most land uses, trip generation is estimated using trip generation rates from the Institute of Transportation Engineers (ITE) Trip Generation Manual. ITE has compiled trip generation data from hundreds of surveys around the United States for common types of land uses. However, the San Ramon City Civic Center Master Plan contains a mix of civic, retail, and recreational uses, many of which are not included in the ITE trip generation data. Therefore, the more unique land uses required derivation of rates from available information, or use of rates from studies of similar land uses.

Table 4 presents typical weekday trip generation rates and the estimated peak hour trip generation of the proposed City Civic Center land uses. Table 4 identifies the sources of information used in the estimation of traffic and the appendix contains detailed worksheets for the derivation of trip generation rates for several land uses.

Several adjustments are made to the project's trip generation:

1) The library trip generation is reduced by 25% in the afternoon peak hour to reflect students who walk to and from the library from nearby schools and neighborhoods. This information is based on a conversation with San Ramon's Main Public Library librarian.

2) Retail trip generation is reduced 20% for "pass-by" trips. Pass-by trips are trips passing by on adjacent streets and stopping at the project as an intermediate stop between the original origin and destination. Numerous studies have shown that retail and restaurant land uses have pass-by components between 15% and 35% of their total traffic generation.

3) The City office trip generation is reduced 10% to reflect the use of transit and Transportation Demand Management (TDM) measures that encourage employees to use alternative modes of transportation or not travel during the peak hours. Office trip generation rates are derived from surveys of isolated suburban office parks with negligible transit use. San Ramon has an extensive TDM program in place and the project is located within walking distance of the San Ramon Transit Center with connections to BART.

4) The Aquatic Center trip generation is reduced 10% to reflect people walking from nearby neighborhoods.

As shown in Table 4 the project is estimated to generate about 480 a.m. peak hour trips and about 1,000 p.m. peak hour trips. As stated above, these estimates reflect a typical weekday. Several of the land uses have peak generation outside of the peak hours or during special events, specifically the performing arts center (which has its highest weekday generation in the evening) and the aquatic center (which has its highest traffic generation during special events such as swim meets). The children's museum, aquatic center, and performing arts center also have peak generation on weekends which is not studied in this EIR. Performing arts and aquatic center special event trip generation is discussed later in this section.

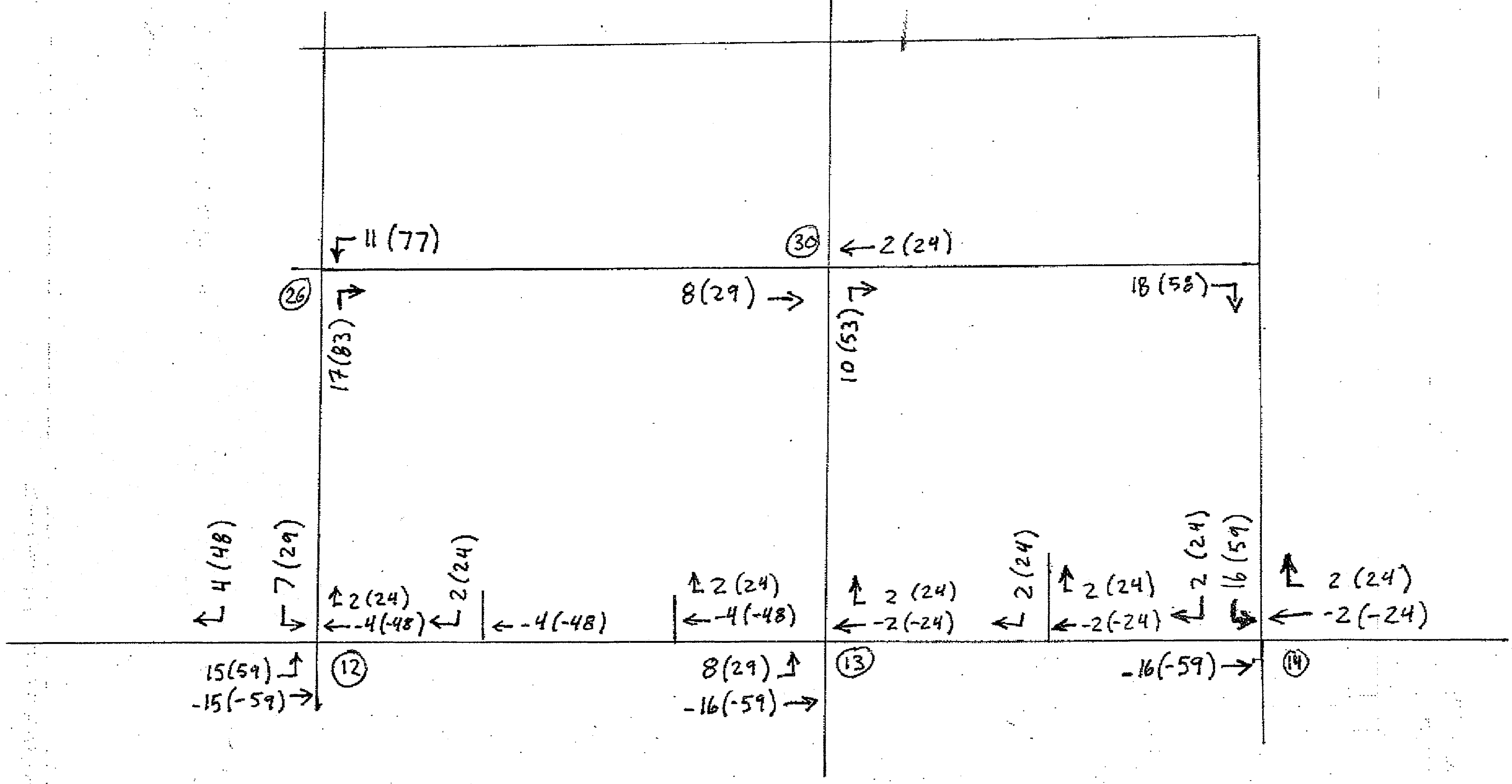
Table 4
PROJECT TRIP GENERATION ESTIMATES

Land Use	Size	Units	Source	Trip Generation Rates						Trip Generation					
				AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		Total
				In	Out	Total	In	Out	Total	In	Out	Total	In	Out	
North Parcel															
City Center Building	70	KSF	[1]	2.43	0.27	2.70	1.08	2.52	3.60	170	19	189	76	176	252
Library	50	KSF	[2]	0.70	0.30	1.00	2.50	2.50	5.00	35	15	50	125	125	250
Children's Museum	20	KSF	[3]	3.79	0.50	4.29	0.14	1.23	1.36	76	10	86	3	25	27
Retail	40	KSF	[4]	1.41	0.90	2.31	4.11	4.45	8.56	56	36	92	164	178	342
Performing Arts Theater	1170	Attendees	[5]	0.03	0.005	0.03	0.12	0.02	0.14	30	5	35	144	20	164
Subtotal North Parcel										367	85	452	512	524	1035
Red. for Library Walk Mode (25% PM Only)													(31)	(31)	(63)
Red. For Retail Pass-by (20%)										(11)	(7)	(18)	(33)	(36)	(68)
Red. For Office Transit/TDM (10%)										(17)	(2)	(19)	(8)	(18)	(25)
Total North Parcel										**339**	**76**	**415**	**440**	**439**	**879**
South Parcel															
City Park	7.5	Acres	[6]	0.159	0.159	0.32	0.159	0.159	0.32	1	1	2	1	1	2
Aquatic Center	25	Employees	[7]	1.92	0.74	2.66	71	65	136	48	19	67	71	65	136
Red. For Aquatic Center Walk Mode (10%)										(5)	(2)	(7)	(7)	(7)	(14)
Total South Parcel										**44**	**18**	**62**	**65**	**60**	**125**
Grand Total North + South Parcels										**383**	**94**	**477**	**505**	**499**	**1004**

PROJECT TRIP GENERATION

Pass-By Trip Assignment

AM(PM) - Flex Retail | Pass-by
San Ramon - 06/13/2007



PROJECT TRIP GENERATION

City's TDM Ordinance

ORDINANCE NO. 301

ORDINANCE OF THE CITY OF SAN RAMON REPEALING CHAPTER VII, TRANSPORTATION DEMAND MANAGEMENT OF DIVISION B-8, OF THE MUNICIPAL CODE AND ADDING CHAPTER VI TO DIVISION B-8 ESTABLISHING A VOLUNTARY TRANSPORTATION SYSTEM MANAGEMENT PROGRAM

THE **CITY COUNCIL OF THE CITY OF SAN RAMON DOES ORDAIN** as follows:

Section 1. The City Council finds that:

(a) There continues to be an increase in new employment and housing opportunities in San Ramon and the San Ramon Valley;

(b) Transportation System Management (TSM) Programs have the potential to reduce vehicle trips and vehicle emissions more efficiently and cost-effectively than major roadway improvements;

(c) For many years prior to the passage of Measure C, local jurisdictions developed and implemented a variety of projects and programs, e.g., operation of transit systems, construction of bicycle facilities, land use policy coordination and related improvements;

(d) Since 1992, the Contra Costa Transportation Authority has committed both Measure C and Transportation Fund for Clean Air (TFCA) funds to four subarea programs, for the implementation of Measure C and Clean Air Plan goals;

(e) The Countywide Comprehensive Transportation Plan incorporates each Regional Committee's Action Plan for Routes of Regional Significance, which support specific TSM goals and objectives;

(f) Over the past four years, the subarea TSM programs have been successful in reducing vehicle trips and emissions at the employment sites specified in the TSM ordinance, as well as in school and residential areas where programs have been implemented;

(g) In adopting this Ordinance cooperation and coordination with other local jurisdictions and regions in TSM are acknowledged as having the potential to enhance the efficiency and cost-effectiveness of its efforts; accordingly the Council directs staff to take steps to implement TSM in accordance with the policies, goals and objectives set forth herein.

Section 2. Chapter VII comprising Sections B8-101 through B8-120 of Division B-8 of the Municipal Code is repealed.

Section 3. Chapter VI comprising Sections B8-101 and B8-102 are added to Division B-8 of the Municipal Code to read:

Chapter VI

Transportation System Management

Section B8-101. Purpose, Goals and Objectives

In light of state law prohibiting mandatory employer-based trip reduction requirements, the following purposes, goals and objectives are adopted.

A. Purpose:

1. To promote maximum efficiency in the existing transportation system and to further the transportation goals of the Measure C Growth Management Program, Contra Costa's Congestion Management Program and the Bay Area Clean Air Plan by:

(a) Promoting and encouraging the use of transit, ridesharing, bicycling, walking, flexible work hours and telecommuting as alternatives to solo driving;

(b) Incorporating these goals and objectives into the land use review and planning process;

(c) Developing proactive programs and/or projects either alone or in conjunction with other jurisdictions, aimed at achieving these goals;

(d) Considering the incorporation of appropriate technology designed to facilitate traffic flow, provide transit and highway information, provide trip generation alternatives, and related technology into the transportation system;

(e) Educating San Ramon employees, employers, residents and students regarding the benefits and availability of commute alternatives;

(f) Working with the transit authorities to better serve San Ramon;

(g) Encouraging the most cost-effective broad based and wide range of transportation improvement projects aimed at achieving congestion relief;

(h) Cooperating with other jurisdictions, the private sector, and transit operators in planning and implementing transportation programs.

2. To reflect an ongoing commitment to expand TSM efforts beyond employer-based trip reduction programs, in order to achieve traffic congestion management and air quality goals.

3. To comply with applicable state and federal laws as well as with Measure C Growth Management Program requirements pertaining to TSM.

B. Goals: The goal of this ordinance is to ensure the continuation of a proactive, but voluntary, TSM program effort aimed at reducing vehicle trips, vehicle emissions and traffic congestion in the most cost effective manner.

C. Objective: The objective of this section is to establish the following policies:

1. To participate, in conjunction with other jurisdictions, in a proactive effort to support and develop projects which will achieve the Measure C TSM goals as described in the San Ramon Action Plan, the Countywide Comprehensive Transportation Plan, the Measure C Strategic Plan, the Congestion Management Plan and/or the Bay Area Clean Air Plan. Such participation may include, but need not be limited to:

   (a) Promotion and encouragement of the use of transit, ridesharing, bicycling, walking, flexible work hours, telecommuting or other alternatives to solo driving;

   (b) Project incorporation appropriate technology designed to facilitate traffic flow, provide transit highway information and related technology.

2. To incorporate these objectives, as appropriate, into the City land use review and planning process.

Section B8-102 TSM Advisory Committee. The San Ramon TSM Advisory Committee is established to provide a unique opportunity for the private/public sector to work together toward reducing traffic congestion and achieving cleaner air for its business community, residents and schools.

(a) **Composition.** The TSM Advisory Committee shall be composed of the following:

1. One (1) representative of the Transportation Committee of the City Council (non-voting member);
2. The San Ramon Transportation Analyst;
3. Five members appointed by the City Council, each representing an employer or complex.

(b) **Term and Termination of Office.** The term of office for each member shall be two (2) calendar years, or portion thereof, ending on December 31 of the second year. Members may be reappointed for consecutive terms. Termination of office shall be according to by-laws developed by the TSM Advisory Committee and approved by the City Council.

(c) **Meetings**. As a part of its by-laws, the TSM Advisory Committee shall establish regularly scheduled dates and times for its meeting, and shall promulgate rules for the conduct of this meeting including attendance requirements.

(d) **Function**. The TSM Advisory Committee may develop and recommend programs to coordinate and implement the City-wide Voluntary Employer Based Trip Reduction effort.

(1) The TDM Advisory Committee shall develop programs and make recommendations to:

a. Coordinate TSM efforts of all employers and complexes in the City of San Ramon;

b. Coordinate TSM efforts with local and regional agencies as designated by the City;

c. Seek the cooperation and assistance of neighboring communities in achieving TSM goals.

(2) The TDM Advisory Committee may make recommendations on other activities which may include, but not limited to, the following:

a. Encourage and promote all transit services between the complexes, downtown and the transit stops;

b. Compile, distribute and annually update Ridesharing materials;

c. Plan any TSM Program element; and,

d. Improvements in City services and facilities to assist employers in meeting the goals of this voluntary TSM Ordinance.

Section 4. If any subsection, sentence, clause or phrase of this Ordinance is for any reason held by a court of competent jurisdiction to be invalid, such decision shall not affect the validity of the remaining portions of this Ordinance. The City Council hereby declares that it would have passed this section, subsection, sentence, clause or phrase hereof irrespective of the fact that any one or more sections, subsections, sentences, clauses or phrases are held invalid.

Section 5. This Ordinance shall take effect thirty (30) days from the date of its passage. Before the expiration of fifteen (15) days after its passage, this Ordinance shall be posted in three public places within the City of San Ramon along with the names of the members of the City Council voting for and against same.

Ordinance No. 301

The foregoing Ordinance was introduced at the meeting of the City Council on June 9, 1998 and after public hearing was adopted at the meeting of the City Council of the City of San Ramon on June 23, 1998 by the following vote:

AYES: Councilmembers Athan, Hudson, Kinney, Raab and Mayor Welm

NOES: None

ABSENT: None

ABSTAIN: None

Hermann Welm, Mayor

ATTEST:

Judy Macfarlane

Judy Macfarlane, City Clerk

g\transp/res/tsmord.rev

PROJECT TRIP GENERATION

Santa Clara VTA's TIA Guidelines for Trip Reduction

Table 4: Maximum Vehicle Trip Reduction ~~Values~~Rates

~~-~~[Should ~~these rates be linked with the CDT anual definitions of developments near transit i.e. cores, corridors, and station areas. All of these locations could result in a reduction in vehicle trips, but the magnitude of these trips would be different. Do new generators near a transit line have to be mixed use]~~

Trip Reduction Strategy	**Maximum Trip Reduction**
Mixed-Use Development Project	
~~[Consider impact of parking ratios – fewer parking spots equates to greater trip reduction]~~	
with housing and retail components	~~*13*~~*15.0% off the smaller trip generator*[3]
with hotel and retail components	*10.0% off the smaller trip generator*[4]
with housing and employment	*3% off the smaller trip generator*[5]
with employment and employee-serving retail	*3% off employment component*[6]
Effective TDM Program with TDM Monitoring Program[7]	
~~[Should rates be increased to encourage project funded shuttles]~~	
Financial Incentives	*up to 5.0%*[8]
Shuttle Program[9]	
- Project-funded dedicated shuttle	*3.0%*
- Partially-funded multi-site shuttle	*2.0%*
Location Within 2,000-Foot <u>Walk</u> of Transit Facility[10]	
~~[Should we change for transit access to the regional system?]~~	
Housing near LRT or Caltrain Station	*9.0%**
Housing near a Major Bus Stop[11]	*2.0%**

---

[3] The proposed trip reductions calculated for all land uses within the development area shall be based on the land use that produces the least amount of new trips. In other words, the same trip reduction rate for the land use that produces the least number of new trips should be used to determine the trip reduction for all developments.

[4] Same as footnote 3.

[5] Same as footnote 3.

[6] All trips made to retail services (employee-serving retail) within the proposed development/complex may be considered internal trips. However, to qualify for this reduction, the employee-serving retail must be integrated into the employment complex and must not have a dedicated parking area.

[7] In order for a project applicant to claim a TDM reduction, TDM program participation must be required of all tenants of the development through covenants, conditions or restrictions. See Section 8.2.3.

[8] Financial incentives must be equivalent to the maximum transit subsidy included in the National Energy ~~policy~~ Policy Act of 1992 and must be available to all employees in order for the project to receive full trip reduction. Eco Pass participation for all employees will also be given the full trip reduction. See Section 8.2.3.

[9] If the shuttle trip reduction is being combined with the "Employment near LRT or Caltrain Station" reduction, the maximum shuttle trip reduction that can be taken is 1.5%.

[10] The appropriate project entrance (e.g., housing front door or office pedestrian entrance) must be within a 2,000-foot walk of the transit facility. The entire development project does not need to be fully within a 2,000 foot walk for the project to be able to take the full trip reduction credit. In the case where the full development is not within a 2,000-foot walk, placement of the more concentrated housing units closest to the transit facility is recommended.

PROJECT TRIP GENERATION

511 Contra Costa TDM Program Brochures

transit
incentive
program

511 CONTRA COSTA

www.511contracosta.org

511 Contra Costa | FOR COMMUTERS WHO TRAVEL TO, FROM, OR THROUGH: Antioch, Brentwood, Clayton, Concord, Danville, El Cerrito, Hercules, Lafayette, Martinez, Moraga, Oakley, Orinda, Pinole, Pittsburg, Pleasant Hill, Richmond, San Pablo, San Ramon, Walnut Creek, and unincorporated areas of Contra Costa County.

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Walnut Creek, CA 94596-4300

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FIRST-CLASS MAIL PERMIT NO. 205 WALNUT CREEK, CA

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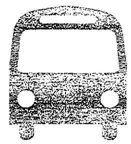
Walnut Creek, CA 94596-9929

Transit Incentive Program Application

If you currently drive alone to work, try transit instead! Submit the attached application to see if you qualify to receive a complimentary pass to try transit for a week.



- For Contra Costa transit commuters a guaranteed/emergency ride home is your insurance policy against being stranded. A taxi or a rental car will be provided to you in the case of a family emergency, home-based crisis, or unscheduled overtime. A program application will be sent to eligible participants receiving transit tickets.
- Offer available to commuters who travel to, from, or through Contra Costa County.

Applications can be submitted or downloaded from the 511 Contra Costa website at www.511contracosta.org.

You can also mail or fax completed form to:

511 Contra Costa
1407 Oakland Blvd., Ste 100
Walnut Creek, CA 94596-4300
Fax: 925-407-0356

For additional information, contact the 511 Contra Costa office at 925-407-0354 or visit www.511contracosta.org.

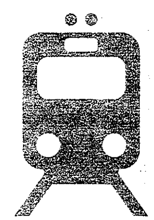
Contra Costa Transportation Authority

Bay Area Air Quality Transportation Fund for Clean Air

511 Contra Costa

RULES OF ELIGIBILITY

- Must drive alone to work.
- Must have access to a car.
- Must have a valid driver's license.
- Must be at least 18 years of age.
- No more than two participants per household or address.
- One offer per person.
- Your transit selections must coincide with commute origin and destination.
- If you currently take the bus, BART, train, ferry, carpool, vanpool, bike or walk to work, you are not eligible for this program.
- If you have received any other incentives from 511 Contra Costa (carpool gas scrip or a vanpool subsidy) you are not eligible for this program. Some exceptions are permitted.
- Once you have participated please expect a follow-up survey to determine the effectiveness of this program.



CLEAN AIR. Ignore it and it will go away.

Funds for this project are provided by the Bay Area Air Quality Management District's Transportation Fund for Clean Air in cooperation with the Contra Costa Transportation Authority.

TEAR OFF & MAIL

IF YOU CURRENTLY DRIVE ALONE TO WORK . . .
Complete the following application to determine your eligibility to receive a complimentary transit pass for a week. Eligible applicants will receive information on the Guaranteed/Emergency Ride Home Program.

Is this a new commute? O YES O NO

Do you currently drive alone? O YES O NO

Do you own a car, or have access to a car? O YES O NO
NOTE: Applicants will be selected at random to provide their license plate number to verify this information.

Year and make of car:

Please select free passes for the following transit companies only. Your selections must coincide with your home origin and work destination.

LOCAL TRANSIT AND COMMUTER TRAINS

O AC Transit	O Capitol Corridor (Amtrak)	O Vallejo Transit
O ACE Train	O County Connection	O WestCAT
O BART	O Fairfield-Suisun Transit	O WHEELS
O Benicia Transit	O Tri Delta Transit	

INTERCITY - EXPRESS BUS SERVICE

O AC Transbay
O Antioch to Lawrence Livermore Lab
O Antioch to Walnut Creek
(Hillcrest Park-n-Ride, Mitchell Park-n-Ride, Walnut Creek BART)
O Brentwood, Antioch to Bay Point BART
O Concord BART to Airport Plaza,
Galaxy Business Park, and Chevron in Concord
O El Sobrante to Orinda BART
O Fairfield to Del Norte BART
O Fairfield or Vacaville to Pleasant Hill BART (via Suisun City)
O Richmond to San Rafael
O San Ramon Transit Center to Dublin BART
O Vacaville to Del Norte BART
O Vallejo to El Cerrito Del Norte BART
O Walnut Creek to ACE Train
(Mitchell Park-n-Ride, Danville Park-n-Ride, Bishop Ranch, ACE Train)
O Walnut Creek to San Ramon
(Mitchell Park-n-Ride, Walnut Creek BART, Bishop Ranch)

If your commute trip involves an express bus, BART or a train, how will you get to the express bus stop, BART or train station?
O drive myself O get dropped off O bus O walk O bike

How did you hear about this program?

Name

Home Address (P. O. Box not acceptable)

Home City | Home Zip

Employer Name

Work Phone — you must provide your work phone number
( )

E-mail

Work Site Address

Work City | Work Zip

I hereby verify that the information submitted is true and correct.

Signature

Complimentary

Employer Services

Provided by:
511 Contra Costa
in cooperation with local
cities and Contra Costa County

Employer Services

- Assist with on-site Events: Transportation Fairs and Wellness Fairs
- Free bicycle racks and lockers
- Parking management consultations
- Corporate pre-tax deductions on employee transportation benefits
- Customized carpool ridematch assistance
- Corporate relocation commute assessment
- Sample programs for telecommuting and flexible work schedules
- Rideshare Rewards, Spare the Air, Bike-to-Work Week
- Complimentary display racks and transportation information brochures for employees

Call 511 Contra Costa to receive complimentary transportation services and commuter benefits!

511 CONTRA COSTA

Phone (925) 973 2650
www.511contracosta.org/employer.html

Employee Commuter Benefits

- Countywide Carpool, Vanpool, and Transit Incentives
- Guaranteed Ride Home Vouchers
- Pre-tax transportation benefit on employee payroll
- Commute trip planning assistance

Join or form a carpool and receive a free gas card	**Carpooling**
Assist employees to join a carpool or vanpool	**Carpool Ridematching**
Take the bus, train, or BART and receive a free week's worth of passes	**Transit**
Join a vanpool and receive reimbursement on ½ of your costs during the first three months	**Vanpooling**
Take a commute alternative and receive free taxi or rental car vouchers for emergencies	**Guaranteed Ride Home**

Complimentary

Commuter Incentives

511 Contra Costa Incentive Programs are FREE for all eligible commuters who work in Contra Costa County

For more details, call: (925) 973 2650
or email: support@511contracosta.org

City of San Ramon, Transportation Services Division:
2222 Camino Ramon, San Ramon California 94583

511 CONTRA COSTA

511 CONTRA COSTA

Complimentary
Services for:

Employers & Commuters

Commuter

Employer

511 CONTRA COSTA
City of San Ramon
Transportation Services Division
2222 Camino Ramon
San Ramon, CA 94583

Start carpooling to work and receive a free $60 gift card and be entered in a drawing to win free gas for a year!

Benefits of carpooling:

--> **Share the daily driving responsibilities with other drivers.** A day that you are not driving allows you to read the newspaper, catch up on work or sleep.

--> **Save money on your commute.** The American Automobile Association reports that your driving costs may be as high as 79.0 cents/mile per year (includes gas, maintenance, tires, insurance, depreciation and all finance costs).

--> **Improve air quality.** Carpooling with one other person saves over a pound of measurable pollution a day.

--> **Participate when you want.** No need to carpool everyday. Make carpooling work around your busy schedule.

Added Bonus!

Guaranteed Ride Home: Provides a free taxi or rental car ride home in the event of an emergency such as a sick child, unscheduled overtime, or a vehicle break down. If your worksite is located in Contra Costa County, you could be eligible for this program. Pre-enrollment is required. Visit www.511contracosta.org or call 510-315-3035 for more information.

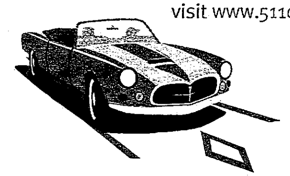
How do I find carpool riders?

If you need a carpool partner, visit www.511.org, and click on the "Rideshare" link. This link will direct you to the online "511 Ridematch" database. If you need help with the online ridematching database, dial "511" on your phone and at the voice prompt say "carpooling", and then "rideshare" for a consultant.

For additional information...

call 925-407-0355 or

visit www.511contracosta.org



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countywide
carpool
program

$60 gift card
and
a chance to win...

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www.511contracosta.org

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511 Contra Costa
1407 Oakland Blvd., Ste. 100
Walnut Creek, CA 94596-4300

Here is how it works:

--> Start a NEW carpool with at least one other person, or add a new member to an existing carpool.

--> Pledge to carpool to work a minimum of two days per week for an eight week period.

--> All eligible participants are automatically entered in a drawing to win "FREE GAS FOR A YEAR". Contest winner agrees to allow 511 Contra Costa to use his/her name and photograph for public relations purposes. Rules and conditions apply. See www.511contracosta.org and click on "Carpool" for contest rules.

Rules:

- Must be at least 18 years of age.
- Must have a valid driver's license.
- Carpools must commute to, from, or through Contra Costa County.
- If you have received any 511 Contra Costa incentives (vanpool subsidy, transit tickets, carpool gas cards), you are not eligible for this program.
- One-time, per person offer while supplies last.
- No more than 1 participant per household or address.
- Each carpooler must reside at a different household or address.
- Once you have participated in this program, please expect a follow-up survey to determine the effectiveness of this program.
- Employers may be contacted to verify employment. Falsifying any information will disqualify you from ALL 511 Contra Costa Programs.

Visit www.511contracosta.org for the most recent Carpool Incentive Program application and rules. 511 Contra Costa reserves the right to make any changes to the rules of eligibility at any time without prior notification.

Contra Costa Transportation Authority

Bay Area Air Quality

Transportation Fund for Clean Air

511 Contra Costa

Funds for this project are provided by the Bay Area Air Quality Management District's Transportation Fund for Clean Air in cooperation with the Contra Costa Transportation Authority.

CLEAN AIR. Ignore it and it will go away.

TEAR OFF, SEAL WITH TAPE AND MAIL. NO STAPLES PLEASE.

Carpool Incentive Program Application - Please Print

All information is required for processing. Register each carpool member on one form. If there are three or more members, use an additional form and attach the forms together. Falsifying any information on this document will disqualify you from ALL 511 Contra Costa Programs. Participation in the Carpool Incentive Program requires your participation in a follow-up survey.

Our carpool started Month: ________________ Year: ________________

Application

☐ (Initial) I pledge to carpool 2 days/week for 8 weeks

Carpool Member's Name #1

Home Address (PO Box not accepted)

Home City   Home Zip

Home Phone   Work Phone (required)

Company Name

Work Address

Work City   Work Zip

Supervisor's Name (print)

Supervisor's Phone (required)

What is the one-way mileage from your home to your worksite?

What is the approximate number or employees at your worksite?

How did you hear about this incentive program?

Do you have a valid driver's license? ○ YES ○ NO

Do you own or have access to a car? ○ YES ○ NO
Note: Applicants will be selected at random to provide their license plate number to verify this information.

Year, Make/Model of car

Please select your preferred gift card:
○ $60 Safeway ○ $60 Shell Gas ○ $60 Borders Books & Music

☐ (Initial) I pledge to carpool 2 days/week for 8 weeks

Carpool Member's Name #2

Home Address (PO Box not accepted)

Home City   Home Zip

Home Phone   Work Phone (required)

Company Name

Work Address

Work City   Work Zip

Supervisor's Name (print)

Supervisor's Phone (required)

What is the one-way mileage from your home to your worksite?

What is the approximate number or employees at your worksite?

How did you hear about this incentive program?

Do you have a valid driver's license? ○ YES ○ NO

Do you own or have access to a car? ○ YES ○ NO
Note: Applicants will be selected at random to provide their license plate number to verify this information.

Year, Make/Model of car

Please select your preferred gift card:
○ $60 Safeway ○ $60 Shell Gas ○ $60 Borders Books & Music

Release and Waiver of Liability

I, the undersigned, recognize that participation in the Carpool Incentive Program is strictly voluntary and that such participation is not within the course and scope of my employment. I, the undersigned request to register my participation in the Carpool Incentive Program. I hereby assume full responsibility for all risk of injury and loss, including death, which may result from my participation in the program. I agree to hold harmless, release, waive, forever discharge, and covenant not to bring suit or claim against 511 Contra Costa, TRANSPAC, the City of Pleasant Hill, the Company, or their respective officers, agents, and/or employees from any and all claims and demands which the undersigned may have against 511 Contra Costa, TRANSPAC, the City, the Company, or their officers, agents, or employees, by reason of an accident, illness, injury, or death, or damage to or loss of or destruction of any property arising or resulting directly from my participation in the Carpool Incentive Program and occurring during such participation, or any time subsequent thereto, whether or not such loss, injury, or death is caused or alleged to be caused in whole or in part by the negligent acts or omissions of 511 Contra Costa, TRANSPAC, the City, the Company, or their officers, agents or employees. The terms of this release are binding on my heirs, executors, administrators, and for all of my family members as well as myself.

I have read the foregoing paragraph and fully understand the terms contained therein and sign this waiver freely and without inducement.

I hereby verify the information submitted is true and correct.

Carpool Member Signature #1   Date

Carpool Member Signature #2   Date

The Release and Waiver of Liability must be on file prior to participation in the Carpool Incentive Program. Return the completed form(s) to:

Carpool Incentive Program
511 Contra Costa
1407 Oakland Blvd., Ste. 100
Walnut Creek, CA 94596-4300
Fax: 925-407-0356

12/06

511 Contra Costa
c/o City of San Ramon
2222 Camino Ramon
San Ramon, CA 94583

511 Contra Costa | FOR COMMUTERS WHO TRAVEL TO, FROM, OR THROUGH: Antioch, Brentwood, Clayton, Concord, Danville, El Cerrito, Hercules, Lafayette, Martinez, Moraga, Oakley, Orinda, Pinole, Pittsburg, Pleasant Hill, Richmond, San Pablo, San Ramon, Walnut Creek, and unincorporated areas of Contra Costa County.

countywide vanpool incentive program

511 CONTRA COSTA

www.511contracosta.org

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 117 SAN RAMON, CA
POSTAGE WILL BE PAID BY ADDRESSEE

CITY OF SAN RAMON TRANSPORTATION DIVISION
2222 CAMINO RAMON
SAN RAMON, CA 94583-9946

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

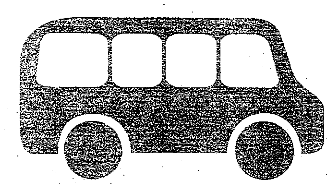
Join a Vanpool... we'll pay you to try it!

Try vanpooling and as an incentive to get you started, when you join a vanpool we'll provide **half of the costs for the first three months.***

Earn an extra $1,000!
In addition, drivers who start new vanpools and keep them on the road for at least one year, with a minimum of six new passengers, will be eligible to receive a $1,000 cash bonus.

Imagine This:
Your own personal driver picks you up every morning. You settle into a roomy, comfortable seat. You have extra time to read, relax, snooze or catch up on paperwork. While all around you, thousands fight the traffic that has frustrated you for years. Quite a way to start the day! There are over 100 vanpools traveling to and from Contra Costa County every day. One of these could be for you!

* Vanpool must have a Contra Costa County origin or destination. For more information call 925-973-2650 or visit www.511contrcosta.org



How do I participate?

- **Join a Vanpool:** 511 Regional Rideshare is an excellent starting point if you're looking for a vanpool. 511 Regional Rideshare is a non-profit rideshare organization with a database filled with carpools and vanpools. They can match you up with an existing vanpool, or help you start your own. All in one phone call, and free of charge! Give them a call dialing 511 from your phone.
- **Register for the Vanpool Incentive Program:** Once you're in a vanpool, complete the Vanpool Incentive Program Passenger Application within three months of joining the vanpool. After you're registered, you'll receive three reimbursement coupons. After you've completed three consecutive months, you and your vanpool driver sign the coupons and send them to the City of San Ramon for reimbursement.
- **If you're driving a "new" vanpool . . .** and would like to qualify for the $1,000 cash bonus, contact the San Ramon Transportation Services Division at (925) 937-2650 to receive your Driver Bonus Application. This must be submitted within three months of starting your vanpool.

The Vanpool incentive program is administered by the City of San Ramon. The program is part of (12) Countywide Commuter Incentive Programs sponsored by 511 Contra Costa in cooperation with the Contra Costa Transportation Authority and the Bay Area Air Quality Management District. This 511 Contra Costa program is sponsored by the Southwest Area Transportation (SWAT) Planning Committee which represents the communities of Danville, Lafayette, Moraga, Orinda, San Ramon, and Contra Costa County.

Contra Costa Transportation Authority

Bay Area Air Quality
Transportation Fund for Clean Air

511 Contra Costa

TEAR-OFF & MAIL

Countywide Vanpool Incentive Program — Passenger Application

Please complete this form and submit it to the 511 Contra Costa within the first three months of joining your vanpool.[1]

Date:

Name:

Company:

Social Security Number (Last 4 digits):

Home City:

Name of Employer:

Work Address:

Work Phone:

When did you join the vanpool of which you are currently a member?

Have you been a member of a different vanpool within the last six months?
O YES O NO

If yes, why did you leave the vanpool?

Are you in the 511 Contra Costa database?
O YES O NO

What do you estimate your monthly vanpool fares will be?

Are you joining a new or existing vanpool?
O New O Existing

Will you be a driver, passenger or both?[3]
O Driver O Passenger O Both

How did you get to work before you joined a vanpool?
O Drive alone O Carpool O Public Transit O Other

Name of registered vanpool driver or coordinator:

Signature of vanpool driver of coordinator:

Phone number of vanpool driver or coordinator:

Vanpool registration number[2] (Provided by the City of San Ramon):

SR:

RES:

Name in which check should be made:

Address where you would like the vanpool incentive check sent:

I hereby declare the above information to be true to the best of my knowledge and understand that falsifying information can result in disqualification from the "Countywide Vanpool Incentive Program". I also understand that any funds I receive are fully taxable under Federal Law.

Passenger Signature:

Date:

1. Application received after you have been a member of your vanpool for three months may not be considered for the program.

2. Your vanpool must be registered in the Countywide Vanpool Incentive Program in order for you to qualify for a passenger subsidy. The vanpool registration number will be issued by the City of San Ramon at the time of registration. Please contact the City of San Ramon at (925) 973-2650 to request the Vanpool Registration Form.

3. If you will be driving a new vanpool and would like to be eligible for $1,000 bonus for keeping a new vanpool in operation for a full year, with a minimum of six new passengers, please contact the City of San Ramon at (925) 973-2650.

COUNTYWIDE VANPOOL RELEASE AND WAIVER OF LIABILITY

I the undersigned, recognize that participation in the Vanpool Incentive Program is strictly voluntary and that such participation is not within the course and scope of my employment with

Company Name

I, the undersigned, request to register my participation in the Countywide Vanpool Incentive Program. I hereby assume full responsibility for all risk of injury or loss, including death, which may result from my participation in this program. I agree to hold harmless, release, waive, forever discharge, and covenant not to bring suit or claim against the City of San Ramon/SWAT or the Company, or their respective officers, agents, and/or employees from any and all claims and demands which the undersigned may have against the City of San Ramon/SWAT or the Company, or their officers, agents, and/or employees, by reason of an accident, illness, injury, or death, or damage to or loss or destruction of any property arising or resulting directly from my participation in the Countywide Vanpool Incentive Program and occurring during such participation, or any time subsequent thereto, whether or not such loss, injury, or death is caused or alleged to be caused in whole or in part by the negligent acts or omissions of the City of San Ramon/SWAT, the Company, or their officers, agents, or employees. The terms of this release is binding on my heirs, executors, administrators, and for all of my family members as well as myself.

I have read the foregoing two paragraphs and fully understand the terms contained therein and sign this waiver freely and without inducement.

Name (PRINT)

Signature

Home Address

Home City Zip

Home Phone

Date

This Release and Waiver of Liability must be on file prior to participation in the Vanpool Incentive Program. Every individual participating in the Incentive Program is required to submit this release form. Return the completed forms to:

Countywide Vanpool Incentive Program
511 Contra Costa
c/o City of San Ramon
2222 Camino Ramon
San Ramon CA 94583
Fax: 925-866-6173

4/06

Vanpool

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 117 SAN RAMON, CA
POSTAGE WILL BE PAID BY ADDRESSEE

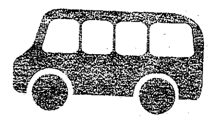
CITY OF SAN RAMON TRANSPORTATION DIVISION
2222 CAMINO RAMON
SAN RAMON, CA 94583-9946

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

Countywide Vanpool

Join a vanpool...we'll pay you to try it!

To get you started, you will receive **half off your vanpool fare,** for the first three months.*



- Call 511 - the Regional Rideshare Program. 511 provides free services that can match you with existing vanpools. 511 will send you a "matchlist" of vanpools with schedules similar to your own.
- Once you've joined a vanpool, submit your vanpool application and the waiver of liability within three months of joining your vanpool. You will then receive three vanpool coupons. At the end of three months, submit all three vanpool coupons to the City of San Ramon. You will be reimbursed half off the cost for the first three months.

Vanpool Driver Bonus Program

Start a "new" vanpool with a minimum of 6 "new" vanpool riders and be eligible for a **$1,000 cash bonus.**

- 511 Regional Rideshare Program will work with you every step of the way to get your vanpool on the road. Call 511 and speak to a Vanpool Consultant.
- Once your vanpool is on the road, register for the Vanpool Bonus: Contact the City of San Ramon at 925-973-2650 to request the Vanpool Bonus Application and Vanpool Registration. Complete both the Vanpool Bonus Application and Vanpool Registration and submit to the City of San Ramon within three months of starting your vanpool.

At the end of the 12 consecutive months, you will be eligible for the $1,000 bonus!

*Existing vanpool riders may not be eligible for any of the vanpool incentives.

Countywide Guaranteed Ride Home

Countywide Guaranteed Ride Home

Does the idea of using public transit, carpool, vanpool, walking or riding a bike to work sound appealing, but you've held back on making the commitment because you didn't know what you would do in the case of personal illness, family emergency, unscheduled overtime, or vehicle breakdown? The Guaranteed Ride Home Program is your safety net to get you home on the day when your regular commute option does not work out!

The 511 Contra Costa Guaranteed Ride Home program offers service to all commuters who work in Contra Costa County with no cost to employers or participants who pre-register and receive a voucher by mail. Voucher can be used to pay for a rental car or taxi ride home on a day that a qualified commute method is used to get to work and then is not available to get you home at the end of your work day.

You may use the Guaranteed Ride Home program if:

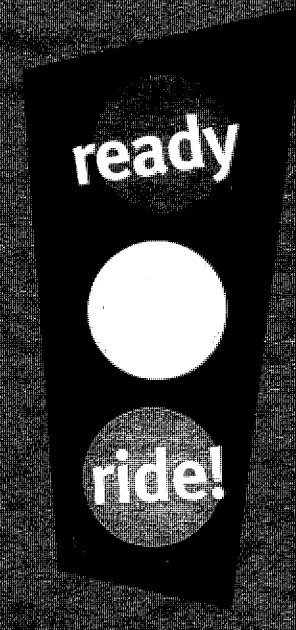
- You or an immediate family member suffers an illness
- You are asked by your supervisor to work unscheduled overtime
- Your ridesharing vehicle breaks down or the driver has to leave early
- You have a break-in, flood, or fire at your residence

The Guaranteed Ride Home Program may not be used for:

- Personal errands
- Pre-planned medical or dental appointments
- Business-related travel
- Working overtime without a supervisor's request
- Non-emergency side trips on the way home
- Ambulance service
- Trips to the work place

To request more information about the program and the official registration form complete the attached card and send it to the 511 Contra Costa Guaranteed Ride Home program office or call 510-215-3035.

Your Guide to Great Transportation Programs and Commute Incentives in Contra Costa County



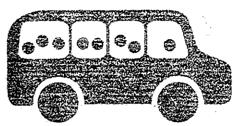
511 CONTRA COSTA

www.511contracosta.org

Countywide **Student Transit** Ticket Program

Countywide Student Transit Ticket Program

The Countywide Student Transit Ticket Program offers limited free public bus passes/tickets to students at public and private schools in Contra Costa County. This program encourages the use of public transit. The free bus passes/tickets are limited in supply, rules and regulations apply.



Contact your local 511 Contra Costa Representative for the specific information about the program.

- If your school is located in the communities of Alamo, Lafayette, Moraga, Orinda, Danville or San Ramon contact the 511 Contra Costa Representative at 925-973-2650.
- If your school is located in the communities of Antioch, Brentwood, Clayton, Concord, Martinez, Oakley, Pittsburg, Pleasant Hill or Walnut Creek contact the 511 Contra Costa Representative at 925-407-0355.
- If your school is located in the communities of El Cerrito, Hercules, Pinole, Richmond, San Pablo or the unincorporated areas of West Contra Costa contact the 511 Representative at 510-215-3035.

Countywide **Carpool** Incentive Program

Countywide Carpool

The Carpool Incentive Programs are designed to encourage drive-alone commuters to try carpooling.

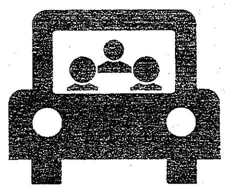
If you currently drive alone and commute to, from or through Contra Costa County.

Carpool Incentive Program
Join or form a carpool and receive a $60 gas card. Includes carpooling to BART and train stations.

College Commute Program
Join or form a carpool to campus and receive a $40 gas card.

Carpooling helps reduce driving costs, traffic congestion, and improves air quality.

Phone 925-407-0352 for more details or request an application at www.511contracosta.org



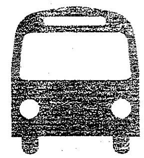
Countywide **Transit** Incentive Program

Countywide Transit Incentive

To receive a weeks worth of transit tickets go on-line to register at www.511contracosta.org

Eligibility Requirements:

- You must be 18 years of age or older to participate.

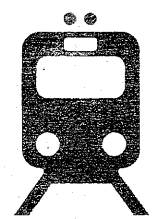


- Currently drive alone to work or college and be willing to try transit instead.
- Must travel to, through or from Contra Costa County.

The transit tickets available through this program include: AC Transit, Altamont Commuter Express (ACE), BART, Benicia Transit, Capitol Corridor, County Connection, Fairfield Transit, Solano Transit, Tri Delta Transit, Vallejo Transit, LAVTA (Wheels), and WestCAT.

Application may be submitted on-line at www.511contracosta.org

Phone 925-407-0352 for more information



To receive an official registration form for any of these programs, just return the attached card, or register on-line at www.511contracosta.org.

Registration forms and more info:

I am interested in receiving additional information and registration forms for the following programs:

- ○ Vanpool Incentive Program
  - ○ Rider Incentive ○ Driver Incentive
- ○ School Transit Ticket Program
- ○ College Commute Program
- ○ Carpool Incentive Program
- ○ Guaranteed Ride Home
- ○ Transit Incentive Program
- ○ Bike Maps - East Bay
- ○ *Making Public Transit Work for You*
  - ○ Video ○ DVD

PLEASE PRINT

Name ______________________

Address ______________________

City ______________ Zip ________

Home Phone ______________________

Business Phone ______________________

Would you like to be put on our e-mail list for new information? If so, please give us your e-mail address:

____

Contra Costa Transportation Authority

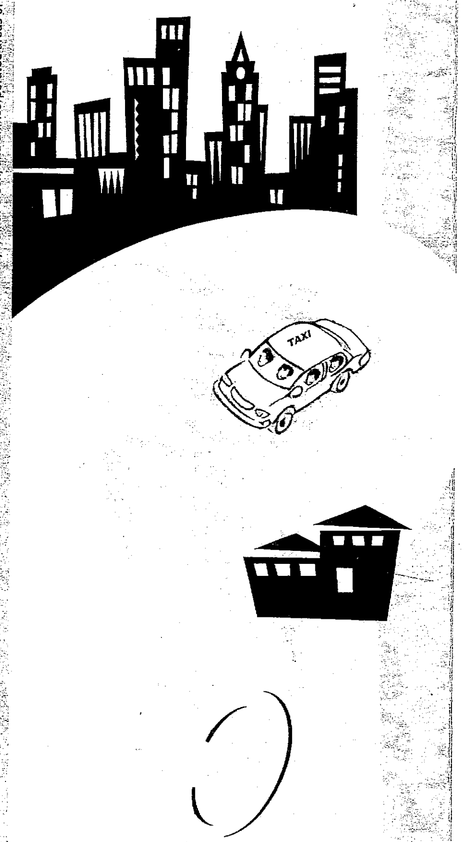
Bay Area Air Quality — Transportation Fund for Clean Air

511 Contra Costa

Danville · Lafayette · Orinda

SRV-2006

guaranteed



511 Contra Costa | FOR COMMUTERS WHO WORK IN: Antioch, Brentwood, Clayton, Concord, Danville, El Cerrito, Hercules, Lafayette, Martinez, Moraga, Oakley, Orinda, Pinole, Pittsburg, Pleasant Hill, Richmond, San Pablo, San Ramon, Walnut Creek, and unincorporated areas of Contra Costa County.

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 5149 RICHMOND, CA

POSTAGE WILL BE PAID BY ADDRESSEE

WCCTAC/511 Contra Costa
One Alvarado Square
San Pablo, CA 94806-9950

Your Guarantee

The idea of using public transit, carpooling, or vanpooling may sound great, but what about the fear of being stranded in case of a family emergency, unscheduled overtime, or vehicle breakdown?

Your "Insurance Policy" against being stranded if you miss your regular ride home because of an unplanned emergency — illness, family crisis, unscheduled overtime — a taxi or rental car voucher will get you home.

Just pick up the phone...

When you are approved to participate in the Guaranteed Ride Home Program, you will be issued either a taxi voucher or a rental car voucher to use **in an emergency.**

Taxi — The Taxi will pick you up at your workplace! If one of the specified emergencies prevents you from using your commute mode to get home you have a guaranteed trip home, just a phone call away!

Rent-A-Car — If you have to work late or if the carpool or vanpool left without you the Rent-A-Car representative can make arrangements for you to obtain a car and take the worry out of the trip home.

Program Participation:

If you leave your employer, cease to use a commute alternative, or work outside Contra Costa County, you are required to return your voucher to WCCTAC / 511 Contra Costa.

Falsifying any information on this document will disqualify you from the Guaranteed Ride Home Incentive Program. Participation in the Guaranteed Ride Home Incentive Program requires your participation in an annual follow-up survey.

- Participants and their employers must pre-register in the program. There is no cost to employers or employees to participate.
- Employees are eligible to use the Guaranteed Ride Home Program as long as they have obtained a voucher (in advance) and used a commute alternative on the day the Guaranteed Ride Home service is needed.

You may use the Guaranteed Ride Home Program if:

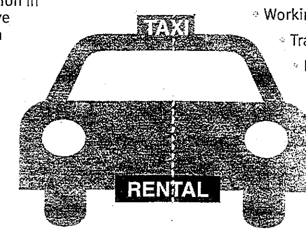
- You or an immediate family member suffers an illness, injury, or sever crisis
- You are asked by your supervisor to work unscheduled overtime
- Your ridesharing vehicle breaks down or the driver has to leave early
- You have a break-in, flood, or fire at your residence.

Vouchers are Non-Transferable:

You may NOT give your assigned voucher to another person. Rental cars are not to be used for pleasure. If an employee is found falsifying information related to the reason for using the Guaranteed Ride Home Program, the commute mode taken on the day of the program's use, or otherwise abusing the program, the employee will be charged for the ride and will be prohibited from using the program for one year. In addition, the employer will be notified of this incident.

THE GUARANTEED RIDE HOME PROGRAM IS RESERVED FOR UNEXPECTED EMERGENCIES ONLY. IT MAY NOT BE USED FOR:

- Non-emergency side trips on the way home
- Pre-planned medical or dental appointments
- Working overtime without supervisor's request
- Travel to work or personal errands
- Business-related travel
- Ambulance service
- Public Transit strikes



How to use the program . . .

If you work in Contra Costa County and use a commute alternative mode (public transit, carpool, vanpool, bicycle, walking) from home to the work place you may participate in the 511 Contra Costa Countywide Guaranteed Ride Home Program:

1. Verify that your employer is registered in the 511 Contra Costa program, you may call (510) 215-3035 to obtain current information. If your employer is not registered you will be sent an Employer Registration Form. There is no charge to employers or employees for this service, however, employers of ALL participants must register.
2. Complete the application form. Choose a taxi or rental car voucher. Complete the release and wavier of liability form, and mail or fax to the 511 Contra Costa Guaranteed Ride Home Program.
3. Upon receipt and approval of your application, you will be sent the program guidelines, one Taxi voucher or one Rent-A-Car voucher (per request), and the evaluation questionnaire. If you return the questionnaire within seven days after using the voucher you will be eligible to receive an additional voucher to be used for the next emergency. The program may be used a maximum of twice in one month and up to six times per calendar year.
4. In case of one of the specified emergencies:

TAXI - Call the Taxi company number on your voucher and notify the dispatcher that you are a participant in the 511 Contra Costa Countywide Guaranteed Ride Home Program, be sure to tell the dispatcher where you will be waiting for the Taxi and where you will be going. The Taxi will pick you up within 30 minutes of the call and is authorized to take you home or to a location where you started your commute to work. When the Taxi arrives, give the voucher to the driver to note the Taxi odometer reading (the fare is based on the miles traveled, not the meter rate). The 511 Contra Costa Guaranteed Ride Home program voucher is the payment method for the Taxi fare, a ten percent (10%) gratuity and bridge toll when applicable. Request a copy of the voucher for your records at the end of the trip.

RENT-A-CAR - The Rent-A-Car number is located on the voucher, call and indicate that you are a participant in the 511 Contra Costa Countywide Guaranteed Ride Home Program. The Rent-A-Car representative can make arrangements for you to obtain a car. To use the Rent-A-Car voucher you must present a valid California driver's license, a valid credit card and sign a rental agreement. When using the Rent-A-Car option you will required to replace the fuel to the same level it was at the time of delivery. The 511 Contra Costa Guaranteed Ride Home voucher for the Rental-A-Car option provides payment for a rental car from the time of pick-up until 9:30 am the following morning. Additional time and use will be billed to the participant's credit card. Request a copy of the voucher for your records.

TEAR-OFF, SEAL WITH TAPE AND MAIL . . . NO STAPLES PLEASE

511 CC COUNTYWIDE GRH RELEASE AND WAIVER OF LIABILITY

I the undersigned, recognize that participation in the Guaranteed Ride Home Program (GRH) is strictly voluntary and that such participation does not imply that I am acting in the course and scope of official company business.

I, the undersigned, request to register my participation in the GRH Program. I hereby assume full responsibility for all risk of injury or loss, including death, which may result from my participation in this program. I agree to **hold harmless, release, waive, forever discharge, and covenant not to bring suit or claim** against WCCTAC (El Cerrito, Hercules, Pinole, Richmond, San Pablo, BART, AC Transit, WestCAT and Contra Costa County) or any of the cities in Contra Costa County, or my employer, its officers, agents, and/or employees from any and all claims and demands which the undersigned may have against the said company, officers, agents, or employers, by reason of a accident, illness, injury, or death, or damage to or loss or destruction of any property arising or resulting directly or indirectly from my participation in the GRH Program and occurring during such participation, or any time subsequent thereto, whether or not such loss, injury, or death is caused or alleged to be caused in whole or in part by the negligent acts or omissions of the company, their officers, agents or employees. The terms of this release shall serve as a **release** and **assumption of risks** for all my heirs, executors, administrators, and for all of my family members.

I, the undersigned, acknowledge that I have read the foregoing two paragraphs and agree to the conditions outlined above.

Employee Name (print) ______________________

Signature ______________________

Address ______________ Room# ________

City ______________ Zip ________

Phone ______________ Date ________

THIS RELEASE AND WAIVER OF LIABILITY MUST BE ON FILE PRIOR TO PARTICIPATION IN THE GUARANTEED RIDE HOME PROGRAM.
Return the completed form to:

WCCTAC / 511 Contra Costa
13831 San Pablo Avenue
San Pablo, CA 94806
tel: (510) 215-3035 fax: (510) 235-7059

Contra Costa Transportation Authority
Bay Area Air Quality Transportation Fund for Clean Air
511 Contra Costa

Funds for this project are provided by the Bay Area Air Quality Management District's Transportation Fund for Clean Air in cooperation with the Contra Costa Transportation Authority.

10/05

Countywide Guaranteed Ride Home Program Application

FOR OFFICE USE ONLY:

APPLICATION INFORMATION ALL INFORMATION IS KEPT CONFIDENTIAL.
Complete all fields. Print all information.
Choose One:*
O Taxi Voucher O Rental Car Voucher

Your Name ______________________

Company Name ______________________

Department ______________ Cubicle or Mail Stop # ________

Company Address ______________ Suite # ________

City ______________ Zip ________

Home City ______________________

Work Phone # ______________ Ext. ________

Work Fax # ______________________

Email Address ______________________

Supervisors Name ______________ Phone # ________

COMMUTE METHOD USED TO REACH YOUR WORKPLACE

Do you participate in a CARPOOL? O YES O NO | # of days per week

Carpool Members: Member 1 (Yourself) | Member 2

Member 3 | Member 4

Do you participate in a VANPOOL? O YES O NO | #Members in Vanpool | #Days per week

Morning pick-up location ______________________

Address ______________________

City ______________ Cross-streets ________

Do you use PUBLIC TRANSIT? O YES O NO | #Days per week

Bus company and bus route(s) # used ______________________

Do you use one of the following? O YES O NO

WALK # Days per week	BIKE # Days per week	TRAIN # Days per week	BART # Days per week	Other

* You may change between the type of GRH service provided. Contact the GRH office for specific details at (510) 215-3035.

APPENDIX C

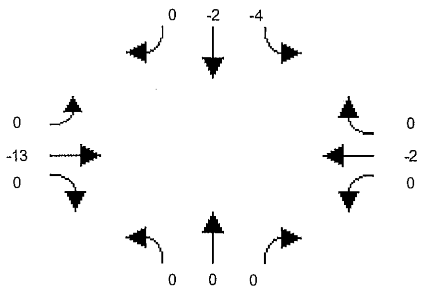
VOLUME ADJUSTMENTS

Negative Assignment for Existing Office Space

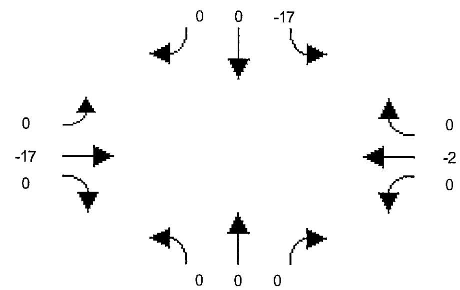
2020 Project Assignment without Office Entitlement

Intersection Graphic Report
Initial Volume (Future Alternative)
AM EXISTING OFFICE DEMO TRIP REDUCTION

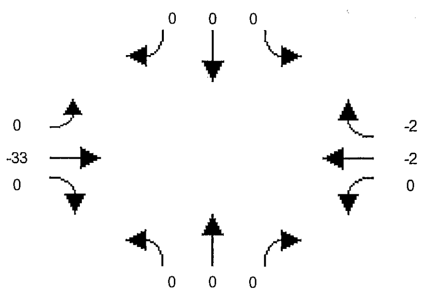
Intersection #1: San Ramon/Crow



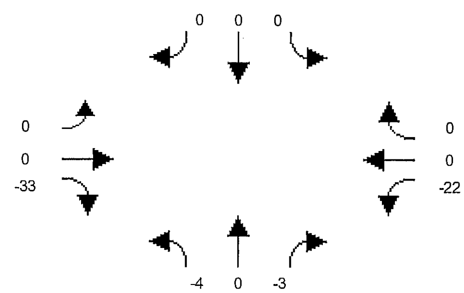
Intersection #2: 680 SB OFF/Crow



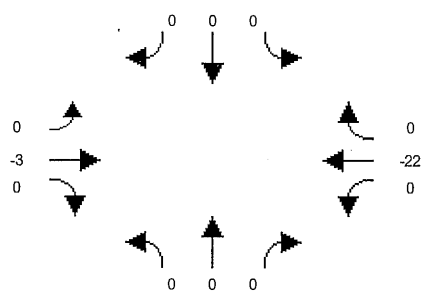
Intersection #3: 680 NB ON/Crow



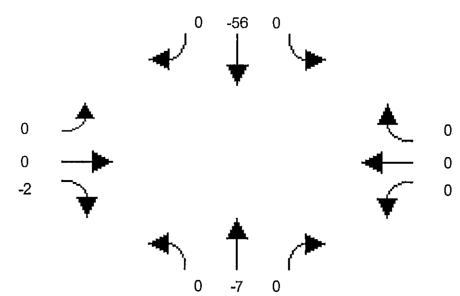
Intersection #4: Camino Ramon/Crow



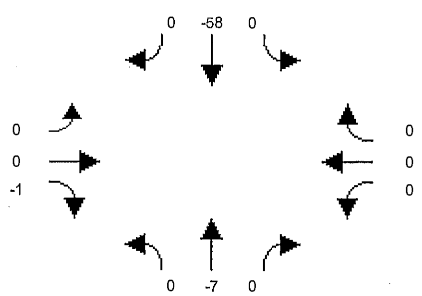
Intersection #5: Alcosta/Crow



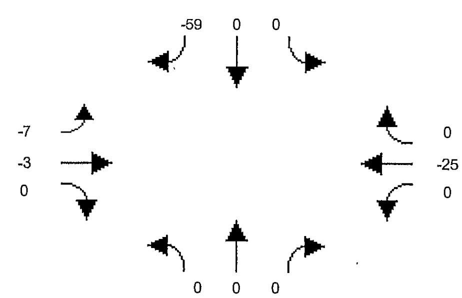
Intersection #6: Camino Ramon/Norris



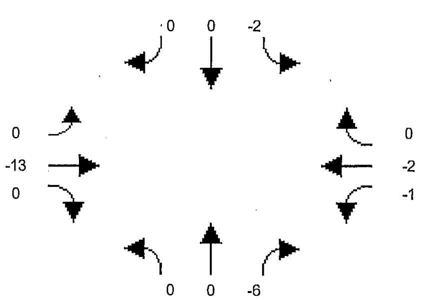
Intersection #7: Camino Ramon/Executive



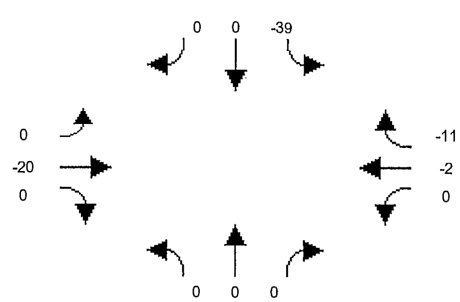
Intersection #8: Camino Ramon/Bishop Drive



Intersection #9: San Ramon/Bollinger

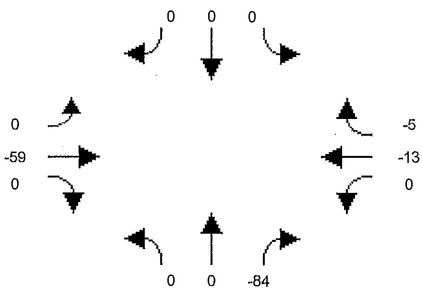


Intersection #10: 680 SB OFF/Bollinger

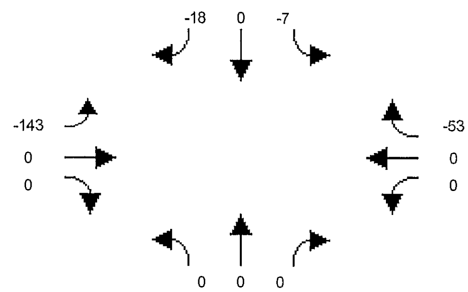


Intersection Graphic Report
Initial Volume (Future Alternative)
AM EXISTING OFFICE DEMO TRIP REDUCTION

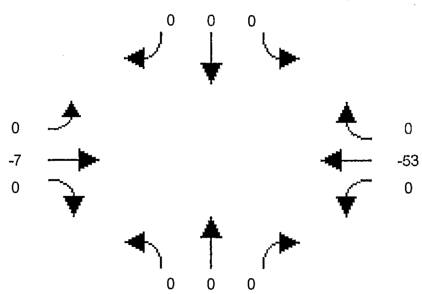
Intersection #11: 680 NB OFF/Bollinger



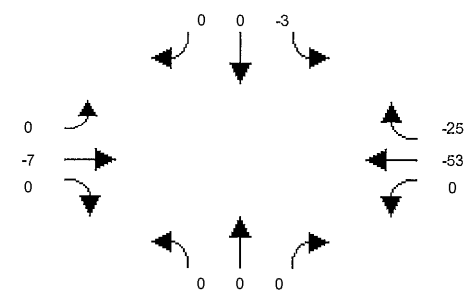
Intersection #12: Sunset/Bollinger



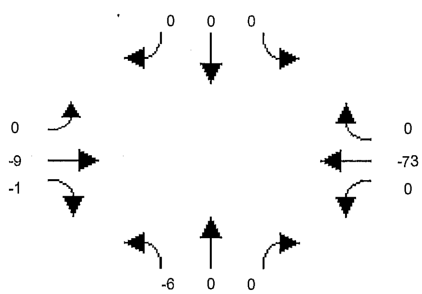
Intersection #13: Camino Ramon/Bollinger



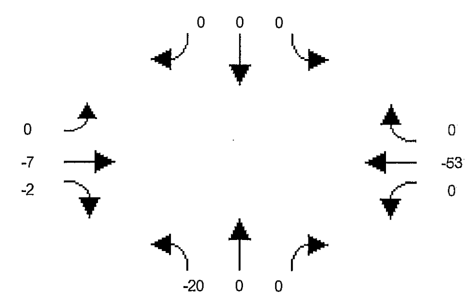
Intersection #14: Bishop 2 Drive/Bollinger



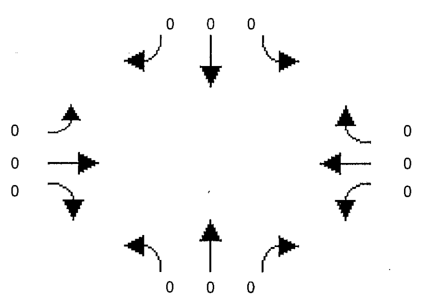
Intersection #15: Market/Bollinger Drive



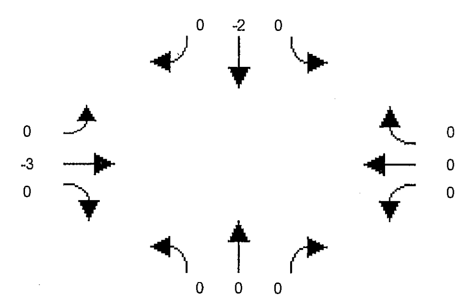
Intersection #16: Alcosta/Bollinger



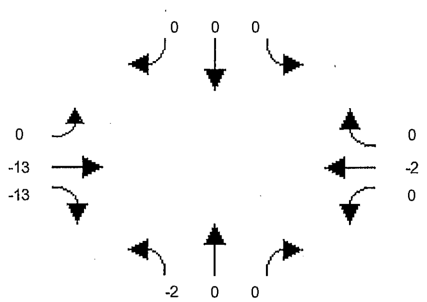
Intersection #17: Alcosta/Norris



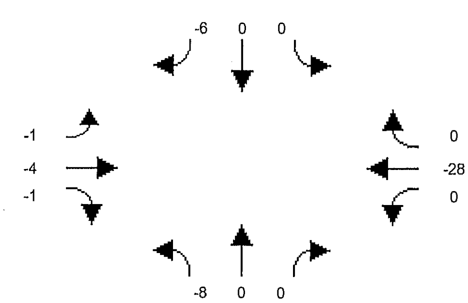
Intersection #18: San Ramon/Norris



Intersection #19: Bollinger/Crow

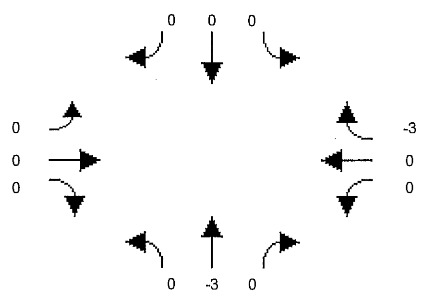


Intersection #20: Dougherty/Bollinger

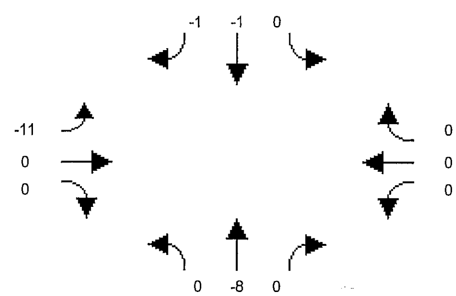


Intersection Graphic Report
Initial Volume (Future Alternative)
AM EXISTING OFFICE DEMO TRIP REDUCTION

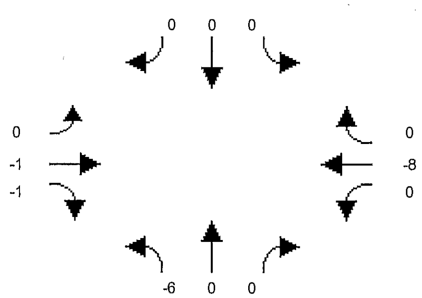
Intersection #21: San Ramon/Montevideo



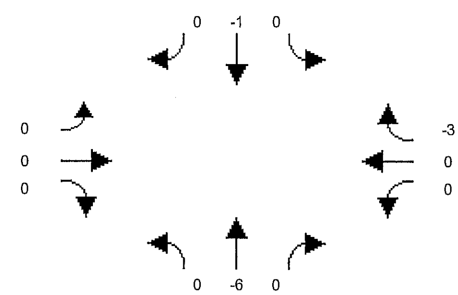
Intersection #22: Alcosts/Montevideo



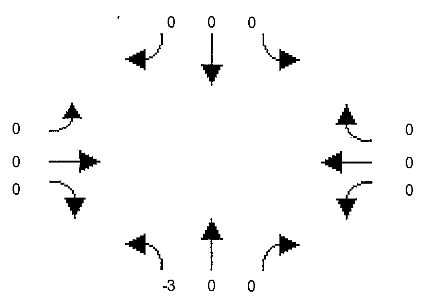
Intersection #23: Dougherty/Crow



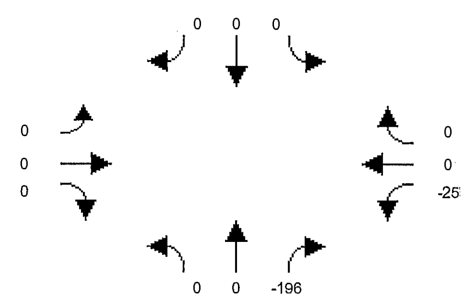
Intersection #24: Alcosta/Old Ranch



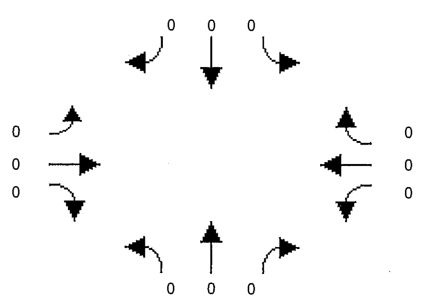
Intersection #25: Doughert/Old Ranch



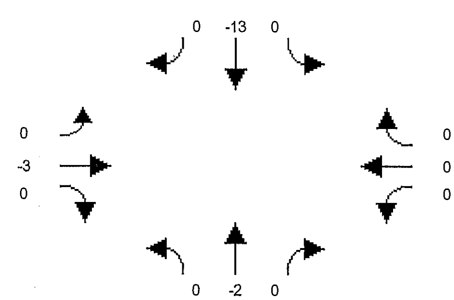
Intersection #26: Sunset/Center Street



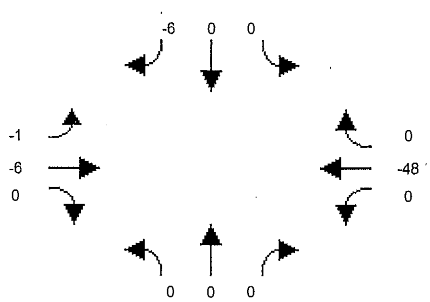
Intersection #27: Bishop Drive/Sunset



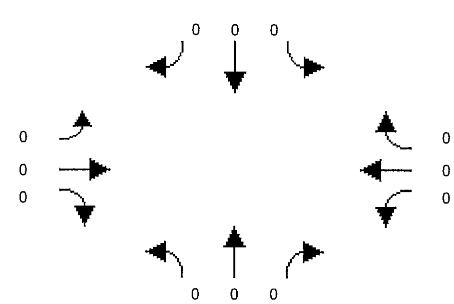
Intersection #28



Intersection #29: Bollinger/Canyon Lakes

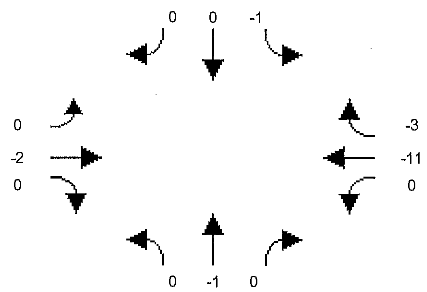


Intersection #30: Camino Ramon/Center Street

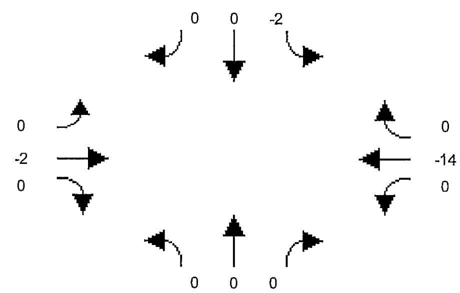


Intersection Graphic Report
Initial Volume (Future Alternative)
PM EXISTING OFFICE DEMO TRIP REDUCTION

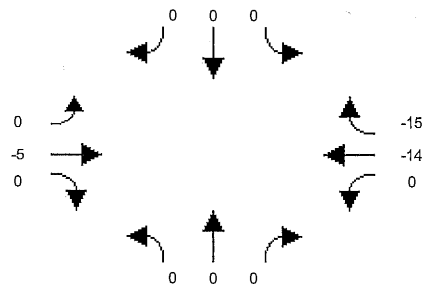
Intersection #1: San Ramon/Crow



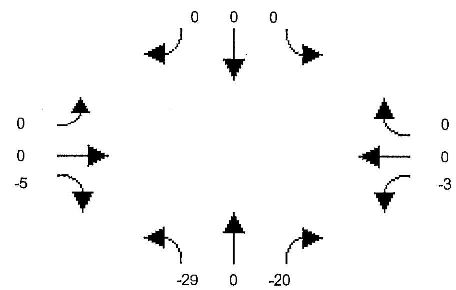
Intersection #2: 680 SB OFF/Crow



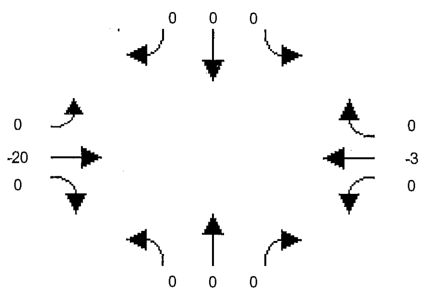
Intersection #3: 680 NB ON/Crow



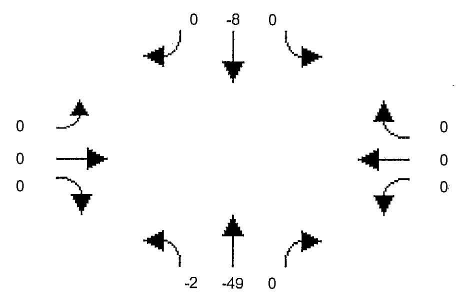
Intersection #4: Camino Ramon/Crow



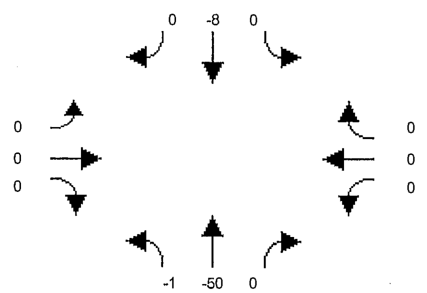
Intersection #5: Alcosta/Crow



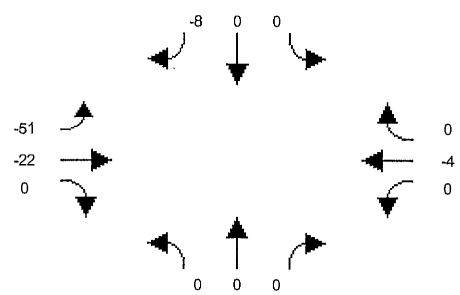
Intersection #6: Camino Ramon/Norris



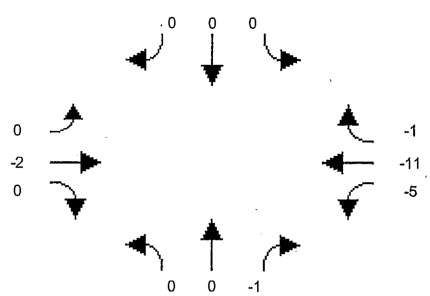
Intersection #7: Camino Ramon/Executive



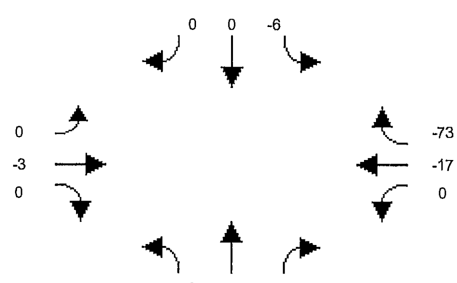
Intersection #8: Camino Ramon/Bishop Drive



Intersection #9: San Ramon/Bollinger

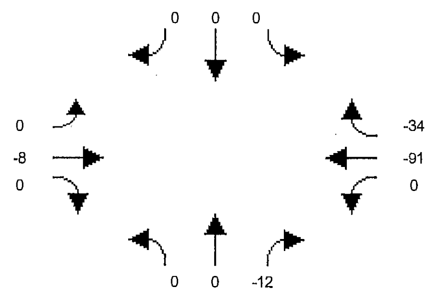


Intersection #10: 680 SB OFF/Bollinger

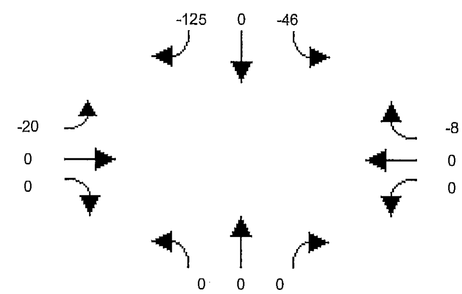


Intersection Graphic Report
Initial Volume (Future Alternative)
PM EXISTING OFFICE DEMO TRIP REDUCTION

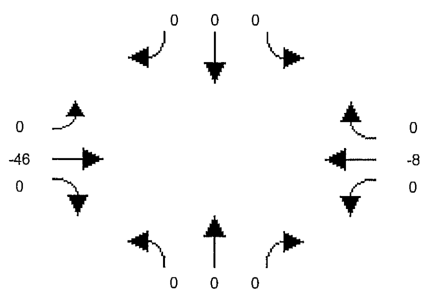
Intersection #11: 680 NB OFF/Bollinger



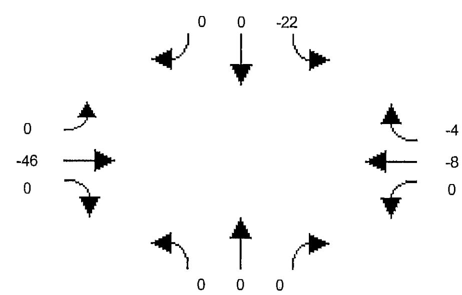
Intersection #12: Sunset/Bollinger



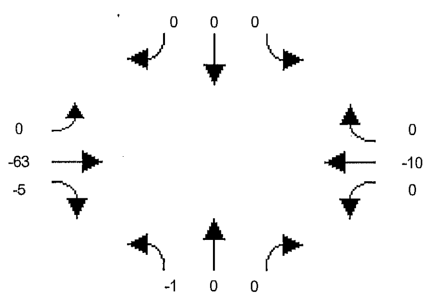
Intersection #13: Camino Ramon/Bollinger



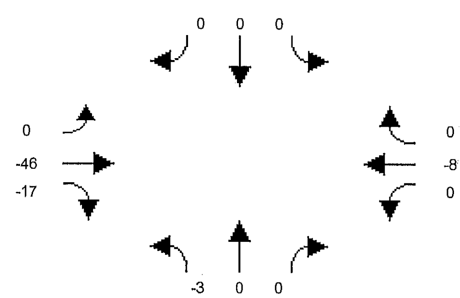
Intersection #14: Bishop 2 Drive/Bollinger



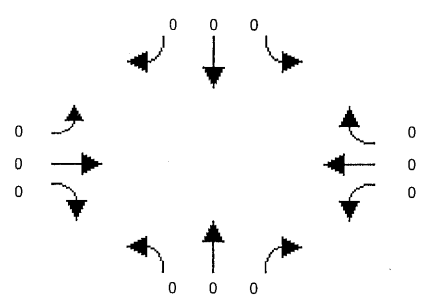
Intersection #15: Market/Bollinger Drive



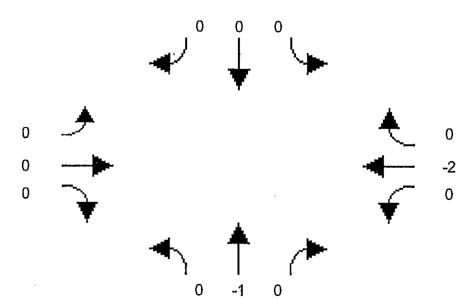
Intersection #16: Alcosta/Bollinger



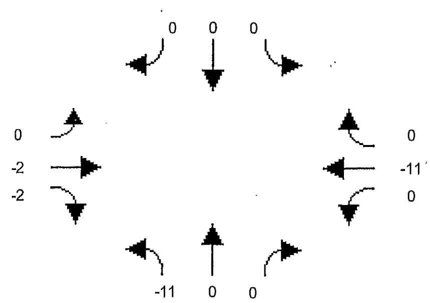
Intersection #17: Alcosta/Norris



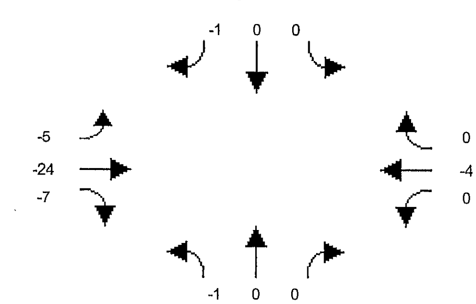
Intersection #18: San Ramon/Norris



Intersection #19: Bollinger/Crow

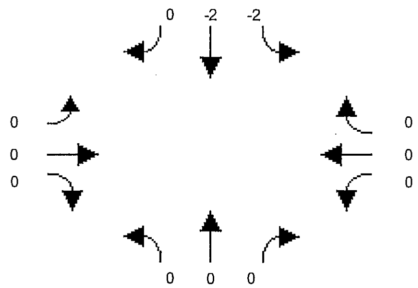


Intersection #20: Dougherty/Bollinger

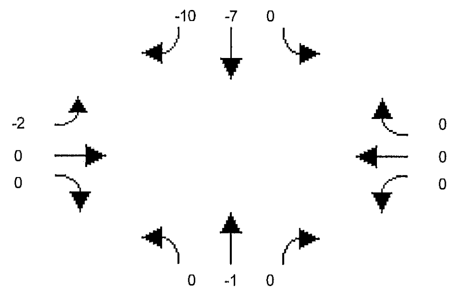


Intersection Graphic Report
Initial Volume (Future Alternative)
PM EXISTING OFFICE DEMO TRIP REDUCTION

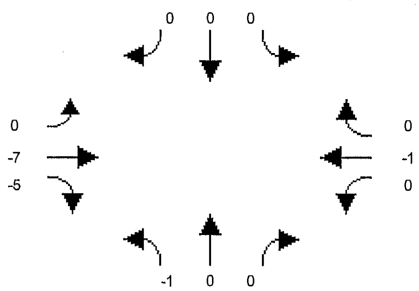
Intersection #21: San Ramon/Montevideo



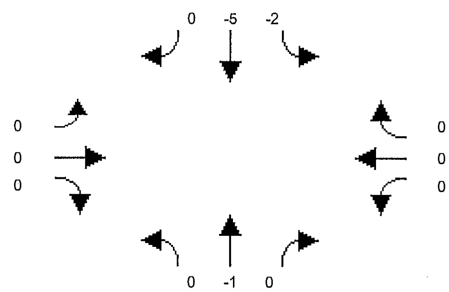
Intersection #22: Alcosts/Montevideo



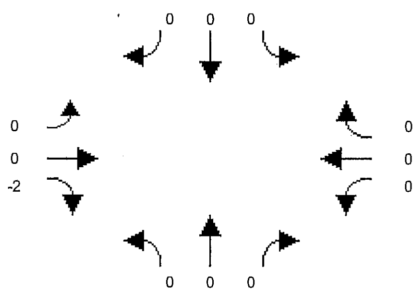
Intersection #23: Dougherty/Crow



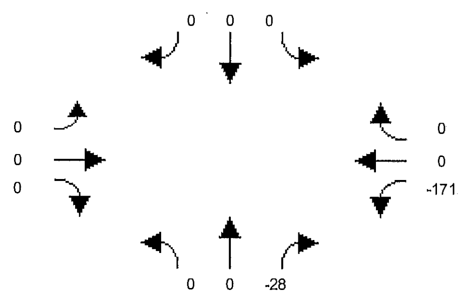
Intersection #24: Alcosta/Old Ranch



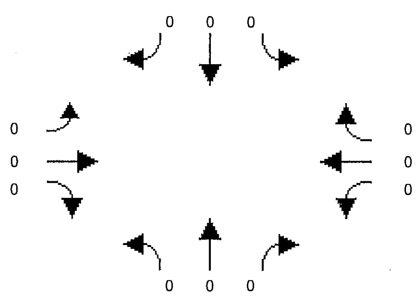
Intersection #25: Doughert/Old Ranch



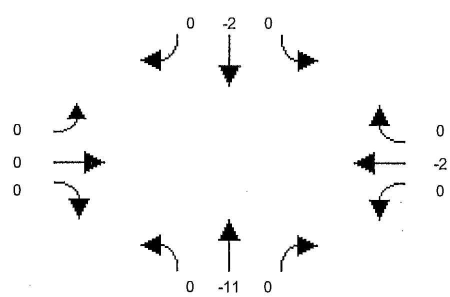
Intersection #26: Sunset/Center Street



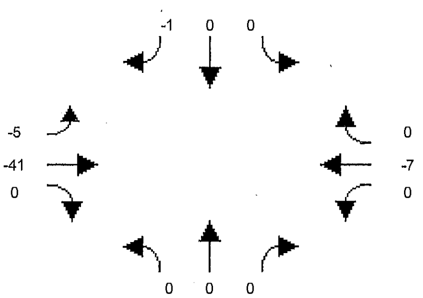
Intersection #27: Bishop Drive/Sunset



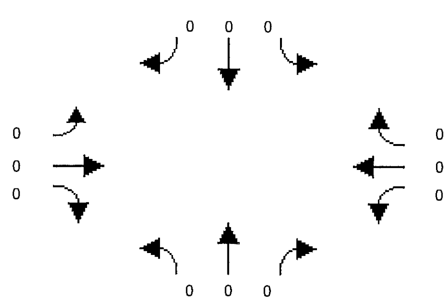
Intersection #28



Intersection #29: Bollinger/Canyon Lakes



Intersection #30: Camino Ramon/Center Street



VOLUME ADJUSTMENTS

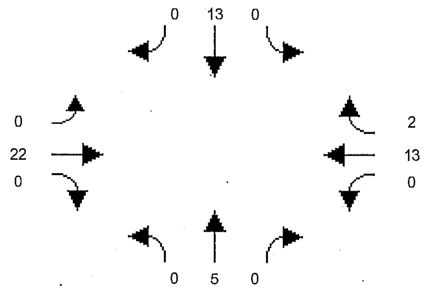
2020 Project Assignment without Office Entitlement

Appendix C

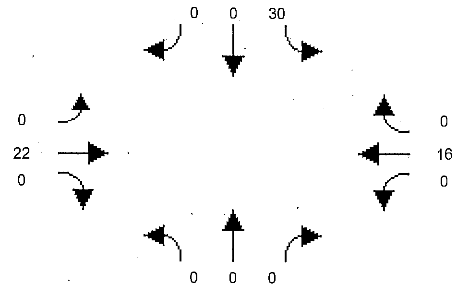
The Traffix volume sheets in Appendix C labeled "2020 Project Traffic Volumes without Office Entitlement" represent the volumes in the bottom row of Table 3-7 entitled "Net New Project Trips Above Current Entitlement." The 2020 background traffic volumes were adjusted to redistribute traffic from Camino Ramon to Sunset Drive and Bishop Drive East as illustrated in Appendix D: Intersection Modifications (re-routing), and the 2020 Project Traffic Volumes without Office Entitlement shown in this appendix were adjusted to account for pass-by traffic as shown in Appendix B: Pass-by trip Assignments to calculate the 2020 Plus Project volumes presented and analyzed in this report.

Intersection Graphic Report
Initial Volume (Future Alternative)
AM 2020 PROJECT VOLUMES (-) ENTITLEMENT

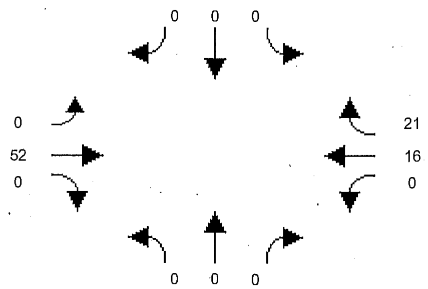
Intersection #1: San Ramon/Crow



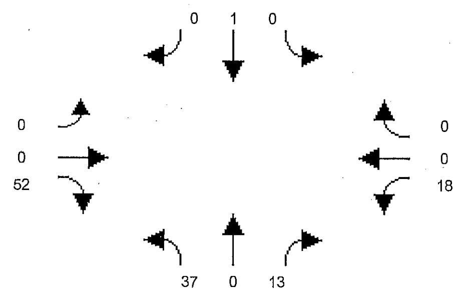
Intersection #2: 680 SB OFF/Crow



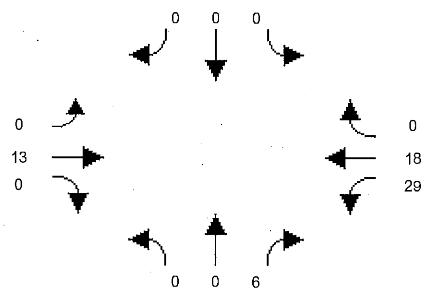
Intersection #3: 680 NB ON/Crow



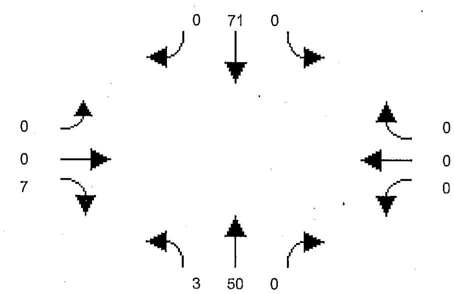
Intersection #4: Camino Ramon/Crow



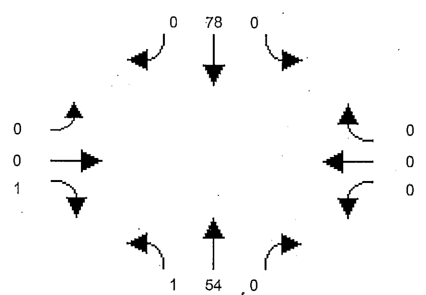
Intersection #5: Alcosta/Crow



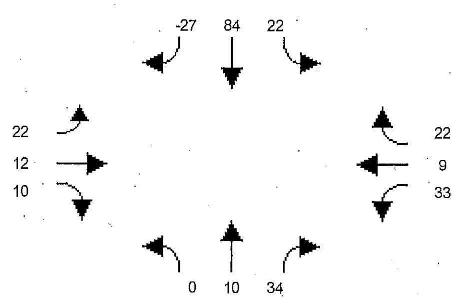
Intersection #6: Camino Ramon/Norris



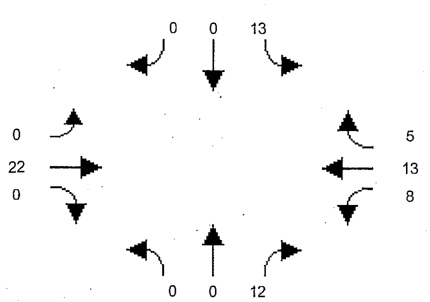
Intersection #7: Camino Ramon/Executive



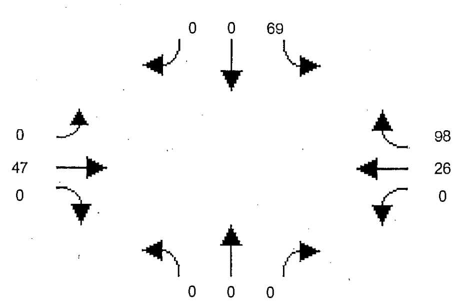
Intersection #8: Camino Ramon/Bishop Drive



Intersection #9: San Ramon/Bollinger

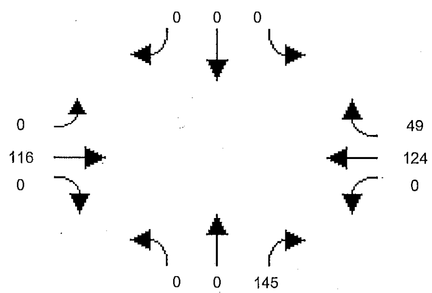


Intersection #10: 680 SB OFF/Bollinger

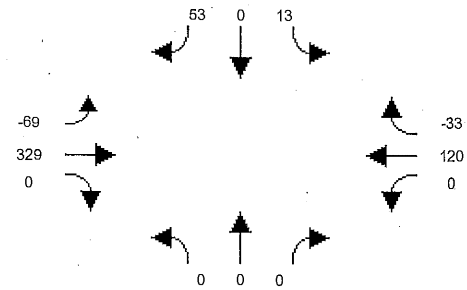


Intersection Graphic Report
Initial Volume (Future Alternative)
AM 2020 PROJECT VOLUMES (-) ENTITLEMENT

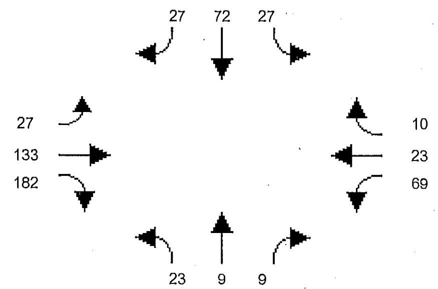
Intersection #11: 680 NB OFF/Bollinger



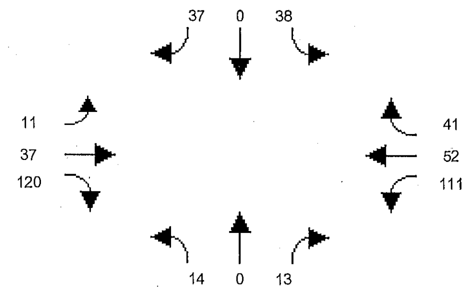
Intersection #12: Sunset/Bollinger



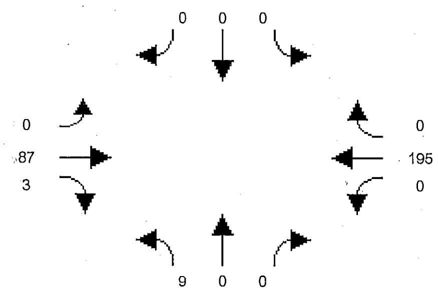
Intersection #13: Camino Ramon/Bollinger



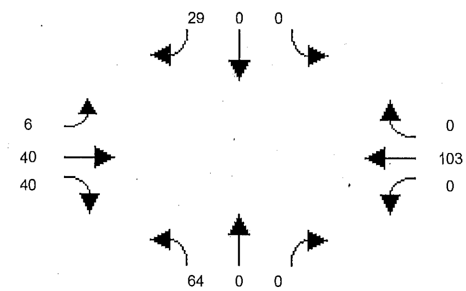
Intersection #14: Bishop 2 Drive/Bollinger



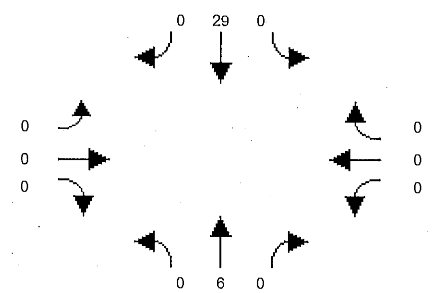
Intersection #15: Market/Bollinger Drive



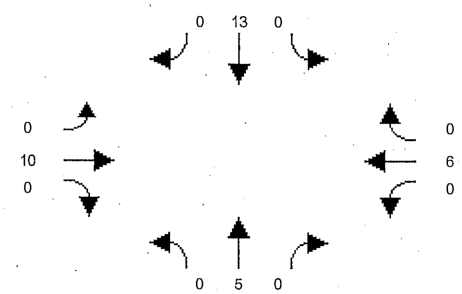
Intersection #16: Alcosta/Bollinger



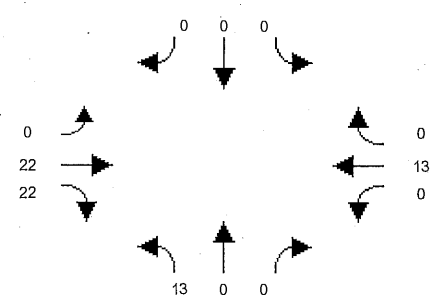
Intersection #17: Alcosta/Norris



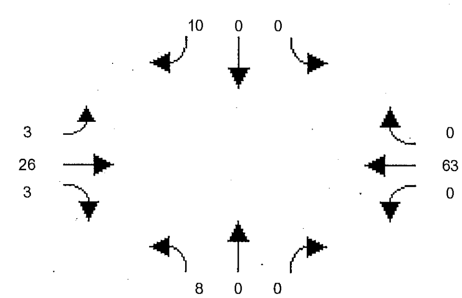
Intersection #18: San Ramon/Norris



Intersection #19: Bollinger/Crow

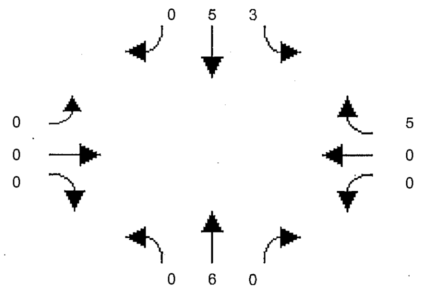


Intersection #20: Dougherty/Bollinger

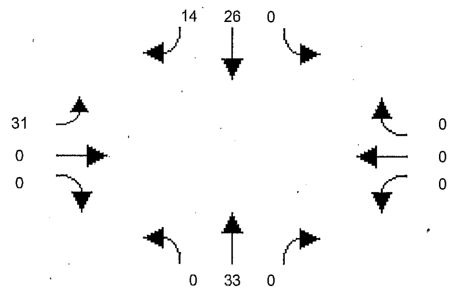


Intersection Graphic Report
Initial Volume (Future Alternative)
AM 2020 PROJECT VOLUMES (-) ENTITLEMENT

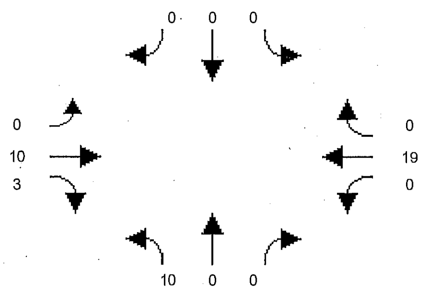
Intersection #21: San Ramon/Montevideo



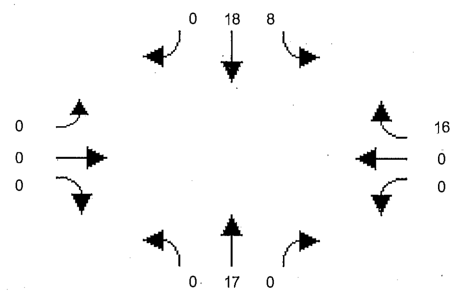
Intersection #22: Alcosts/Montevideo



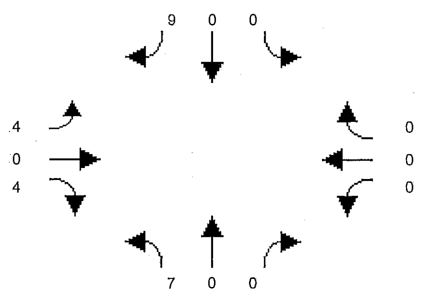
Intersection #23: Dougherty/Crow



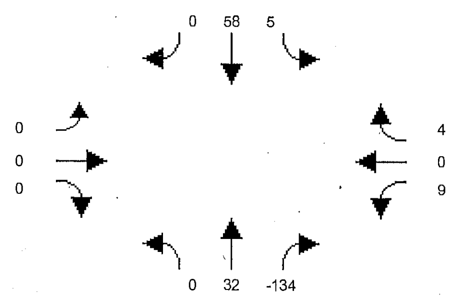
Intersection #24: Alcosta/Old Ranch



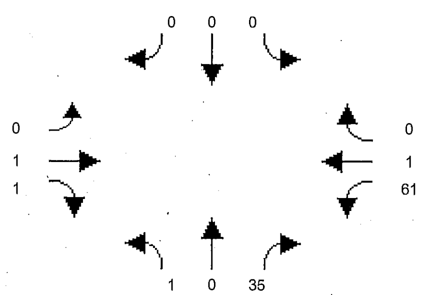
Intersection #25: Doughert/Old Ranch



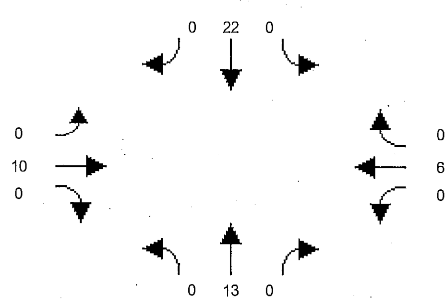
Intersection #26: Sunset/Center Street



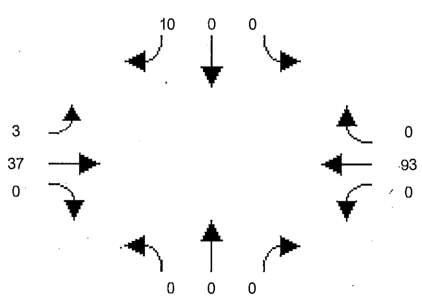
Intersection #27: Bishop Drive/Sunset



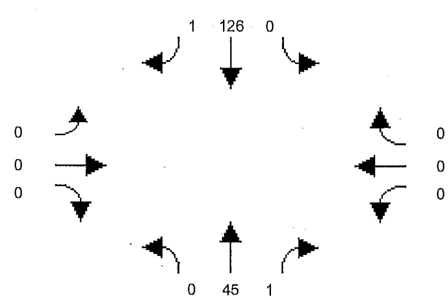
Intersection #28



Intersection #29: Bollinger/Canyon Lakes

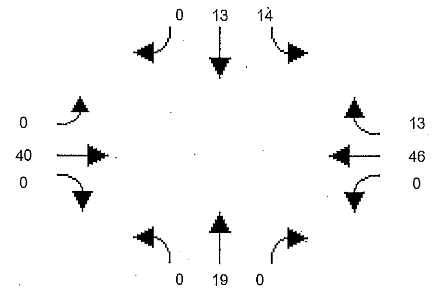


Intersection #30: Camino Ramon/Center Street

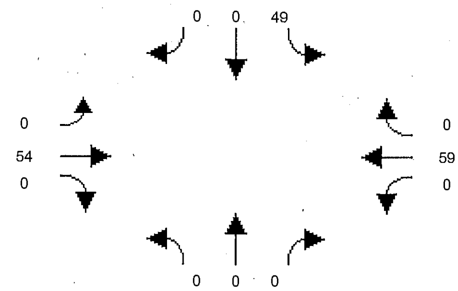


Intersection Graphic Report
Initial Volume (Future Alternative)
PM 2020 PROJECT VOLUMES (-) ENTITLEMENT

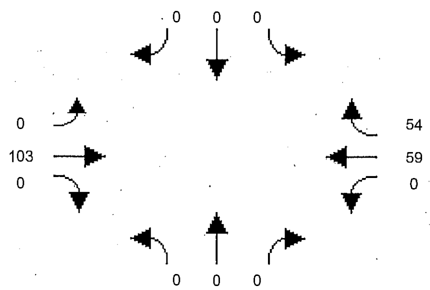
Intersection #1: San Ramon/Crow



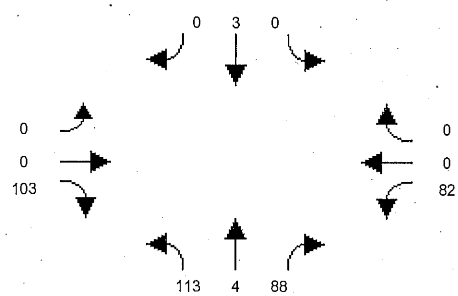
Intersection #2: 680 SB OFF/Crow



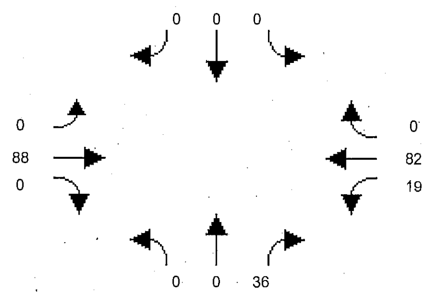
Intersection #3: 680 NB ON/Crow



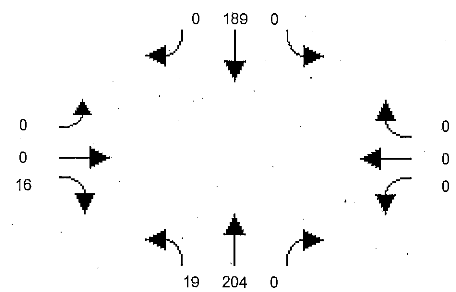
Intersection #4: Camino Ramon/Crow



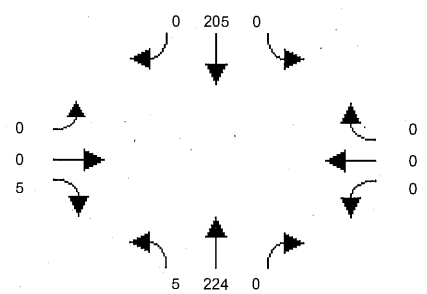
Intersection #5: Alcosta/Crow



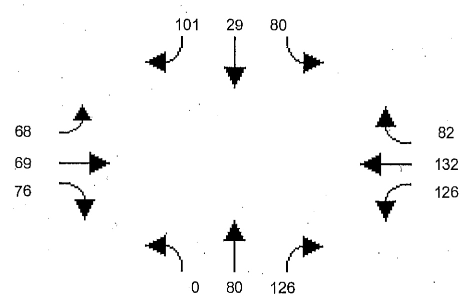
Intersection #6: Camino Ramon/Norris



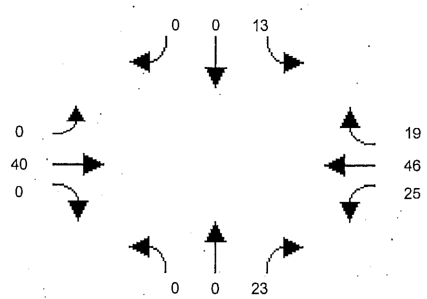
Intersection #7: Camino Ramon/Executive



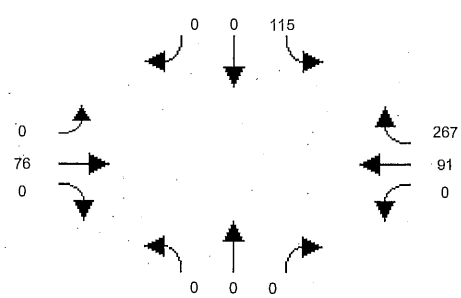
Intersection #8: Camino Ramon/Bishop Drive



Intersection #9: San Ramon/Bollinger

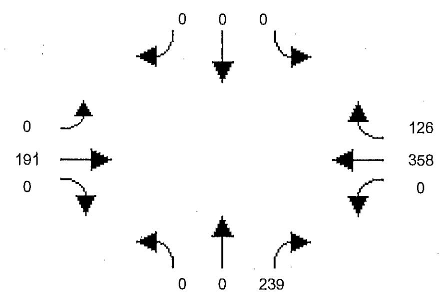


Intersection #10: 680 SB OFF/Bollinger

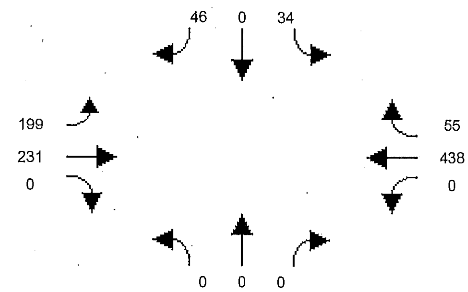


Intersection Graphic Report
Initial Volume (Future Alternative)
PM 2020 PROJECT VOLUMES (-) ENTITLEMENT

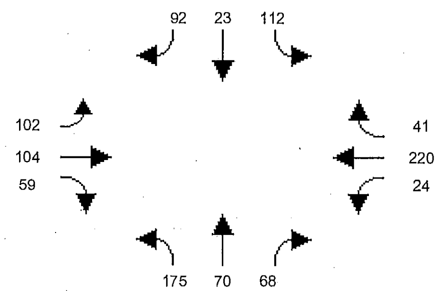
Intersection #11: 680 NB OFF/Bollinger



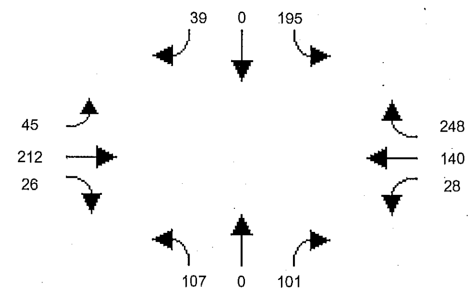
Intersection #12: Sunset/Bollinger



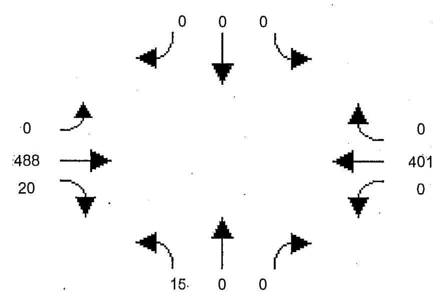
Intersection #13: Camino Ramon/Bollinger



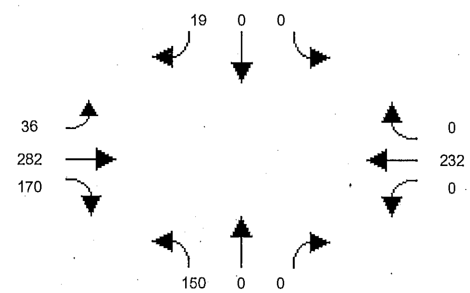
Intersection #14: Bishop 2 Drive/Bollinger



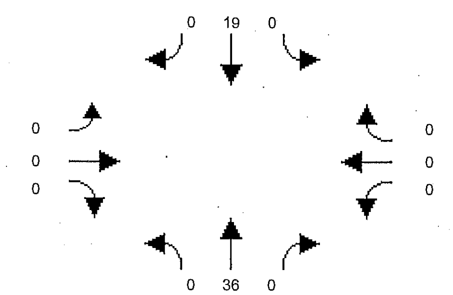
Intersection #15: Market/Bollinger Drive



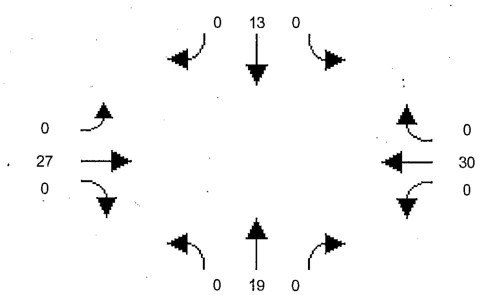
Intersection #16: Alcosta/Bollinger



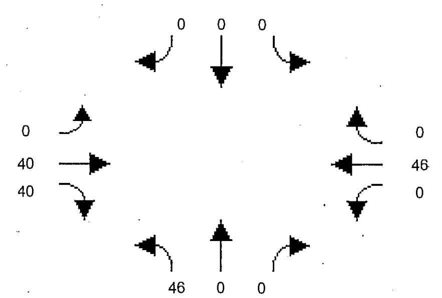
Intersection #17: Alcosta/Norris



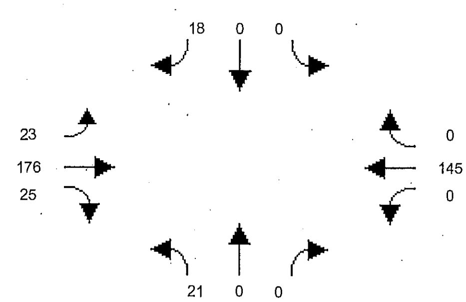
Intersection #18: San Ramon/Norris



Intersection #19: Bollinger/Crow

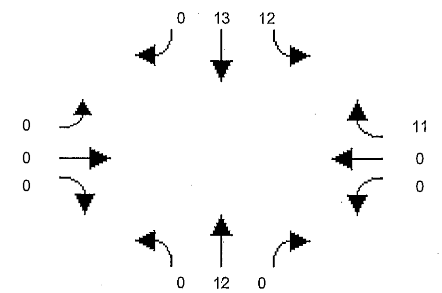


Intersection #20: Dougherty/Bollinger

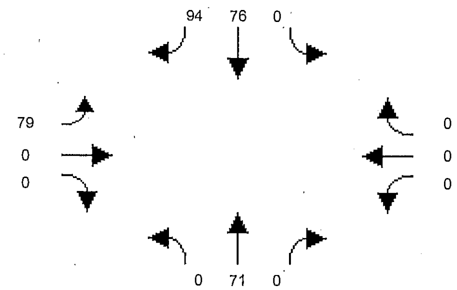


Intersection Graphic Report
Initial Volume (Future Alternative)
PM 2020 PROJECT VOLUMES (-) ENTITLEMENT

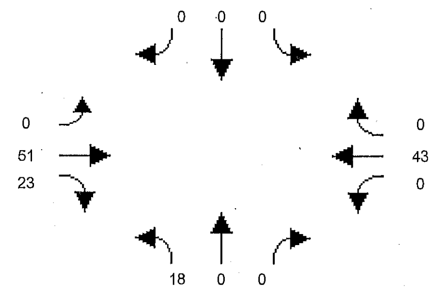
Intersection #21: San Ramon/Montevideo



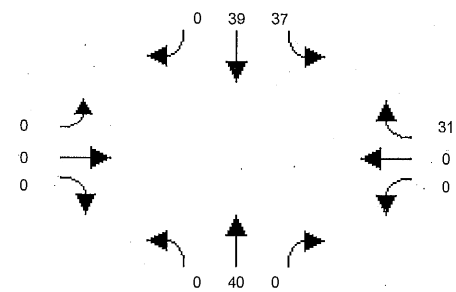
Intersection #22: Alcosts/Montevideo



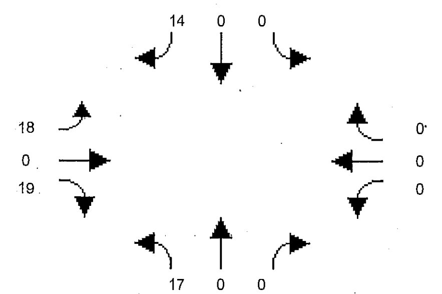
Intersection #23: Dougherty/Crow



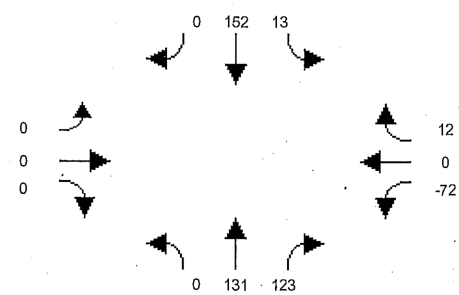
Intersection #24: Alcosta/Old Ranch



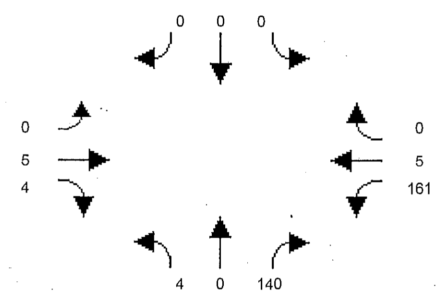
Intersection #25: Doughert/Old Ranch



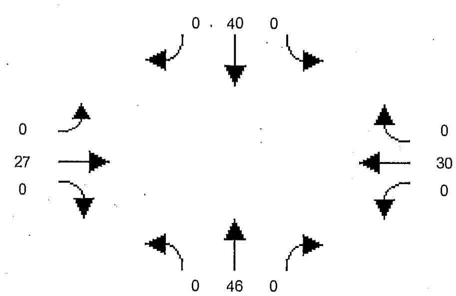
Intersection #26: Sunset/Center Street



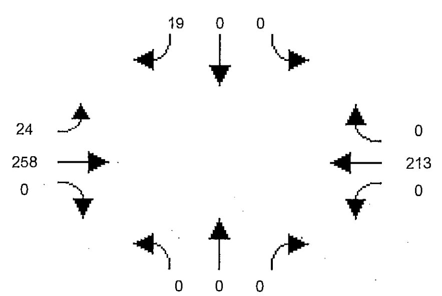
Intersection #27: Bishop Drive/Sunset



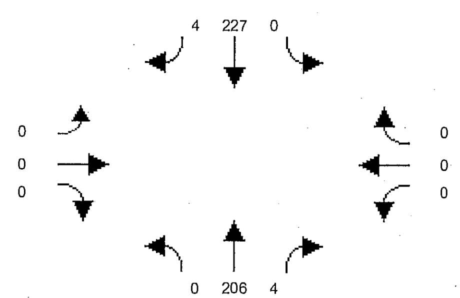
Intersection #28



Intersection #29: Bollinger/Canyon Lakes



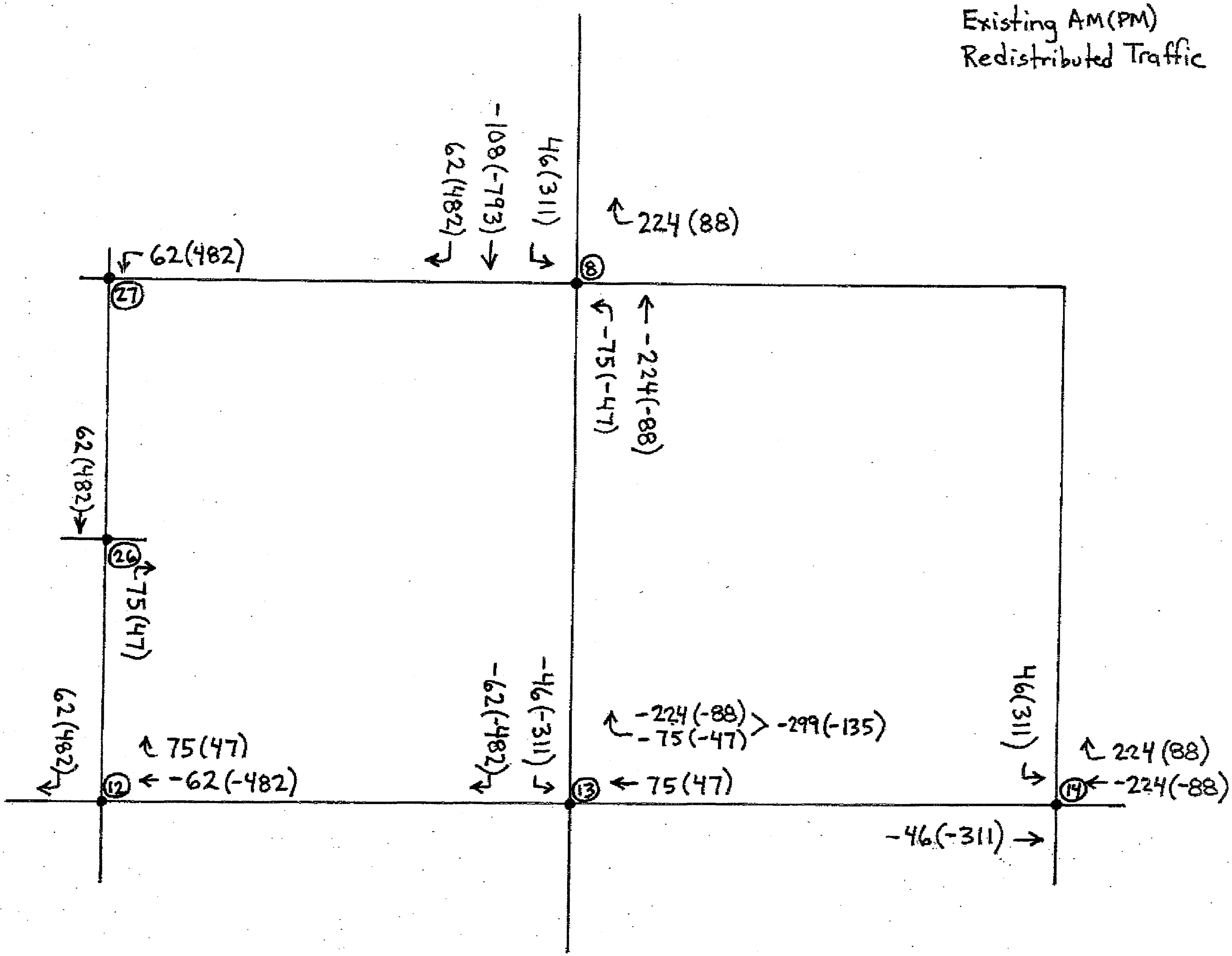
Intersection #30: Camino Ramon/Center Street



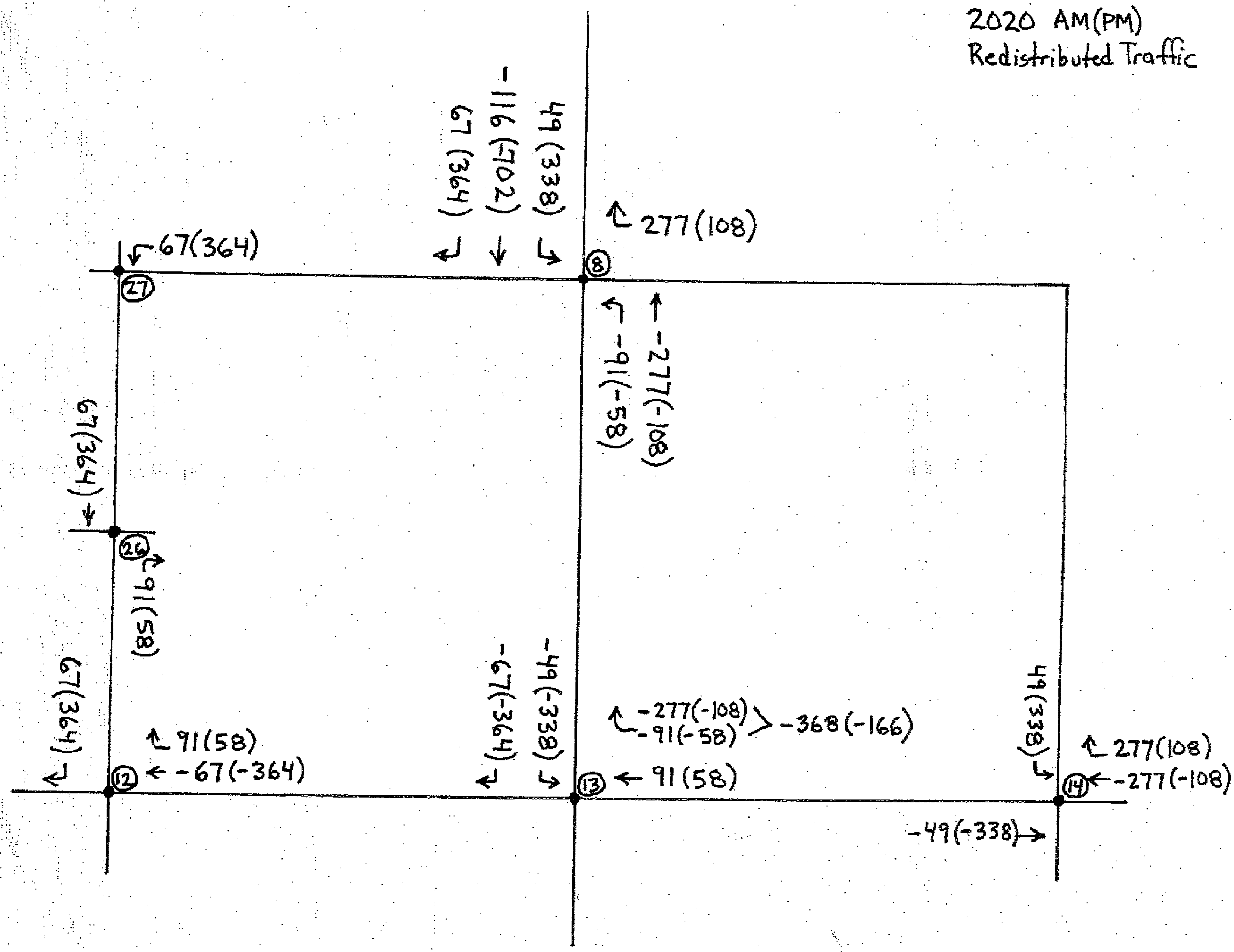
APPENDIX D

INTERSECTION MODIFICATIONS (RE-ROUTING)

Existing AM(PM)
Redistributed Traffic



2020 AM(PM)
Redistributed Traffic



VOLUME ADJUSTMENTS

Negative Assignment for Existing Office Space

APPENDIX E

TRANSIT SCHEDULES

Transit Route Summary

Route #	Route Name	Description	Frequency
121	Walnut Creek BART Solano Ramon Valley Dublin/Pleasanton BART	Runs north and south on the same route between Walnut Creek and Dublin along I-680 on California Blvd, Danville Blvd, San Ramon Valley Blvd, Camino Ramon, Bollinger Canyon Rd, and Village Pkwy.	Weekday: up to 40 min Sat & Sun: up to 90 min
135	San Ramon Transit Center Dublin BART	Runs north and south on the same route between San Ramon and Dublin primarily on Bollinger Canyon Rd which becomes Dougherty Rd in the south.	Limited Weekday 20 to 45 min
221	Limited Service San Ramon Area	Runs north and south on the same route between Danville and Dublin. This route has a lot of east/west movement. The route runs on Stone Valley Rd, Green Valley Rd, Diablo Rd, Railroad Ave, Sycamore Valley Rd, Camino Tassajara Rd, Crow Canyon Rd, Alcosta Blvd, Broadmoor Dr, Old Ranch Rd Dougherty Rd, and Dublin Blvd.	Limited Weekday About 2 AM trips and 3 PM trips, in the project area vicinity
920 AM	Ace Express Bus Mitchell Drive Park & Ride Danville Park & Ride San Ramon Transit Center	Runs from Mitchell Dr Park & Ride to the Pleasanton Train Station. In the AM period, a trip is made from Mitchell Dr Park & Ride to Pleasanton Train Station and a trip is made from Pleasanton Train Station to North but stops in San Ramon. The northbound trip makes more stops in San Ramon than the southbound trip	Limited Weekday NB: 2 AM trips and 3 PM trips SB: 3 AM trips and 3 PM trips
920 PM		Like the AM period, the PM period has complete trip to the south and an incomplete trip to the north ending in San Ramon. Again, the northbound trip has more stops in San Ramon.	
960B	Mitchell Drive Park & Ride Bollinger Canyon Road Bishop Ranch	Runs from Mitchell Dr Park & Ride south through areas of San Ramon making a loop. The route runs on I-680 and makes the loop using Camino Ramon, Executive Pkwy, Norris Canyon Rd, Bishop Dr, and Sunset Dr.	Limited Weekday 15 to 30 min
960C	Mitchell Drive Park & Ride Crow Canyon Road Bishop Ranch	Similar to 960B this route begins at Mitchell Dr Park & Ride and runs through areas of San Ramon. This route loops through San Ramon using Crow Canyon Rd, Fostoria Way, Comino Ramon, Executive Pkwy, Norris Canyon Rd, Bishop Dr, and Sunset Dr.	Limited Weekday 30 to 60 min
970B	Dublin/Pleasanton BART Bollinger Canyon Road Bishop Ranch	Makes a loop through San Ramon from Dublin/Pleasanton BART. It loops using Camino Ramon Executive Pkwy, Norris Canyon Rd, Bishop Dr, and Sunset Dr.	Limited Weekday 30 to 70 min
970C	Dublin Pleasanton BART Crow Canyon Road Bishop Ranch	Similar to 970B, but goes further north traveling all the way to Fostoria Way and returns to the Dublin Pleasanton BART station via I-680.	Limited Weekday 3 AM trips and 5 PM trips

Route 121 Schedule
(Updated 11 Mar 07)

Weekday Southbound

Leave Walnut Creek BART	S. Main/ Creekside	Danville/ Alamo Plaza	San Ramon Valley/ Railroad	Danville Park 'n Ride	Camino Ramon/ Greenbrook	San Ramon Valley/ Fostoria	Arrive San Ramon Transit Center	Leave San Ramon Transit Center	Bolinger Canyon/ Talavera	Broadmoor/ Pine Valley	Fircrest/ Craydon	Village Pkwy/ Elmwood	Arrive Dublin/ Pleasanton BART
5:25	5:30	5:36	5:45	5:50	5:53	5:57	6:03	6:06	6:21			6:31	6:46
6:06	6:11	6:17	6:26	6:31	6:34	6:38	6:44	6:47	7:02	7:10		7:16	7:31
6:40	6:50	6:56	7:05	7:10	7:13	7:17	7:23	7:26	7:41	7:49		7:55	8:10
7:20	7:30	7:42	7:51	7:56	7:59	8:03	8:09	8:12	8:27			8:37	8:52
8:00	8:10	8:22	8:31	8:36	8:39	8:43	8:49	8:52	9:07			9:17	9:32
8:40	8:50	8:56	9:05	9:10	9:13	9:17	9:23	9:26	9:41		9:53	9:55	10:10
9:20	9:30	9:36	9:45	9:50	9:53	9:57	10:03	10:06	10:21			10:31	10:46
10:00	10:10	10:16	10:25	10:30	10:33	10:37	10:43	10:46	11:01			11:11	11:26
10:40	10:50	10:56	11:05	11:10	11:13	11:17	11:23	11:26	11:41		11:53	11:55	**12:10**
11:20	11:30	11:36	11:45	11:50	11:53	11:57	**12:03**	**12:06**	**12:21**			**12:31**	**12:46**
12:00	**12:10**	**12:16**	**12:25**	**12:30**	**12:33**	**12:37**	**12:43**	**12:46**	**1:01**			**1:11**	**1:26**
12:48	**12:58**	**1:04**	**1:13**	**1:18**	**1:21**	**1:25**	**1:31**	**1:34**	**1:49**		**2:01**	**2:03**	**2:18**
								2:05	**2:20**	**2:30**		**2:34**	**2:49**
1:25	**1:35**	**1:41**	**1:50**	**1:55**	**1:58**	**2:02**	**2:08**	**2:11**	**2:26**			**2:36**	**2:51**
2:10	**2:20**	**2:26**	**2:35**	**2:40**	**2:43**	**2:47**	**2:53**	**2:56**	**3:11**			**3:21**	**3:36**
								2:55	**3:10**	**3:20**		**3:24**	**3:39**
2:40	**2:50**	**2:56**	**3:05**	**3:10**	**3:13**	**3:17**	**3:23**	**3:26**	**3:41**			**3:51**	**4:06**
		3:11S	**3:30S**		**3:40S**	**3:45S**	**4:00S**						
3:20	**3:30**	**3:36**	**3:45**	**3:50**	**3:53**	**3:57**	**4:03**	**4:06**	**4:21**			**4:31**	**4:46**
4:26	**4:36**	**4:42**	**4:51**	**4:56**	**4:59**	**5:03**	**5:09**	**5:12**	**5:27**			**5:37**	**5:52**
4:45	**4:55**	**5:01**	**5:10**	**5:15**	**5:18**	**5:22**	**5:28**	**5:31**	**5:46**		**5:58**	**6:00**	**6:15**
5:20	**5:30**	**5:36**	**5:45**	**5:50**	**5:53**	**5:57**	**6:03**	**6:06**	**6:21**			**6:31**	**6:46**
6:07	**6:17**	**6:23**	**6:32**	**6:37**	**6:40**	**6:44**	**6:50**	**6:53**	**7:08**			**7:18**	**7:33**
6:40	**6:50**	**6:56**	**7:05**	**7:10**	**7:13**	**7:17**	**7:23**	**7:26**	**7:41**			**7:51**	**8:06**
7:35	**7:45**	**7:51**	**8:00**	**8:05**	**8:08**	**8:12**	**8:18**	**8:21**	**8:36**			**8:46**	**9:01**
8:05	**8:15**	**8:21**	**8:30**	**8:35**	**8:38**	**8:42**	**8:48**	**8:51**	**9:06**			**9:16**	**9:31**
8:40	**8:50**	**8:56**	**9:05**	**9:10**	**9:13**	**9:17**	**9:23**	**9:26**	**9:41**			**9:51**	**10:06**

Route 121 Schedule (continued)

Weekday Northbound

Leave Dublin/ Pleasanton BART	Fircrest/ Craydon	Alcosta/ Davona	Pine Valley/ Broadmoor	Bolinger Canyon/ Talavera	Arrive San Ramon Transit Center	Leave San Ramon Transit Center	San Ramon Valley/ Fostoria	Camino Ramon/ Greenbrook	Danville Park 'n Ride	Railroad/ San Ramon Valley	Danville/ Alamo Plaza	S. Main/ Creekside	Arrive Walnut Creek BART
5:10		5:19		5:28	5:43	5:46	5:50	5:53	5:56	6:01	6:08	6:15	6:30
5:42		5:51		6:00	6:15	6:18	6:22	6:25	6:28	6:33	6:40	6:47	7:02
6:22		6:32		6:42	6:57	7:00	7:04	7:07	7:10	7:15	7:22	7:29	7:44
7:02		7:12		7:22	7:37	7:40	7:44	7:47	7:50	7:55	8:02	8:09	8:24
7:40		7:50		8:00	8:15	8:18	8:22	8:25	8:28	8:33	8:40	8:47	9:02
8:22		8:32		8:42	8:57	9:00	9:04	9:07	9:10	9:15	9:22	9:29	9:44
9:02		9:12		9:22	9:37	9:40	9:44	9:47	9:50	9:55	10:02	10:09	10:24
9:42	9:54	9:56		10:06	10:21	10:24	10:28	10:31	10:34	10:39	10:46	10:53	11:08
10:22		10:32		10:42	10:57	11:00	11:04	11:07	11:10	11:15	11:22	11:29	11:44
11:02		11:12		11:22	11:37	11:40	11:44	11:47	11:50	11:55	**12:02**	**12:09**	**12:24**
11:42	11:54	11:56		**12:06**	**12:21**	**12:24**	**12:28**	**12:31**	**12:34**	**12:39**	**12:46**	**12:53**	**1:08**
12:22		**12:32**		**12:42**	**12:57**	**1:00**	**1:04**	**1:07**	**1:10**	**1:15**	**1:22**	**1:29**	**1:44**
1:02		**1:12**		**1:22**	**1:37**	**1:40**	**1:44**	**1:47**	**1:50**	**1:55**	**2:02**	**2:09**	**2:24**
1:42	**1:54**	**1:56**		**2:06**	**2:21**	**2:24**	**2:28**	**2:31**	**2:34**	**2:39**	**2:46**	**2:53**	**3:08**
2:42		**2:59**	**3:06**	**3:21**	**3:39**	**3:39**	**3:45**	**3:48**	**3:52**	**4:00**	**4:09**	**4:14**	**4:35**
3:07		**3:17**	**3:25**	**3:35**	**3:50**	**3:53**	**3:57**	**4:00**	**4:03**	**4:08**	**4:15**	**4:22**	**4:37**
3:42		**3:52**		**4:02**	**4:17**	**4:20**	**4:24**	**4:27**	**4:30**	**4:35**	**4:42**	**4:49**	**5:04**
4:22		**4:32**		**4:42**	**4:57**	**5:00**	**5:04**	**5:07**	**5:10**	**5:15**	**5:22**	**5:29**	**5:54**
5:02		**5:12**		**5:22**	**5:37**	**5:40**	**5:44**	**5:47**	**5:50**	**5:55**	**6:02**	**6:09**	**6:24**
6:00		**6:10**		**6:20**	**6:35**	**6:38**	**6:42**	**6:45**	**6:48**	**6:53**	**7:00**	**7:07**	**7:22**
6:28	**6:40**	**6:42**		**6:52**	**7:07**	**7:10**	**7:14**	**7:17**	**7:20**	**7:25**	**7:32**	**7:39**	**7:54**
7:02		**7:12**		**7:22**	**7:37**	**7:40**	**7:44**	**7:47**	**7:50**	**7:55**	**8:02**	**8:09**	**8:24**
7:42		**7:51**		**8:00**	**8:15**	**8:18**	**8:22**	**8:25**	**8:28**	**8:33**	**8:40**	**8:47**	**9:02**
8:10		**8:19**		**8:28**	**8:43**	**8:46**	**8:50**	**8:53**	**8:56**	**9:01**	**9:08**	**9:15**	**9:30**
9:05		**9:14**		**9:23**	**9:38**	**9:41**	**9:45**	**9:48**	**9:51**	**9:56**	**10:03**	**10:10**	**10:25**
9:35		**9:44**		**9:53**	**10:08**	**10:11**	**10:15**	**10:18**	**10:21**	**10:26**	**10:33**	**10:40**	**10:55**
10:16		**10:25**		**10:34**	**10:49**	**10:52**	**10:56**	**10:59**	**11:02**	**11:07**	**11:14**	**11:21**	**11:36**

Route 121 Schedule (continued)

Saturday Southbound

Leave Walnut Creek	S. Main/ Creekside	Danville Alamo Plaza	San Ramon Valley/ Railroad	Danville Park 'n Ride	Camino Ramon/ Greenbrook	San Ramon Valley/ Fostoria	Arrive San Ramon Transit Center	Leave San Ramon Transit Center	Bllinger Canyon/ Talavera	Fircrest Craydon	Village/ Elmwood	Arrive Dublin/ Pleasanton BART
7:40	7:50	7:56	8:05	8:10	8:13	8:17	8:23	8:26	8:41		8:51	9:06
8:40	8:50	8:56	9:05	9:10	9:13	9:17	9:23	9:26	9:41	9:53	9:55	10:10
9:40	9:50	9:56	10:05	10:10	10:13	10:17	10:23	10:26	10:41		10:51	11:06
11:00	11:10	11:16	11:25	11:30	11:33	11:37	11:43	11:46	**12:01**	**12:13**	**12:15**	**12:30**
12:10	**12:20**	**12:26**	**12:35**	**12:40**	**12:43**	**12:47**	**12:53**	**12:56**	**1:11**		**1:21**	**1:36**
1:20	**1:30**	**1:36**	**1:45**	**1:50**	**1:53**	**1:57**	**2:03**	**2:06**	**2:21**	**2:33**	**2:35**	**2:50**
2:30	**2:40**	**2:46**	**2:55**	**3:00**	**3:03**	**3:07**	**3:13**	**3:16**	**3:31**		**3:41**	**3:56**
3:40	**3:50**	**3:56**	**4:05**	**4:10**	**4:13**	**4:17**	**4:23**	**4:26**	**4:41**	**4:53**	**4:55**	**5:10**
4:45	**4:55**	**5:01**	**5:10**	**5:15**	**5:18**	**5:22**	**5:28**	**5:31**	**5:46**		**5:56**	**6:11**
6:00	**6:10**	**6:16**	**6:25**	**6:30**	**6:33**	**6:37**	**6:43**	**6:46**	**7:01**	**7:13**	**7:15**	**7:30**
7:00	**7:10**	**7:16**	**7:25**	**7:30**	**7:33**	**7:37**	**7:43**	**7:46**	**8:01**		**8:11**	**8:26**
8:00	**8:10**	**8:16**	**8:25**	**8:30**	**8:33**	**8:37**	**8:43**	**8:46**	**9:01**	**9:13**	**9:15**	**9:30**

Route 121 Schedule (continued)

Saturday Northbound

Leave Dublin/ Pleasanton BART	Fircrest/ Craydon	Alcosta Davona	Bollinger Canyon/ Talavera	Arrive San Ramon Transit Center	Leave San Ramon Transit Center	San Ramon Valley/ Fostoria	Camino Ramon/ Greenbrook	Danville Park 'n Ride	Railroad/ San Ramon Valley	Danville Alamo Plaza	S. Main/ Creekside	Arrive Walnut Creek BART
7:00		7:10	7:20	7:35	7:38	7:42	7:45	7:48	7:53	8:00	8:07	8:22
8:00	8:12	8:14	8:24	8:39	8:42	8:46	8:49	8:52	8:57	9:04	9:11	9:26
9:20		9:30	9:40	9:55	9:58	10:02	10:05	10:08	10:13	10:20	10:27	10:42
10:20	10:32	10:34	10:44	10:59	11:02	11:06	11:09	11:12	11:17	11:24	11:31	11:46
11:20		11:30	11:40	11:55	11:58	**12:02**	**12:05**	**12:08**	**12:13**	**12:20**	**12:27**	**12:42**
12:40	**12:52**	**12:54**	**1:04**	**1:19**	**1:22**	**1:26**	**1:29**	**1:32**	**1:37**	**1:44**	**1:51**	**2:06**
1:50		**2:00**	**2:10**	**2:25**	**2:28**	**2:32**	**2:35**	**2:38**	**2:43**	**2:50**	**2:57**	**3:12**
3:00	**3:12**	**3:14**	**3:24**	**3:39**	**3:42**	**3:46**	**3:49**	**3:52**	**3:57**	**4:04**	**4:11**	**4:26**
4:20		**4:30**	**4:40**	**4:55**	**4:58**	**5:02**	**5:05**	**5:08**	**5:13**	**5:20**	**5:27**	**5:42**
5:20	**5:32**	**5:34**	**5:44**	**5:59**	**6:02**	**6:06**	**6:09**	**6:12**	**6:17**	**6:24**	**6:31**	**6:46**
6:20		**6:30**	**6:40**	**6:55**	**6:58**	**7:02**	**7:05**	**7:08**	**7:13**	**7:20**	**7:27**	**7:42**
7:40	**7:52**	**7:54**	**8:04**	**8:19**	**8:22**	**8:26**	**8:29**	**8:32**	**8:37**	**8:44**	**8:51**	**9:06**
8:40		**8:50**	**9:00**	**9:15**	**9:18**	**9:22**	**9:25**	**9:28**	**9:33**	**9:40**	**9:47**	**10:02**

Route 121 Schedule (continued)

Sunday Southbound

Leave Walnut Creek BART	S. Main/ Creekside	Danville Alamo Plaza	San Ramon Valley/ Railroad	Danville Park 'n Ride	Camino Ramon/ Greenbrook	San Ramon Valley/ Fostoria	Arrive San Ramon Transit Center	Leave San Ramon Transit Center	Bollinger Canyon/ Talvera	Fircrest Craydon	Village/ Elmwood	Arrive Dublin/ Pleasanton BART
8:45	8:55	9:01	9:10	9:15	9:18	9:22	9:28	9:31	9:46	9:58	10:00	10:15
9:40	9:50	9:56	10:05	10:10	10:13	10:17	10:23	10:26	10:41		10:51	11:06
11:00	11:10	11:16	11:25	11:30	11:33	11:37	11:43	11:46	12:01	12:13	12:15	12:30
12:21	12:31	12:37	12:46	12:51	12:54	12:58	1:04	1:07	1:22		1:32	1:47
1:20	1:30	1:36	1:45	1:50	1:53	1:57	2:03	2:06	2:21	2:33	2:35	2:50
2:40	2:50	2:56	3:05	3:10	3:13	3:17	3:23	3:26	3:41		3:51	4:06
3:40	3:50	3:56	4:05	4:10	4:13	4:17	4:23	4:26	4:41	4:53	4:55	5:10
4:40	4:50	4:56	5:05	5:10	5:13	5:17	5:23	5:26	5:41		5:51	6:06

Sunday Northbound

Leave Dublin/ Pleasanton BART	Fircrest/ Craycord	Alcosta Davona	Bollinger Canyon Talavera	Arrive San Ramon Transit Center	Leave San Ramon Transit Center	San Ramon Valley/ Fostoria	Camino Ramon/ Greenbrook	Danville Park 'n Ride	Railroad/ San Ramon Valley	Danville Alamo Plaza	S. Main/ Creekside	Arrive Walnut Creek BART
9:20		9:30	9:40	9:55	9:58	10:02	10:05	10:08	10:13	10:20	10:27	10:42
10:25	10:37	10:39	10:49	11:04	11:07	11:11	11:14	11:17	11:22	11:29	11:36	11:51
11:20		11:30	11:40	11:55	11:58	12:02	12:05	12:08	12:13	12:20	12:27	12:42
12:40	12:52	12:54	1:04	1:19	1:22	1:26	1:29	1:32	1:37	1:44	1:51	2:06
2:00		2:10	2:20	2:35	2:38	2:42	2:45	2:48	2:53	3:00	3:07	3:22
3:00	3:12	3:14	3:24	3:39	3:42	3:46	3:49	3:52	3:57	4:04	4:11	4:26
4:20		4:30	4:40	4:55	4:58	5:02	5:05	5:08	5:13	5:20	5:27	5:42
5:20	5:32	5:34	5:44	5:59	6:02	6:06	6:09	6:12	6:17	6:24	6:31	6:46

Route 135 Weekday Schedule

Leave San Ramon Transit Center	Bollinger Canyon/ Alcosta Blvd	Bollinger Canyon/ Windemere	Arrive Dublin/ Pleasanton BART	To Milbrae BART	From Milbrae BART	Leave Dublin/ Pleasanton BART	Bollinger Canyon/ Windemer	Bollinger Canyon/ Alcosta	Arrive San Ramon Transit Center
6:05	6:08	6:20	6:35	6:44	6:37	6:45	6:57	7:05	7:15
6:25	6:28	6:40	6:55	6:59					
6:45	6:48	7:00	7:15	7:29					
7:05	7:08	7:20	7:35	7:44	7:37	7:40	7:52	8:00	8:10
7:35	7:38	7:50	8:05	8:14	8:07	8:10	8:22	8:30	8:40
7:55	7:58	8:10	8:25	8:26	8:22	8:30	8:42	8:50	9:00
8:20	8:23	8:35	8:50	8:59	8:52	9:00	9:12	9:20	9:30
9:05	9:08	9:20	9:35	9:44	9:37	9:45	9:57	10:05	10:15
9:50	9:53	10:05	10:20	10:29	10:22	10:30	10:42	10:50	11:00
10:40	10:43	10:55	11:10	11:14	11:07	11:15	11:27	11:35	11:45
11:20	11:23	11:35	11:50	11:59	11:52	**12:00**	**12:12**	**12:20**	**12:30**
12:05	**12:08**	**12:20**	**12:35**	**12:44**	**12:37**	**12:45**	**12:57**	**1:05**	**1:15**
12:50	**12:53**	**1:05**	**1:20**	**1:29**	**1:22**	**1:30**	**1:42**	**1:50**	**2:00**
1:35	**1:38**	**1:50**	**2:05**	**2:14**	**2:07**	**2:15**	**2:27**	**2:35**	**2:45**
2:20	**2:23**	**2:35**	**2:50**	**2:59**	**2:52**	**3:00**	**3:12**	**3:20**	**3:30**
					3:07	**3:20**	**3:32**	**3:40**	**3:50**
3:05	**3:08**	**3:20**	**3:35**	**3:44**	**3:37**	**3:45**	**3:57**	**4:05**	**4:15**
					4:22	**4:30**	**4:42**	**4:50**	**5:00**
4:05	**4:08**	**4:20**	**4:35**	**4:44**	**4:37**	**4:45**	**4:57**	**5:05**	**5:15**
4:35	**4:38**	**4:50**	**5:05**	**5:14**	**5:08**	**5:15**	**5:27**	**5:35**	**5:45**
					5:23	**5:35**	**5:47**	**5:55**	**6:05**
5:20	**5:23**	**5:35**	**5:50**	**5:59**	**5:53**	**6:00**	**6:12**	**6:20**	**6:30**
6:05	**6:08**	**6:20**	**6:35**	**6:44**	**6:38**	**6:45**	**6:57**	**7:05**	**7:15**
6:50	**6:53**	**7:05**	**7:20**	**7:24**	**7:22**	**7:30**	**7:42**	**7:50**	**8:00**

Route 221 Limited Service
(Updated 26 Mar 06)

Leave Danville/ Alamo Plaza	Stone Valley Green Valley	San Ramon Valley Railroad	Sycamore Valley Camino Tassajara	Camino Tassajara Crow Canyon	Crow Canyon Rd San Ramon Valley	Annabel Ln	San Ramon Transit Center	Alcosta Bollinger Canyon	Broadmoor Newport	Broadmoor Pine Valley	Belle Meade Alcosta	Arrive Pleasanton/ Dublin BART
6:45	6:56	7:07	7:12	7:18	7:28	7:31		7:38	7:45	7:49	7:51	
7:15	7:23	7:34	7:39	7:45	7:55	8:00	8:05					
							1:35	**1:45**	**1:55**	**2:00**		**2:25**
							2:55	**3:05**	**3:15**	**3:20**		**3:45**
3:10	**3:25**	**3:40**	**3:46**	**3:54**	**4:04**	**4:14**						

Pine Valley Broadmoor	Broadmoor Dr Newport	Alcosta Bollinger Canyon	San Ramon Transit Center	Annabel Ln	Crow Canyon San Ramon Valley	Camino Tassajara Crow Canyon	Sycamore Valley Camino Tassajara	San Ramon Valley Railroad	Stone Valley Green Valley	Danville Blvd Alamo Plaza
				6:30	6:32	6:42	6:48	6:53	7:04	7:15
2:59	**3:03**	**3:10**		**3:14**	**3:16**	**3:26**	**3:32**	**3:37**	**3:47**	**3:55**

Route 920 Schedule

Southbound

Leave Mitchell Park 'n Ride	Danville Park 'n Ride	Crow Canyon/ Crow Canyon Pl	Bishop Ranch 15	San Ramon Transit Center	ATT	Chevron	Arrive Pleasanton Train Station
5:54	6:14			6:21			6:40
6:50	7:12			7:20			7:45
		3:39	**3:43**	**3:47**	**3:50**	**3:56**	**4:13**
		4:39	**4:43**	**4:47**	**4:50**	**4:56**	**5:13**
		5:39	**5:43**	**5:47**	**5:50**	**5:56**	**6:13**

Northbound

Leave Pleasanton Train Station	Chevron	ATT	San Ramon Transit Center	Bishop Ranch 15	Crow Canyon/ Crow Canyon Pl	Danville Park 'n Ride	Arrive Mitchell Park 'n Ride
6:56	7:11	7:18	7:21	7:22	7:25		
6:56	7:11	7:18	7:21	7:22	7:25		
8:01	8:16	8:23	8:26	8:27	8:30		
4:32	**4:42**		**4:47**			**4:58**	**5:18**
5:32	**5:42**		**5:47**			**5:58**	**6:18**
6:32	**6:42**		**6:47**			**6:58**	**7:18**

Route 960B Schedule
(Updated 11 Mar 07)

Leave Mitchell Park 'n Ride	Wiget/ Ygnacio	Arrive Walnut Creek BART	Leave Walnut Creek BART	San Ramon Valley/ Sycamore Valley	Danville Park 'n Ride	Arrive Chevron
5:15	5:17	5:27	5:35			5:55
5:45	5:47	5:57	6:08			6:28
			6:38			6:58
6:50	6:52	7:02	7:08			7:28
7:03	7:05	7:15	7:23			7:43
			7:38			7:58
7:45	7:47	7:57	8:08			8:28
			9:08			9:23
			12:10			**12:25**
			3:08			**3:23**
			4:01	**4:20**	**4:22**	**4:38**
			4:30	**4:49**	**4:51**	**5:07**
6:07		**6:19**	**6:20**	**6:39**	**6:41**	**6:57**

Route 960B Schedule (continued)

Leave Chevron	Bishop Ranch 1	Bishop Ranch 3	Bishop Ranch 6	San Ramon Transit Center	Bishop Ranch 15	Annabel/ Bishop Ranch 12	Bishop Ranch 8	Bishop/ Marriot	Arrive Sunset/ Bishop Ranch 2	Leave Sunset/ Bishop Ranch 2	Danville Park 'n Ride	San Ramon Valley/ Sycamore Valley	Arrive Walnut Creek BART	Leave Walnut Creek BART	Wiget/ Ygnacio	Arrive Mitchell Park 'n Ride
5:55	5:57	5:59	6:01	6:03	6:05	6:09	6:11	6:12	6:14	6:14			6:42			
6:28	6:30	6:32	6:34	6:36	6:38	6:42	6:44	6:45	6:47	6:50			7:18	7:20		7:32
6:58	7:00	7:02	7:04	7:06	7:08	7:12	7:14	7:15	7:17	7:18	7:28	7:30	7:54			
7:28	7:30	7:32	7:34	7:36	7:38	7:42	7:44	7:45	7:47	7:50	8:00	8:02	8:26			
7:43	7:45	7:47	7:49	7:51	7:53	7:57	7:59	8:00	8:02							
7:58	8:00	8:02	8:04	8:06	8:08	8:12	8:14	8:15	8:17							
8:28	8:30	8:32	8:34	8:36	8:38	8:42	8:44	8:45	8:47	8:50	9:00	9:02	9:26			
9:23	9:25	9:27	9:29	9:31	9:33	9:37	9:39	9:40	9:42	9:42			9:57			
12:25	**12:27**	**12:29**	**12:31**	**12:33**	**12:35**	**12:39**	**12:41**	**12:42**	**12:44**	**12:44**			**12:59**			
2:45	**2:47**	**2:49**	**2:51**	**2:53**	**2:55**	**2:59**	**3:01**	**3:02**	**3:04**	**3:04**		**3:14**	**3:40**			
3:23	**3:25**	**3:27**	**3:29**	**3:31**	**3:33**	**3:37**	**3:39**	**3:40**	**3:42**	**3:42**			**3:57**			
3:40	**3:42**	**3:44**	**3:46**	**3:48**	**3:50**	**3:54**	**3:56**	**3:57**	**3:59**	**3:59**			**4:27**	**4:30**	**4:40**	**4:42**
4:02	**4:04**	**4:06**	**4:08**	**4:10**	**4:12**	**4:16**	**4:18**	**4:19**	**4:21**	**4:21**		**4:31**	**4:57**			
4:40	**4:42**	**4:44**	**4:46**	**4:48**	**4:50**	**4:54**	**4:56**	**4:57**	**4:59**	**4:59**			**5:27**	**5:33**	**5:43**	**5:45**
5:07	**5:09**	**5:11**	**5:13**	**5:15**	**5:17**	**5:21**	**5:23**	**5:24**	**5:26**	**5:29**			**5:57**	**5:58**	**6:08**	**6:10**
5:38	**5:40**	**5:42**	**5:44**	**5:46**	**5:48**	**5:52**	**5:54**	**5:55**	**5:57**	**5:58**			**6:26**			
6:17	**6:19**	**6:21**	**6:23**	**6:25**	**6:27**	**6:31**	**6:33**	**6:34**	**6:36**	**6:36**			**7:04**			
6:57	**6:59**	**7:01**	**7:03**	**7:05**	**7:07**	**7:11**	**7:13**	**7:14**	**7:16**	**7:20**			**7:48**			

Route 960C Schedule
(Updated 11 Mar 07)

Leave Mitchell Park 'n Ride	Wiget/ Ygnacio	Arrive Walnut Creek BART	Leave Walnut Creek BART	San Ramon Valley/ Sycamore Valley	Danville Park 'n Ride	Arrive Crow Canyon Pl/ Crow Canyon Rd
6:00	6:02	6:12	6:22			6:42
6:33	6:35	6:45	6:52			7:12
			7:13	7:32		7:43
			7:30			7:50
			7:50	8:09		8:20
8:13	8:15	8:25	8:25			8:45
			9:40			10:00
			4:50	**5:09**	**5:11**	**5:27**
6:25		**6:37**	**6:37**	**6:54**	**6:56**	**7:02**

Route 960C Schedule (continued)

Leave Crow Canyon Pl/ Crow Canyon Rd	Bishop Ranch 6	San Ramon Transit Center	Bishop Ranch 15	Annabel/ Bishop Ranch 12	Bishop Ranch 8	Bishop/ Marriott	Sunset/ Bishop	Chevron	Bishop Ranch 1	Arrive Bishop Ranch 3	Leave Bishop Ranch 3	Danville Park 'n Ride	San Ramon Valley/ Sycamore Valley	Arrive Walnut Creek BART	Leave Walnut Creek BART	Wiget/ Ygnacio	Arrive Mitchell Park 'n Ride
												6:30	6:32	6:50			
6:42	6:45	6:48	6:50	6:54	6:56	6:57	6:59	7:00	7:02	7:10	7:10			7:38			
7:12	7:15	7:18	7:20	7:24	7:26	7:27	7:29	7:30	7:32	7:40	7:40	7:50	7:52	8:16			
7:43	7:46	7:49	7:51	7:55	7:57	7:58	8:00	8:01	8:03	8:11	8:11	8:21	8:23	8:47			
7:50	7:53	7:56	7:58	8:02	8:04	8:05	8:07	8:08	8:10	8:18							
8:20	8:23	8:26	8:28	8:32	8:34	8:35	8:37	8:38	8:40	8:48							
8:45	8:48	8:51	8:53	8:57	8:59	9:00	9:02	9:03	9:05	9:13							
10:00	10:03	10:06	10:08	10:12	10:14	10:15	10:17	10:18	10:20	10:28	10:28			10:56			
3:27	3:30	3:33	3:35	3:39	3:41	3:42	3:44	3:45	3:47	3:55	3:55			4:23			
3:54	3:57	4:00	4:02	4:06	4:08	4:09	4:11	4:12	4:14	4:22	4:22		4:32	4:58	4:58	5:08	5:10
4:22	4:25	4:28	4:30	4:34	4:36	4:37	4:39	4:40	4:42	4:50	4:50			5:18			
4:57	5:00	5:03	5:05	5:09	5:11	5:12	5:14	5:15	5:17	5:25	5:25			5:53			
5:27	5:30	5:33	5:35	5:39	5:41	5:42	5:44	5:45	5:47	5:55	5:55			6:23	6:23	6:33	6:35
6:17	6:20	6:23	6:25	6:29	6:31	6:32	6:34	6:35	6:37	6:45	6:45			7:13			
7:02	7:05	7:08	7:10	7:13	7:15	7:16	7:17	7:18	7:19	7:22	7:22			7:50			

Route 970B Schedule
(Updated 17 Dec 06)

Leave Dublin/ Pleasanton BART	Arrive Chevron	Leave Chevron	Bishop Ranch 1	Bishop Ranch 3	Bishop Ranch 6	San Ramon Transit Center	Bishop Ranch 15	Annabel Ln	Bishop Ranch 8	Bishop Dr/ Marriott	Arrive Sunset/ Bishop Dr	Leave Sunset/ Bishop Dr	Arrive Dublin/ Pleasanton BART
6:35	6:50	6:50	6:52	6:54	6:56	6:58	7:00	7:04	7:06	7:07	7:09	7:10	7:35
7:05	7:20	7:20	7:22	7:24	7:26	7:28	7:30	7:34	7:36	7:37	7:39		
7:30	7:45	7:45	7:47	7:49	7:51	7:53	7:55	7:59	8:01	8:02	8:04		
8:00	8:15	8:15	8:17	8:19	8:21	8:23	8:25	8:29	8:31	8:32	8:34	8:35	9:00
8:30	8:45	8:45	8:47	8:49	8:51	8:53	8:55	8:59	9:01	9:02	9:04		
9:15	9:30	9:30	9:32	9:34	9:36	9:38	9:40	9:44	9:46	9:47	9:49		
3:30	**3:45**	**3:45**	**3:47**	**3:49**	**3:51**	**3:53**	**3:55**	**3:59**	**4:01**	**4:02**	**4:04**	**4:05**	**4:34**
		4:00	**4:02**	**4:04**	**4:06**	**4:08**	**4:10**	**4:14**	**4:16**	**4:17**	**4:19**	**4:20**	**4:49**
4:15	**4:30**	**4:30**	**4:32**	**4:34**	**4:36**	**4:38**	**4:40**	**4:44**	**4:46**	**4:47**	**4:49**	**4:50**	**5:19**
4:45	**5:00**	**5:00**	**5:02**	**5:04**	**5:06**	**5:08**	**5:10**	**5:14**	**5:16**	**5:17**	**5:19**	**5:20**	**5:49**
5:55	**6:10**	**6:10**	**6:12**	**6:14**	**6:16**	**6:18**	**6:20**	**6:24**	**6:26**	**6:27**	**6:29**	**6:30**	**6:55**

Route 970C Schedule
(Updated 17 Dec 06)

From Millbrae	Leave Dublin/ Pleasanton BART	Crow Canyon Pl/ Crow Canyon Rd	Bishop Ranch 6	San Ramon Transit Center	Bishop Ranch 15	Annabel Ln/ Bishop Ranch 12	Bishop Ranch 8	Bishop/ Marriott	Sunset/ Bishop Ranch 2	Chevron	Bishop Ranch 1	Arrive Bishop Ranch 3	Leave Bishop Ranch 3	Arrive Dublin/ Pleasanton BART	To Millbrae
6:37	6:44	6:59	7:02	7:05	7:07	7:11	7:13	7:14	7:16	7:19	7:20	7:22	7:23	7:53	7:59
7:07	7:14	7:29	7:32	7:35	7:37	7:41	7:43	7:44	7:46	7:49	7:50	7:52	7:53	8:23	8:29
7:37	7:43	7:58	8:01	8:04	8:06	8:10	8:12	8:13	8:15	8:18	8:19	8:21	8:22	8:52	8:59
		3:16	**3:19**	**3:22**	**3:24**	**3:28**	**3:30**	**3:31**	**3:33**	**3:36**	**3:37**	**3:39**	**3:40**	**4:10**	**4:14**
		3:46	**3:49**	**3:52**	**3:54**	**3:58**	**4:00**	**4:01**	**4:03**	**4:06**	**4:07**	**4:09**	**4:10**	**4:40**	**4:41**
		4:16	**4:19**	**4:22**	**4:24**	**4:28**	**4:30**	**4:31**	**4:33**	**4:36**	**4:37**	**4:39**	**4:40**	**5:10**	**5:14**
4:22	**4:36**	**4:51**	**4:54**	**4:57**	**4:59**	**5:03**	**5:05**	**5:06**	**5:08**	**5:11**	**5:12**	**5:14**	**5:15**	**5:45**	**5:59**
5:23	**5:33**	**5:48**	**5:51**	**5:54**	**5:56**	**6:00**	**6:02**	**6:03**	**6:05**	**6:08**	**6:09**	**6:11**	**6:12**	**6:42**	**6:44**

APPENDIX F

SIGNAL WARRANTS

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #28 Bollinger Canyon/Norris Canyon

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Stop Sign					Stop Sign				
Lanes:	1	0	1	1	0	1	0	1	1	0	0	0	1!	0	0	0	0	1!	0	0
Initial Vol:	99		297		66	121		402		11	12		293		164	69		67		87

Major Street Volume: 996
Minor Approach Volume: 469
Minor Approach Volume Threshold: 286

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #28 Bollinger Canyon/Norris Canyon

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Stop Sign					Stop Sign				
Lanes:	1	0	1	1	0	1	0	1	1	0	0	0	1!	0	0	0	0	1!	0	0
Initial Vol:	72		260		59	69		256		20	6		111		146	36		113		44

Major Street Volume: 736
Minor Approach Volume: 263
Minor Approach Volume Threshold: 390

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #28 Bollinger Canyon/Norris Canyon

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Lanes:	1 0	1	1 0	1 0	1	1 0	0 0	1!	0 0	0 0	1!	0 0
Initial Vol:	122	360	82	150	467	14	14	346	198	83	80	105

Major Street Volume: 1194
Minor Approach Volume: 558
Minor Approach Volume Threshold: 224

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #28 Bollinger Canyon/Norris Canyon

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Stop Sign					Stop Sign				
Lanes:	1	0	1	1	0	1	0	1	1	0	0	0	1!	0	0	0	0	1!	0	0
Initial Vol:	89		289		73	85		303		25	7		129		177	44		126		53

Major Street Volume: 863
Minor Approach Volume: 313
Minor Approach Volume Threshold: 336

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

APPENDIX G

TRAFFIX ANALYSIS

Existing Traffic Counts

Existing
Existing + Project
Existing + Project (Mitigation)
2020
2020 + Project
2020 + Project (Mitigation)

TRAFFIX ANALYSIS

Existing Traffic Counts

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰	↑↑↑	↱	↰↰	↑↑↑	↱	↰↰	↑↑	↱	↰↰	↑↑	↱
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		125	250		150	235		0	250		300
Storage Lanes	2		1	1		1	2		1	2		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			52			216			355			142
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		660			295			608			434	
Travel Time (s)		11.3			5.0			13.8			9.9	
Volume (vph)	171	975	124	492	1228	466	91	238	410	340	225	131
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	186	1060	135	535	1335	507	99	259	446	370	245	142
Lane Group Flow (vph)	186	1060	135	535	1335	507	99	259	446	370	245	142
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phases	5	2	2	1	6	6	7	4	4	3	8	8
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	15.0	32.0	32.0	15.0	28.0	28.0	15.0	32.0	32.0	15.0	32.0	32.0
Total Split (s)	25.0	59.0	59.0	49.0	83.0	83.0	19.0	54.0	54.0	38.0	73.0	73.0
Total Split (%)	12.5%	29.5%	29.5%	24.5%	41.5%	41.5%	9.5%	27.0%	27.0%	19.0%	36.5%	36.5%
Maximum Green (s)	20.0	54.0	54.0	44.0	78.0	78.0	14.0	49.0	49.0	33.0	68.0	68.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None
Walk Time (s)		4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0
Flash Dont Walk (s)		23.0	23.0		19.0	19.0		23.0	23.0		23.0	23.0
Pedestrian Calls (#/hr)		5	5		5	5		8	8		8	8
Act Effct Green (s)	12.9	32.1	32.1	23.8	42.9	42.9	20.3	17.9	17.9	18.6	20.0	20.0
Actuated g/C Ratio	0.12	0.29	0.29	0.21	0.39	0.39	0.18	0.16	0.16	0.17	0.18	0.18
v/c Ratio	0.46	0.72	0.27	0.72	0.68	0.68	0.16	0.45	0.81	0.64	0.38	0.35
Control Delay	57.0	40.5	24.7	49.8	30.8	21.9	43.0	48.0	24.0	53.1	51.0	12.1
Queue Delay	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.0	40.5	24.7	49.8	30.8	22.0	43.0	48.0	24.0	53.1	51.0	12.1
LOS	E	D	C	D	C	C	D	D	C	D	D	B
Approach Delay		41.2			33.2			34.1			44.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		125	0		150	235		0	250		300
Storage Lanes	2		1	2		1	2		1	2		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			45			231			343			207
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		660			295			608			434	
Travel Time (s)		11.3			5.0			13.8			9.9	
Volume (vph)	312	1090	117	466	1201	559	158	579	626	414	435	190
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	339	1185	127	507	1305	608	172	629	680	450	473	207
Lane Group Flow (vph)	339	1185	127	507	1305	608	172	629	680	450	473	207
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phases	5	2	2	1	6	6	7	4	4	3	8	8
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	15.0	32.0	32.0	15.0	28.0	28.0	15.0	32.0	32.0	15.0	32.0	32.0
Total Split (s)	45.0	65.0	65.0	45.0	65.0	65.0	35.0	55.0	55.0	35.0	55.0	55.0
Total Split (%)	22.5%	32.5%	32.5%	22.5%	32.5%	32.5%	17.5%	27.5%	27.5%	17.5%	27.5%	27.5%
Maximum Green (s)	40.0	60.0	60.0	40.0	60.0	60.0	30.0	50.0	50.0	30.0	50.0	50.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None
Walk Time (s)		4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0
Flash Dont Walk (s)		23.0	23.0		19.0	19.0		23.0	23.0		23.0	23.0
Pedestrian Calls (#/hr)		5	5		5	5		8	8		8	8
Act Effct Green (s)	23.5	51.0	51.0	32.0	59.5	59.5	49.4	51.7	51.7	27.7	30.1	30.1
Actuated g/C Ratio	0.13	0.29	0.29	0.18	0.33	0.33	0.28	0.29	0.29	0.16	0.17	0.17
v/c Ratio	0.75	0.82	0.26	0.82	0.77	0.89	0.18	0.61	0.97	0.84	0.79	0.47
Control Delay	87.1	65.0	33.5	83.4	57.0	51.3	54.5	60.6	57.9	89.6	82.6	11.0
Queue Delay	0.0	0.4	0.0	0.2	31.2	28.8	0.0	0.6	8.2	15.5	0.0	0.0
Total Delay	87.1	65.4	33.5	83.6	88.2	80.2	54.5	61.2	66.1	105.1	82.6	11.0
LOS	F	E	C	F	F	F	D	E	E	F	F	B
Approach Delay		67.4			85.2			62.7			78.4	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.86	0.91	1.00	1.00	1.00
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	6408	5085	1583	0	0
Flt Permitted						
Satd. Flow (perm)	0	6408	5085	1583	0	0
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		40	40		30	
Link Distance (ft)		285	318		995	
Travel Time (s)		4.9	5.4		22.6	
Volume (vph)	0	2083	1280	324	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2264	1391	352	0	0
Lane Group Flow (vph)	0	2264	1391	352	0	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 85.6% ICU Level of Service E
Analysis Period (min) 15

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑↑	↑↑↑	↱		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.86	0.91	1.00	1.00	1.00
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	6408	5085	1583	0	0
Flt Permitted						
Satd. Flow (perm)	0	6408	5085	1583	0	0
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		40	40		30	
Link Distance (ft)		285	318		995	
Travel Time (s)		4.9	5.4		22.6	
Volume (vph)	0	2136	1264	553	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2322	1374	601	0	0
Lane Group Flow (vph)	0	2322	1374	601	0	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 61.5% ICU Level of Service B
Analysis Period (min) 15

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↱		↑↑↑↑		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.91	1.00	1.00	0.86	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	5085	1583	0	6408	0	0
Flt Permitted						
Satd. Flow (perm)	5085	1583	0	6408	0	0
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	40			40	40	
Link Distance (ft)	295			228	604	
Travel Time (s)	5.0			3.9	10.3	
Volume (vph)	934	782	0	2118	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1015	850	0	2302	0	0
Lane Group Flow (vph)	1015	850	0	2302	0	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 51.8% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↱		↑↑↑↑		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		250	0		0	0
Storage Lanes		1	0		0	0
Lane Util. Factor	0.91	1.00	1.00	0.86	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	5085	1583	0	6408	0	0
Flt Permitted						
Satd. Flow (perm)	5085	1583	0	6408	0	0
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	40			40	40	
Link Distance (ft)	295			228	604	
Travel Time (s)	5.0			3.9	10.3	
Volume (vph)	1624	606	0	2133	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1765	659	0	2318	0	0
Lane Group Flow (vph)	1765	659	0	2318	0	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 40.9% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↰↰	↱↱
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		50	50		50	50
Trailing Detector (ft)		0	0		0	0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.97	0.88
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	5085	5085	0	3433	2787
Flt Permitted					0.950	
Satd. Flow (perm)	0	5085	5085	0	3433	2787
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						30
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		40	40		30	
Link Distance (ft)		228	285		685	
Travel Time (s)		3.9	4.9		15.6	
Volume (vph)	0	934	1280	0	1149	838
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1015	1391	0	1249	911
Lane Group Flow (vph)	0	1015	1391	0	1249	911
Turn Type						Prot
Protected Phases		2	6		4	4
Permitted Phases						
Detector Phases		2	6		4	4
Minimum Initial (s)		5.0	5.0		5.0	5.0
Minimum Split (s)		20.0	24.0		20.0	20.0
Total Split (s)	0.0	45.0	45.0	0.0	45.0	45.0
Total Split (%)	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%
Maximum Green (s)		40.0	40.0		40.0	40.0
Yellow Time (s)		3.5	3.5		3.5	3.5
All-Red Time (s)		1.5	1.5		1.5	1.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		C-Max	C-Max		None	None
Walk Time (s)			7.0			
Flash Dont Walk (s)			12.0			
Pedestrian Calls (#/hr)			5			
Act Effct Green (s)		42.1	42.1		39.9	39.9
Actuated g/C Ratio		0.47	0.47		0.44	0.44
v/c Ratio		0.43	0.58		0.82	0.73
Control Delay		16.9	13.2		27.2	23.8
Queue Delay		0.0	0.1		0.0	0.2
Total Delay		16.9	13.3		27.2	23.9
LOS		B	B		C	C
Approach Delay		16.9	13.3		25.9	
Approach LOS		B	B		C	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		50	50		50	50
Trailing Detector (ft)		0	0		0	0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.97	0.88
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	5085	5085	0	3433	2787
Flt Permitted					0.950	
Satd. Flow (perm)	0	5085	5085	0	3433	2787
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						31
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		40	40		30	
Link Distance (ft)		228	285		685	
Travel Time (s)		3.9	4.9		15.6	
Volume (vph)	0	1624	1264	0	512	869
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1765	1374	0	557	945
Lane Group Flow (vph)	0	1765	1374	0	557	945
Turn Type						Prot
Protected Phases		2	6		4	4
Permitted Phases						
Detector Phases		2	6		4	4
Minimum Initial (s)		5.0	5.0		5.0	5.0
Minimum Split (s)		20.0	24.0		20.0	20.0
Total Split (s)	0.0	45.0	45.0	0.0	45.0	45.0
Total Split (%)	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%
Maximum Green (s)		40.0	40.0		40.0	40.0
Yellow Time (s)		3.5	3.5		3.5	3.5
All-Red Time (s)		1.5	1.5		1.5	1.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		C-Max	C-Max		None	None
Walk Time (s)			7.0			
Flash Dont Walk (s)			12.0			
Pedestrian Calls (#/hr)			5			
Act Effct Green (s)		45.2	45.2		36.8	36.8
Actuated g/C Ratio		0.50	0.50		0.41	0.41
v/c Ratio		0.69	0.54		0.40	0.82
Control Delay		19.7	11.8		19.1	28.9
Queue Delay		0.3	0.1		0.0	0.6
Total Delay		20.0	11.9		19.1	29.5
LOS		B	B		B	C
Approach Delay		20.0	11.9		25.6	
Approach LOS		B	B		C	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↱		↑↑↑↑		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.91	1.00	1.00	0.86	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	5085	1583	0	6408	0	0
Flt Permitted						
Satd. Flow (perm)	5085	1583	0	6408	0	0
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	40			40	30	
Link Distance (ft)	318			286	1126	
Travel Time (s)	5.4			4.9	25.6	
Volume (vph)	1364	817	0	1604	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1483	888	0	1743	0	0
Lane Group Flow (vph)	1483	888	0	1743	0	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 63.6% ICU Level of Service B
Analysis Period (min) 15

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↱		↑↑↑↑		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.91	1.00	1.00	0.86	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	5085	1583	0	6408	0	0
Flt Permitted						
Satd. Flow (perm)	5085	1583	0	6408	0	0
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	40			40	30	
Link Distance (ft)	318			286	1126	
Travel Time (s)	5.4			4.9	25.6	
Volume (vph)	1574	625	0	1946	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1711	679	0	2115	0	0
Lane Group Flow (vph)	1711	679	0	2115	0	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 68.5% ICU Level of Service C
Analysis Period (min) 15

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑↑	↰↰	↱↱
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50			50	50	50
Trailing Detector (ft)	0			0	0	0
Lane Util. Factor	0.91	1.00	1.00	0.86	0.97	0.88
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	5085	0	0	6408	3433	2787
Flt Permitted					0.950	
Satd. Flow (perm)	5085	0	0	6408	3433	2787
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						17
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	40			40	30	
Link Distance (ft)	286			328	955	
Travel Time (s)	4.9			5.6	21.7	
Volume (vph)	1364	0	0	1151	453	874
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1483	0	0	1251	492	950
Lane Group Flow (vph)	1483	0	0	1251	492	950
Turn Type						Perm
Protected Phases	2			6	4	
Permitted Phases						4
Detector Phases	2			6	4	4
Minimum Initial (s)	4.0			4.0	4.0	4.0
Minimum Split (s)	24.0			21.0	21.0	21.0
Total Split (s)	43.0	0.0	0.0	43.0	47.0	47.0
Total Split (%)	47.8%	0.0%	0.0%	47.8%	52.2%	52.2%
Maximum Green (s)	38.0			38.0	42.0	42.0
Yellow Time (s)	3.5			3.5	3.5	3.5
All-Red Time (s)	1.5			1.5	1.5	1.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	C-Max			C-Max	None	None
Walk Time (s)	7.0					
Flash Dont Walk (s)	12.0					
Pedestrian Calls (#/hr)	5					
Act Effct Green (s)	44.4			44.4	37.6	37.6
Actuated g/C Ratio	0.49			0.49	0.42	0.42
v/c Ratio	0.59			0.40	0.34	0.81
Control Delay	14.0			15.7	17.8	28.3
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	14.0			15.7	17.8	28.3
LOS	B			B	B	C
Approach Delay	14.0			15.7	24.7	
Approach LOS	B			B	C	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑↑	↖↖	↗↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50			50	50	50
Trailing Detector (ft)	0			0	0	0
Lane Util. Factor	0.91	1.00	1.00	0.86	0.97	0.88
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	5085	0	0	6408	3433	2787
Flt Permitted					0.950	
Satd. Flow (perm)	5085	0	0	6408	3433	2787
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						8
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	40			40	30	
Link Distance (ft)	286			328	955	
Travel Time (s)	4.9			5.6	21.7	
Volume (vph)	1574	0	0	1339	607	898
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1711	0	0	1455	660	976
Lane Group Flow (vph)	1711	0	0	1455	660	976
Turn Type						Perm
Protected Phases	2			6	4	
Permitted Phases						4
Detector Phases	2			6	4	4
Minimum Initial (s)	4.0			4.0	4.0	4.0
Minimum Split (s)	24.0			21.0	21.0	21.0
Total Split (s)	43.0	0.0	0.0	43.0	47.0	47.0
Total Split (%)	47.8%	0.0%	0.0%	47.8%	52.2%	52.2%
Maximum Green (s)	38.0			38.0	42.0	42.0
Yellow Time (s)	3.5			3.5	3.5	3.5
All-Red Time (s)	1.5			1.5	1.5	1.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	C-Max			C-Max	None	None
Walk Time (s)	7.0					
Flash Dont Walk (s)	12.0					
Pedestrian Calls (#/hr)	5					
Act Effct Green (s)	43.4			43.4	38.6	38.6
Actuated g/C Ratio	0.48			0.48	0.43	0.43
v/c Ratio	0.70			0.47	0.45	0.81
Control Delay	16.5			17.0	18.7	28.1
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	16.5			17.0	18.7	28.1
LOS	B			B	B	C
Approach Delay	16.5			17.0	24.3	
Approach LOS	B			B	C	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑↑	↑↑↑↑	↱		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.86	0.81	0.81	1.00	1.00
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	6408	6035	1282	0	0
Flt Permitted						
Satd. Flow (perm)	0	6408	6035	1282	0	0
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		40	40		30	
Link Distance (ft)		328	382		1090	
Travel Time (s)		5.6	6.5		24.8	
Volume (vph)	0	2238	1151	773	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2433	1251	840	0	0
Lane Group Flow (vph)	0	2433	1251	840	0	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 35.8% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.86	0.81	0.81	1.00	1.00
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	6408	6035	1282	0	0
Flt Permitted						
Satd. Flow (perm)	0	6408	6035	1282	0	0
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		40	40		30	
Link Distance (ft)		328	382		1090	
Travel Time (s)		5.6	6.5		24.8	
Volume (vph)	0	2472	1439	795	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2687	1564	864	0	0
Lane Group Flow (vph)	0	2687	1564	864	0	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 39.2% ICU Level of Service A

Analysis Period (min) 15

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		0	250		0	250		0	150		0
Storage Lanes	1		1	1		0	2		1	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50		50	50	50	50	50	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	0.97	1.00	1.00	1.00	0.95	0.95
Frt			0.850		0.983				0.850		0.947	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	1583	1770	4999	0	3433	1863	1583	1770	3352	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	5085	1583	1770	4999	0	3433	1863	1583	1770	3352	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			627		19				62		74	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		816			680			2235			429	
Travel Time (s)		13.9			11.6			50.8			9.8	
Volume (vph)	184	1046	579	231	1560	204	109	61	57	126	126	68
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	200	1137	629	251	1696	222	118	66	62	137	137	74
Lane Group Flow (vph)	200	1137	629	251	1918	0	118	66	62	137	211	0
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	5	2		1	6		4	4		8	8	
Permitted Phases			2						4			
Detector Phases	5	2	2	1	6		4	4	4	8	8	
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	15.0	29.0	29.0	15.0	30.0		38.0	38.0	38.0	38.0	38.0	
Total Split (s)	22.0	30.0	30.0	28.0	36.0	0.0	31.0	31.0	31.0	31.0	31.0	0.0
Total Split (%)	18.3%	25.0%	25.0%	23.3%	30.0%	0.0%	25.8%	25.8%	25.8%	25.8%	25.8%	0.0%
Maximum Green (s)	18.5	25.0	25.0	24.5	31.0		26.0	26.0	26.0	26.0	26.0	
Yellow Time (s)	3.5	4.5	4.5	3.5	4.5		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	0.0	0.5	0.5	0.0	0.5		1.0	1.0	1.0	1.0	1.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Walk Time (s)		4.0	4.0		4.0		4.0	4.0	4.0	4.0	4.0	
Flash Dont Walk (s)		20.0	20.0		21.0		29.0	29.0	29.0	29.0	29.0	
Pedestrian Calls (#/hr)		10	10		10		10	10	10	10	10	
Act Effct Green (s)	17.5	53.9	53.9	20.5	56.9		13.2	13.2	13.2	16.4	16.4	
Actuated g/C Ratio	0.15	0.45	0.45	0.17	0.47		0.11	0.11	0.11	0.14	0.14	
v/c Ratio	0.78	0.50	0.60	0.83	0.81		0.31	0.32	0.27	0.57	0.40	
Control Delay	77.8	14.4	7.5	65.9	30.2		49.5	51.0	13.2	56.3	31.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	77.8	14.4	7.5	65.9	30.2		49.5	51.0	13.2	56.3	31.3	
LOS	E	B	A	E	C		D	D	B	E	C	
Approach Delay		18.7			34.3			40.7			41.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		0	250		0	250		0	150		0
Storage Lanes	1		1	1		0	2		1	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50		50	50	50	50	50	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	0.97	1.00	1.00	1.00	0.95	0.95
Frt			0.850		0.980				0.850		0.929	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	1583	1770	4984	0	3433	1863	1583	1770	3288	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	5085	1583	1770	4984	0	3433	1863	1583	1770	3288	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			169		26				153		130	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		816			680			2235			429	
Travel Time (s)		13.9			11.6			50.8			9.8	
Volume (vph)	117	1592	206	154	1157	182	464	288	141	287	134	120
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	127	1730	224	167	1258	198	504	313	153	312	146	130
Lane Group Flow (vph)	127	1730	224	167	1456	0	504	313	153	312	276	0
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	5	2		1	6		4	4		8	8	
Permitted Phases			2						4			
Detector Phases	5	2	2	1	6		4	4	4	8	8	
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	15.0	29.0	29.0	15.0	30.0		38.0	38.0	38.0	38.0	38.0	
Total Split (s)	15.0	31.0	31.0	15.0	31.0	0.0	26.0	26.0	26.0	38.0	38.0	0.0
Total Split (%)	13.6%	28.2%	28.2%	13.6%	28.2%	0.0%	23.6%	23.6%	23.6%	34.5%	34.5%	0.0%
Maximum Green (s)	11.5	26.0	26.0	11.5	26.0		21.0	21.0	21.0	33.0	33.0	
Yellow Time (s)	3.5	4.5	4.5	3.5	4.5		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	0.0	0.5	0.5	0.0	0.5		1.0	1.0	1.0	1.0	1.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Walk Time (s)		4.0	4.0		4.0		4.0	4.0	4.0	4.0	4.0	
Flash Dont Walk (s)		20.0	20.0		21.0		29.0	29.0	29.0	29.0	29.0	
Pedestrian Calls (#/hr)		10	10		10		10	10	10	10	10	
Act Effct Green (s)	11.8	32.8	32.8	14.8	35.8		21.3	21.3	21.3	25.1	25.1	
Actuated g/C Ratio	0.11	0.30	0.30	0.13	0.33		0.19	0.19	0.19	0.23	0.23	
v/c Ratio	0.67	1.14	0.38	0.70	0.89		0.76	0.87	0.36	0.77	0.32	
Control Delay	76.6	96.0	4.5	76.1	32.8		60.3	70.1	28.0	52.3	18.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	76.6	96.0	4.5	76.1	32.8		60.3	70.1	28.0	52.3	18.0	
LOS	E	F	A	E	C		E	E	C	D	B	
Approach Delay		84.9			37.3			58.4			36.2	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		175	350		200	0
Storage Lanes		1	2		1	1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0
Lane Util. Factor	0.91	1.00	0.97	0.91	0.97	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	5085	1583	3433	5085	3433	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	5085	1583	3433	5085	3433	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		504				71
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	40			40	30	
Link Distance (ft)	807			756	945	
Travel Time (s)	13.8			12.9	21.5	
Volume (vph)	608	464	521	1653	275	225
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	661	504	566	1797	299	245
Lane Group Flow (vph)	661	504	566	1797	299	245
Turn Type		Perm	Prot			custom
Protected Phases	2		1	6	8	
Permitted Phases		2				1 8
Detector Phases	2	2	1	6	8	1 8
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	26.0	26.0	20.5	21.0	31.0	
Total Split (s)	33.0	33.0	30.0	63.0	27.0	57.0
Total Split (%)	36.7%	36.7%	33.3%	70.0%	30.0%	63.3%
Maximum Green (s)	28.0	28.0	25.5	58.0	22.0	
Yellow Time (s)	4.5	4.5	4.0	4.5	4.0	
All-Red Time (s)	0.5	0.5	0.5	0.5	1.0	
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	None	C-Max	None	
Walk Time (s)	7.0	7.0			7.0	
Flash Dont Walk (s)	14.0	14.0			19.0	
Pedestrian Calls (#/hr)	10	10			10	
Act Effct Green (s)	42.5	42.5	20.5	67.0	15.0	39.5
Actuated g/C Ratio	0.47	0.47	0.23	0.74	0.17	0.44
v/c Ratio	0.27	0.50	0.72	0.47	0.52	0.33
Control Delay	16.6	4.0	42.5	2.1	36.8	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.6	4.0	42.5	2.1	36.8	11.2
LOS	B	A	D	A	D	B
Approach Delay	11.2			11.8	25.2	

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↱	↰↰	↑↑↑	↰↰	↱
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		175	350		200	0
Storage Lanes		1	2		1	1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0
Lane Util. Factor	0.91	1.00	0.97	0.91	0.97	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	5085	1583	3433	5085	3433	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	5085	1583	3433	5085	3433	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		213				5
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	40			40	30	
Link Distance (ft)	807			756	945	
Travel Time (s)	13.8			12.9	21.5	
Volume (vph)	1581	261	318	915	498	623
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1718	284	346	995	541	677
Lane Group Flow (vph)	1718	284	346	995	541	677
Turn Type		Perm	Prot			custom
Protected Phases	2		1	6	8	
Permitted Phases		2				1 8
Detector Phases	2	2	1	6	8	1 8
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	26.0	26.0	20.5	21.0	31.0	
Total Split (s)	53.0	53.0	26.0	79.0	31.0	57.0
Total Split (%)	48.2%	48.2%	23.6%	71.8%	28.2%	51.8%
Maximum Green (s)	48.0	48.0	21.5	74.0	26.0	
Yellow Time (s)	4.5	4.5	4.0	4.5	4.0	
All-Red Time (s)	0.5	0.5	0.5	0.5	1.0	
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	None	C-Max	None	
Walk Time (s)	7.0	7.0			7.0	
Flash Dont Walk (s)	14.0	14.0			19.0	
Pedestrian Calls (#/hr)	10	10			10	
Act Effct Green (s)	50.9	50.9	20.1	75.0	27.0	51.1
Actuated g/C Ratio	0.46	0.46	0.18	0.68	0.25	0.46
v/c Ratio	0.73	0.34	0.55	0.29	0.64	0.92
Control Delay	10.3	2.0	49.2	8.7	41.3	46.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.3	2.0	49.2	8.7	41.3	46.0
LOS	B	A	D	A	D	D
Approach Delay	9.1			19.1	43.9	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱		↰	↑↱		↰	↑↑	↱	↰	↑↱	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	200		0	200		0	250		0
Storage Lanes	1		0	1		0	1		1	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50	50	50	50	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Frt		0.961			0.962				0.850		0.976	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3401	0	1770	3405	0	1770	3539	1583	1770	3454	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3401	0	1770	3405	0	1770	3539	1583	1770	3454	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		62			60				64		28	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1870			470			1407			2235	
Travel Time (s)		42.5			10.7			32.0			50.8	
Volume (vph)	76	336	120	117	261	90	78	159	59	131	569	108
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	83	365	130	127	284	98	85	173	64	142	618	117
Lane Group Flow (vph)	83	495	0	127	382	0	85	173	64	142	735	0
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases									4			
Detector Phases	5	2		1	6		7	4	4	3	8	
Minimum Initial (s)	5.0	5.0		5.0	10.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	10.0	25.0		10.0	26.0		10.0	25.0	25.0	10.0	25.0	
Total Split (s)	13.0	26.0	0.0	14.0	27.0	0.0	12.0	25.0	25.0	15.0	28.0	0.0
Total Split (%)	16.3%	32.5%	0.0%	17.5%	33.8%	0.0%	15.0%	31.3%	31.3%	18.8%	35.0%	0.0%
Maximum Green (s)	8.0	21.0		9.0	22.0		7.0	20.0	20.0	10.0	23.0	
Yellow Time (s)	3.5	4.0		3.5	4.0		3.5	4.0	4.0	3.5	4.0	
All-Red Time (s)	1.5	1.0		1.5	1.0		1.5	1.0	1.0	1.5	1.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Max		None	None		None	None	None	None	None	
Walk Time (s)		4.0			4.0			4.0	4.0		4.0	
Flash Dont Walk (s)		16.0			17.0			16.0	16.0		16.0	
Pedestrian Calls (#/hr)		8			8			8	8		8	
Act Effct Green (s)	8.5	23.6		9.3	24.4		7.8	18.1	18.1	10.0	20.2	
Actuated g/C Ratio	0.12	0.33		0.13	0.34		0.11	0.25	0.25	0.14	0.28	
v/c Ratio	0.41	0.42		0.56	0.32		0.45	0.19	0.14	0.59	0.74	
Control Delay	39.4	20.9		43.3	18.6		42.0	23.6	7.4	42.8	28.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	39.4	20.9		43.3	18.6		42.0	23.6	7.4	42.8	28.2	
LOS	D	C		D	B		D	C	A	D	C	
Approach Delay		23.5			24.8			25.3			30.5	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	200		0	200		0	250		0
Storage Lanes	1		0	1		0	1		1	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50	50	50	50	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Frt		0.967			0.972				0.850		0.966	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3422	0	1770	3440	0	1770	3539	1583	1770	3419	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3422	0	1770	3440	0	1770	3539	1583	1770	3419	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		33			22				110		34	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1870			470			1407			2235	
Travel Time (s)		42.5			10.7			32.0			50.8	
Volume (vph)	200	282	78	49	342	77	132	864	101	136	386	112
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	217	307	85	53	372	84	143	939	110	148	420	122
Lane Group Flow (vph)	217	392	0	53	456	0	143	939	110	148	542	0
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases									4			
Detector Phases	5	2		1	6		7	4	4	3	8	
Minimum Initial (s)	5.0	5.0		5.0	10.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	10.0	25.0		10.0	26.0		10.0	25.0	25.0	10.0	25.0	
Total Split (s)	29.0	37.0	0.0	19.0	27.0	0.0	20.0	34.0	34.0	20.0	34.0	0.0
Total Split (%)	26.4%	33.6%	0.0%	17.3%	24.5%	0.0%	18.2%	30.9%	30.9%	18.2%	30.9%	0.0%
Maximum Green (s)	24.0	32.0		14.0	22.0		15.0	29.0	29.0	15.0	29.0	
Yellow Time (s)	3.5	4.0		3.5	4.0		3.5	4.0	4.0	3.5	4.0	
All-Red Time (s)	1.5	1.0		1.5	1.0		1.5	1.0	1.0	1.5	1.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Walk Time (s)		4.0			4.0			4.0	4.0		4.0	
Flash Dont Walk (s)		16.0			17.0			16.0	16.0		16.0	
Pedestrian Calls (#/hr)		8			8			8	8		8	
Act Effct Green (s)	19.0	41.1		9.6	29.5		13.9	31.3	31.3	14.1	31.6	
Actuated g/C Ratio	0.17	0.37		0.09	0.27		0.13	0.28	0.28	0.13	0.29	
v/c Ratio	0.71	0.30		0.34	0.49		0.64	0.93	0.21	0.65	0.54	
Control Delay	55.2	24.3		52.5	35.5		58.8	55.2	6.9	65.0	29.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	55.2	24.3		52.5	35.5		58.8	55.2	6.9	65.0	29.4	
LOS	E	C		D	D		E	E	A	E	C	
Approach Delay		35.3			37.2			51.2			37.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑	↱		↰↑	↱	↰	↑↱		↰	↑↱	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	0		0	200		0	180		0
Storage Lanes	0		1	0		1	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.972			0.951	
Flt Protected		0.974			0.970		0.950			0.950		
Satd. Flow (prot)	0	1814	1583	0	1807	1583	1770	3440	0	1770	3366	0
Flt Permitted		0.844			0.817		0.359			0.508		
Satd. Flow (perm)	0	1572	1583	0	1522	1583	669	3440	0	946	3366	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			25			49		64			191	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		858			619			2235			432	
Travel Time (s)		19.5			14.1			50.8			9.8	
Volume (vph)	44	39	23	43	26	45	178	307	71	63	417	202
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	48	42	25	47	28	49	193	334	77	68	453	220
Lane Group Flow (vph)	0	90	25	0	75	49	193	411	0	68	673	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phases	4	4	4	8	8	8	2	2		6	6	
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	20.0	20.0		7.0	7.0	
Minimum Split (s)	26.0	26.0	26.0	25.0	25.0	25.0	28.0	28.0		27.0	27.0	
Total Split (s)	27.0	27.0	27.0	27.0	27.0	27.0	43.0	43.0	0.0	43.0	43.0	0.0
Total Split (%)	38.6%	38.6%	38.6%	38.6%	38.6%	38.6%	61.4%	61.4%	0.0%	61.4%	61.4%	0.0%
Maximum Green (s)	22.0	22.0	22.0	22.0	22.0	22.0	38.0	38.0		38.0	38.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Min	Min		Min	Min	
Walk Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	17.0	17.0	17.0	16.0	16.0	16.0	19.0	19.0		18.0	18.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)		11.2	11.2		11.1	11.1	42.2	42.2		42.2	42.2	
Actuated g/C Ratio		0.18	0.18		0.18	0.18	0.75	0.75		0.75	0.75	
v/c Ratio		0.31	0.08		0.27	0.15	0.39	0.16		0.10	0.26	
Control Delay		17.2	8.0		16.7	6.9	7.5	3.0		4.2	2.8	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		17.2	8.0		16.7	6.9	7.5	3.0		4.2	2.8	
LOS		B	A		B	A	A	A		A	A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑	↱		↰↑	↱	↰	↑↑↱		↰	↑↑↱	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	0		0	200		0	180		0
Storage Lanes	0		1	0		1	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.995			0.991	
Flt Protected		0.955			0.960		0.950			0.950		
Satd. Flow (prot)	0	1779	1583	0	1788	1583	1770	3522	0	1770	3507	0
Flt Permitted		0.610			0.575		0.950			0.950		
Satd. Flow (perm)	0	1136	1583	0	1071	1583	1770	3522	0	1770	3507	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			174			83		4			7	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		858			619			2235			432	
Travel Time (s)		19.5			14.1			50.8			9.8	
Volume (vph)	215	11	160	117	24	76	32	698	24	15	660	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	234	12	174	127	26	83	35	759	26	16	717	45
Lane Group Flow (vph)	0	246	174	0	153	83	35	785	0	16	762	0
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						
Detector Phases	4	4	4	8	8	8	5	2		1	6	
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	20.0		4.0	7.0	
Minimum Split (s)	26.0	26.0	26.0	27.0	27.0	27.0	15.0	29.0		15.0	28.0	
Total Split (s)	39.0	39.0	39.0	39.0	39.0	39.0	18.0	33.0	0.0	18.0	33.0	0.0
Total Split (%)	43.3%	43.3%	43.3%	43.3%	43.3%	43.3%	20.0%	36.7%	0.0%	20.0%	36.7%	0.0%
Maximum Green (s)	34.0	34.0	34.0	34.0	34.0	34.0	14.0	28.0		14.0	28.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	0.5	1.5		0.5	1.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min		None	Min	
Walk Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Flash Dont Walk (s)	17.0	17.0	17.0	18.0	18.0	18.0		20.0			19.0	
Pedestrian Calls (#/hr)	2	2	2	2	2	2		2			2	
Act Effct Green (s)		18.0	18.0		17.6	17.6	6.9	31.7		6.4	29.6	
Actuated g/C Ratio		0.31	0.31		0.31	0.31	0.11	0.57		0.10	0.54	
v/c Ratio		0.69	0.28		0.47	0.15	0.17	0.39		0.09	0.40	
Control Delay		28.0	4.2		20.6	4.9	31.3	12.0		33.7	14.5	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		28.0	4.2		20.6	4.9	31.3	12.0		33.7	14.5	
LOS		C	A		C	A	C	B		C	B	

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱		↰	↑↱		↰	↑↱	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	115		0	0		0	300		0	300		0
Storage Lanes	1		0	1		0	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		15	20		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.904			0.900			0.976			0.959	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1684	0	1770	1676	0	1770	3454	0	1770	3394	0
Flt Permitted	0.750			0.726			0.544			0.149		
Satd. Flow (perm)	1397	1684	0	1352	1676	0	1013	3454	0	278	3394	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30			8			35			85	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		880			360			819			2235	
Travel Time (s)		20.0			8.2			18.6			50.8	
Volume (vph)	62	16	28	26	4	7	75	829	161	22	216	82
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	17	30	28	4	8	82	901	175	24	235	89
Lane Group Flow (vph)	67	47	0	28	12	0	82	1076	0	24	324	0
Turn Type	pm+pt			pm+pt			Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	7	4		3	8		2	2		6	6	
Minimum Initial (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	8.0	24.0		8.0	26.0		27.0	27.0		27.0	27.0	
Total Split (s)	12.0	30.0	0.0	12.0	30.0	0.0	43.0	43.0	0.0	43.0	43.0	0.0
Total Split (%)	14.1%	35.3%	0.0%	14.1%	35.3%	0.0%	50.6%	50.6%	0.0%	50.6%	50.6%	0.0%
Maximum Green (s)	8.0	25.0		8.0	25.0		38.0	38.0		38.0	38.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	1.5		0.5	1.5		1.5	1.5		1.5	1.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		12.0			14.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	10.6	9.1		9.3	8.4		50.2	50.2		50.2	50.2	
Actuated g/C Ratio	0.16	0.14		0.14	0.12		0.83	0.83		0.83	0.83	
v/c Ratio	0.25	0.19		0.12	0.06		0.10	0.38		0.10	0.11	
Control Delay	14.7	12.3		15.8	15.6		4.3	4.2		6.5	2.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	14.7	12.3		15.8	15.6		4.3	4.2		6.5	2.6	
LOS	B	B		B	B		A	A		A	A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	115		0	0		0	300		0	300		0
Storage Lanes	1		0	1		0	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	200		50	200	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		15	20		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.853			0.888			0.996			0.982	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1589	0	1770	1654	0	1770	3525	0	1770	3476	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1589	0	1770	1654	0	1770	3525	0	1770	3476	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		86			24			3			16	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		880			360			428			2235	
Travel Time (s)		20.0			8.2			9.7			50.8	
Volume (vph)	115	2	79	144	7	22	47	461	12	9	842	114
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	125	2	86	157	8	24	51	501	13	10	915	124
Lane Group Flow (vph)	125	88	0	157	32	0	51	514	0	10	1039	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Detector Phases	7	4		3	8		5	2		1	6	
Minimum Initial (s)	4.0	5.0		4.0	5.0		4.0	5.0		4.0	5.0	
Minimum Split (s)	15.0	33.0		15.0	31.0		15.0	35.0		15.0	27.0	
Total Split (s)	17.0	33.0	0.0	15.0	31.0	0.0	15.0	37.0	0.0	15.0	37.0	0.0
Total Split (%)	17.0%	33.0%	0.0%	15.0%	31.0%	0.0%	15.0%	37.0%	0.0%	15.0%	37.0%	0.0%
Maximum Green (s)	13.0	28.0		11.0	26.0		11.0	32.0		11.0	32.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	1.5		0.5	1.5		0.5	1.5		0.5	1.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		21.0			19.0			23.0			15.0	
Pedestrian Calls (#/hr)		2			2			2			2	
Act Effct Green (s)	15.7	10.7		10.3	10.5		7.7	42.8		6.1	37.4	
Actuated g/C Ratio	0.20	0.14		0.14	0.13		0.10	0.57		0.07	0.49	
v/c Ratio	0.35	0.30		0.65	0.13		0.30	0.26		0.08	0.60	
Control Delay	32.2	10.0		47.0	16.6		39.9	11.8		42.1	20.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	32.2	10.0		47.0	16.6		39.9	11.8		42.1	20.0	
LOS	C	A		D	B		D	B		D	B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	135		0	150		110	130		0	280		0
Storage Lanes	1		0	1		1	2		0	2		0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Leading Detector (ft)	50	50		50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Lane Util. Factor	1.00	0.95	0.95	0.97	0.95	1.00	0.97	0.95	0.95	0.97	0.95	0.95
Frt		0.969				0.850		0.929			0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3429	0	3433	3539	1583	3433	3288	0	3433	3493	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3429	0	3433	3539	1583	3433	3288	0	3433	3493	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17				120		119			5	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		793			317			1498			810	
Travel Time (s)		18.0			7.2			34.0			18.4	
Volume (vph)	38	761	200	397	308	200	206	491	446	260	276	26
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	41	827	217	432	335	217	224	534	485	283	300	28
Lane Group Flow (vph)	41	1044	0	432	335	217	224	1019	0	283	328	0
Turn Type	Prot			Prot		Free	Prot			Prot		
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases						Free						
Detector Phases	5	2		1	6		7	4		3	8	
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	15.0	65.0		15.0	36.0		15.0	28.0		15.0	29.0	
Total Split (s)	35.0	65.0	0.0	35.0	65.0	0.0	35.0	65.0	0.0	35.0	65.0	0.0
Total Split (%)	17.5%	32.5%	0.0%	17.5%	32.5%	0.0%	17.5%	32.5%	0.0%	17.5%	32.5%	0.0%
Maximum Green (s)	31.0	60.0		31.0	60.0		31.0	60.0		31.0	60.0	
Yellow Time (s)	4.0	4.5		4.0	4.5		4.0	4.5		4.0	4.5	
All-Red Time (s)	0.0	0.5		0.0	0.5		0.0	0.5		0.0	0.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Walk Time (s)		4.0			4.0			4.0			4.0	
Flash Dont Walk (s)		21.0			27.0			19.0			20.0	
Pedestrian Calls (#/hr)		3			3			3			3	
Act Effct Green (s)	10.5	57.5		26.8	76.6	171.9	17.6	54.7		20.5	57.6	
Actuated g/C Ratio	0.06	0.33		0.16	0.45	1.00	0.10	0.32		0.12	0.34	
v/c Ratio	0.38	0.90		0.81	0.21	0.14	0.64	0.90		0.69	0.28	
Control Delay	95.6	66.5		84.9	32.5	0.2	86.0	62.1		84.7	43.3	
Queue Delay	0.0	0.6		11.8	1.4	0.0	0.0	0.0		0.2	0.0	
Total Delay	95.6	67.1		96.7	33.9	0.2	86.0	62.1		84.9	43.3	
LOS	F	E		F	C	A	F	E		F	D	
Approach Delay		68.2			54.0			66.4			62.6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	135		0	150		0	130		0	280		0
Storage Lanes	1		0	2		1	2		0	2		0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Leading Detector (ft)	50	50		50	50	50	50	200		50	200	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Lane Util. Factor	1.00	0.95	0.95	0.97	0.95	1.00	0.97	0.95	0.95	0.97	0.95	0.95
Frt		0.952				0.850		0.921			0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3369	0	3433	3539	1583	3433	3260	0	3433	3493	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3369	0	3433	3539	1583	3433	3260	0	3433	3493	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		47				178		197			7	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		793			317			1498			914	
Travel Time (s)		18.0			7.2			34.0			20.8	
Volume (vph)	15	313	147	1039	530	179	89	431	483	294	430	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	340	160	1129	576	195	97	468	525	320	467	43
Lane Group Flow (vph)	16	500	0	1129	576	195	97	993	0	320	510	0
Turn Type	Prot			Prot		Free	Prot			Prot		
Protected Phases	5	2		1 9	6		7	4		3	8	
Permitted Phases						Free						
Detector Phases	5	2		1 9	6		7	4		3	8	
Minimum Initial (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	15.0	15.0			15.0		15.0	15.0		15.0	15.0	
Total Split (s)	15.0	28.0	0.0	54.0	67.0	0.0	15.0	43.0	0.0	18.0	46.0	0.0
Total Split (%)	10.5%	19.6%	0.0%	37.8%	46.9%	0.0%	10.5%	30.1%	0.0%	12.6%	32.2%	0.0%
Maximum Green (s)	11.0	23.0			62.0		11.0	38.0		14.0	41.0	
Yellow Time (s)	4.0	4.5			4.5		4.0	4.5		4.0	4.5	
All-Red Time (s)	0.0	0.5			0.5		0.0	0.5		0.0	0.5	
Lead/Lag	Lead	Lag			Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	3.0			3.0		1.0	3.0		1.0	3.0	
Minimum Gap (s)	1.0	0.5			3.0		1.0	0.5		1.0	0.5	
Time Before Reduce (s)	0.0	10.0			0.0		0.0	10.0		0.0	8.0	
Time To Reduce (s)	0.0	5.0			0.0		0.0	4.0		0.0	4.0	
Recall Mode	None	None			None		None	None		None	None	
Walk Time (s)		4.0			4.0			4.0			4.0	
Flash Dont Walk (s)		24.0			21.0			22.0			28.0	
Pedestrian Calls (#/hr)		3			3			3			3	
Act Effct Green (s)	6.5	24.6		48.1	74.7	141.7	8.5	39.3		14.7	45.5	
Actuated g/C Ratio	0.04	0.17		0.34	0.53	1.00	0.06	0.28		0.10	0.32	
v/c Ratio	0.21	0.80		0.97	0.31	0.12	0.47	0.95		0.90	0.45	
Control Delay	73.8	61.3		49.1	20.2	0.2	72.6	58.1		91.1	39.9	
Queue Delay	0.0	0.0		49.7	4.0	0.0	0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↱			↑↑↑	↱		✥		↰	↰↑	↱↱
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	505		500
Storage Lanes	0		0	0		1	0		0	1		1
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Leading Detector (ft)		50			50	50	50	50		50	50	50
Trailing Detector (ft)		0			0	0	0	0		0	0	0
Lane Util. Factor	1.00	0.86	0.86	1.00	0.91	1.00	1.00	1.00	1.00	0.95	0.95	0.88
Frt		0.999				0.850		0.869				0.850
Flt Protected								0.999		0.950	0.954	
Satd. Flow (prot)	0	6401	0	0	5085	1583	0	1617	0	1681	1688	2787
Flt Permitted								0.992		0.720	0.687	
Satd. Flow (perm)	0	6401	0	0	5085	1583	0	1606	0	1274	1216	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				907		4				136
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		317			132			166			770	
Travel Time (s)		7.2			3.0			3.8			17.5	
Volume (vph)	0	1375	8	0	680	834	3	0	101	733	12	248
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1495	9	0	739	907	3	0	110	797	13	270
Lane Group Flow (vph)	0	1504	0	0	739	907	0	113	0	399	411	270
Turn Type						Perm	Perm			Perm		Perm
Protected Phases		2			6			8			4	
Permitted Phases						6	8			4		4
Detector Phases		2			6	6	8	8		4	4	4
Minimum Initial (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)		21.0			21.0	21.0	10.0	10.0		10.0	10.0	10.0
Total Split (s)	0.0	29.0	0.0	0.0	29.0	29.0	41.0	41.0	0.0	41.0	41.0	41.0
Total Split (%)	0.0%	41.4%	0.0%	0.0%	41.4%	41.4%	58.6%	58.6%	0.0%	58.6%	58.6%	58.6%
Maximum Green (s)		24.0			24.0	24.0	36.0	36.0		36.0	36.0	36.0
Yellow Time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)		1.0			1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode		Min			Min	Min	None	None		None	None	None
Walk Time (s)		5.0			5.0	5.0						
Flash Dont Walk (s)		11.0			11.0	11.0						
Pedestrian Calls (#/hr)		2			2	2						
Act Effct Green (s)		23.0			23.0	23.0		25.8		25.8	25.8	25.8
Actuated g/C Ratio		0.42			0.42	0.42		0.47		0.47	0.47	0.47
v/c Ratio		0.57			0.35	0.76		0.15		0.67	0.72	0.20
Control Delay		14.8			13.2	6.7		8.6		17.7	20.1	4.6
Queue Delay		0.1			0.1	0.0		0.0		0.0	0.0	0.0
Total Delay		14.9			13.3	6.7		8.6		17.7	20.1	4.6
LOS		B			B	A		A		B	C	A
Approach Delay		14.9			9.7			8.6			15.4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	0		500
Storage Lanes	0		0	0		1	0		0	1		2
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Leading Detector (ft)		150			150	50	50	50		50	50	50
Trailing Detector (ft)		0			0	0	0	0		0	0	0
Lane Util. Factor	1.00	0.86	0.86	1.00	0.91	1.00	1.00	1.00	1.00	0.95	0.95	0.88
Frt		0.999				0.850		0.871				0.850
Flt Protected								0.998		0.950	0.955	
Satd. Flow (prot)	0	6401	0	0	5085	1583	0	1619	0	1681	1690	2787
Flt Permitted								0.998		0.950	0.955	
Satd. Flow (perm)	0	6401	0	0	5085	1583	0	1619	0	1681	1690	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				1091		15				374
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		317			132			492			837	
Travel Time (s)		7.2			3.0			11.2			19.0	
Volume (vph)	0	1150	10	0	1260	1445	5	0	101	817	21	344
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1250	11	0	1370	1571	5	0	110	888	23	374
Lane Group Flow (vph)	0	1261	0	0	1370	1571	0	115	0	444	467	374
Turn Type						Free	Split			Split		Prot
Protected Phases		2			6		3	3		4	4	4
Permitted Phases						Free						
Detector Phases		2			6		3	3		4	4	4
Minimum Initial (s)		4.0			4.0		3.0	3.0		3.0	3.0	3.0
Minimum Split (s)		28.0			15.0		15.0	15.0		15.0	15.0	15.0
Total Split (s)	0.0	28.0	0.0	0.0	28.0	0.0	15.0	15.0	0.0	22.0	22.0	22.0
Total Split (%)	0.0%	43.1%	0.0%	0.0%	43.1%	0.0%	23.1%	23.1%	0.0%	33.8%	33.8%	33.8%
Maximum Green (s)		23.0			23.0		11.0	11.0		18.0	18.0	18.0
Yellow Time (s)		4.0			4.0		3.0	3.0		3.0	3.0	3.0
All-Red Time (s)		1.0			1.0		1.0	1.0		1.0	1.0	1.0
Lead/Lag							Lag	Lag		Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode		Min			Min		None	None		None	None	None
Walk Time (s)		7.0										
Flash Dont Walk (s)		16.0										
Pedestrian Calls (#/hr)		2										
Act Effct Green (s)		24.1			24.1	58.9		9.7		18.5	18.5	18.5
Actuated g/C Ratio		0.41			0.41	1.00		0.16		0.31	0.31	0.31
v/c Ratio		0.48			0.66	0.99		0.42		0.84	0.88	0.33
Control Delay		14.5			17.0	24.8		26.3		38.9	43.1	3.3
Queue Delay		0.0			0.7	0.0		0.6		0.0	0.0	0.3
Total Delay		14.5			17.7	24.8		26.9		38.9	43.1	3.6
LOS		B			B	C		C		D	D	A
Approach Delay		14.5			21.5			26.9			30.1	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↱		↑↑↑		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		0	0
Storage Lanes		1	0		0	0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	5085	1583	0	5085	0	0
Flt Permitted						
Satd. Flow (perm)	5085	1583	0	5085	0	0
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	30			30	30	
Link Distance (ft)	132			774	483	
Travel Time (s)	3.0			17.6	11.0	
Volume (vph)	1728	482	0	1511	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1878	524	0	1642	0	0
Lane Group Flow (vph)	1878	524	0	1642	0	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 36.7% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↱		↑↑↑		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		0	0
Storage Lanes		1	0		0	0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	5085	1583	0	5085	0	0
Flt Permitted						
Satd. Flow (perm)	5085	1583	0	5085	0	0
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	30			30	30	
Link Distance (ft)	132			774	975	
Travel Time (s)	3.0			17.6	22.2	
Volume (vph)	1516	504	0	2700	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1648	548	0	2935	0	0
Lane Group Flow (vph)	1648	548	0	2935	0	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 55.5% ICU Level of Service B
Analysis Period (min) 15

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱	↰		↱↱			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		200	0		0	0		510	0		0
Storage Lanes	0		1	0		0	1		2	0		0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Leading Detector (ft)		50	50		50	50	50		50			
Trailing Detector (ft)		0	0		0	0	0		0			
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	0.88	1.00	1.00	1.00
Frt			0.850			0.850			0.850			
Flt Protected							0.950					
Satd. Flow (prot)	0	5085	1583	0	5085	1583	1770	0	2787	0	0	0
Flt Permitted							0.950					
Satd. Flow (perm)	0	5085	1583	0	5085	1583	1770	0	2787	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			362			555			24			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		774			1191			930			428	
Travel Time (s)		17.6			27.1			21.1			9.7	
Volume (vph)	0	1349	386	0	1218	511	280	0	1646	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1466	420	0	1324	555	304	0	1789	0	0	0
Lane Group Flow (vph)	0	1466	420	0	1324	555	304	0	1789	0	0	0
Turn Type			Free			Free	custom		custom			
Protected Phases		2			6							
Permitted Phases			Free			Free	4		4			
Detector Phases		2			6		4		4			
Minimum Initial (s)		5.0			5.0		5.0		5.0			
Minimum Split (s)		21.0			21.0		10.0		10.0			
Total Split (s)	0.0	35.0	0.0	0.0	35.0	0.0	35.0	0.0	35.0	0.0	0.0	0.0
Total Split (%)	0.0%	50.0%	0.0%	0.0%	50.0%	0.0%	50.0%	0.0%	50.0%	0.0%	0.0%	0.0%
Maximum Green (s)		30.0			30.0		30.0		30.0			
Yellow Time (s)		4.0			4.0		4.0		4.0			
All-Red Time (s)		1.0			1.0		1.0		1.0			
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Recall Mode		Max			Max		None		None			
Walk Time (s)		5.0			5.0							
Flash Dont Walk (s)		11.0			11.0							
Pedestrian Calls (#/hr)		0			0							
Act Effct Green (s)		32.0	70.0		32.0	70.0	32.0		32.0			
Actuated g/C Ratio		0.46	1.00		0.46	1.00	0.46		0.46			
v/c Ratio		0.63	0.27		0.57	0.35	0.38		1.39			
Control Delay		16.0	0.4		15.2	0.6	14.2		202.1			
Queue Delay		0.0	0.0		0.0	0.0	0.0		0.0			
Total Delay		16.0	0.4		15.2	0.6	14.2		202.1			
LOS		B	A		B	A	B		F			
Approach Delay		12.5			10.9							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑↱	↱	↰		↱↱			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		200	0		0	0		510	0		0
Storage Lanes	0		1	0		0	1		2	0		0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Leading Detector (ft)		250	50		250	50	50		50			
Trailing Detector (ft)		0	0		0	0	0		0			
Lane Util. Factor	1.00	0.91	1.00	1.00	0.86	0.86	1.00	1.00	0.88	1.00	1.00	1.00
Frt			0.850			0.850			0.850			
Flt Protected							0.950					
Satd. Flow (prot)	0	5085	1583	0	4806	1362	1770	0	2787	0	0	0
Flt Permitted							0.950					
Satd. Flow (perm)	0	5085	1583	0	4806	1362	1770	0	2787	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			187			436			66			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		774			1191			861			748	
Travel Time (s)		17.6			27.1			19.6			17.0	
Volume (vph)	0	1305	248	0	2325	892	439	0	923	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1418	270	0	2527	970	477	0	1003	0	0	0
Lane Group Flow (vph)	0	1418	270	0	2527	970	477	0	1003	0	0	0
Turn Type			Free			Free	custom		custom			
Protected Phases		2			6							
Permitted Phases			Free			Free	8		8			
Detector Phases		2			6		8		8			
Minimum Initial (s)		10.0			10.0		4.0		4.0			
Minimum Split (s)		24.0			21.0		10.0		10.0			
Total Split (s)	0.0	54.0	0.0	0.0	54.0	0.0	36.0	0.0	36.0	0.0	0.0	0.0
Total Split (%)	0.0%	60.0%	0.0%	0.0%	60.0%	0.0%	40.0%	0.0%	40.0%	0.0%	0.0%	0.0%
Maximum Green (s)		49.0			49.0		32.0		32.0			
Yellow Time (s)		4.0			4.0		3.0		3.0			
All-Red Time (s)		1.0			1.0		1.0		1.0			
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Recall Mode		Min			Min		None		None			
Walk Time (s)		7.0										
Flash Dont Walk (s)		12.0										
Pedestrian Calls (#/hr)		2										
Act Effct Green (s)		51.0	90.0		51.0	90.0	33.0		33.0			
Actuated g/C Ratio		0.57	1.00		0.57	1.00	0.37		0.37			
v/c Ratio		0.49	0.17		0.93	0.71	0.73		0.94			
Control Delay		12.4	0.2		25.5	3.2	32.8		43.8			
Queue Delay		0.0	0.0		0.0	0.0	0.0		0.0			
Total Delay		12.4	0.2		25.5	3.2	32.8		43.8			
LOS		B	A		C	A	C		D			
Approach Delay		10.5			19.3							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	310		310	360		240	0		0	0		0
Storage Lanes	2		1	1		1	1		1	0		2
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Leading Detector (ft)	50	200	50	50	200	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Util. Factor	0.97	0.91	1.00	1.00	0.86	1.00	0.95	0.95	1.00	1.00	1.00	0.88
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.966			0.967	
Satd. Flow (prot)	3433	5085	1583	1770	6408	1583	1681	1709	1583	0	1801	2787
Flt Permitted	0.950			0.950			0.950	0.966			0.967	
Satd. Flow (perm)	3433	5085	1583	1770	6408	1583	1681	1709	1583	0	1801	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			602			74			37			154
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1191			975			301			524	
Travel Time (s)		27.1			22.2			6.8			11.9	
Volume (vph)	1033	1495	567	215	1469	70	52	9	34	83	39	142
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1123	1625	616	234	1597	76	57	10	37	90	42	154
Lane Group Flow (vph)	1123	1625	616	234	1597	76	33	34	37	0	132	154
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Prot
Protected Phases	5	2		1	6		8	8		4	4	4
Permitted Phases			2			6			8			
Detector Phases	5	2	2	1	6	6	8	8	8	4	4	4
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	15.0	32.0	32.0	15.0	29.0	29.0	37.5	37.5	37.5	15.0	15.0	15.0
Total Split (s)	30.0	30.0	30.0	28.0	28.0	28.0	33.0	33.0	33.0	19.0	19.0	19.0
Total Split (%)	27.3%	27.3%	27.3%	25.5%	25.5%	25.5%	30.0%	30.0%	30.0%	17.3%	17.3%	17.3%
Maximum Green (s)	26.0	25.0	25.0	24.0	23.0	23.0	28.5	28.5	28.5	14.5	14.5	14.5
Yellow Time (s)	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	0.5	0.5	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Walk Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0			
Flash Dont Walk (s)		18.0	18.0		15.0	15.0	29.0	29.0	29.0			
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0			
Act Effct Green (s)	52.2	52.2	52.2	25.0	25.0	25.0	9.0	9.0	9.0		13.8	13.8
Actuated g/C Ratio	0.47	0.47	0.47	0.23	0.23	0.23	0.08	0.08	0.08		0.13	0.13
v/c Ratio	0.69	0.67	0.58	0.58	1.10	0.18	0.24	0.24	0.23		0.58	0.32
Control Delay	26.8	25.3	4.4	31.9	85.2	11.5	50.9	50.9	18.1		55.8	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	26.8	25.3	4.4	31.9	85.2	11.5	50.9	50.9	18.1		55.8	8.6
LOS	C	C	A	C	F	B	D	D	B		E	A
Approach Delay		22.0			75.7			39.2			30.4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	310		310	360		240	0		0	0		0
Storage Lanes	2		1	1		1	1		1	0		2
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Leading Detector (ft)	50	250	50	50	250	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Util. Factor	0.97	0.91	1.00	1.00	0.86	1.00	0.95	0.95	1.00	1.00	1.00	0.88
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.958			0.956	
Satd. Flow (prot)	3433	5085	1583	1770	6408	1583	1681	1695	1583	0	1781	2787
Flt Permitted	0.950			0.950			0.950	0.958			0.956	
Satd. Flow (perm)	3433	5085	1583	1770	6408	1583	1681	1695	1583	0	1781	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			43			113			108			64
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1191			975			768			276	
Travel Time (s)		27.1			22.2			17.5			6.3	
Volume (vph)	402	1883	43	28	1817	140	494	35	99	142	13	902
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	437	2047	47	30	1975	152	537	38	108	154	14	980
Lane Group Flow (vph)	437	2047	47	30	1975	152	280	295	108	0	168	980
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		pm+ov
Protected Phases	5	2		1	6		8	8		4	4	5
Permitted Phases			2			6			8			4
Detector Phases	5	2	2	1	6	6	8	8	8	4	4	5
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	15.0	30.0	30.0	15.0	29.0	29.0	37.5	37.5	37.5	15.0	15.0	15.0
Total Split (s)	34.0	62.5	62.5	15.0	43.5	43.5	37.5	37.5	37.5	15.0	15.0	34.0
Total Split (%)	26.2%	48.1%	48.1%	11.5%	33.5%	33.5%	28.8%	28.8%	28.8%	11.5%	11.5%	26.2%
Maximum Green (s)	30.0	57.5	57.5	11.0	38.5	38.5	33.0	33.0	33.0	10.5	10.5	30.0
Yellow Time (s)	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	0.5	0.5	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Walk Time (s)		4.0	4.0				4.0	4.0	4.0			
Flash Dont Walk (s)		21.0	21.0				29.0	29.0	29.0			
Pedestrian Calls (#/hr)		2	2				2	2	2			
Act Effct Green (s)	37.2	71.7	71.7	10.0	40.5	40.5	28.3	28.3	28.3		12.0	49.2
Actuated g/C Ratio	0.29	0.55	0.55	0.08	0.31	0.31	0.22	0.22	0.22		0.09	0.38
v/c Ratio	0.45	0.73	0.05	0.22	0.99	0.27	0.77	0.80	0.25		1.02	0.90
Control Delay	41.0	26.3	6.4	46.2	50.4	6.8	61.2	63.8	8.2		134.1	39.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	41.0	26.3	6.4	46.2	50.4	6.8	61.2	63.8	8.2		134.1	39.1
LOS	D	C	A	D	D	A	E	E	A		F	D
Approach Delay		28.4			47.3			53.9			53.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰	↑↑↑	↱	↰	↑↑↑↱		↰	↑	↱	↰↰	↱	↱
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	280		180	250		0	390		390	280		0
Storage Lanes	2		1	1		0	1		1	1		1
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Leading Detector (ft)	50	200	50	50	200		50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Lane Util. Factor	0.97	0.91	1.00	1.00	0.86	0.86	1.00	1.00	1.00	0.97	0.95	0.95
Frt			0.850		0.972						0.952	0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5085	1583	1770	6228	0	1770	1863	1863	3433	1685	1504
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5085	1583	1770	6228	0	1770	1863	1863	3433	1685	1504
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			263		49						21	91
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		975			676			556			819	
Travel Time (s)		22.2			15.4			12.6			18.6	
Volume (vph)	672	747	242	24	1628	373	12	19	0	76	41	103
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	730	812	263	26	1770	405	13	21	0	83	45	112
Lane Group Flow (vph)	730	812	263	26	2175	0	13	21	0	83	66	91
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		custom
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2						4			1 8
Detector Phases	5	2	2	1	6		7	4	4	3	8	1 8
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	15.0	31.0	31.0	15.0	29.0		15.0	21.0	21.0	15.0	40.0	
Total Split (s)	24.0	34.0	34.0	19.0	29.0	0.0	20.0	23.0	23.0	34.0	37.0	56.0
Total Split (%)	21.8%	30.9%	30.9%	17.3%	26.4%	0.0%	18.2%	20.9%	20.9%	30.9%	33.6%	50.9%
Maximum Green (s)	20.0	29.0	29.0	15.0	24.0		16.0	18.0	18.0	30.0	32.0	
Yellow Time (s)	4.0	4.5	4.5	4.0	4.5		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	0.0	0.5	0.5	0.0	0.5		0.0	1.0	1.0	0.0	1.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Walk Time (s)		4.0	4.0		4.0						4.0	
Flash Dont Walk (s)		22.0	22.0		20.0						31.0	
Pedestrian Calls (#/hr)		0	0		0						0	
Act Effct Green (s)	36.4	82.8	82.8	8.2	52.0		7.2	8.7		9.3	12.3	21.6
Actuated g/C Ratio	0.33	0.75	0.75	0.07	0.47		0.07	0.08		0.08	0.11	0.20
v/c Ratio	0.64	0.21	0.21	0.20	0.73		0.11	0.14		0.29	0.32	0.25
Control Delay	36.0	12.2	7.4	45.8	21.7		50.1	48.8		49.2	35.4	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	36.0	12.2	7.4	45.8	21.7		50.1	48.8		49.2	35.4	8.4
LOS	D	B	A	D	C		D	D		D	D	A
Approach Delay		21.2			22.0			49.3			29.9	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	280		180	250		0	390		390	280		0
Storage Lanes	2		1	1		0	1		1	1		1
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Leading Detector (ft)	50	250	50	50	250		50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Lane Util. Factor	0.97	0.91	1.00	1.00	0.86	0.86	1.00	1.00	1.00	0.97	0.95	0.95
Frt			0.850		0.981				0.850		0.859	0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5085	1583	1770	6286	0	1770	1863	1583	3433	1520	1504
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5085	1583	1770	6286	0	1770	1863	1583	3433	1520	1504
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			10		28				39		258	32
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		975			676			438			378	
Travel Time (s)		22.2			15.4			10.0			8.6	
Volume (vph)	350	1868	18	12	1011	146	347	34	36	518	18	603
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	380	2030	20	13	1099	159	377	37	39	563	20	655
Lane Group Flow (vph)	380	2030	20	13	1258	0	377	37	39	563	337	338
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		pm+ov
Protected Phases	5	2		1	6		7	4		3	8	5
Permitted Phases			2						4			8
Detector Phases	5	2	2	1	6		7	4	4	3	8	5
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	15.0	32.0	32.0	15.0	30.0		15.0	15.0	15.0	15.0	38.0	15.0
Total Split (s)	24.0	50.0	50.0	15.0	41.0	0.0	27.0	33.0	33.0	32.0	38.0	24.0
Total Split (%)	18.5%	38.5%	38.5%	11.5%	31.5%	0.0%	20.8%	25.4%	25.4%	24.6%	29.2%	18.5%
Maximum Green (s)	20.0	45.0	45.0	11.0	36.0		23.0	28.0	28.0	28.0	33.0	20.0
Yellow Time (s)	4.0	4.5	4.5	4.0	4.5		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	0.5	0.5	0.0	0.5		0.0	1.0	1.0	0.0	1.0	0.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	None
Walk Time (s)		4.0	4.0		4.0						4.0	
Flash Dont Walk (s)		23.0	23.0		21.0						29.0	
Pedestrian Calls (#/hr)		2	2		2						2	
Act Effct Green (s)	19.5	58.1	58.1	7.5	40.1		41.0	9.9	9.9	50.6	17.4	36.9
Actuated g/C Ratio	0.15	0.45	0.45	0.06	0.31		0.32	0.08	0.08	0.39	0.13	0.28
v/c Ratio	0.74	0.89	0.03	0.13	0.64		0.68	0.26	0.25	0.42	0.79	0.75
Control Delay	79.4	25.5	9.8	55.4	38.6		47.5	60.6	20.1	31.1	26.2	29.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.4	25.5	9.8	55.4	38.6		47.5	60.6	20.1	31.1	26.2	29.6
LOS	E	C	A	E	D		D	E	C	C	C	C
Approach Delay		33.8			38.7			46.2			29.4	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		320	0
Storage Lanes		0	1		1	1
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Leading Detector (ft)	200		50	200	50	50
Trailing Detector (ft)	0		0	0	0	0
Lane Util. Factor	0.91	0.91	1.00	0.91	1.00	1.00
Frt	0.994					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	5055	0	1770	5085	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	5055	0	1770	5085	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	6					9
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	30			30	30	
Link Distance (ft)	676			441	427	
Travel Time (s)	15.4			10.0	9.7	
Volume (vph)	792	32	37	1959	10	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	861	35	40	2129	11	9
Lane Group Flow (vph)	896	0	40	2129	11	9
Turn Type			Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases						8
Detector Phases	2		1	6	8	8
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	23.0		9.0	10.0	29.0	29.0
Total Split (s)	45.0	0.0	23.0	68.0	42.0	42.0
Total Split (%)	40.9%	0.0%	20.9%	61.8%	38.2%	38.2%
Maximum Green (s)	40.0		19.0	63.0	37.5	37.5
Yellow Time (s)	4.5		3.5	4.5	4.0	4.0
All-Red Time (s)	0.5		0.5	0.5	0.5	0.5
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	C-Max		None	C-Max	None	None
Walk Time (s)	4.0				4.0	4.0
Flash Dont Walk (s)	14.0				20.0	20.0
Pedestrian Calls (#/hr)	5				5	5
Act Effct Green (s)	92.7		8.6	100.9	11.0	11.0
Actuated g/C Ratio	0.84		0.08	0.92	0.10	0.10
v/c Ratio	0.21		0.29	0.46	0.06	0.05
Control Delay	4.9		62.5	0.9	41.0	20.5
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	4.9		62.5	0.9	41.0	20.5
LOS	A		E	A	D	C
Approach Delay	4.9			2.1	31.8	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		320	0
Storage Lanes		0	1		1	1
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Leading Detector (ft)	250		50	250	50	50
Trailing Detector (ft)	0		0	0	0	0
Lane Util. Factor	0.91	0.91	1.00	0.91	1.00	1.00
Frt						0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	5085	0	1770	5085	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	5085	0	1770	5085	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						54
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	30			30	30	
Link Distance (ft)	676			441	427	
Travel Time (s)	15.4			10.0	9.7	
Volume (vph)	2300	0	50	1150	150	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2500	0	54	1250	163	54
Lane Group Flow (vph)	2500	0	54	1250	163	54
Turn Type			Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases						8
Detector Phases	2		1	6	8	8
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	25.0		15.0	10.0	32.5	32.5
Total Split (s)	80.5	0.0	16.0	96.5	33.5	33.5
Total Split (%)	61.9%	0.0%	12.3%	74.2%	25.8%	25.8%
Maximum Green (s)	75.5		12.0	91.5	29.0	29.0
Yellow Time (s)	4.5		3.5	4.5	4.0	4.0
All-Red Time (s)	0.5		0.5	0.5	0.5	0.5
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	C-Max		None	C-Max	None	None
Walk Time (s)	4.0				4.0	4.0
Flash Dont Walk (s)	16.0				24.0	24.0
Pedestrian Calls (#/hr)	5				5	5
Act Effct Green (s)	93.6		10.2	104.8	19.2	19.2
Actuated g/C Ratio	0.72		0.08	0.81	0.15	0.15
v/c Ratio	0.68		0.39	0.30	0.62	0.19
Control Delay	6.3		63.3	1.0	61.5	12.4
Queue Delay	0.1		0.0	0.1	0.0	0.0
Total Delay	6.4		63.3	1.1	61.5	12.4
LOS	A		E	A	E	B
Approach Delay	6.4			3.7	49.3	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		100	100		0	75		75	0		0
Storage Lanes	1		1	2		1	1		1	1		0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Leading Detector (ft)	50	200	50	50	200	50	50	50	50	50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.864	
Flt Protected	0.950			0.950			0.950	0.953		0.950		
Satd. Flow (prot)	1770	5085	1583	3433	3539	1583	1681	1686	1583	1770	1609	0
Flt Permitted	0.950			0.950			0.950	0.953		0.950		
Satd. Flow (perm)	1770	5085	1583	3433	3539	1583	1681	1686	1583	1770	1609	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			142			3			36		10	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		441			788			535			263	
Travel Time (s)		10.0			17.9			12.2			6.0	
Volume (vph)	11	638	149	41	1765	6	243	1	33	2	1	9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	693	162	45	1918	7	264	1	36	2	1	10
Lane Group Flow (vph)	12	693	162	45	1918	7	132	133	36	2	11	0
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2			6			8			
Detector Phases	5	2	2	1	6	6	8	8	8	4	4	
Minimum Initial (s)	5.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	15.0	27.0	27.0	14.0	21.0	21.0	30.0	30.0	30.0	15.0	15.0	
Total Split (s)	21.0	32.0	32.0	21.0	32.0	32.0	36.0	36.0	36.0	21.0	21.0	0.0
Total Split (%)	19.1%	29.1%	29.1%	19.1%	29.1%	29.1%	32.7%	32.7%	32.7%	19.1%	19.1%	0.0%
Maximum Green (s)	17.5	27.0	27.0	17.5	27.0	27.0	31.0	31.0	31.0	16.0	16.0	
Yellow Time (s)	3.5	4.5	4.5	3.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	0.0	0.5	0.5	0.0	0.5	0.5	1.0	1.0	1.0	1.0	1.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0			
Flash Dont Walk (s)		18.0	18.0		12.0	12.0	21.0	21.0	21.0			
Pedestrian Calls (#/hr)		5	5		5	5	10	10	10			
Act Effct Green (s)	6.8	72.0	72.0	10.5	80.5	80.5	16.6	16.6	16.6	8.0	8.0	
Actuated g/C Ratio	0.06	0.65	0.65	0.10	0.73	0.73	0.15	0.15	0.15	0.07	0.07	
v/c Ratio	0.11	0.21	0.15	0.14	0.74	0.01	0.52	0.52	0.13	0.02	0.09	
Control Delay	50.0	12.1	6.4	52.9	10.6	4.8	49.1	49.1	12.3	47.0	27.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	50.0	12.1	6.4	52.9	10.6	4.8	49.1	49.1	12.3	47.0	27.0	
LOS	D	B	A	D	B	A	D	D	B	D	C	
Approach Delay		11.6			11.6			44.7			30.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		100	100		0	0		75	0		0
Storage Lanes	1		1	2		1	1		1	1		0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Leading Detector (ft)	50	250	50	50	250	50	50	50	50	50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.892	
Flt Protected	0.950			0.950			0.950	0.953		0.950		
Satd. Flow (prot)	1770	5085	1583	3433	3539	1583	1681	1686	1583	1770	1662	0
Flt Permitted	0.950			0.950			0.950	0.953		0.950		
Satd. Flow (perm)	1770	5085	1583	3433	3539	1583	1681	1686	1583	1770	1662	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			188			9			97		13	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		441			788			535			263	
Travel Time (s)		10.0			17.9			12.2			6.0	
Volume (vph)	37	1912	460	42	824	8	395	2	136	13	5	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	2078	500	46	896	9	429	2	148	14	5	13
Lane Group Flow (vph)	40	2078	500	46	896	9	215	216	148	14	18	0
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2			6			8			
Detector Phases	5	2	2	1	6	6	8	8	8	4	4	
Minimum Initial (s)	5.0	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	15.0	29.0	29.0	14.0	21.0	21.0	31.0	31.0	31.0	15.0	15.0	
Total Split (s)	15.0	70.0	70.0	14.0	69.0	69.0	31.0	31.0	31.0	15.0	15.0	0.0
Total Split (%)	11.5%	53.8%	53.8%	10.8%	53.1%	53.1%	23.8%	23.8%	23.8%	11.5%	11.5%	0.0%
Maximum Green (s)	11.5	65.0	65.0	10.5	64.0	64.0	26.0	26.0	26.0	10.0	10.0	
Yellow Time (s)	3.5	4.5	4.5	3.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	0.0	0.5	0.5	0.0	0.5	0.5	1.0	1.0	1.0	1.0	1.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0			
Flash Dont Walk (s)		20.0	20.0		12.0	12.0	22.0	22.0	22.0			
Pedestrian Calls (#/hr)		5	5		5	5	10	10	10			
Act Effct Green (s)	8.8	82.4	82.4	10.5	83.2	83.2	23.4	23.4	23.4	8.6	8.6	
Actuated g/C Ratio	0.07	0.63	0.63	0.08	0.64	0.64	0.18	0.18	0.18	0.07	0.07	
v/c Ratio	0.33	0.64	0.47	0.17	0.40	0.01	0.71	0.71	0.41	0.12	0.15	
Control Delay	77.7	6.3	2.7	82.9	3.4	0.9	62.6	62.6	20.0	58.9	33.9	
Queue Delay	0.0	0.2	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	77.7	6.4	3.1	82.9	3.4	0.9	62.6	62.6	20.0	58.9	33.9	
LOS	E	A	A	F	A	A	E	E	C	E	C	
Approach Delay		6.9			7.2			51.7			44.8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		460	200		260	300		0	315		100
Storage Lanes	1		0	1		1	2		0	2		1
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Leading Detector (ft)	50	200	50	50	200	50	50	200		50	200	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95	0.97	0.95	1.00
Frt			0.850			0.850		0.957				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	3387	0	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	3387	0	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			98			310		52				240
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			40			30			30	
Link Distance (ft)		788			1204			1002			464	
Travel Time (s)		17.9			20.5			22.8			10.5	
Volume (vph)	190	396	90	281	1094	330	542	463	184	146	263	221
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	430	98	305	1189	359	589	503	200	159	286	240
Lane Group Flow (vph)	207	430	98	305	1189	359	589	703	0	159	286	240
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6						8
Detector Phases	5	2	2	1	6	6	7	4		3	8	8
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	15.0	35.0	35.0	15.0	36.0	36.0	15.0	35.0		15.0	36.0	36.0
Total Split (s)	21.0	36.0	36.0	22.0	37.0	37.0	22.0	32.0	0.0	20.0	30.0	30.0
Total Split (%)	19.1%	32.7%	32.7%	20.0%	33.6%	33.6%	20.0%	29.1%	0.0%	18.2%	27.3%	27.3%
Maximum Green (s)	17.5	31.0	31.0	18.5	32.0	32.0	18.5	27.0		16.5	25.0	25.0
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	4.0		3.5	4.0	4.0
All-Red Time (s)	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0		0.0	1.0	1.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Min		C-Max	C-Max	C-Max
Walk Time (s)		4.0	4.0		4.0	4.0		4.0			4.0	4.0
Flash Dont Walk (s)		26.0	26.0		27.0	27.0		21.0			20.0	20.0
Pedestrian Calls (#/hr)		10	10		10	10		10			10	10
Act Effct Green (s)	16.4	31.4	31.4	19.0	34.0	34.0	20.5	27.9		19.7	27.1	27.1
Actuated g/C Ratio	0.15	0.29	0.29	0.17	0.31	0.31	0.19	0.25		0.18	0.25	0.25
v/c Ratio	0.78	0.43	0.19	1.00	1.09	0.51	0.92	0.78		0.26	0.33	0.42
Control Delay	65.4	34.4	18.9	97.1	90.8	8.3	65.6	42.1		41.5	35.3	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	65.4	34.4	18.9	97.1	90.8	8.3	65.6	42.1		41.5	35.3	6.8
LOS	E	C	B	F	F	A	E	D		D	D	A
Approach Delay		41.1			75.8			52.8			26.8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑↑	↱	↰↰	↑↱		↰↰	↑↑	↱
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	200		130	300		0	315		100
Storage Lanes	1		1	1		1	2		0	2		1
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Leading Detector (ft)	50	250	50	50	250	50	50	50		50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95	0.97	0.95	1.00
Frt			0.850			0.850		0.965				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	3415	0	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	3415	0	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			243			125		29				139
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		788			1204			1002			464	
Travel Time (s)		17.9			27.4			22.8			10.5	
Volume (vph)	260	1450	338	218	651	165	154	411	127	239	404	165
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	283	1576	367	237	708	179	167	447	138	260	439	179
Lane Group Flow (vph)	283	1576	367	237	708	179	167	585	0	260	439	179
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases			8			4						6
Detector Phases	3	8	8	7	4	4	5	2		1	6	6
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	15.0	29.0	29.0	15.0	29.0	29.0	15.0	31.0		15.0	33.0	33.0
Total Split (s)	35.0	61.0	61.0	21.0	47.0	47.0	15.0	33.0	0.0	15.0	33.0	33.0
Total Split (%)	26.9%	46.9%	46.9%	16.2%	36.2%	36.2%	11.5%	25.4%	0.0%	11.5%	25.4%	25.4%
Maximum Green (s)	30.0	56.0	56.0	16.0	42.0	42.0	11.5	28.0		11.5	28.0	28.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.5	4.0		3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0		0.0	1.0	1.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead		Lag	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	None	Min	Min	None	None		None	None	None
Walk Time (s)		4.0	4.0		4.0	4.0		4.0			4.0	4.0
Flash Dont Walk (s)		20.0	20.0		20.0	20.0		22.0			24.0	24.0
Pedestrian Calls (#/hr)		10	10		10	10		10			10	10
Act Effct Green (s)	38.7	58.7	58.7	19.3	39.4	39.4	16.4	27.0		12.9	23.6	23.6
Actuated g/C Ratio	0.30	0.45	0.45	0.15	0.30	0.30	0.13	0.21		0.10	0.18	0.18
v/c Ratio	0.54	0.99	0.43	0.90	0.66	0.32	0.39	0.80		0.76	0.68	0.45
Control Delay	28.6	36.6	3.6	89.9	42.2	12.1	55.7	55.0		72.1	55.0	15.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	28.6	36.6	3.6	89.9	42.2	12.1	55.7	55.0		72.1	55.0	15.6
LOS	C	D	A	F	D	B	E	E		E	D	B
Approach Delay		30.1			47.5			55.2			52.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		50	0		150	300		0	200		200
Storage Lanes	1		1	1		1	1		0	1		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50		50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt			0.850			0.850		0.978				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	1770	3461	0	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	1863	1583	1770	1863	1583	1770	3461	0	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			224			91		21				235
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		668			937			1507			1209	
Travel Time (s)		15.2			21.3			34.3			27.5	
Volume (vph)	143	71	206	42	58	84	285	379	66	235	461	216
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	155	77	224	46	63	91	310	412	72	255	501	235
Lane Group Flow (vph)	155	77	224	46	63	91	310	484	0	255	501	235
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		custom
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6						5 8
Detector Phases	5	2	2	1	6	6	7	4		3	8	5 8
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	15.0	26.0	26.0	15.0	26.0	26.0	15.0	26.0		15.0	26.0	
Total Split (s)	21.0	32.0	32.0	15.0	26.0	26.0	17.0	28.0	0.0	15.0	26.0	47.0
Total Split (%)	23.3%	35.6%	35.6%	16.7%	28.9%	28.9%	18.9%	31.1%	0.0%	16.7%	28.9%	52.2%
Maximum Green (s)	16.0	27.0	27.0	10.0	21.0	21.0	12.0	23.0		10.0	21.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	Min	Min	None	None	None	None	None		None	None	
Walk Time (s)		4.0	4.0		4.0	4.0		4.0			4.0	
Flash Dont Walk (s)		17.0	17.0		17.0	17.0		17.0			17.0	
Pedestrian Calls (#/hr)		5	5		5	5		5			5	
Act Effct Green (s)	9.4	13.8	13.8	8.3	10.3	10.3	13.8	17.6		11.7	15.4	28.9
Actuated g/C Ratio	0.14	0.22	0.22	0.12	0.16	0.16	0.22	0.28		0.19	0.24	0.44
v/c Ratio	0.31	0.19	0.43	0.21	0.21	0.27	0.80	0.49		0.78	0.58	0.28
Control Delay	28.9	24.1	6.8	32.0	26.8	8.7	46.4	21.5		48.5	25.2	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	28.9	24.1	6.8	32.0	26.8	8.7	46.4	21.5		48.5	25.2	2.9
LOS	C	C	A	C	C	A	D	C		D	C	A
Approach Delay		17.2			19.7			31.2			25.9	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		50	0		150	300		0	200		200
Storage Lanes	1		1	1		1	1		0	1		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50		50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt			0.850			0.850		0.991				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	1770	3507	0	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	1863	1583	1770	1863	1583	1770	3507	0	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			172			151		7				138
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		668			937			1507			1209	
Travel Time (s)		15.2			21.3			34.3			27.5	
Volume (vph)	374	77	158	44	138	139	125	548	35	76	356	127
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	407	84	172	48	150	151	136	596	38	83	387	138
Lane Group Flow (vph)	407	84	172	48	150	151	136	634	0	83	387	138
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		custom
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6						5 8
Detector Phases	5	2	2	1	6	6	7	4		3	8	5 8
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	15.0	26.0	26.0	15.0	26.0	26.0	15.0	26.0		15.0	26.0	
Total Split (s)	21.0	32.0	32.0	15.0	26.0	26.0	17.0	28.0	0.0	15.0	26.0	47.0
Total Split (%)	23.3%	35.6%	35.6%	16.7%	28.9%	28.9%	18.9%	31.1%	0.0%	16.7%	28.9%	52.2%
Maximum Green (s)	16.0	27.0	27.0	10.0	21.0	21.0	12.0	23.0		10.0	21.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	Min	Min	None	None	None	None	None		None	None	
Walk Time (s)		4.0	4.0		4.0	4.0		4.0			4.0	
Flash Dont Walk (s)		17.0	17.0		17.0	17.0		17.0			17.0	
Pedestrian Calls (#/hr)		5	5		5	5		5			5	
Act Effct Green (s)	14.6	20.6	20.6	9.0	12.7	12.7	11.0	18.8		9.7	17.5	39.3
Actuated g/C Ratio	0.22	0.31	0.31	0.13	0.19	0.19	0.16	0.29		0.14	0.27	0.60
v/c Ratio	0.53	0.14	0.28	0.21	0.43	0.36	0.47	0.63		0.33	0.41	0.14
Control Delay	30.0	21.9	5.5	35.7	32.2	8.1	37.5	26.6		36.4	25.3	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	30.0	21.9	5.5	35.7	32.2	8.1	37.5	26.6		36.4	25.3	2.9
LOS	C	C	A	D	C	A	D	C		D	C	A
Approach Delay		22.6			22.3			28.5			21.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	100		0	150		0	200		0
Storage Lanes	1		0	1		1	1		0	2		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	0.95
Frt		0.986				0.850		0.925			0.977	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3490	0	1770	1863	1583	1770	3274	0	3433	3458	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3490	0	1770	1863	1583	1770	3274	0	3433	3458	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12				258		254			24	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		638			910			766			907	
Travel Time (s)		14.5			20.7			17.4			20.6	
Volume (vph)	78	493	51	85	148	237	74	325	326	406	144	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	85	536	55	92	161	258	80	353	354	441	157	29
Lane Group Flow (vph)	85	591	0	92	161	258	80	707	0	441	186	0
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases						6						
Detector Phases	5	2		1	6	6	7	4		3	8	
Minimum Initial (s)	7.0	10.0		7.0	10.0	10.0	7.0	5.0		7.0	5.0	
Minimum Split (s)	12.0	29.0		12.0	29.0	29.0	12.0	32.0		12.0	32.0	
Total Split (s)	12.0	29.0	0.0	17.0	34.0	34.0	12.0	32.0	0.0	12.0	32.0	0.0
Total Split (%)	13.3%	32.2%	0.0%	18.9%	37.8%	37.8%	13.3%	35.6%	0.0%	13.3%	35.6%	0.0%
Maximum Green (s)	7.0	24.0		12.0	29.0	29.0	7.0	27.0		7.0	27.0	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	1.5	1.5		1.5	1.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min	Min	None	None		None	None	
Walk Time (s)		4.0			4.0	4.0		4.0			4.0	
Flash Dont Walk (s)		17.0			20.0	20.0		23.0			23.0	
Pedestrian Calls (#/hr)		5			5	5		5			5	
Act Effct Green (s)	8.3	17.9		10.2	19.7	19.7	8.3	16.8		8.7	23.6	
Actuated g/C Ratio	0.12	0.27		0.15	0.29	0.29	0.12	0.25		0.13	0.35	
v/c Ratio	0.40	0.63		0.35	0.29	0.40	0.39	0.70		0.99	0.15	
Control Delay	39.9	26.5		34.8	22.0	5.1	40.4	19.1		78.1	18.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	39.9	26.5		34.8	22.0	5.1	40.4	19.1		78.1	18.0	
LOS	D	C		C	C	A	D	B		E	B	
Approach Delay		28.2			15.8			21.3			60.3	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	100		0	150		0	200		0
Storage Lanes	1		0	1		1	1		0	2		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	0.95
Frt		0.950				0.850		0.962			0.962	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3362	0	1770	1863	1583	1770	3405	0	3433	3405	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3362	0	1770	1863	1583	1770	3405	0	3433	3405	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		96				380		53			53	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		638			910			766			907	
Travel Time (s)		14.5			20.7			17.4			20.6	
Volume (vph)	100	200	100	250	500	350	100	300	100	150	300	100
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	217	109	272	543	380	109	326	109	163	326	109
Lane Group Flow (vph)	109	326	0	272	543	380	109	435	0	163	435	0
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases						6						
Detector Phases	5	2		1	6	6	7	4		3	8	
Minimum Initial (s)	7.0	10.0		7.0	10.0	10.0	7.0	5.0		7.0	5.0	
Minimum Split (s)	12.0	29.0		12.0	29.0	29.0	12.0	32.0		12.0	32.0	
Total Split (s)	12.0	29.0	0.0	17.0	34.0	34.0	12.0	32.0	0.0	12.0	32.0	0.0
Total Split (%)	13.3%	32.2%	0.0%	18.9%	37.8%	37.8%	13.3%	35.6%	0.0%	13.3%	35.6%	0.0%
Maximum Green (s)	7.0	24.0		12.0	29.0	29.0	7.0	27.0		7.0	27.0	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	1.5	1.5		1.5	1.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min	Min	None	None		None	None	
Walk Time (s)		4.0			4.0	4.0		4.0			4.0	
Flash Dont Walk (s)		17.0			20.0	20.0		23.0			23.0	
Pedestrian Calls (#/hr)		5			5	5		5			5	
Act Effct Green (s)	8.2	21.0		13.8	30.3	30.3	8.2	15.6		8.2	15.6	
Actuated g/C Ratio	0.11	0.29		0.19	0.42	0.42	0.11	0.22		0.11	0.22	
v/c Ratio	0.56	0.31		0.80	0.69	0.43	0.56	0.56		0.43	0.56	
Control Delay	48.2	15.8		53.1	27.8	4.1	48.2	25.6		38.0	25.6	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	48.2	15.8		53.1	27.8	4.1	48.2	25.6		38.0	25.6	
LOS	D	B		D	C	A	D	C		D	C	
Approach Delay		23.9			26.0			30.1			29.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		225	300		0	175		175	150		0
Storage Lanes	1		1	1		1	1		1	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.968	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1803	0
Flt Permitted	0.950			0.950			0.697			0.728		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1298	1863	1583	1356	1803	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			72			23			145		18	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		504			1434			529			426	
Travel Time (s)		8.6			24.4			12.0			9.7	
Volume (vph)	34	951	70	88	758	21	116	41	133	18	67	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	1034	76	96	824	23	126	45	145	20	73	20
Lane Group Flow (vph)	37	1034	76	96	824	23	126	45	145	20	93	0
Turn Type	Prot		Perm	Prot		Perm	Perm		Perm	Perm		
Protected Phases	5	2		1	6			4			8	
Permitted Phases			2			6	4		4	8		
Detector Phases	5	2	2	1	6	6	4	4	4	8	8	
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	15.0	33.0	33.0	15.0	22.0	22.0	32.0	32.0	32.0	32.0	32.0	
Total Split (s)	26.0	24.0	24.0	26.0	24.0	24.0	40.0	40.0	40.0	40.0	40.0	0.0
Total Split (%)	28.9%	26.7%	26.7%	28.9%	26.7%	26.7%	44.4%	44.4%	44.4%	44.4%	44.4%	0.0%
Maximum Green (s)	21.0	17.0	17.0	21.0	17.0	17.0	35.0	35.0	35.0	35.0	35.0	
Yellow Time (s)	3.5	4.5	4.5	3.5	4.5	4.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.5	2.5	2.5	1.5	2.5	2.5	1.5	1.5	1.5	1.5	1.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Flash Dont Walk (s)		22.0	22.0		11.0	11.0	23.0	23.0	23.0	23.0	23.0	
Pedestrian Calls (#/hr)		1	1		1	1	1	1	1	1	1	
Act Effct Green (s)	8.2	53.5	53.5	11.3	58.0	58.0	16.1	16.1	16.1	16.1	16.1	
Actuated g/C Ratio	0.09	0.59	0.59	0.13	0.64	0.64	0.18	0.18	0.18	0.18	0.18	
v/c Ratio	0.23	0.49	0.08	0.43	0.36	0.02	0.54	0.13	0.36	0.08	0.28	
Control Delay	40.8	13.8	4.2	51.9	7.4	4.9	40.8	29.1	7.3	27.9	25.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	40.8	13.8	4.2	51.9	7.4	4.9	40.8	29.1	7.3	27.9	25.7	
LOS	D	B	A	D	A	A	D	C	A	C	C	
Approach Delay		14.0			11.8			23.8			26.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		225	300		0	175		175	150		0
Storage Lanes	1		1	1		1	1		1	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.972	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1811	0
Flt Permitted	0.950			0.950			0.726			0.734		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1352	1863	1583	1367	1811	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			154			31			57		9	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		504			1434			529			426	
Travel Time (s)		8.6			24.4			12.0			9.7	
Volume (vph)	16	825	142	90	1004	29	181	32	52	30	36	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	897	154	98	1091	32	197	35	57	33	39	9
Lane Group Flow (vph)	17	897	154	98	1091	32	197	35	57	33	48	0
Turn Type	Prot		Perm	Prot		Perm	Perm		Perm	Perm		
Protected Phases	5	2		1	6			4			8	
Permitted Phases			2			6	4		4	8		
Detector Phases	5	2	2	1	6	6	4	4	4	8	8	
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	15.0	33.0	33.0	15.0	22.0	22.0	32.0	32.0	32.0	32.0	32.0	
Total Split (s)	26.0	43.0	43.0	26.0	43.0	43.0	41.0	41.0	41.0	41.0	41.0	0.0
Total Split (%)	23.6%	39.1%	39.1%	23.6%	39.1%	39.1%	37.3%	37.3%	37.3%	37.3%	37.3%	0.0%
Maximum Green (s)	21.0	36.0	36.0	21.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	
Yellow Time (s)	3.5	4.5	4.5	3.5	4.5	4.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.5	2.5	2.5	1.5	2.5	2.5	1.5	1.5	1.5	1.5	1.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Flash Dont Walk (s)		22.0	22.0		11.0	11.0	23.0	23.0	23.0	23.0	23.0	
Pedestrian Calls (#/hr)		1	1		1	1	1	1	1	1	1	
Act Effct Green (s)	7.5	67.5	67.5	12.3	75.8	75.8	21.1	21.1	21.1	21.1	21.1	
Actuated g/C Ratio	0.07	0.61	0.61	0.11	0.69	0.69	0.19	0.19	0.19	0.19	0.19	
v/c Ratio	0.14	0.41	0.15	0.49	0.45	0.03	0.76	0.10	0.16	0.13	0.14	
Control Delay	50.3	13.8	2.7	40.6	15.7	5.3	59.5	34.2	9.6	34.9	29.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	50.3	13.8	2.7	40.6	15.7	5.3	59.5	34.2	9.6	34.9	29.6	
LOS	D	B	A	D	B	A	E	C	A	C	C	
Approach Delay		12.8			17.4			46.6			31.8	

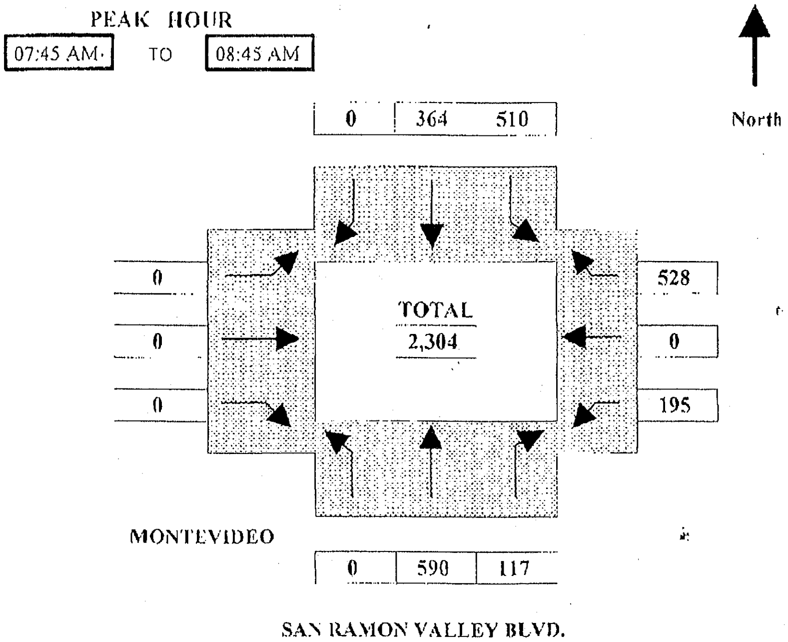
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	ø8
Lane Configurations							
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	590			290	930	930	
Storage Lanes	2			1	2	0	
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	
Leading Detector (ft)	50	200	200	50	200	200	
Trailing Detector (ft)	0	0	0	0	0	0	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00	
Frt				0.850		0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	3433	3539	3539	1583	3433	1583	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	3433	3539	3539	1583	3433	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)				360		539	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Link Speed (mph)		40	40		30		
Link Distance (ft)		2026	1030		1337		
Travel Time (s)		34.5	17.6		30.4		
Volume (vph)	165	286	723	331	404	496	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	179	311	786	360	439	539	
Lane Group Flow (vph)	179	311	786	360	439	539	
Turn Type	Prot			Perm		custom	
Protected Phases	5	2	6		7		8
Permitted Phases				6		4	
Detector Phases	5	2	6	6	7	4	
Minimum Initial (s)	9.0	14.0	9.0	9.0	7.0	8.0	4.0
Minimum Split (s)	15.0	20.0	45.0	45.0	15.0	31.0	28.0
Total Split (s)	17.0	33.0	16.0	16.0	16.0	27.0	11.0
Total Split (%)	28.3%	55.0%	26.7%	26.7%	26.7%	45.0%	18%
Maximum Green (s)	11.0	27.0	10.0	10.0	10.0	23.0	7.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	0.5	0.5
Lead/Lag	Lead		Lag	Lag	Lag		Lead
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None
Walk Time (s)			7.0	7.0		7.0	7.0
Flash Dont Walk (s)			32.0	32.0		16.0	17.0
Pedestrian Calls (#/hr)			1	1		1	1
Act Effct Green (s)	12.4	36.3	23.9	23.9	15.5	17.7	
Actuated g/C Ratio	0.21	0.60	0.40	0.40	0.26	0.30	
v/c Ratio	0.25	0.15	0.56	0.43	0.49	0.64	
Control Delay	16.8	4.3	13.9	4.6	21.0	5.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	16.8	4.3	13.9	4.6	21.0	5.3	
LOS	B	A	B	A	C	A	
Approach Delay		8.9	11.0		12.4		

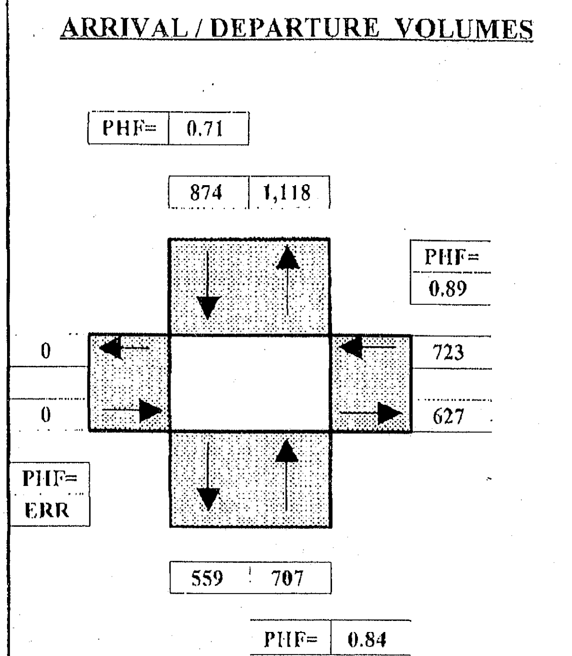
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	ø8
Lane Configurations							
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	590			290	0	930	
Storage Lanes	2			1	2	1	
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	
Leading Detector (ft)	50	250	250	50	50	50	
Trailing Detector (ft)	0	0	0	0	0	0	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00	
Frt				0.850		0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	3433	3539	3539	1583	3433	1583	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	3433	3539	3539	1583	3433	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)				398		312	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Link Speed (mph)		30	30		30		
Link Distance (ft)		2026	1030		1337		
Travel Time (s)		46.0	23.4		30.4		
Volume (vph)	622	698	380	366	281	287	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	676	759	413	398	305	312	
Lane Group Flow (vph)	676	759	413	398	305	312	
Turn Type	Prot			Perm		custom	
Protected Phases	5	2	6		7		8
Permitted Phases				6		4	
Detector Phases	5	2	6	6	7	4	
Minimum Initial (s)	8.0	14.0	9.0	9.0	7.0	8.0	4.0
Minimum Split (s)	14.0	20.0	42.0	42.0	14.0	28.0	20.0
Total Split (s)	14.0	56.0	42.0	42.0	14.0	34.0	20.0
Total Split (%)	15.6%	62.2%	46.7%	46.7%	15.6%	37.8%	22%
Maximum Green (s)	8.0	50.0	36.0	36.0	8.0	30.0	16.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	0.5	0.5
Lead/Lag	Lead		Lag	Lag	Lead		Lag
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None
Walk Time (s)			7.0	7.0		4.0	4.0
Flash Dont Walk (s)			29.0	29.0		20.0	12.0
Pedestrian Calls (#/hr)			1	1		1	1
Act Effct Green (s)	27.0	69.0	39.0	39.0	11.0	15.0	
Actuated g/C Ratio	0.30	0.77	0.43	0.43	0.12	0.17	
v/c Ratio	0.66	0.28	0.27	0.44	0.73	0.60	
Control Delay	30.6	1.9	11.1	7.9	49.2	8.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	30.6	1.9	11.1	7.9	49.2	8.3	
LOS	C	A	B	A	D	A	
Approach Delay		15.4	9.5		28.5		

BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

PROJECT: SAN RAMON TMC	SURVEY DATE: 2 / 15 / 2007	DAY: THURSDAY	
N-S Approach: SAN RAMON VALLEY BLVD.	SURVEY TIME: 7:00 AM	TO 9:00 AM	
E-W Approach: MONTEVIDEO	CITY: SAN RAMON	FILE: SRVMTSRAM	





TIME PERIOD From		To	NORTHBOUND Left	NORTHBOUND Thru	NORTHBOUND Right	SOUTHBOUND Left	SOUTHBOUND Thru	SOUTHBOUND Right	EASTBOUND Left	EASTBOUND Thru	EASTBOUND Right	WESTBOUND Left	WESTBOUND Thru	WESTBOUND Right	TOTAL
SURVEY DATA															
07:00 AM	---	07:15 AM	0	36	12	39	38	0	0	0	0	46	0	66	237
07:15 AM	---	07:30 AM	0	95	17	81	90	0	0	0	0	106	0	138	527
07:30 AM	---	07:45 AM	0	179	27	139	162	0	0	0	0	188	0	232	927
07:45 AM	---	08:00 AM	0	310	52	285	256	0	0	0	0	263	0	354	1,520
08:00 AM	---	08:15 AM	0	473	100	467	381	0	0	0	0	304	0	517	2,242
08:15 AM	---	08:30 AM	0	625	126	605	466	0	0	0	0	339	0	648	2,809
08:30 AM	---	08:45 AM	0	769	144	649	526	0	0	0	0	383	0	760	3,231
08:45 AM	---	09:00 AM	0	899	158	680	567	0	0	0	0	419	0	855	3,578
TOTAL BY PERIOD															
07:00 AM	---	07:15 AM	0	36	12	39	38	0	0	0	0	46	0	66	237
07:15 AM	---	07:30 AM	0	59	5	42	52	0	0	0	0	60	0	72	290
07:30 AM	---	07:45 AM	0	84	10	58	72	0	0	0	0	82	0	94	400
07:45 AM	---	08:00 AM	0	131	25	146	94	0	0	0	0	75	0	122	593
08:00 AM	---	08:15 AM	0	163	48	182	125	0	0	0	0	41	0	163	722
08:15 AM	---	08:30 AM	0	152	26	138	85	0	0	0	0	35	0	131	567
08:30 AM	---	08:45 AM	0	144	18	44	60	0	0	0	0	44	0	112	422
08:45 AM	---	09:00 AM	0	130	14	31	41	0	0	0	0	36	0	95	347
HOURLY TOTALS															
07:00 AM	---	08:00 AM	0	310	52	285	256	0	0	0	0	263	0	354	1,520
07:15 AM	---	08:15 AM	0	437	88	428	343	0	0	0	0	258	0	451	2,005
07:30 AM	---	08:30 AM	0	530	109	524	376	0	0	0	0	233	0	510	2,282
07:45 AM	---	08:45 AM	0	590	117	510	364	0	0	0	0	195	0	528	2,304
08:00 AM	---	09:00 AM	0	589	106	395	311	0	0	0	0	156	0	501	2,058

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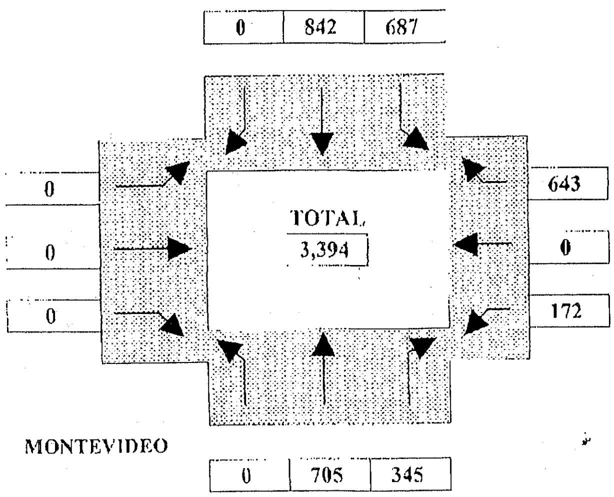
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

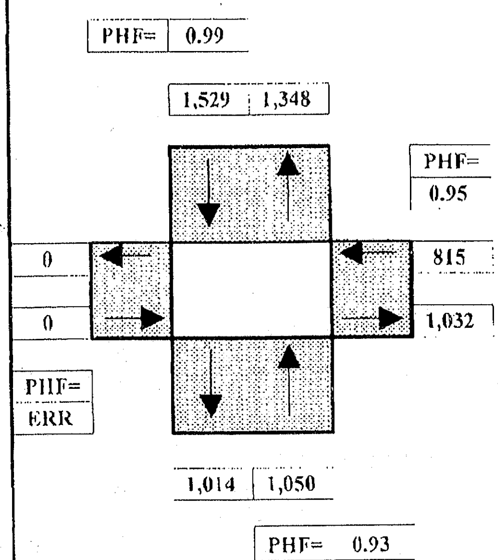
PROJECT: SAN RAMON TMC	SURVEY DATE: 2 / 15 / 2007		DAY: THURSDAY
N-S Approach: SAN RAMON VALLEY BLVD.	SURVEY TIME: 4:00 PM	TO	6:00 PM
E-W Approach: MONTEVIDEO	CITY: SAN RAMON		FILE: SRVMTSRPM

PEAK HOUR

05:00 PM TO 06:00 PM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From		To	NORTHBOUND Left	NORTHBOUND Thru	NORTHBOUND Right	SOUTHBOUND Left	SOUTHBOUND Thru	SOUTHBOUND Right	EASTBOUND Left	EASTBOUND Thru	EASTBOUND Right	WESTBOUND Left	WESTBOUND Thru	WESTBOUND Right	TOTAL
SURVEY DATA															
04:00 PM	---	04:15 PM	0	133	45	112	152	0	0	0	0	33	0	82	557
04:15 PM	---	04:30 PM	0	289	97	251	329	0	0	0	0	59	0	176	1,201
04:30 PM	---	04:45 PM	0	459	157	407	514	0	0	0	0	89	0	281	1,907
04:45 PM	---	05:00 PM	0	613	229	549	680	0	0	0	0	135	0	405	2,611
05:00 PM	---	05:15 PM	0	795	320	724	886	0	0	0	0	176	0	547	3,448
05:15 PM	---	05:30 PM	0	960	400	885	1,104	0	0	0	0	228	0	710	4,287
05:30 PM	---	05:45 PM	0	1,148	493	1,067	1,309	0	0	0	0	266	0	882	5,165
05:45 PM	---	06:00 PM	0	1,318	574	1,236	1,522	0	0	0	0	307	0	1,048	6,005
TOTAL BY PERIOD															
04:00 PM	---	04:15 PM	0	133	45	112	152	0	0	0	0	33	0	82	557
04:15 PM	---	04:30 PM	0	156	52	139	177	0	0	0	0	26	0	94	644
04:30 PM	---	04:45 PM	0	170	60	156	185	0	0	0	0	30	0	105	706
04:45 PM	---	05:00 PM	0	154	72	142	166	0	0	0	0	46	0	124	704
05:00 PM	---	05:15 PM	0	182	91	175	206	0	0	0	0	41	0	142	837
05:15 PM	---	05:30 PM	0	165	80	161	218	0	0	0	0	52	0	163	839
05:30 PM	---	05:45 PM	0	188	93	182	205	0	0	0	0	38	0	172	878
05:45 PM	---	06:00 PM	0	170	81	169	213	0	0	0	0	41	0	166	840
HOURLY TOTALS															
04:00 PM	---	05:00 PM	0	613	229	549	680	0	0	0	0	135	0	405	2,611
04:15 PM	---	05:15 PM	0	662	275	612	734	0	0	0.	0	143	0	465	2,891
04:30 PM	---	05:30 PM	0	671	303	634	775	0	0	0	0	169	0	534	3,086
04:45 PM	---	05:45 PM	0	689	336	660	795	0	0	0	0	177	0	601	3,258
05:00 PM	---	06:00 PM	0	705	345	687	842	0	0	0	0	172	0	643	3,394

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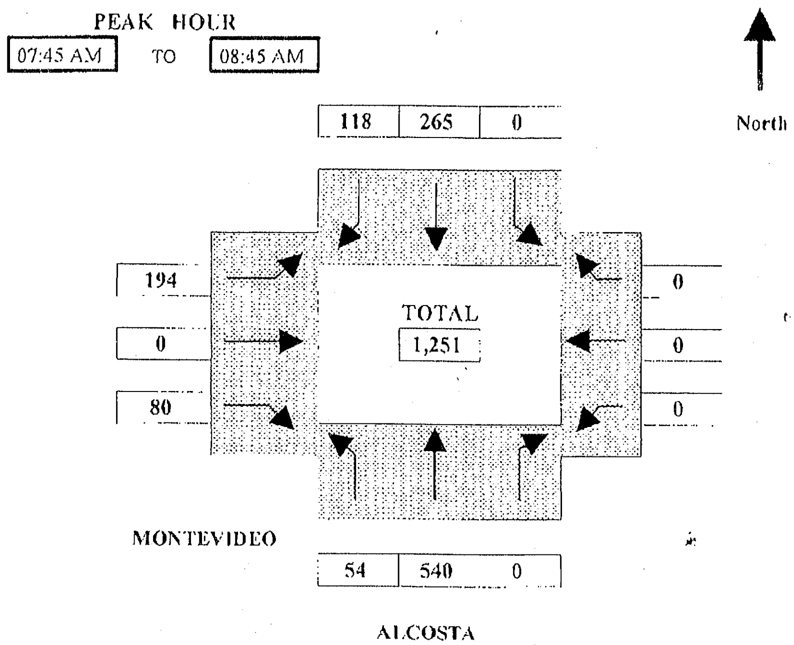
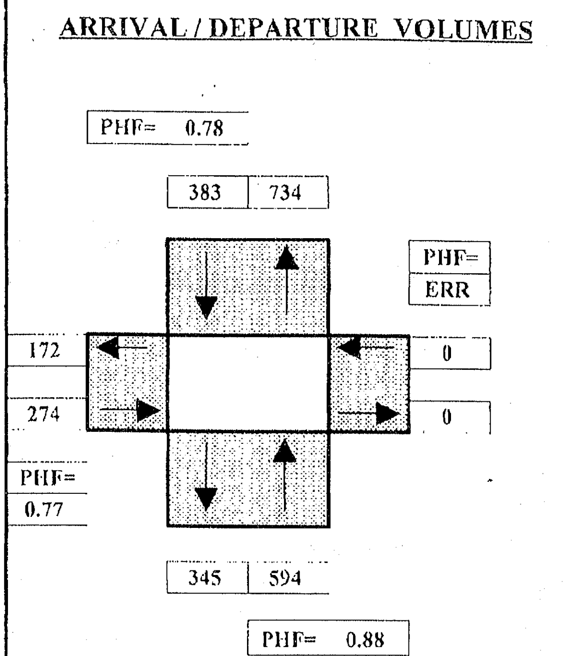
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

PROJECT: SAN RAMON TMC	SURVEY DATE: 2 / 15 / 2007	DAY: THURSDAY	
N-S Approach: ALCOSTA	SURVEY TIME: 7:00 AM	TO	9:00 AM
E-W Approach: MONTEVIDEO	CITY: SAN RAMON	FILE: ACMTSRAM	





TIME PERIOD From		To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA															
07:00 AM	---	07:15 AM	4	36	0	0	30	56	33	0	10	0	0	0	169
07:15 AM	---	07:30 AM	9	95	0	0	68	97	74	0	22	0	0	0	365
07:30 AM	---	07:45 AM	15	179	0	0	124	127	112	0	39	0	0	0	596
07:45 AM	---	08:00 AM	25	310	0	0	194	155	154	0	54	0	0	0	892
08:00 AM	---	08:15 AM	46	458	0	0	277	195	217	0	80	0	0	0	1,273
08:15 AM	---	08:30 AM	62	600	0	0	343	225	269	0	104	0	0	0	1,603
08:30 AM	---	08:45 AM	69	719	0	0	389	245	306	0	119	0	0	0	1,847
08:45 AM	---	09:00 AM	72	794	0	0	424	255	326	0	126	0	0	0	1,997
TOTAL BY PERIOD															
07:00 AM	---	07:15 AM	4	36	0	0	30	56	33	0	10	0	0	0	169
07:15 AM	---	07:30 AM	5	59	0	0	38	41	41	0	12	0	0	0	196
07:30 AM	---	07:45 AM	6	84	0	0	56	30	38	0	17	0	0	0	231
07:45 AM	---	08:00 AM	10	131	0	0	70	28	42	0	15	0	0	0	296
08:00 AM	---	08:15 AM	21	148	0	0	83	40	63	0	26	0	0	0	381
08:15 AM	---	08:30 AM	16	142	0	0	66	30	52	0	24	0	0	0	330
08:30 AM	---	08:45 AM	7	119	0	0	46	20	37	0	15	0	0	0	244
08:45 AM	---	09:00 AM	3	75	0	0	35	10	20	0	7	0	0	0	150
HOURLY TOTALS															
07:00 AM	---	08:00 AM	25	310	0	0	194	155	154	0	54	0	0	0	892
07:15 AM	---	08:15 AM	42	422	0	0	247	139	184	0	70	0	0	0	1,104
07:30 AM	---	08:30 AM	53	505	0	0	275	128	195	0	82	0	0	0	1,238
07:45 AM	---	08:45 AM	54	540	0	0	265	118	194	0	80	0	0	0	1,251
08:00 AM	---	09:00 AM	47	484	0	0	230	100	172	0	72	0	0	0	1,105

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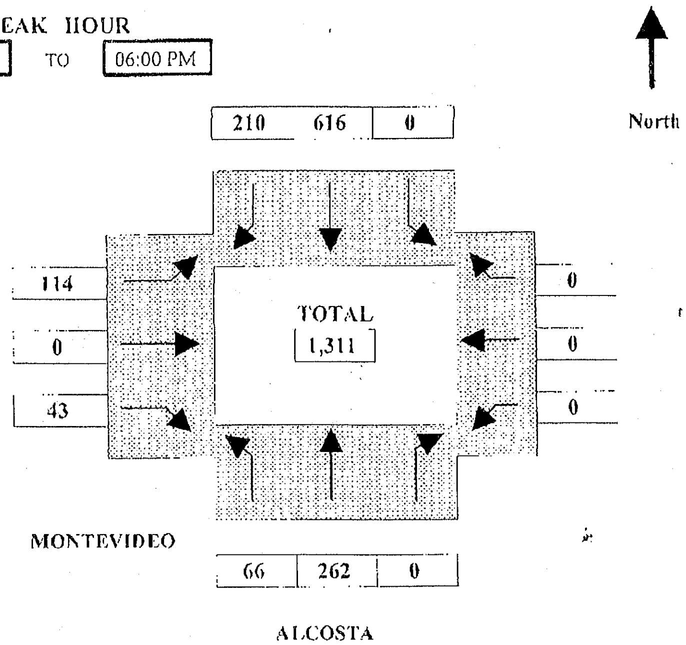
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

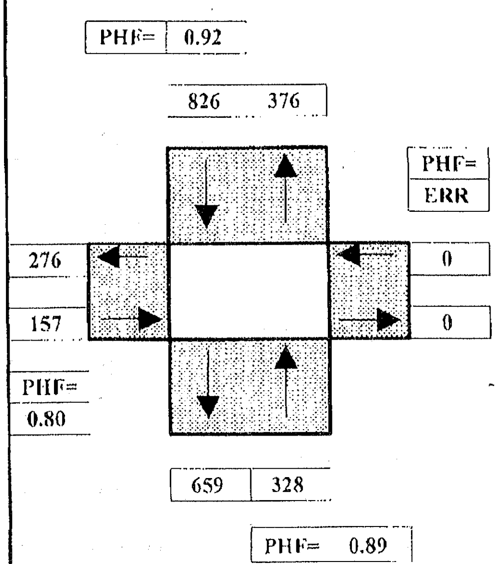
PROJECT: SAN RAMON TMC	SURVEY DATE: 2/15/2007		DAY: THURSDAY
N-S Approach: ALCOSTA	SURVEY TIME: 4:00 PM	TO	6:00 PM
E-W Approach: MONTEVIDEO	CITY: SAN RAMON		FILE: ACMTSRPM

PEAK HOUR

05:00 PM TO 06:00 PM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From		To	NORTHBOUND Left	NORTHBOUND Thru	NORTHBOUND Right	SOUTHBOUND Left	SOUTHBOUND Thru	SOUTHBOUND Right	EASTBOUND Left	EASTBOUND Thru	EASTBOUND Right	WESTBOUND Left	WESTBOUND Thru	WESTBOUND Right	TOTAL
SURVEY DATA															
04:00 PM	---	04:15 PM	5	55	0	0	112	33	33	0	5	0	0	0	243
04:15 PM	---	04:30 PM	12	118	0	0	241	79	61	0	17	0	0	0	528
04:30 PM	---	04:45 PM	21	190	0	0	347	131	86	0	24	0	0	0	799
04:45 PM	---	05:00 PM	32	255	0	0	482	194	116	0	37	0	0	0	1,116
05:00 PM	---	05:15 PM	42	314	0	0	641	244	144	0	43	0	0	0	1,428
05:15 PM	---	05:30 PM	61	387	0	0	785	295	169	0	53	0	0	0	1,750
05:30 PM	---	05:45 PM	76	455	0	0	951	353	203	0	68	0	0	0	2,106
05:45 PM	---	06:00 PM	98	517	0	0	1,098	404	230	0	80	0	0	0	2,427
TOTAL BY PERIOD															
04:00 PM	---	04:15 PM	5	55	0	0	112	33	33	0	5	0	0	0	243
04:15 PM	---	04:30 PM	7	63	0	0	129	46	28	0	12	0	0	0	285
04:30 PM	---	04:45 PM	9	72	0	0	106	52	25	0	7	0	0	0	271
04:45 PM	---	05:00 PM	11	65	0	0	135	63	30	0	13	0	0	0	317
05:00 PM	---	05:15 PM	10	59	0	0	159	50	28	0	6	0	0	0	312
05:15 PM	---	05:30 PM	19	73	0	0	144	51	25	0	10	0	0	0	322
05:30 PM	---	05:45 PM	15	68	0	0	166	58	34	0	15	0	0	0	356
05:45 PM	---	06:00 PM	22	62	0	0	147	51	27	0	12	0	0	0	321
HOURLY TOTALS															
04:00 PM	---	05:00 PM	32	255	0	0	482	194	116	0	37	0	0	0	1,116
04:15 PM	---	05:15 PM	37	259	0	0	529	211	111	0	38	0	0	0	1,185
04:30 PM	---	05:30 PM	49	269	0	0	544	216	108	0	36	0	0	0	1,222
04:45 PM	---	05:45 PM	55	265	0	0	604	222	117	0	44	0	0	0	1,307
05:00 PM	---	06:00 PM	66	262	0	0	616	210	114	0	43	0	0	0	1,311

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		150	260		281	0
Storage Lanes		1	1		1	2
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	0.88
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	3433	3539	3433	2787
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3539	1583	3433	3539	3433	2787
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		115				445
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	45			40	30	
Link Distance (ft)	1090			630	736	
Travel Time (s)	16.5			10.7	16.7	
Volume (vph)	426	106	694	1177	210	409
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	463	115	754	1279	228	445
Lane Group Flow (vph)	463	115	754	1279	228	445
Turn Type		Perm	Prot			Prot
Protected Phases	2		1	6	8	8
Permitted Phases	2	2				
Detector Phases	2	2	1	6	8	8
Minimum Initial (s)	10.0	10.0	7.0	10.0	5.0	5.0
Minimum Split (s)	36.0	36.0	15.0	20.0	39.0	39.0
Total Split (s)	36.0	36.0	25.0	61.0	39.0	39.0
Total Split (%)	36.0%	36.0%	25.0%	61.0%	39.0%	39.0%
Maximum Green (s)	30.3	30.3	20.0	55.3	34.0	34.0
Yellow Time (s)	4.7	4.7	3.5	4.7	3.5	3.5
All-Red Time (s)	1.0	1.0	1.5	1.0	1.5	1.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	None	Max	None	None
Walk Time (s)	4.0	4.0			5.0	5.0
Flash Dont Walk (s)	26.0	26.0			29.0	29.0
Pedestrian Calls (#/hr)	4	4			4	4
Act Effct Green (s)	32.4	32.4	21.3	57.7	15.1	15.1
Actuated g/C Ratio	0.40	0.40	0.26	0.71	0.19	0.19
v/c Ratio	0.33	0.16	0.83	0.51	0.36	0.51
Control Delay	19.1	5.0	39.5	7.7	29.1	4.7
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay	19.1	5.0	39.5	7.8	29.1	4.7
LOS	B	A	D	A	C	A
Approach Delay	16.3			19.5	13.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↱	↰↰	↑↑	↰↰	↱↱
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		150	260		281	0
Storage Lanes		1	1		1	2
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	0.88
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	3433	3539	3433	2787
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3539	1583	3433	3539	3433	2787
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		70				882
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	45			40	30	
Link Distance (ft)	1090			630	736	
Travel Time (s)	16.5			10.7	16.7	
Volume (vph)	1195	137	547	541	135	811
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1299	149	595	588	147	882
Lane Group Flow (vph)	1299	149	595	588	147	882
Turn Type		Perm	Prot			Prot
Protected Phases	2		1	6	8	8
Permitted Phases	2	2				
Detector Phases	2	2	1	6	8	8
Minimum Initial (s)	10.0	10.0	7.0	10.0	5.0	5.0
Minimum Split (s)	36.0	36.0	15.0	20.0	39.0	39.0
Total Split (s)	36.0	36.0	32.0	68.0	42.0	42.0
Total Split (%)	32.7%	32.7%	29.1%	61.8%	38.2%	38.2%
Maximum Green (s)	30.3	30.3	27.0	62.3	37.0	37.0
Yellow Time (s)	4.7	4.7	3.5	4.7	3.5	3.5
All-Red Time (s)	1.0	1.0	1.5	1.0	1.5	1.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None	C-Max	None	None
Walk Time (s)	4.0	4.0			5.0	5.0
Flash Dont Walk (s)	26.0	26.0			29.0	29.0
Pedestrian Calls (#/hr)	4	4			4	4
Act Effct Green (s)	55.1	55.1	26.2	85.4	16.6	16.6
Actuated g/C Ratio	0.50	0.50	0.24	0.78	0.15	0.15
v/c Ratio	0.73	0.18	0.73	0.21	0.28	0.75
Control Delay	23.5	8.3	48.0	2.5	40.6	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.2
Total Delay	23.5	8.3	48.0	2.5	40.6	7.0
LOS	C	A	D	A	D	A
Approach Delay	21.9			25.4	11.8	

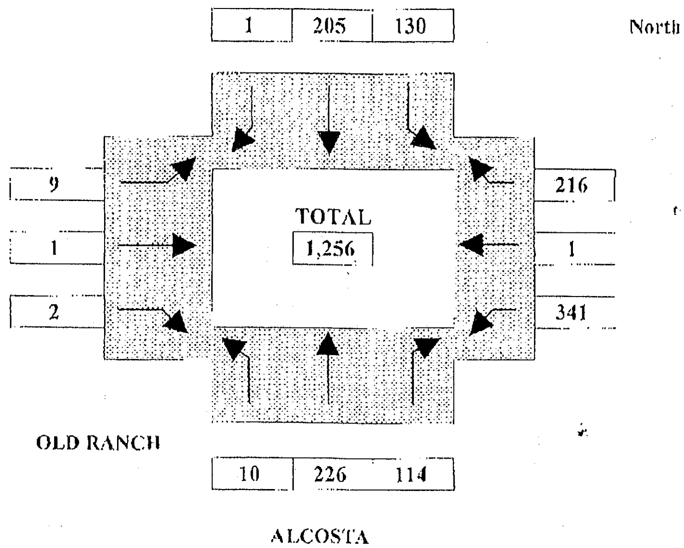
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

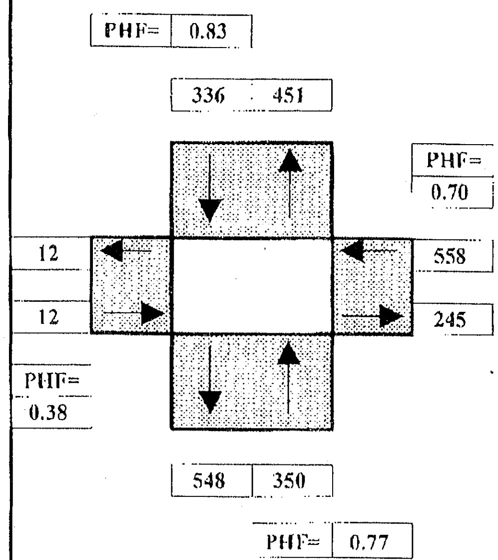
PROJECT: SAN RAMON TMC	SURVEY DATE: 2 / 15 / 2007		DAY: THURSDAY
N-S Approach: ALCOSTA	SURVEY TIME: 7:00 AM	TO 9:00 AM	
E-W Approach: OLD RANCH	CITY: SAN RAMON		FILE: ACORSRAM

PEAK HOUR

07:30 AM TO 08:30 AM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From		To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA															
07:00 AM	---	07:15 AM	1	18	9	20	28	0	0	0	0	29	0	25	*130*
07:15 AM	---	07:30 AM	3	47	19	42	60	0	1	1	0	74	0	56	*303*
07:30 AM	---	07:45 AM	5	89	34	70	101	0	3	1	0	137	0	96	*536*
07:45 AM	---	08:00 AM	9	145	62	108	154	0	4	1	1	225	1	151	*861*
08:00 AM	---	08:15 AM	11	218	100	142	220	1	7	2	1	345	1	229	*1,277*
08:15 AM	---	08:30 AM	13	273	133	172	265	1	10	2	2	415	1	272	*1,559*
08:30 AM	---	08:45 AM	15	323	161	197	301	2	12	2	2	456	2	297	*1,770*
08:45 AM	---	09:00 AM	16	366	185	219	338	2	13	2	3	489	2	317	*1,952*
TOTAL BY PERIOD															
07:00 AM	---	07:15 AM	1	18	9	20	28	0	0	0	0	29	0	25	*130*
07:15 AM	---	07:30 AM	2	29	10	22	32	0	1	1	0	45	0	31	*173*
07:30 AM	---	07:45 AM	2	42	15	28	41	0	2	0	0	63	0	40	*233*
07:45 AM	---	08:00 AM	4	56	28	38	53	0	1	0	1	88	1	55	*325*
08:00 AM	---	08:15 AM	2	73	38	34	66	1	3	1	0	120	0	78	*416*
08:15 AM	---	08:30 AM	2	55	33	30	45	0	3	0	1	70	0	43	*282*
08:30 AM	---	08:45 AM	2	50	28	25	36	1	2	0	0	41	1	25	*211*
08:45 AM	---	09:00 AM	1	43	24	22	37	0	1	0	1	33	0	20	*182*
HOURLY TOTALS															
07:00 AM	---	08:00 AM	9	145	62	108	154	0	4	1	1	225	1	151	*861*
07:15 AM	---	08:15 AM	10	200	91	122	192	1	7	2	1	316	1	204	*1,147*
07:30 AM	---	08:30 AM	10	226	114	130	205	1	9	1	2	341	1	216	*1,256*
07:45 AM	---	08:45 AM	10	234	127	127	200	2	9	1	2	319	2	201	*1,234*
08:00 AM	---	09:00 AM	7	221	123	111	184	2	9	1	2	264	1	166	*1,091*

Tel : (510) 232-1271 *Fax: (510) 232-1272*

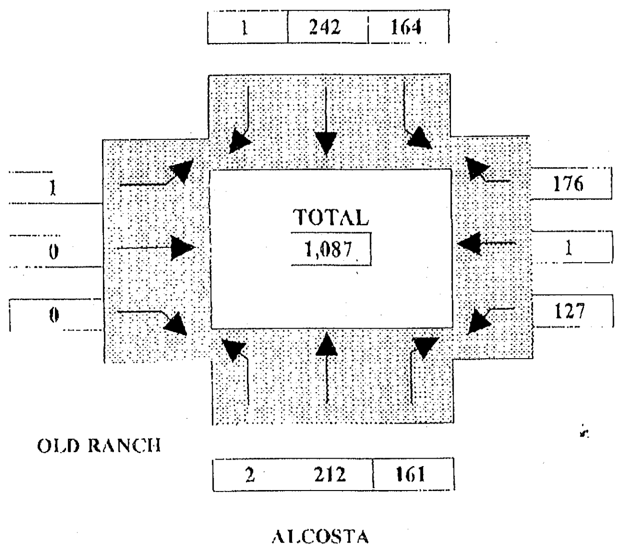
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

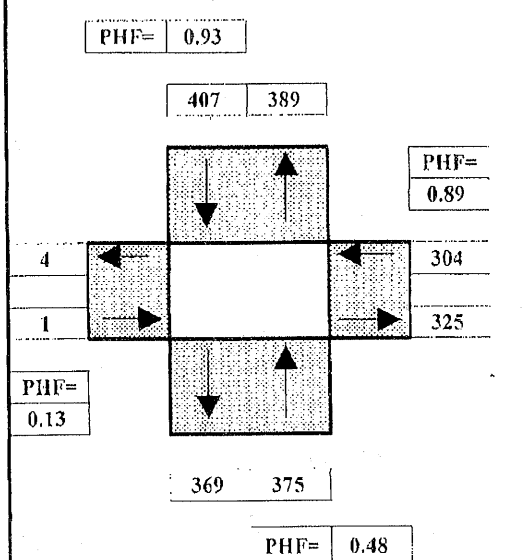
PROJECT: SAN RAMON TMC	SURVEY DATE: 2 / 15 / 2007		DAY: THURSDAY
N-S Approach: ALCOSTA	SURVEY TIME: 4:00 PM	TO	6:00 PM
E-W Approach: OLD RANCH	CITY: SAN RAMON		FILE: ACORSRPM

PEAK HOUR

05:00 PM TO 06:00 PM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From		To	NORTHBOUND Left	NORTHBOUND Thru	NORTHBOUND Right	SOUTHBOUND Left	SOUTHBOUND Thru	SOUTHBOUND Right	EASTBOUND Left	EASTBOUND Thru	EASTBOUND Right	WESTBOUND Left	WESTBOUND Thru	WESTBOUND Right	TOTAL
SURVEY DATA															
04:00 PM	---	04:15 PM	0	46	29	19	45	0	0	0	0	32	0	24	195
04:15 PM	---	04:30 PM	0	99	63	45	97	1	0	0	0	72	0	44	421
04:30 PM	---	04:45 PM	2	151	106	76	144	1	0	0	0	107	0	78	665
04:45 PM	---	05:00 PM	2	211	141	118	200	2	0	2	0	136	0	116	928
05:00 PM	---	05:15 PM	2	259	181	156	266	2	1	2	0	162	0	161	1,192
05:15 PM	---	05:30 PM	3	316	214	192	324	2	1	2	0	195	1	202	1,452
05:30 PM	---	05:45 PM	4	367	260	236	388	3	1	2	0	232	1	250	1,744
05:45 PM	---	06:00 PM	4	423	302	282	442	3	1	2	0	263	1	292	2,015
TOTAL BY PERIOD															
04:00 PM	---	04:15 PM	0	46	29	19	45	0	0	0	0	32	0	24	195
04:15 PM	---	04:30 PM	0	53	34	26	52	1	0	0	0	40	0	20	226
04:30 PM	---	04:45 PM	2	52	43	31	47	0	0	0	0	35	0	34	244
04:45 PM	---	05:00 PM	0	60	35	42	56	1	0	2	0	29	0	38	263
05:00 PM	---	05:15 PM	0	48	40	38	66	0	1	0	0	26	0	45	264
05:15 PM	---	05:30 PM	1	57	33	36	58	0	0	0	0	33	1	41	260
05:30 PM	---	05:45 PM	1	51	46	44	64	1	0	0	0	37	0	48	292
05:45 PM	---	06:00 PM	0	56	42	46	54	0	0	0	0	31	0	42	271
HOURLY TOTALS															
04:00 PM	---	05:00 PM	2	211	141	118	200	2	0	2	0	136	0	116	928
04:15 PM	---	05:15 PM	2	213	152	137	221	2	1	2	0	130	0	137	997
04:30 PM	---	05:30 PM	3	217	151	147	227	1	1	2	0	123	1	158	1,031
04:45 PM	---	05:45 PM	2	216	154	160	244	2	1	2	0	125	1	172	1,079
05:00 PM	---	06:00 PM	2	212	161	164	242	1	1	0	0	127	1	176	1,087

Tel : (510) 232-1271 Fax: (510) 232-1272

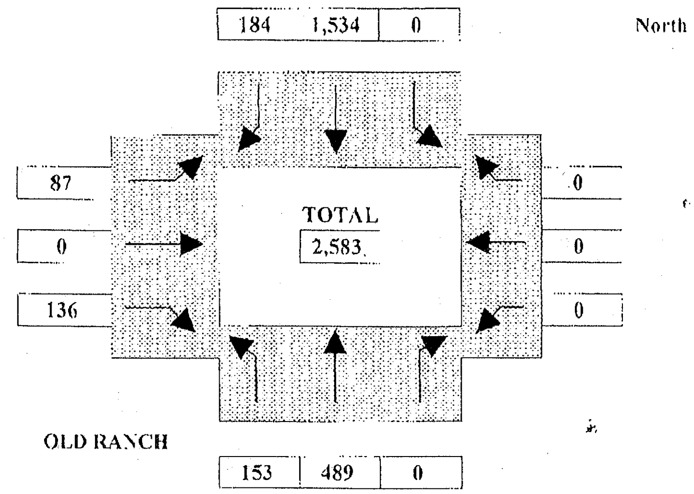
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

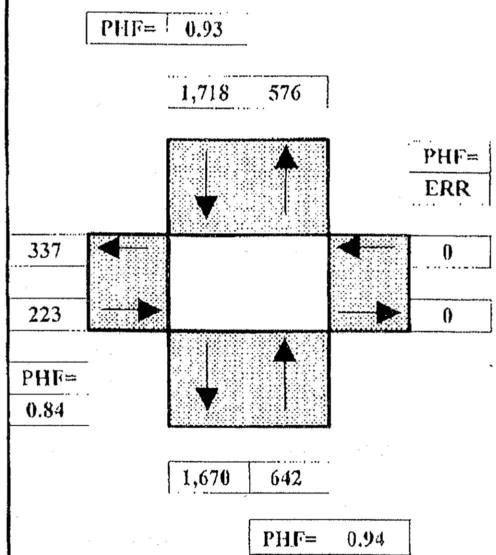
PROJECT: SAN RAMON TMC	SURVEY DATE: 2 / 15 / 2007		DAY: THURSDAY
N-S Approach: DOUGHERTY	SURVEY TIME: 7:00 AM	TO	9:00 AM
E-W Approach: OLD RANCH	CITY: SAN RAMON		FILE: DHORSRAM

PEAK HOUR

08:00 AM TO 09:00 AM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From		To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA															
07:00 AM	---	07:15 AM	13	106	0	0	245	10	5	0	42	0	0	0	*421*
07:15 AM	---	07:30 AM	31	218	0	0	511	26	13	0	80	0	0	0	*879*
07:30 AM	---	07:45 AM	51	342	0	0	813	51	28	0	116	0	0	0	*1,401*
07:45 AM	---	08:00 AM	77	448	0	0	1,139	89	48	0	160	0	0	0	*1,961*
08:00 AM	---	08:15 AM	113	582	0	0	1,523	135	72	0	196	0	0	0	*2,621*
08:15 AM	---	08:30 AM	155	697	0	0	1,928	191	100	0	234	0	0	0	*3,305*
08:30 AM	---	08:45 AM	190	824	0	0	2,319	235	119	0	266	0	0	0	*3,953*
08:45 AM	---	09:00 AM	230	937	0	0	2,673	273	135	0	296	0	0	0	*4,544*
TOTAL BY PERIOD															
07:00 AM	---	07:15 AM	13	106	0	0	245	10	5	0	42	0	0	0	*421*
07:15 AM	---	07:30 AM	18	112	0	0	266	16	8	0	38	0	0	0	*458*
07:30 AM	---	07:45 AM	20	124	0	0	302	25	15	0	36	0	0	0	*522*
07:45 AM	---	08:00 AM	26	106	0	0	326	38	20	0	44	0	0	0	*560*
08:00 AM	---	08:15 AM	36	134	0	0	384	46	24	0	36	0	0	0	*660*
08:15 AM	---	08:30 AM	42	115	0	0	405	56	28	0	38	0	0	0	*684*
08:30 AM	---	08:45 AM	35	127	0	0	391	44	19	0	32	0	0	0	*648*
08:45 AM	---	09:00 AM	40	113	0	0	354	38	16	0	30	0	0	0	*591*
HOURLY TOTALS															
07:00 AM	---	08:00 AM	77	448	0	0	1,139	89	48	0	160	0	0	0	*1,961*
07:15 AM	---	08:15 AM	100	476	0	0	1,278	125	67	0	154	0	0	0	*2,200*
07:30 AM	---	08:30 AM	124	479	0	0	1,417	165	87	0	154	0	0	0	*2,426*
07:45 AM	---	08:45 AM	139	482	0	0	1,506	184	91	0	150	0	0	0	*2,552*
08:00 AM	---	09:00 AM	153	489	0	0	1,534	184	87	0	136	0	0	0	*2,583*

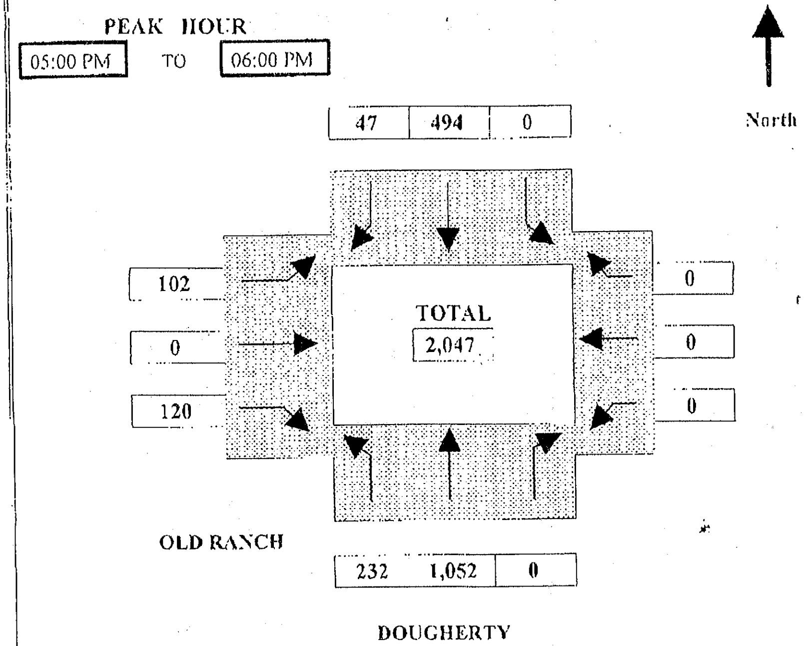
BAYMETRICS TRAFFIC RESOURCES

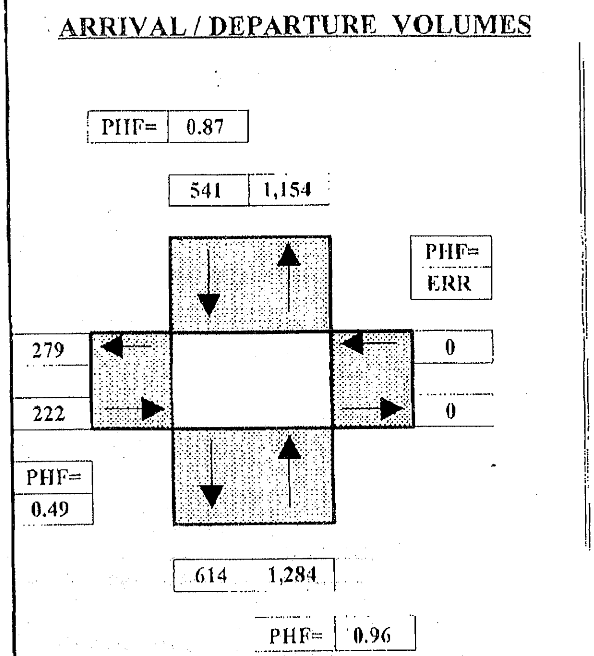
INTERSECTION TURNING MOVEMENT SUMMARY

PROJECT: SAN RAMON TMC | SURVEY DATE: 2 / 15 / 2007 | DAY: THURSDAY

N-S Approach: DOUGHERTY | SURVEY TIME: 4:00 PM TO 6:00 PM

E-W Approach: OLD RANCH | CITY: SAN RAMON | FILE: DHORSRPM





TIME PERIOD From		To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA															
04:00 PM	---	04:15 PM	50	178	0	0	106	15	25	0	22	0	0	0	396
04:15 PM	---	04:30 PM	110	383	0	0	230	27	47	0	46	0	0	0	843
04:30 PM	---	04:45 PM	161	604	0	0	335	36	81	0	65	0	0	0	1,282
04:45 PM	---	05:00 PM	209	848	0	0	452	47	107	0	95	0	0	0	1,758
05:00 PM	---	05:15 PM	265	1,117	0	0	593	61	132	0	122	0	0	0	2,290
05:15 PM	---	05:30 PM	328	1,367	0	0	702	69	154	0	156	0	0	0	2,776
05:30 PM	---	05:45 PM	380	1,648	0	0	830	84	183	0	184	0	0	0	3,309
05:45 PM	---	06:00 PM	441	1,900	0	0	946	94	209	0	215	0	0	0	3,805
TOTAL BY PERIOD															
04:00 PM	---	04:15 PM	50	178	0	0	106	15	25	0	22	0	0	0	396
04:15 PM	---	04:30 PM	60	205	0	0	124	12	22	0	24	0	0	0	447
04:30 PM	---	04:45 PM	51	221	0	0	105	9	34	0	19	0	0	0	439
04:45 PM	---	05:00 PM	48	244	0	0	117	11	26	0	30	0	0	0	476
05:00 PM	---	05:15 PM	56	269	0	0	141	14	25	0	27	0	0	0	532
05:15 PM	---	05:30 PM	63	250	0	0	109	8	22	0	34	0	0	0	486
05:30 PM	---	05:45 PM	52	281	0	0	128	15	29	0	28	0	0	0	533
05:45 PM	---	06:00 PM	61	252	0	0	116	10	26	0	31	0	0	0	496
HOURLY TOTALS															
04:00 PM	---	05:00 PM	209	848	0	0	452	47	107	0	95	0	0	0	1,758
04:15 PM	---	05:15 PM	215	939	0	0	487	46	107	0	100	0	0	0	1,894
04:30 PM	---	05:30 PM	218	984	0	0	472	42	107	0	110	0	0	0	1,933
04:45 PM	---	05:45 PM	219	1,044	0	0	495	48	102	0	119	0	0	0	2,027
05:00 PM	---	06:00 PM	232	1,052	0	0	494	47	102	0	120	0	0	0	2,047

Tel : (510) 232-1271 Fax: (510) 232-1272

PEAK HOUR COUNTS

LOCATION: Sunset Dr./ Shopping Center

DATE: 9/20/06

AM												TOTAL
NBL	NBT	NBR	WBL	WBT	WBR	SBL	SBT	SBR	EBL	EBT	EBR	
302	691	78	12	1	3	7	109	23	48	6	142	1422
PEAK HOUR: 7:30-8:30 AM												

PM												TOTAL
NBL	NBT	NBR	WBL	WBT	WBR	SBL	SBT	SBR	EBL	EBT	EBR	
250	200	50	100	25	15	25	575	75	50	15	175	1555
PEAK HOUR: 4:30-5:30 PM												

LOCATION: Sunset Dr./ Bishop Dr.

DATE: 9/20/06

AM												TOTAL
NBL	NBT	NBR	WBL	WBT	WBR	SBL	SBT	SBR	EBL	EBT	EBR	
299	393	49	33	71	11	11	14	20	25	82	90	1098
PEAK HOUR: 7:30-8:30 AM												

PM												TOTAL
NBL	NBT	NBR	WBL	WBT	WBR	SBL	SBT	SBR	EBL	EBT	EBR	
140	50	75	100	50	20	20	325	25	15	100	250	1170
PEAK HOUR: 4:30-5:30 PM												

BAYMETRICS TRAFFIC RESOURCES

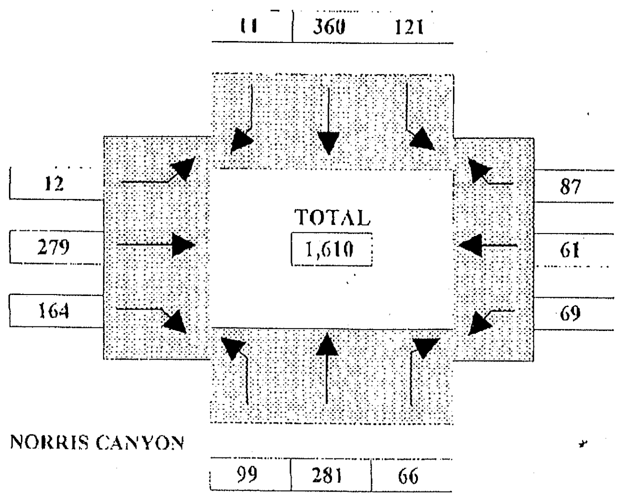
INTERSECTION TURNING MOVEMENT SUMMARY

PROJECT: SAN RAMON TMC | SURVEY DATE: 2 / 15 / 2007 | DAY: THURSDAY

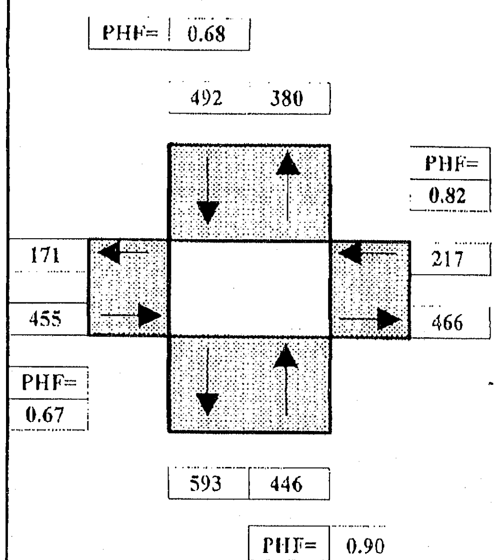
N-S Approach: BOLLINGER CANYON | SURVEY TIME: 7:00 AM TO 9:00 AM

E-W Approach: NORRIS CANYON | CITY: SAN RAMON | FILE: BCNCSRAM

PEAK HOUR 07:15 AM TO 08:15 AM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From		To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA															
07:00 AM	---	07:15 AM	28	41	5	7	42	3	0	35	18	10	15	5	*209*
07:15 AM	---	07:30 AM	51	111	15	25	98	6	1	75	43	24	27	17	*493*
07:30 AM	---	07:45 AM	79	186	36	55	186	8	3	137	77	39	41	36	*883*
07:45 AM	---	08:00 AM	101	252	54	100	317	12	8	239	139	61	54	66	*1,403*
08:00 AM	---	08:15 AM	127	322	71	128	402	14	12	314	182	79	76	92	*1,819*
08:15 AM	---	08:30 AM	146	377	83	146	458	17	12	369	211	89	89	102	*2,099*
08:30 AM	---	08:45 AM	161	423	91	159	495	18	15	412	229	94	97	108	*2,302*
08:45 AM	---	09:00 AM	174	464	101	170	529	20	16	450	251	100	104	113	*2,492*
TOTAL BY PERIOD															
07:00 AM	---	07:15 AM	28	41	5	7	42	3	0	35	18	10	15	5	*209*
07:15 AM	---	07:30 AM	23	70	10	18	56	3	1	40	25	14	12	12	*284*
07:30 AM	---	07:45 AM	28	75	21	30	88	2	2	62	34	15	14	19	*390*
07:45 AM	---	08:00 AM	22	66	18	45	131	4	5	102	62	22	13	30	*520*
08:00 AM	---	08:15 AM	26	70	17	28	85	2	4	75	43	18	22	26	*416*
08:15 AM	---	08:30 AM	19	55	12	18	56	3	0	55	29	10	13	10	*280*
08:30 AM	---	08:45 AM	15	46	8	13	37	1	3	43	18	5	8	6	*203*
08:45 AM	---	09:00 AM	13	41	10	11	34	2	1	38	22	6	7	5	*190*
HOURLY TOTALS															
07:00 AM	---	08:00 AM	101	252	54	100	317	12	8	239	139	61	54	66	*1,403*
07:15 AM	---	08:15 AM	99	281	66	121	360	11	12	279	164	69	61	87	*1,610*
07:30 AM	---	08:30 AM	95	266	68	121	360	11	11	294	168	65	62	85	*1,606*
07:45 AM	---	08:45 AM	82	237	55	104	309	10	12	275	152	55	56	72	*1,419*
08:00 AM	---	09:00 AM	73	212	47	70	212	8	8	211	112	39	50	47	*1,089*

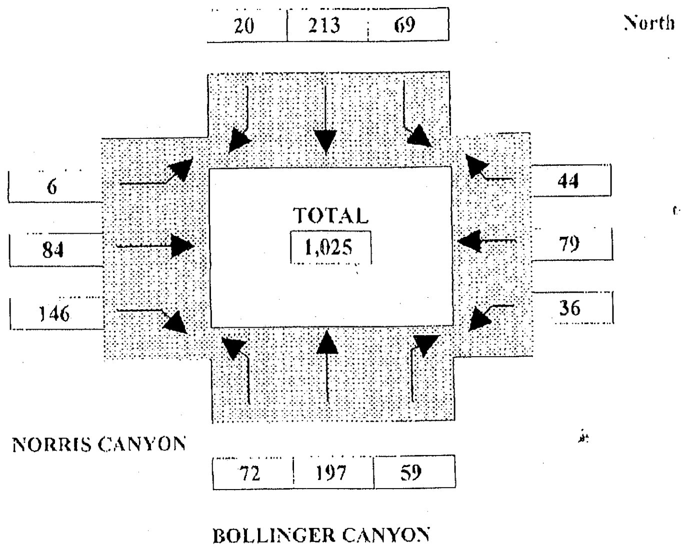
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

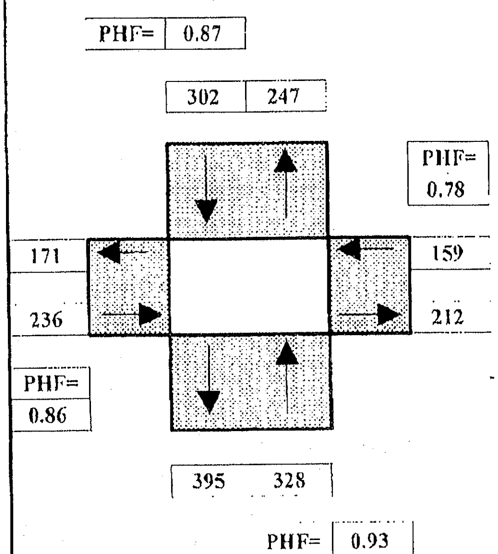
PROJECT: SAN RAMON TMC	SURVEY DATE: 2 / 15 / 2007		DAY: THURSDAY
N-S Approach: BOLLINGER CANYON	SURVEY TIME: 4:00 PM	TO	6:00 PM
E-W Approach: NORRIS CANYON	CITY: SAN RAMON		FILE: BCNCSRPM

PEAK HOUR

04:15 PM TO 05:15 PM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From		To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
							SURVEY DATA								
04:00 PM	---	04:15 PM	16	45	10	17	42	4	0	24	33	10	18	9	228
04:15 PM	---	04:30 PM	38	96	25	31	93	11	2	43	73	18	40	19	489
04:30 PM	---	04:45 PM	55	151	36	51	155	16	2	60	108	25	57	31	747
04:45 PM	---	05:00 PM	70	199	56	67	210	21	4	80	140	37	73	45	1,002
05:00 PM	---	05:15 PM	88	242	69	86	255	24	6	108	179	46	97	53	1,253
05:15 PM	---	05:30 PM	102	280	86	100	293	26	6	130	222	54	129	60	1,488
05:30 PM	---	05:45 PM	119	320	108	112	334	27	8	156	251	65	157	72	1,729
05:45 PM	---	06:00 PM	132	354	126	123	368	30	10	178	286	79	183	82	1,951
							TOTAL BY PERIOD								
04:00 PM	---	04:15 PM	16	45	10	17	42	4	0	24	33	10	18	9	228
04:15 PM	---	04:30 PM	22	51	15	14	51	7	2	19	40	8	22	10	261
04:30 PM	---	04:45 PM	17	55	11	20	62	5	0	17	35	7	17	12	258
04:45 PM	---	05:00 PM	15	48	20	16	55	5	2	20	32	12	16	14	255
05:00 PM	---	05:15 PM	18	43	13	19	45	3	2	28	39	9	24	8	251
05:15 PM	---	05:30 PM	14	38	17	14	38	2	0	22	43	8	32	7	235
05:30 PM	---	05:45 PM	17	40	22	12	41	1	2	26	29	11	28	12	241
05:45 PM	---	06:00 PM	13	34	18	11	34	3	2	22	35	14	26	10	222
							HOURLY TOTALS								
04:00 PM	---	05:00 PM	70	199	56	67	210	21	4	80	140	37	73	45	1,002
04:15 PM	---	05:15 PM	72	197	59	69	213	20	6	84	146	36	79	44	1,025
04:30 PM	---	05:30 PM	64	184	61	69	200	15	4	87	149	36	89	41	999
04:45 PM	---	05:45 PM	64	169	72	61	179	11	6	96	143	40	100	41	982
05:00 PM	---	06:00 PM	62	155	70	56	158	9	6	98	146	42	110	37	949

Tel : (510) 232-1271 Fax: (510) 232-1272

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	120		200	100		0	0		110
Storage Lanes	1		0	1		1	1		0	0		1
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Leading Detector (ft)	50	200		50	200	50	50	50		50	50	50
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996				0.850		0.888				0.850
Flt Protected	0.950			0.950			0.950				0.954	
Satd. Flow (prot)	1770	3525	0	1770	3539	1583	1770	1654	0	0	1777	1583
Flt Permitted	0.950			0.950			0.731				0.814	
Satd. Flow (perm)	1770	3525	0	1770	3539	1583	1362	1654	0	0	1516	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				86		12				279
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		1038			1986			316			373	
Travel Time (s)		17.7			33.9			7.2			8.5	
Volume (vph)	172	480	13	33	1276	79	124	4	11	36	1	257
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	187	522	14	36	1387	86	135	4	12	39	1	279
Lane Group Flow (vph)	187	536	0	36	1387	86	135	16	0	0	40	279
Turn Type	Prot			Prot		Perm	Perm			Perm		custom
Protected Phases	5	2		1	6			4			8	
Permitted Phases						6	4			8		6
Detector Phases	5	2		1	6	6	4	4		8	8	6
Minimum Initial (s)	7.0	15.0		7.0	15.0	15.0	7.0	7.0		7.0	7.0	15.0
Minimum Split (s)	15.0	29.0		15.0	29.0	29.0	32.0	32.0		32.0	32.0	29.0
Total Split (s)	15.0	20.0	0.0	15.0	20.0	20.0	25.0	25.0	0.0	25.0	25.0	20.0
Total Split (%)	25.0%	33.3%	0.0%	25.0%	33.3%	33.3%	41.7%	41.7%	0.0%	41.7%	41.7%	33.3%
Maximum Green (s)	11.0	15.0		11.0	15.0	15.0	20.0	20.0		20.0	20.0	15.0
Yellow Time (s)	3.5	4.0		3.5	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	0.5	1.0		0.5	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lead/Lag	Lag	Lead		Lag	Lead	Lead						Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	C-Max
Walk Time (s)		7.0			7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)		15.0			15.0	15.0	20.0	20.0		20.0	20.0	15.0
Pedestrian Calls (#/hr)		4			4	4	4	4		4	4	4
Act Effct Green (s)	10.9	37.2		9.6	28.7	28.7	13.8	13.8			13.8	28.7
Actuated g/C Ratio	0.18	0.62		0.16	0.48	0.48	0.23	0.23			0.23	0.48
v/c Ratio	0.58	0.25		0.13	0.82	0.11	0.43	0.04			0.11	0.31
Control Delay	30.0	10.0		21.2	16.3	1.3	22.7	9.5			16.6	3.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	30.0	10.0		21.2	16.3	1.3	22.7	9.5			16.6	3.5
LOS	C	A		C	B	A	C	A			B	A
Approach Delay		15.1			15.6			21.3			5.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	120		200	100		0	0		110
Storage Lanes	1		0	1		1	1		0	0		1
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Leading Detector (ft)	50	250		50	250	50	50	50		50	50	50
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.989				0.850		0.925				0.850
Flt Protected	0.950			0.950			0.950				0.956	
Satd. Flow (prot)	1770	3500	0	1770	3539	1583	1770	1723	0	0	1781	1583
Flt Permitted	0.950			0.950			0.675				0.762	
Satd. Flow (perm)	1770	3500	0	1770	3539	1583	1257	1723	0	0	1419	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11				97		7				188
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1038			1986			316			373	
Travel Time (s)		23.6			45.1			7.2			8.5	
Volume (vph)	301	1402	107	24	638	89	52	6	6	90	7	173
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	327	1524	116	26	693	97	57	7	7	98	8	188
Lane Group Flow (vph)	327	1640	0	26	693	97	57	14	0	0	106	188
Turn Type	Prot			Prot		Perm	Perm			Perm		custom
Protected Phases	5	2		1	6			4			8	
Permitted Phases						6	4			8		6
Detector Phases	5	2		1	6	6	4	4		8	8	6
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	15.0	31.0		15.0	30.0	30.0	35.0	35.0		33.0	33.0	30.0
Total Split (s)	24.0	40.0	0.0	15.0	31.0	31.0	35.0	35.0	0.0	35.0	35.0	31.0
Total Split (%)	26.7%	44.4%	0.0%	16.7%	34.4%	34.4%	38.9%	38.9%	0.0%	38.9%	38.9%	34.4%
Maximum Green (s)	20.0	35.0		11.0	26.0	26.0	30.0	30.0		30.0	30.0	26.0
Yellow Time (s)	3.5	4.0		3.5	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	0.5	1.0		0.5	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	C-Max
Walk Time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Flash Dont Walk (s)		22.0			21.0	21.0	26.0	26.0		24.0	24.0	21.0
Pedestrian Calls (#/hr)		4			4	4	4	4		4	4	4
Act Effct Green (s)	21.7	65.9		7.9	45.5	45.5	15.9	15.9			16.0	45.5
Actuated g/C Ratio	0.24	0.73		0.09	0.51	0.51	0.18	0.18			0.18	0.51
v/c Ratio	0.77	0.64		0.17	0.39	0.11	0.26	0.05			0.42	0.21
Control Delay	44.8	13.1		51.9	8.3	1.5	31.2	18.1			35.4	4.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	44.8	13.1		51.9	8.3	1.5	31.2	18.1			35.4	4.0
LOS	D	B		D	A	A	C	B			D	A
Approach Delay		18.3			8.8			28.7			15.3	

TRAFFIX ANALYSIS

Existing

Scenario Report

Scenario:	AM EXT
Command:	Default Command
Volume:	AM Ext
Geometry:	Ext
Impact Fee:	Default Impact Fee
Trip Generation:	No
Trip Distribution:	None
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/C	Future LOS	Future Del/ Veh	Future V/C	Change in
# 1 San Ramon/Crow	A	xxxxx	0.559	A	xxxxx	0.559	+ 0.000 V/C
# 2 680 SB OFF/Crow	A	xxxxx	0.588	A	xxxxx	0.588	+ 0.000 V/C
# 3 680 NB ON/Crow	A	xxxxx	0.523	A	xxxxx	0.523	+ 0.000 V/C
# 4 Camino Ramon/Crow	A	xxxxx	0.568	A	xxxxx	0.568	+ 0.000 V/C
# 5 Alcosta/Crow	A	xxxxx	0.436	A	xxxxx	0.436	+ 0.000 V/C
# 6 Camino Ramon/Norris	A	xxxxx	0.462	A	xxxxx	0.462	+ 0.000 V/C
# 7 Camino Ramon/Executive	A	xxxxx	0.357	A	xxxxx	0.357	+ 0.000 V/C
# 8 Camino Ramon/Bishop Drive	A	xxxxx	0.358	A	xxxxx	0.358	+ 0.000 V/C
# 9 San Ramon/Bollinger	C	xxxxx	0.794	C	xxxxx	0.794	+ 0.000 V/C
# 10 680 SB OFF/Bollinger	A	xxxxx	0.500	A	xxxxx	0.500	+ 0.000 V/C
# 11 680 NB OFF/Bollinger	C	xxxxx	0.753	C	xxxxx	0.753	+ 0.000 V/C
# 12 Sunset/Bollinger	B	xxxxx	0.661	B	xxxxx	0.661	+ 0.000 V/C
# 13 Camino Ramon/Bollinger	A	xxxxx	0.564	A	xxxxx	0.564	+ 0.000 V/C
# 14 Bishop 2 Drive/Bollinger	A	xxxxx	0.385	A	xxxxx	0.385	+ 0.000 V/C
# 15 Market/Bollinger Drive	A	xxxxx	0.452	A	xxxxx	0.452	+ 0.000 V/C
# 16 Alcosta/Bollinger	C	xxxxx	0.707	C	xxxxx	0.707	+ 0.000 V/C
# 17 Alcosta/Norris	A	xxxxx	0.395	A	xxxxx	0.395	+ 0.000 V/C
# 18 San Ramon/Norris	A	xxxxx	0.549	A	xxxxx	0.549	+ 0.000 V/C
# 19 Bollinger/Crow	A	xxxxx	0.455	A	xxxxx	0.455	+ 0.000 V/C
# 20 Dougherty/Bollinger	A	xxxxx	0.498	A	xxxxx	0.498	+ 0.000 V/C
# 21 San Ramon/Montevideo	B	xxxxx	0.615	B	xxxxx	0.615	+ 0.000 V/C
# 22 Alcosts/Montevideo	A	xxxxx	0.270	A	xxxxx	0.270	+ 0.000 V/C
# 23 Dougherty/Crow	A	xxxxx	0.409	A	xxxxx	0.409	+ 0.000 V/C
# 24 Alcosta/Old Ranch	A	xxxxx	0.299	A	xxxxx	0.299	+ 0.000 V/C
# 25 Doughert/Old Ranch	B	xxxxx	0.639	B	xxxxx	0.639	+ 0.000 V/C

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 26 Sunset/Center Street	A	xxxxx	0.299	A	xxxxx	0.299	+ 0.000 V/C
# 27 Bishop Drive/Sunset	A	xxxxx	0.362	A	xxxxx	0.362	+ 0.000 V/C
# 28 Bollinger Canyon/Norris Canyon	C	20.6	0.855	C	20.6	0.855	+ 0.000 V/C
# 29 Bollinger/Canyon Lakes	A	xxxxx	0.592	A	xxxxx	0.592	+ 0.000 V/C
# 30 Camino Ramon/Center Street		xxxxx	0.000		xxxxx	0.000	+ 0.000 V/C

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                     Level Of Service Computation Report
                  CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #1 San Ramon/Crow
********************************************************************************
Cycle (sec):          180                Critical Vol./Cap.(X):         0.559
Loss Time (sec):       12 (Y+R=4.0 sec)  Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         52                Level Of Service:                  A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Protected        Protected         Protected        Protected
Rights:           Include          Include           Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        2  0  2  0  1    2  0  2  0  1    2  0  3  0  1    2  0  3  0  1
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:      91   238   410  340   225   131  171   975   124  492  1228   466
Growth Adj:  1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Initial Bse:   91   238   410  340   225   131  171   975   124  492  1228   466
Added Vol:      0     0     0    0     0     0    0     0     0    0     0     0
PasserByVol:    0     0     0    0     0     0    0     0     0    0     0     0
Initial Fut:   91   238   410  340   225   131  171   975   124  492  1228   466
User Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Volume:    91   238   410  340   225   131  171   975   124  492  1228   466
Reduct Vol:     0     0     0    0     0     0    0     0     0    0     0     0
Reduced Vol:   91   238   410  340   225   131  171   975   124  492  1228   466
RTOR Reduct:    0     0   271    0     0    94    0     0    50    0     0   187
RTOR Vol:      91   238   139  340   225    37  171   975    74  492  1228   279
PCE Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Final Vol.:    91   238   139  340   225    37  171   975    74  492  1228   279
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650  1650
Adjustment:  0.91  1.00  1.00 0.91  1.00  1.00 0.91  1.00  1.00 0.91  1.00  1.00
Lanes:       2.00  2.00  1.00 2.00  2.00  1.00 2.00  3.00  1.00 2.00  3.00  1.00
Final Sat.:  3000  3300  1650 3000  3300  1650 3000  4950  1650 3000  4950  1650
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.03  0.07  0.08 0.11  0.07  0.02 0.06  0.20  0.04 0.16  0.25  0.17
Crit Vol:                 139  170                     325        246
Crit Moves:              ****  ****                   ****       ****
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                    Level Of Service Computation Report
                CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #2 680 SB OFF/Crow
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):        0.588
Loss Time (sec):       0 (Y+R=4.0 sec) Average Delay (sec/veh):     xxxxxx
Optimal Cycle:        45              Level Of Service:                 A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase        Permitted         Permitted
Rights:           Include          Include           Ignore            Ignore
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        0  0  0  0  0    2  0  0  0  2    0  0  3  0  1    0  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0     0     0 1149     0   838    0   934   497    0  1280   749
Growth Adj:  1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Initial Bse:   0     0     0 1149     0   838    0   934   497    0  1280   749
Added Vol:     0     0     0    0     0     0    0     0     0    0     0     0
PasserByVol:   0     0     0    0     0     0    0     0     0    0     0     0
Initial Fut:   0     0     0 1149     0   838    0   934   497    0  1280   749
User Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Volume:    0     0     0 1149     0   838    0   934   497    0  1280   749
Reduct Vol:    0     0     0    0     0     0    0     0     0    0     0     0
Reduced Vol:   0     0     0 1149     0   838    0   934   497    0  1280   749
RTOR Reduct:   0     0     0    0     0     0    0     0     0    0     0     0
RTOR Vol:      0     0     0 1149     0   838    0   934   497    0  1280   749
PCE Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Final Vol.:    0     0     0 1149     0   838    0   934   497    0  1280   749
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1800  1800  1800 1800  1800  1800 1800  1800  1800 1800  1800  1800
Adjustment:  1.00  1.00  1.00 0.91  1.00  0.91 1.00  1.00  1.00 1.00  1.00  1.00
Lanes:       0.00  0.00  0.00 2.00  0.00  2.00 0.00  3.00  1.00 0.00  3.00  1.00
Final Sat.:    0     0     0 3272     0  3272    0  5400  1800    0  5400  1800
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.00  0.00 0.35  0.00  0.26 0.00  0.17  0.28 0.00  0.24  0.42
Crit Vol:          0           575              0                    427
Crit Moves:                   ****             ****                  ****
********************************************************************************
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                      Level Of Service Computation Report
                  CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #3 680 NB ON/Crow
********************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):         0.523
Loss Time (sec):        0 (Y+R=4.0 sec)  Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         39                Level Of Service:                  A
********************************************************************************
Approach:      North Bound       South Bound       East Bound        West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:       Split Phase       Split Phase        Permitted         Permitted
Rights:          Include           Include           Ignore            Ignore
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  1! 0  1   0  0  0  0  0   0  0  3  0  1   0  0  3  1  1
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:     453    0   874    0    0     0    0 1364   915    0 1151   551
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:  453    0   874    0    0     0    0 1364   915    0 1151   551
Added Vol:      0    0     0    0    0     0    0    0     0    0    0     0
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  453    0   874    0    0     0    0 1364   915    0 1151   551
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   453    0   874    0    0     0    0 1364   915    0 1151   551
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  453    0   874    0    0     0    0 1364   915    0 1151   551
RTOR Reduct:    0    0     0    0    0     0    0    0     0    0    0     0
RTOR Vol:     453    0   874    0    0     0    0 1364   915    0 1151   551
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:   453    0   874    0    0     0    0 1364   915    0 1151   551
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1800 1800  1800 1800 1800  1800 1800 1800  1800 1800 1800  1800
Adjustment:  0.91 1.00  0.91 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.91
Lanes:       1.02 xxxx  1.98 0.00 0.00  0.00 0.00 3.00  1.00 0.00 3.38  1.62
Final Sat.:  1676    0  3233    0    0     0    0 5400  1800    0 6086  2648
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.27 0.00  0.27 0.00 0.00  0.00 0.00 0.25  0.51 0.00 0.19  0.21
Crit Vol:               442          0               455          0
Crit Moves:            ****                          ****       ****
********************************************************************************
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #4 Camino Ramon/Crow

Cycle (sec):	100	Critical Vol./Cap.(X):	0.568
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	53	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 1 0 1			1 0 1 1 0			1 0 3 0 1			1 0 3 1 0		
Volume Module:												
Base Vol:	109	61	57	126	126	68	184	1046	579	231	1560	204
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	109	61	57	126	126	68	184	1046	579	231	1560	204
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	109	61	57	126	126	68	184	1046	579	231	1560	204
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	109	61	57	126	126	68	184	1046	579	231	1560	204
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	109	61	57	126	126	68	184	1046	579	231	1560	204
RTOR Reduct:	0	0	57	0	0	0	0	0	60	0	0	0
RTOR Vol:	109	61	0	126	126	68	184	1046	519	231	1560	204
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	109	61	0	126	126	68	184	1046	519	231	1560	204
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	1.30	0.70	1.00	3.00	1.00	1.00	3.54	0.46
Final Sat.:	3000	1650	1650	1650	2143	1157	1650	4950	1650	1650	5837	763
Capacity Analysis Module:												
Vol/Sat:	0.04	0.04	0.00	0.08	0.06	0.06	0.11	0.21	0.31	0.14	0.27	0.27
Crit Vol:		61		126					519	231		
Crit Moves:		****		****					****	****		

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #5 Alcosta/Crow

Cycle (sec):	100	Critical Vol./Cap.(X):	0.436
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	40	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	3 0	1	2 0	3 0	0
Volume Module:												
Base Vol:	275	0	225	0	0	0	0	608	464	521	1653	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	275	0	225	0	0	0	0	608	464	521	1653	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	275	0	225	0	0	0	0	608	464	521	1653	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	275	0	225	0	0	0	0	608	464	521	1653	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	275	0	225	0	0	0	0	608	464	521	1653	0
RTOR Reduct:	0	0	225	0	0	0	0	0	151	0	0	0
RTOR Vol:	275	0	0	0	0	0	0	608	313	521	1653	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	275	0	0	0	0	0	0	608	313	521	1653	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	3.00	1.00	2.00	3.00	0.00
Final Sat.:	3127	0	1720	0	0	0	0	5160	1720	3127	5160	0
Capacity Analysis Module:												
Vol/Sat:	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.18	0.17	0.32	0.00
Crit Vol:	138				0				313	261		
Crit Moves:	****								****	****		

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #6 Camino Ramon/Norris

Cycle (sec):	100	Critical Vol./Cap.(X):	0.462
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	42	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	2 0	1	1 0	1 1	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	78	159	59	131	569	108	76	336	120	117	261	90
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	78	159	59	131	569	108	76	336	120	117	261	90
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	78	159	59	131	569	108	76	336	120	117	261	90
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	78	159	59	131	569	108	76	336	120	117	261	90
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	78	159	59	131	569	108	76	336	120	117	261	90
RTOR Reduct:	0	0	59	0	0	0	0	0	0	0	0	0
RTOR Vol:	78	159	0	131	569	108	76	336	120	117	261	90
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	78	159	0	131	569	108	76	336	120	117	261	90
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.68	0.32	1.00	1.47	0.53	1.00	1.49	0.51
Final Sat.:	1650	3300	1650	1650	2774	526	1650	2432	868	1650	2454	846
Capacity Analysis Module:												
Vol/Sat:	0.05	0.05	0.00	0.08	0.21	0.21	0.05	0.14	0.14	0.07	0.11	0.11
Crit Vol:	78				339				228	117		
Crit Moves:	****				****				****	****		

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #7 Camino Ramon/Executive

Cycle (sec): 100 Critical Vol./Cap.(X): 0.357
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 29 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:		Protected			Protected			Permitted			Permitted	
Rights:		Include			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	1 1	0	0 1	0 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	178	307	71	63	417	202	44	39	23	43	26	45
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	178	307	71	63	417	202	44	39	23	43	26	45
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	178	307	71	63	417	202	44	39	23	43	26	45
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	178	307	71	63	417	202	44	39	23	43	26	45
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	178	307	71	63	417	202	44	39	23	43	26	45
RTOR Reduct:	0	0	0	0	0	0	0	0	23	0	0	45
RTOR Vol:	178	307	71	63	417	202	44	39	0	43	26	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	178	307	71	63	417	202	44	39	0	43	26	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.62	0.38	1.00	1.35	0.65	0.53	0.47	1.00	0.62	0.38	1.00
Final Sat.:	1720	2794	646	1720	2317	1123	912	808	1720	1072	648	1720
Capacity Analysis Module:												
Vol/Sat:	0.10	0.11	0.11	0.04	0.18	0.18	0.05	0.05	0.00	0.04	0.04	0.00
Crit Vol:	178					310		83		43		
Crit Moves:	****					****		****		****		

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                    Level Of Service Computation Report
                CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #8 Camino Ramon/Bishop Drive
********************************************************************************
Cycle (sec):          100                 Critical Vol./Cap.(X):         0.358
Loss Time (sec):        0 (Y+R=4.0 sec)   Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         35                 Level Of Service:                  A
********************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:         Protected        Protected        Protected        Protected
Rights:            Include          Include          Include          Include
Min. Green:     0     0     0    0     0     0    0     0     0    0     0     0
Lanes:         1  0  1  1  0   1  0  1  1  0   1  0  0  1  0   1  0  0  1  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:      75   829   161    22   216    82    62    16    28    26     4     7
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:   75   829   161    22   216    82    62    16    28    26     4     7
Added Vol:      0     0     0     0     0     0     0     0     0     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:   75   829   161    22   216    82    62    16    28    26     4     7
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:    75   829   161    22   216    82    62    16    28    26     4     7
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   75   829   161    22   216    82    62    16    28    26     4     7
RTOR Reduct:    0     0     0     0     0     0     0     0     0     0     0     0
RTOR Vol:      75   829   161    22   216    82    62    16    28    26     4     7
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:    75   829   161    22   216    82    62    16    28    26     4     7
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1650  1650  1650  1650  1650  1650  1650  1650  1650  1650  1650  1650
Adjustment:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Lanes:       1.00  1.67  0.33  1.00  1.45  0.55  1.00  0.36  0.64  1.00  0.36  0.64
Final Sat.:  1650  2763   537  1650  2392   908  1650   600  1050  1650   600  1050
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.05  0.30  0.30  0.01  0.09  0.09  0.04  0.03  0.03  0.02  0.01  0.01
Crit Vol:           495         22                62                      11
Crit Moves:         ****        ****              ****                    ****
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                     Level Of Service Computation Report
                  CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #9 San Ramon/Bollinger
********************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):         0.794
Loss Time (sec):        0 (Y+R=4.0 sec)  Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        111                Level Of Service:                  C
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Protected        Protected        Protected         Protected
Rights:          Include          Include          Include           Include
Min. Green:    0     0     0    0     0     0    0     0     0     0     0     0
Lanes:        2  0  1  1  0   2  0  1  1  0   1  0  1  1  0    2  0  2  0  1
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:     206   491   446   260   276    26    38   761   200   397   308   200
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:  206   491   446   260   276    26    38   761   200   397   308   200
Added Vol:      0     0     0     0     0     0     0     0     0     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:  206   491   446   260   276    26    38   761   200   397   308   200
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:   206   491   446   260   276    26    38   761   200   397   308   200
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  206   491   446   260   276    26    38   761   200   397   308   200
RTOR Reduct:    0     0     0     0     0     0     0     0     0     0     0   143
RTOR Vol:     206   491   446   260   276    26    38   761   200   397   308    57
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:   206   491   446   260   276    26    38   761   200   397   308    57
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1650  1650  1650  1650  1650  1650  1650  1650  1650  1650  1650  1650
Adjustment:  0.91  1.00  1.00  0.91  1.00  1.00  1.00  1.00  1.00  0.91  1.00  1.00
Lanes:       2.00  1.05  0.95  2.00  1.83  0.17  1.00  1.58  0.42  2.00  2.00  1.00
Final Sat.:  3000  1729  1571  3000  3016   284  1650  2613   687  3000  3300  1650
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.07  0.28  0.28  0.09  0.09  0.09  0.02  0.29  0.29  0.13  0.09  0.03
Crit Vol:           469         130                      481         199
Crit Moves:        ****        ****                     ****        ****
********************************************************************************
```

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--------------------------------------------------------------------------------
                     Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #10 680 SB OFF/Bollinger
********************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):         0.500
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):       xxxxxx
Optimal Cycle:        37                Level Of Service:                   A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Split Phase      Split Phase        Permitted        Permitted
Rights:          Include          Include          Include           Ignore
Min. Green:    0    0    0     0    0     0     0    0     0     0    0     0
Lanes:        0  0  1! 0  0   1  1  0  0  2    0  0  3  1  0    0  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      3    0   101   733   12   248     0 1375     8     0  680   834
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   3    0   101   733   12   248     0 1375     8     0  680   834
Added Vol:     0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:   0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   3    0   101   733   12   248     0 1375     8     0  680   834
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    3    0   101   733   12   248     0 1375     8     0  680   834
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   3    0   101   733   12   248     0 1375     8     0  680   834
RTOR Reduct:   0    0     0     0    0     0     0    0     0     0    0     0
RTOR Vol:      3    0   101   733   12   248     0 1375     8     0  680   834
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    3    0   101   733   12   248     0 1375     8     0  680   834
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1720 1720  1720  1720 1720  1720  1720 1720  1720  1720 1720  1720
Adjustment:  1.00 1.00  1.00  0.91 1.00  0.91  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.03 0.00  0.97  1.97 0.03  2.00  0.00 3.98  0.02  0.00 3.00  1.00
Final Sat.:    50    0  1670  3077   55  3127     0 6840    40     0 5160  1720
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.06 0.00  0.06  0.24 0.22  0.08  0.00 0.20  0.20  0.00 0.13  0.48
Crit Vol:               104   372                            346     0
Crit Moves:             ****  ****                           ****  ****
********************************************************************************
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #11 680 NB OFF/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	0.753
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	75	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Permitted			Permitted		
Rights:	Include			Include			Ignore			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 0 0 2			0 0 0 0 0			0 0 3 0 1			0 0 3 0 1		
Volume Module:												
Base Vol:	280	0	1646	0	0	0	0	1349	386	0	1218	511
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	280	0	1646	0	0	0	0	1349	386	0	1218	511
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	280	0	1646	0	0	0	0	1349	386	0	1218	511
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	280	0	1646	0	0	0	0	1349	386	0	1218	511
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	280	0	1646	0	0	0	0	1349	386	0	1218	511
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	280	0	1646	0	0	0	0	1349	386	0	1218	511
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	280	0	1646	0	0	0	0	1349	386	0	1218	511
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.00	2.00	0.00	0.00	0.00	0.00	3.00	1.00	0.00	3.00	1.00
Final Sat.:	1800	0	3272	0	0	0	0	5400	1800	0	5400	1800
Capacity Analysis Module:												
Vol/Sat:	0.16	0.00	0.50	0.00	0.00	0.00	0.00	0.25	0.21	0.00	0.23	0.28
Crit Vol:			823		0			450		0		
Crit Moves:			****					****		****		

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #12 Sunset/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	0.661
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	67	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Ignore			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 1 0 0 1			0 1 0 0 2			2 0 3 0 1			1 0 4 0 1		
Volume Module:												
Base Vol:	52	9	34	83	39	142	1033	1495	567	215	1469	70
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	52	9	34	83	39	142	1033	1495	567	215	1469	70
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	52	9	34	83	39	142	1033	1495	567	215	1469	70
User Adj:	1.00	1.00	1.00	1.00	1.00	0.69	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	52	9	34	83	39	98	1033	1495	567	215	1469	70
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	52	9	34	83	39	98	1033	1495	567	215	1469	70
RTOR Reduct:	0	0	34	0	0	0	0	0	29	0	0	70
RTOR Vol:	52	9	0	83	39	98	1033	1495	538	215	1469	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	52	9	0	83	39	98	1033	1495	538	215	1469	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00
Lanes:	1.70	0.30	1.00	0.68	0.32	2.00	2.00	3.00	1.00	1.00	4.00	1.00
Final Sat.:	2557	487	1650	1123	527	3000	3000	4950	1650	1650	6600	1650
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.00	0.07	0.07	0.03	0.34	0.30	0.33	0.13	0.22	0.00
Crit Vol:	31				122		517				367	
Crit Moves:	****				****		****				****	

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #13 Camino Ramon/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	0.564
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	52	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:		Protected			Protected			Protected			Protected	
Rights:		Include			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 1 0 1			2 0 0 1 1			2 0 3 0 1			1 0 3 1 0		
Volume Module:												
Base Vol:	12	19	0	76	41	103	672	747	242	24	1628	373
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	12	19	0	76	41	103	672	747	242	24	1628	373
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	12	19	0	76	41	103	672	747	242	24	1628	373
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	12	19	0	76	41	103	672	747	242	24	1628	373
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	12	19	0	76	41	103	672	747	242	24	1628	373
RTOR Reduct:	0	0	0	0	0	103	0	0	12	0	0	0
RTOR Vol:	12	19	0	76	41	0	672	747	230	24	1628	373
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	12	19	0	76	41	0	672	747	230	24	1628	373
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	2.00	1.00	1.00	2.00	3.00	1.00	1.00	3.25	0.75
Final Sat.:	1650	1650	1650	3000	1650	1500	3000	4950	1650	1650	5370	1230
Capacity Analysis Module:												
Vol/Sat:	0.01	0.01	0.00	0.03	0.02	0.00	0.22	0.15	0.14	0.01	0.30	0.30
Crit Vol:		19		38			336				500	
Crit Moves:		****		****			****				****	

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                      Level Of Service Computation Report
                  CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #14 Bishop 2 Drive/Bollinger
********************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):         0.385
Loss Time (sec):        0 (Y+R=4.0 sec)  Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         37                Level Of Service:                  A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
Lanes:        1  0  0  0  1   0  0  0  0  0    0  0  2  1  0    1  0  3  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      10    0    8     0    0    0     0  792   32    37 1959    0
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:   10    0    8     0    0    0     0  792   32    37 1959    0
Added Vol:      0    0    0     0    0    0     0    0    0     0    0    0
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:   10    0    8     0    0    0     0  792   32    37 1959    0
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:    10    0    8     0    0    0     0  792   32    37 1959    0
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:   10    0    8     0    0    0     0  792   32    37 1959    0
RTOR Reduct:    0    0    8     0    0    0     0    0    0     0    0    0
RTOR Vol:      10    0    0     0    0    0     0  792   32    37 1959    0
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Final Vol.:    10    0    0     0    0    0     0  792   32    37 1959    0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1720 1720 1720  1720 1720 1720  1720 1720 1720  1720 1720 1720
Adjustment:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:       1.00 0.00 1.00  0.00 0.00 0.00  0.00 2.88 0.12  1.00 3.00 0.00
Final Sat.:  1720    0 1720     0    0    0     0 4960  200  1720 5160    0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01 0.00 0.00  0.00 0.00 0.00  0.00 0.16 0.16  0.02 0.38 0.00
Crit Vol:      10                   0           0                     653
Crit Moves:  ****                              ****                  ****
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                   Level Of Service Computation Report
               CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #15 Market/Bollinger Drive
********************************************************************************
Cycle (sec):           100              Critical Vol./Cap.(X):          0.452
Loss Time (sec):         0 (Y+R=4.0 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:          42              Level Of Service:                   A
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  1  0  0  1    1  0  0  1  0    1  0  3  0  1    2  0  2  1  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:     243     1    33     2     1     9    11   638   149    41  1765     6
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:  243     1    33     2     1     9    11   638   149    41  1765     6
Added Vol:      0     0     0     0     0     0     0     0     0     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:  243     1    33     2     1     9    11   638   149    41  1765     6
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:   243     1    33     2     1     9    11   638   149    41  1765     6
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  243     1    33     2     1     9    11   638   149    41  1765     6
RTOR Reduct:    0     0    23     0     0     0     0     0   134     0     0     0
RTOR Vol:     243     1    10     2     1     9    11   638    15    41  1765     6
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:   243     1    10     2     1     9    11   638    15    41  1765     6
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1650  1650  1650  1650  1650  1650  1650  1650  1650  1650  1650  1650
Adjustment:  0.91  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.91  1.00  1.00
Lanes:       1.99  0.01  1.00  1.00  0.10  0.90  1.00  3.00  1.00  2.00  2.99  0.01
Final Sat.:  2987    14  1650  1650   165  1485  1650  4950  1650  3000  4933    17
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.08  0.07  0.01  0.00  0.01  0.01  0.01  0.13  0.01  0.01  0.36  0.36
Crit Vol:     122                     10          11                      590
Crit Moves:  ****                   ****        ****                     ****
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #16 Alcosta/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	0.707
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	78	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	1 1	0	2 0	2 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	542	463	184	146	263	221	190	396	90	281	1094	330
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	542	463	184	146	263	221	190	396	90	281	1094	330
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	542	463	184	146	263	221	190	396	90	281	1094	330
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	542	463	184	146	263	221	190	396	90	281	1094	330
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	542	463	184	146	263	221	190	396	90	281	1094	330
RTOR Reduct:	0	0	0	0	0	190	0	0	90	0	0	80
RTOR Vol:	542	463	184	146	263	31	190	396	0	281	1094	250
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	542	463	184	146	263	31	190	396	0	281	1094	250
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.43	0.57	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3000	2362	938	3000	3300	1650	1650	3300	1650	1650	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.18	0.20	0.20	0.05	0.08	0.02	0.12	0.12	0.00	0.17	0.33	0.15
Crit Vol:	271				132		190				547	
Crit Moves:	****				****		****				****	

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #17 Alcosta/Norris

Cycle (sec):	100	Critical Vol./Cap.(X):	0.395
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	38	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	2 0	1	2 0	1 0	1	1 0	1 0	1
Volume Module:												
Base Vol:	285	379	66	235	461	216	143	71	206	42	58	84
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	285	379	66	235	461	216	143	71	206	42	58	84
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	285	379	66	235	461	216	143	71	206	42	58	84
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	285	379	66	235	461	216	143	71	206	42	58	84
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	285	379	66	235	461	216	143	71	206	42	58	84
RTOR Reduct:	0	0	0	0	0	79	0	0	206	0	0	84
RTOR Vol:	285	379	66	235	461	137	143	71	0	42	58	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	285	379	66	235	461	137	143	71	0	42	58	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.70	0.30	1.00	2.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1650	2811	489	1650	3300	1650	3000	1650	1650	1650	1650	1650
Capacity Analysis Module:												
Vol/Sat:	0.17	0.13	0.13	0.14	0.14	0.08	0.05	0.04	0.00	0.03	0.04	0.00
Crit Vol:	285				231		72				58	
Crit Moves:	****				****		****				****	

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                  Level Of Service Computation Report
                CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #18 San Ramon/Norris
********************************************************************************
Cycle (sec):          90               Critical Vol./Cap.(X):           0.549
Loss Time (sec):       0 (Y+R=4.0 sec) Average Delay (sec/veh):        xxxxxx
Optimal Cycle:        51               Level Of Service:                    A
********************************************************************************
Approach:     North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:       Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0     0    0    0     0    0    0     0    0    0
Lanes:       1  0  1  1  0    2  0  1  1  0    1  0  1  1  0    1  0  1  0  1
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:     74  325   326   406  144    27    78  493    51    85  148   237
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  74  325   326   406  144    27    78  493    51    85  148   237
Added Vol:     0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:   0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  74  325   326   406  144    27    78  493    51    85  148   237
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   74  325   326   406  144    27    78  493    51    85  148   237
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  74  325   326   406  144    27    78  493    51    85  148   237
RTOR Reduct:   0    0     0     0    0     0     0    0     0     0    0   223
RTOR Vol:     74  325   326   406  144    27    78  493    51    85  148    14
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   74  325   326   406  144    27    78  493    51    85  148    14
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  1.00 1.00  1.00  0.91 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.00  1.00  2.00 1.68  0.32  1.00 1.81  0.19  1.00 1.00  1.00
Final Sat.:  1650 1650  1650  3000 2779   521  1650 2991   309  1650 1650  1650
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.04 0.20  0.20  0.14 0.05  0.05  0.05 0.16  0.16  0.05 0.09  0.01
Crit Vol:               326   203                    272          85
Crit Moves:             ****  ****                   ****        ****
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                  Level Of Service Computation Report
                CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #19 Bollinger/Crow
********************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):        0.455
Loss Time (sec):        0 (Y+R=4.0 sec)  Average Delay (sec/veh):     xxxxxx
Optimal Cycle:         34                Level Of Service:                 A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:     0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        1  0  1  0  1   0  0  1! 0  0   1  0  2  0  1   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     116   41   133   18   67    18   34  951    70   88  758    21
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:  116   41   133   18   67    18   34  951    70   88  758    21
Added Vol:      0    0     0    0    0     0    0    0     0    0    0     0
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  116   41   133   18   67    18   34  951    70   88  758    21
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   116   41   133   18   67    18   34  951    70   88  758    21
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  116   41   133   18   67    18   34  951    70   88  758    21
RTOR Reduct:    0    0    88    0    0     0    0    0    70    0    0    18
RTOR Vol:     116   41    45   18   67    18   34  951     0   88  758     3
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:   116   41    45   18   67    18   34  951     0   88  758     3
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1720 1720  1720 1720 1720  1720 1720 1720  1720 1720 1720  1720
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       1.00 1.00  1.00 0.17 0.66  0.17 1.00 2.00  1.00 1.00 2.00  1.00
Final Sat.:  1720 1720  1720  301 1119   301 1720 3440  1720 1720 3440  1720
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.07 0.02  0.03 0.06 0.06  0.06 0.02 0.28  0.00 0.05 0.22  0.00
Crit Vol:     116                      103        476         88
Crit Moves:  ****                     ****       ****       ****
********************************************************************************
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #20 Dougherty/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	0.498
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	45	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0 0 0 0			1 0 0 0 2			2 0 2 0 0			0 0 2 0 1		
Volume Module:												
Base Vol:	0	0	0	404	0	496	165	286	0	0	723	331
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	404	0	496	165	286	0	0	723	331
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	404	0	496	165	286	0	0	723	331
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	404	0	496	165	286	0	0	723	331
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	404	0	496	165	286	0	0	723	331
RTOR Reduct:	0	0	0	0	0	91	0	0	0	0	0	331
RTOR Vol:	0	0	0	404	0	405	165	286	0	0	723	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	404	0	405	165	286	0	0	723	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.00	2.00	2.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	1720	0	3127	3127	3440	0	0	3440	1720
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.23	0.00	0.13	0.05	0.08	0.00	0.00	0.21	0.00
Crit Vol:		0		404			83				362	
Crit Moves:				****			****				****	

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                  Level Of Service Computation Report
               CCTALOS Method (Future Volume Alternative)
******************************************************************************
Intersection #21 San Ramon/Montevideo
******************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):         0.615
Loss Time (sec):        0 (Y+R=4.0 sec)  Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         59                Level Of Service:                  B
******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:       0  0  1  1  0   1  0  2  0  0   0  0  0  0  0   1  0  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module: 7:45 To 8:45
Base Vol:        0  590   117   510  364     0     0    0     0   195    0   528
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:     0  590   117   510  364     0     0    0     0   195    0   528
Added Vol:       0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:     0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:     0  590   117   510  364     0     0    0     0   195    0   528
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:      0  590   117   510  364     0     0    0     0   195    0   528
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:     0  590   117   510  364     0     0    0     0   195    0   528
RTOR Reduct:     0    0     0     0    0     0     0    0     0     0    0   510
RTOR Vol:        0  590   117   510  364     0     0    0     0   195    0    18
PCE Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:      0  590   117   510  364     0     0    0     0   195    0    18
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1720 1720  1720  1720 1720  1720  1720 1720  1720  1720 1720  1720
Adjustment:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:        0.00 1.67  0.33  1.00 2.00  0.00  0.00 0.00  0.00  1.00 0.00  1.00
Final Sat.:      0 2871   569  1720 3440     0     0    0     0  1720    0  1720
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.00 0.21  0.21  0.30 0.11  0.00  0.00 0.00  0.00  0.11 0.00  0.01
Crit Vol:                 354   510                      0         195
Crit Moves:              ****  ****                               ****
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                     Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #22 Alcosts/Montevideo
********************************************************************************
Cycle (sec):          100                 Critical Vol./Cap.(X):         0.270
Loss Time (sec):        0 (Y+R=4.0 sec)   Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         31                 Level Of Service:                  A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected       Split Phase      Split Phase
Rights:          Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  2  0  0    0  0  2  0  1    1  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module: 7:45 To 8:45
Base Vol:      54  540     0     0  265   118   194    0    80     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   54  540     0     0  265   118   194    0    80     0    0     0
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   54  540     0     0  265   118   194    0    80     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    54  540     0     0  265   118   194    0    80     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   54  540     0     0  265   118   194    0    80     0    0     0
RTOR Reduct:    0    0     0     0    0   118     0    0    54     0    0     0
RTOR Vol:      54  540     0     0  265     0   194    0    26     0    0     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    54  540     0     0  265     0   194    0    26     0    0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1720 1720  1720  1720 1720  1720  1720 1720  1720  1720 1720  1720
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 2.00  0.00  0.00 2.00  1.00  1.00 0.00  1.00  0.00 0.00  0.00
Final Sat.:  1720 3440     0     0 3440  1720  1720    0  1720     0    0     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03 0.16  0.00  0.00 0.08  0.00  0.11 0.00  0.02  0.00 0.00  0.00
Crit Vol:          270           0              194                       0
Crit Moves:        ****       ****              ****
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                   Level Of Service Computation Report
               CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #23 Dougherty/Crow
********************************************************************************
Cycle (sec):          100             Critical Vol./Cap.(X):        0.409
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):     xxxxxx
Optimal Cycle:         39             Level Of Service:                 A
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        2  0  0  0  2   0  0  0  0  0   0  0  3  0  1   2  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     210    0   409    0    0     0    0  426   106  694 1177     0
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:  210    0   409    0    0     0    0  426   106  694 1177     0
Added Vol:      0    0     0    0    0     0    0    0     0    0    0     0
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  210    0   409    0    0     0    0  426   106  694 1177     0
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   210    0   409    0    0     0    0  426   106  694 1177     0
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  210    0   409    0    0     0    0  426   106  694 1177     0
RTOR Reduct:    0    0   382    0    0     0    0    0   106    0    0     0
RTOR Vol:     210    0    27    0    0     0    0  426     0  694 1177     0
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:   210    0    27    0    0     0    0  426     0  694 1177     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1720 1720  1720 1720 1720  1720 1720 1720  1720 1720 1720  1720
Adjustment:  0.91 1.00  0.91 1.00 1.00  1.00 1.00 1.00  1.00 0.91 1.00  1.00
Lanes:       2.00 0.00  2.00 0.00 0.00  0.00 0.00 3.00  1.00 2.00 2.00  0.00
Final Sat.:  3127    0  3127    0    0     0    0 5160  1720 3127 3440     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.07 0.00  0.01 0.00 0.00  0.00 0.00 0.08  0.00 0.22 0.34  0.00
Crit Vol:     105                   0          0                      589
Crit Moves:  ****                             ****                    ****
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                     Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #24 Alcosta/Old Ranch
********************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):         0.299
Loss Time (sec):        0 (Y+R=4.0 sec)  Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         33                Level Of Service:                  A
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase      Split Phase      Split Phase
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        1  0  1  1  0    1  0  1  1  0    1  0  1! 0  0    2  0  0  1  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      10  226   114   130  205     1     9    1     2   341    1   216
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   10  226   114   130  205     1     9    1     2   341    1   216
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   10  226   114   130  205     1     9    1     2   341    1   216
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    10  226   114   130  205     1     9    1     2   341    1   216
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   10  226   114   130  205     1     9    1     2   341    1   216
RTOR Reduct:    0    0     0     0    0     0     0    0     0     0    0   130
RTOR Vol:      10  226   114   130  205     1     9    1     2   341    1    86
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    10  226   114   130  205     1     9    1     2   341    1    86
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  0.91 1.00  1.00  0.91 1.00  0.91
Lanes:       1.00 1.33  0.67  1.00 1.99  0.01  1.50 0.17  0.33  2.00 0.02  1.98
Final Sat.:  1650 2194  1106  1650 3284    16  2250  275   550  3000   38  2965
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01 0.10  0.10  0.08 0.06  0.06  0.00 0.00  0.00  0.11 0.03  0.03
Crit Vol:          170         130               6                171
Crit Moves:        ****        ****              ****             ****
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                     Level Of Service Computation Report
               CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #25 Doughert/Old Ranch
********************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):          0.639
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         63              Level Of Service:                   B
********************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Protected        Protected       Split Phase      Split Phase
Rights:            Include          Include          Include          Include
Min. Green:     0     0     0     0     0     0     0     0     0     0     0     0
Lanes:         1  0  2  0  0   0  0  1  1  0   1  0  0  0  2   0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     153   489     0     0  1534   184    87     0   136     0     0     0
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:  153   489     0     0  1534   184    87     0   136     0     0     0
Added Vol:      0     0     0     0     0     0     0     0     0     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:  153   489     0     0  1534   184    87     0   136     0     0     0
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:   153   489     0     0  1534   184    87     0   136     0     0     0
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  153   489     0     0  1534   184    87     0   136     0     0     0
RTOR Reduct:    0     0     0     0     0     0     0     0   136     0     0     0
RTOR Vol:     153   489     0     0  1534   184    87     0     0     0     0     0
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:   153   489     0     0  1534   184    87     0     0     0     0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1720  1720  1720  1720  1720  1720  1720  1720  1720  1720  1720  1720
Adjustment:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.91  1.00  1.00  1.00
Lanes:       1.00  2.00  0.00  0.00  1.79  0.21  1.00  0.00  2.00  0.00  0.00  0.00
Final Sat.:  1720  3440     0     0  3072   368  1720     0  3127     0     0     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.09  0.14  0.00  0.00  0.50  0.50  0.05  0.00  0.00  0.00  0.00  0.00
Crit Vol:     153                     859          87                       0
Crit Moves:  ****                    ****        ****
********************************************************************************
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #26 Sunset/Center Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.299
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	27	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 1 1 0			1 0 1 1 0			0 1 0 0 1			0 0 1! 0 0		
Volume Module:												
Base Vol:	302	691	78	7	109	23	48	6	142	12	1	3
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	302	691	78	7	109	23	48	6	142	12	1	3
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	302	691	78	7	109	23	48	6	142	12	1	3
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	302	691	78	7	109	23	48	6	142	12	1	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	302	691	78	7	109	23	48	6	142	12	1	3
RTOR Reduct:	0	0	0	0	0	0	0	0	142	0	0	0
RTOR Vol:	302	691	78	7	109	23	48	6	0	12	1	3
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	302	691	78	7	109	23	48	6	0	12	1	3
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.80	0.20	1.00	1.65	0.35	0.89	0.11	1.00	0.75	0.06	0.19
Final Sat.:	3127	3091	349	1720	2841	599	1529	191	1720	1290	108	323
Capacity Analysis Module:												
Vol/Sat:	0.10	0.22	0.22	0.00	0.04	0.04	0.03	0.03	0.00	0.01	0.01	0.01
Crit Vol:		385			66		48					16
Crit Moves:		****			****		****					****

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #27 Bishop Drive/Sunset

Cycle (sec):	100	Critical Vol./Cap.(X):	0.362
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	36	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 1	0 1	0	0 1	0 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	299	393	49	11	14	20	25	82	90	33	71	11
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	299	393	49	11	14	20	25	82	90	33	71	11
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	299	393	49	11	14	20	25	82	90	33	71	11
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	299	393	49	11	14	20	25	82	90	33	71	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	299	393	49	11	14	20	25	82	90	33	71	11
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	299	393	49	11	14	20	25	82	90	33	71	11
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	299	393	49	11	14	20	25	82	90	33	71	11
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.81	1.06	0.13	0.49	0.62	0.89	1.00	0.48	0.52	1.00	0.87	0.13
Final Sat.:	1332	1750	218	807	1027	1467	1650	787	863	1650	1429	221
Capacity Analysis Module:												
Vol/Sat:	0.22	0.22	0.22	0.01	0.01	0.01	0.02	0.10	0.10	0.02	0.05	0.05
Crit Vol:			371			22			172	33		
Crit Moves:			****			****			****	****		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #28 Bollinger Canyon/Norris Canyon

Cycle (sec):	100	Critical Vol./Cap.(X):	0.855
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	20.6
Optimal Cycle:	0	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:		Stop Sign			Stop Sign			Stop Sign			Stop Sign	
Rights:		Include			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:		1 0 1 1 0			1 0 1 1 0			0 0 1! 0 0			0 0 1! 0 0	
Volume Module:												
Base Vol:	99	281	66	121	360	11	12	279	164	69	61	87
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	99	281	66	121	360	11	12	279	164	69	61	87
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	99	281	66	121	360	11	12	279	164	69	61	87
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	99	281	66	121	360	11	12	279	164	69	61	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	99	281	66	121	360	11	12	279	164	69	61	87
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	99	281	66	121	360	11	12	279	164	69	61	87
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.62	0.38	1.00	1.94	0.06	0.03	0.61	0.36	0.32	0.28	0.40
Final Sat.:	424	741	178	430	891	27	14	326	192	144	128	182
Capacity Analysis Module:												
Vol/Sat:	0.23	0.38	0.37	0.28	0.40	0.40	0.85	0.85	0.85	0.48	0.48	0.48
Crit Moves:		****			****			****			****	
Delay/Veh:	13.2	14.5	14.1	13.7	15.0	14.9	35.6	35.6	35.6	16.1	16.1	16.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.2	14.5	14.1	13.7	15.0	14.9	35.6	35.6	35.6	16.1	16.1	16.1
LOS by Move:	B	B	B	B	B	B	E	E	E	C	C	C
ApproachDel:		14.1			14.7			35.6			16.1	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		14.1			14.7			35.6			16.1	
LOS by Appr:		B			B			E			C	
AllWayAvgQ:	0.3	0.6	0.5	0.4	0.6	0.6	3.8	3.8	3.8	0.7	0.7	0.7

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #29 Bollinger/Canyon Lakes

Cycle (sec):	100	Critical Vol./Cap.(X):	0.592
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	46	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 0 1 0			0 1 0 0 1			1 0 1 1 0			1 0 2 0 1		
Volume Module:												
Base Vol:	124	4	11	36	1	257	172	480	13	33	1276	79
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	124	4	11	36	1	257	172	480	13	33	1276	79
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	124	4	11	36	1	257	172	480	13	33	1276	79
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	124	4	11	36	1	257	172	480	13	33	1276	79
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	124	4	11	36	1	257	172	480	13	33	1276	79
RTOR Reduct:	0	0	0	0	0	172	0	0	0	0	0	36
RTOR Vol:	124	4	11	36	1	85	172	480	13	33	1276	43
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	124	4	11	36	1	85	172	480	13	33	1276	43
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.27	0.73	0.97	0.03	1.00	1.00	1.95	0.05	1.00	2.00	1.00
Final Sat.:	1720	459	1261	1674	46	1720	1720	3349	91	1720	3440	1720
Capacity Analysis Module:												
Vol/Sat:	0.07	0.01	0.01	0.02	0.02	0.05	0.10	0.14	0.14	0.02	0.37	0.03
Crit Vol:	124					85	172				638	
Crit Moves:	****					****	****				****	

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                     Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #30 Camino Ramon/Center Street
********************************************************************************
Cycle (sec):          100               Critical Vol./Cap.(X):         0.000
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:          0               Level Of Service:
********************************************************************************
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:       Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:       0  0  0  0  0   0  0  0  0  0   0  0  0  0  0   0  0  0  0  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:      0    0     0    0    0     0    0    0     0    0    0     0
Growth Adj:  0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00
Initial Bse:   0    0     0    0    0     0    0    0     0    0    0     0
Added Vol:     0    0     0    0    0     0    0    0     0    0    0     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:   0    0     0    0    0     0    0    0     0    0    0     0
User Adj:    0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00
PHF Adj:     0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00
PHF Volume:    0    0     0    0    0     0    0    0     0    0    0     0
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0    0    0     0    0    0     0    0    0     0
RTOR Reduct:   0    0     0    0    0     0    0    0     0    0    0     0
RTOR Vol:      0    0     0    0    0     0    0    0     0    0    0     0
PCE Adj:     0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00
MLF Adj:     0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00
Final Vol.:    0    0     0    0    0     0    0    0     0    0    0     0
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:      0    0     0    0    0     0    0    0     0    0    0     0
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00
Final Sat.:    0    0     0    0    0     0    0    0     0    0    0     0
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00
Crit Vol:         0                0                0                0
Crit Moves:
********************************************************************************
```

Scenario Report

Scenario:	PM EXT
Command:	Default Command
Volume:	PM Ext
Geometry:	Ext
Impact Fee:	Default Impact Fee
Trip Generation:	No
Trip Distribution:	None
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/Veh	Base V/C	Future LOS	Future Del/Veh	Future V/C	Change in
# 1 San Ramon/Crow	C	xxxxx	0.738	C	xxxxx	0.738	+ 0.000 V/C
# 2 680 SB OFF/Crow	A	xxxxx	0.566	A	xxxxx	0.566	+ 0.000 V/C
# 3 680 NB ON/Crow	A	xxxxx	0.598	A	xxxxx	0.598	+ 0.000 V/C
# 4 Camino Ramon/Crow	C	xxxxx	0.763	C	xxxxx	0.763	+ 0.000 V/C
# 5 Alcosta/Crow	B	xxxxx	0.669	B	xxxxx	0.669	+ 0.000 V/C
# 6 Camino Ramon/Norris	A	xxxxx	0.592	A	xxxxx	0.592	+ 0.000 V/C
# 7 Camino Ramon/Executive	A	xxxxx	0.429	A	xxxxx	0.429	+ 0.000 V/C
# 8 Camino Ramon/Bishop Drive	A	xxxxx	0.455	A	xxxxx	0.455	+ 0.000 V/C
# 9 San Ramon/Bollinger	D	xxxxx	0.876	D	xxxxx	0.876	+ 0.000 V/C
# 10 680 SB OFF/Bollinger	A	xxxxx	0.574	A	xxxxx	0.574	+ 0.000 V/C
# 11 680 NB OFF/Bollinger	C	xxxxx	0.713	C	xxxxx	0.713	+ 0.000 V/C
# 12 Sunset/Bollinger	B	xxxxx	0.680	B	xxxxx	0.680	+ 0.000 V/C
# 13 Camino Ramon/Bollinger	C	xxxxx	0.738	C	xxxxx	0.738	+ 0.000 V/C
# 14 Bishop 2 Drive/Bollinger	A	xxxxx	0.562	A	xxxxx	0.562	+ 0.000 V/C
# 15 Market/Bollinger Drive	A	xxxxx	0.543	A	xxxxx	0.543	+ 0.000 V/C
# 16 Alcosta/Bollinger	D	xxxxx	0.814	D	xxxxx	0.814	+ 0.000 V/C
# 17 Alcosta/Norris	A	xxxxx	0.431	A	xxxxx	0.431	+ 0.000 V/C
# 18 San Ramon/Norris	A	xxxxx	0.545	A	xxxxx	0.545	+ 0.000 V/C
# 19 Bollinger/Crow	A	xxxxx	0.449	A	xxxxx	0.449	+ 0.000 V/C
# 20 Dougherty/Bollinger	A	xxxxx	0.473	A	xxxxx	0.473	+ 0.000 V/C
# 21 San Ramon/Montevideo	D	xxxxx	0.805	D	xxxxx	0.805	+ 0.000 V/C
# 22 Alcosts/Montevideo	A	xxxxx	0.284	A	xxxxx	0.284	+ 0.000 V/C
# 23 Dougherty/Crow	A	xxxxx	0.570	A	xxxxx	0.570	+ 0.000 V/C
# 24 Alcosta/Old Ranch	A	xxxxx	0.255	A	xxxxx	0.255	+ 0.000 V/C
# 25 Doughert/Old Ranch	A	xxxxx	0.365	A	xxxxx	0.365	+ 0.000 V/C

Intersection	Base LOS	Base Del/Veh	Base V/C	Future LOS	Future Del/Veh	Future V/C	Change in
# 26 Sunset/Center Street	A	xxxxx	0.379	A	xxxxx	0.379	+ 0.000 V/C
# 27 Bishop Drive/Sunset	A	xxxxx	0.470	A	xxxxx	0.470	+ 0.000 V/C
# 28 Bollinger Canyon/Norris Canyon	B	10.4	0.371	B	10.4	0.371	+ 0.000 V/C
# 29 Bollinger/Canyon Lakes	A	xxxxx	0.539	A	xxxxx	0.539	+ 0.000 V/C
# 30 Camino Ramon/Center Street		xxxxx	0.000		xxxxx	0.000	+ 0.000 V/C

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #1 San Ramon/Crow

Cycle (sec):	180	Critical Vol./Cap.(X):	0.738
Loss Time (sec):	12 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	87	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	158	579	626	414	435	190	312	1090	117	466	1201	559
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	158	579	626	414	435	190	312	1090	117	466	1201	559
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	158	579	626	414	435	190	312	1090	117	466	1201	559
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	158	579	626	414	435	190	312	1090	117	466	1201	559
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	158	579	626	414	435	190	312	1090	117	466	1201	559
RTOR Reduct:	0	0	256	0	0	172	0	0	87	0	0	228
RTOR Vol:	158	579	370	414	435	18	312	1090	30	466	1201	331
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	158	579	370	414	435	18	312	1090	30	466	1201	331
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3000	3300	1650	3000	3300	1650	3000	4950	1650	3000	4950	1650
Capacity Analysis Module:												
Vol/Sat:	0.05	0.18	0.22	0.14	0.13	0.01	0.10	0.22	0.02	0.16	0.24	0.20
Crit Vol:			370	207				363		233		
Crit Moves:			****	****				****		****		

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #2 680 SB OFF/Crow

Cycle (sec):	100	Critical Vol./Cap.(X):	0.566
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	43	Level Of Service:	A

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Split Phase	Split Phase	Permitted	Permitted
Rights:	Include	Include	Ignore	Ignore
Min. Green:	0 0 0	0 0 0	0 0 0	0 0 0
Lanes:	0 0 0 0 0	2 0 0 0 2	0 0 3 0 1	0 0 3 0 1

	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Volume Module:												
Base Vol:	0	0	0	512	0	869	0	1624	599	0	1264	448
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	512	0	869	0	1624	599	0	1264	448
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	512	0	869	0	1624	599	0	1264	448
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	512	0	869	0	1624	599	0	1264	448
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	512	0	869	0	1624	599	0	1264	448
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	0	0	0	512	0	869	0	1624	599	0	1264	448
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	512	0	869	0	1624	599	0	1264	448
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	1.00	1.00	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	2.00	0.00	3.00	1.00	0.00	3.00	1.00
Final Sat.:	0	0	0	3272	0	3272	0	5400	1800	0	5400	1800
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.16	0.00	0.27	0.00	0.30	0.33	0.00	0.23	0.25
Crit Vol:		0				435		541		0		
Crit Moves:						****		****		****		

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #3 680 NB ON/Crow

Cycle (sec):	100	Critical Vol./Cap.(X):	0.598
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	46	Level Of Service:	A

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Split Phase	Split Phase	Permitted	Permitted
Rights:	Include	Include	Ignore	Ignore
Min. Green:	0 0 0	0 0 0	0 0 0	0 0 0
Lanes:	1 0 1! 0 1	0 0 0 0 0	0 0 3 0 1	0 0 3 1 1

Movement:	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Volume Module:												
Base Vol:	607	0	898	0	0	0	0	1574	884	0	1339	1142
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	607	0	898	0	0	0	0	1574	884	0	1339	1142
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	607	0	898	0	0	0	0	1574	884	0	1339	1142
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	607	0	898	0	0	0	0	1574	884	0	1339	1142
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	607	0	898	0	0	0	0	1574	884	0	1339	1142
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	607	0	898	0	0	0	0	1574	884	0	1339	1142
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	607	0	898	0	0	0	0	1574	884	0	1339	1142
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91
Lanes:	1.21	0.00	1.79	0.00	0.00	0.00	0.00	3.00	1.00	0.00	3.00	2.00
Final Sat.:	1980	0	2929	0	0	0	0	5400	1800	0	5400	3272
Capacity Analysis Module:												
Vol/Sat:	0.31	0.00	0.31	0.00	0.00	0.00	0.00	0.29	0.49	0.00	0.25	0.35
Crit Vol:	502				0			525		0		
Crit Moves:	****							****		****		

```
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
               CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #4 Camino Ramon/Crow
********************************************************************************
Cycle (sec):            100              Critical Vol./Cap.(X):          0.763
Loss Time (sec):          0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:           96              Level Of Service:                   C
********************************************************************************
Approach:     North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:       Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:         2  0  1  0  1   1  0  1  1  0   1  0  3  0  1   1  0  3  1  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:     464  288   141   287  134   120   117 1592   206   154 1157   182
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  464  288   141   287  134   120   117 1592   206   154 1157   182
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  464  288   141   287  134   120   117 1592   206   154 1157   182
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   464  288   141   287  134   120   117 1592   206   154 1157   182
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  464  288   141   287  134   120   117 1592   206   154 1157   182
RTOR Reduct:    0    0   141     0    0     0     0    0   206     0    0     0
RTOR Vol:     464  288     0   287  134   120   117 1592     0   154 1157   182
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   464  288     0   287  134   120   117 1592     0   154 1157   182
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  0.91 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       2.00 1.00  1.00  1.00 1.06  0.94  1.00 3.00  1.00  1.00 3.46  0.54
Final Sat.:  3000 1650  1650  1650 1741  1559  1650 4950  1650  1650 5703   897
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.15 0.17  0.00  0.17 0.08  0.08  0.07 0.32  0.00  0.09 0.20  0.20
Crit Vol:          288         287                    531         154
Crit Moves:       ****        ****                   ****        ****
********************************************************************************
```

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #5 Alcosta/Crow

Cycle (sec):	100	Critical Vol./Cap.(X):	0.669
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	69	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	0	0 1	0 0	0	0 0	0 0	3	0 1	2 0	3	0 0
Volume Module:												
Base Vol:	498	0	623	0	0	0	0	1581	261	318	915	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	498	0	623	0	0	0	0	1581	261	318	915	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	498	0	623	0	0	0	0	1581	261	318	915	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	498	0	623	0	0	0	0	1581	261	318	915	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	498	0	623	0	0	0	0	1581	261	318	915	0
RTOR Reduct:	0	0	175	0	0	0	0	0	261	0	0	0
RTOR Vol:	498	0	448	0	0	0	0	1581	0	318	915	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	498	0	448	0	0	0	0	1581	0	318	915	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	3.00	1.00	2.00	3.00	0.00
Final Sat.:	3127	0	1720	0	0	0	0	5160	1720	3127	5160	0
Capacity Analysis Module:												
Vol/Sat:	0.16	0.00	0.26	0.00	0.00	0.00	0.00	0.31	0.00	0.10	0.18	0.00
Crit Vol:			448	0				527		159		
Crit Moves:			****					****		****		

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #6 Camino Ramon/Norris

Cycle (sec): 100 Critical Vol./Cap.(X): 0.592
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 56 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:		Protected			Protected			Protected			Protected	
Rights:		Include			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:		1 0 2 0 1			1 0 1 1 0			1 0 1 1 0			1 0 1 1 0	
Volume Module:												
Base Vol:	132	864	101	136	386	112	200	282	78	49	342	77
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	132	864	101	136	386	112	200	282	78	49	342	77
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	132	864	101	136	386	112	200	282	78	49	342	77
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	132	864	101	136	386	112	200	282	78	49	342	77
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	132	864	101	136	386	112	200	282	78	49	342	77
RTOR Reduct:	0	0	49	0	0	0	0	0	0	0	0	0
RTOR Vol:	132	864	52	136	386	112	200	282	78	49	342	77
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	132	864	52	136	386	112	200	282	78	49	342	77
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.55	0.45	1.00	1.57	0.43	1.00	1.63	0.37
Final Sat.:	1650	3300	1650	1650	2558	742	1650	2585	715	1650	2694	606
Capacity Analysis Module:												
Vol/Sat:	0.08	0.26	0.03	0.08	0.15	0.15	0.12	0.11	0.11	0.03	0.13	0.13
Crit Vol:		432		136			200					210
Crit Moves:		****		****			****					****

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #7 Camino Ramon/Executive

Cycle (sec):	100	Critical Vol./Cap.(X):	0.429
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	33	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 1 1 0			1 0 1 1 0			0 1 0 0 1			0 1 0 0 1		
Volume Module:												
Base Vol:	32	698	24	15	660	41	215	11	160	117	24	76
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	32	698	24	15	660	41	215	11	160	117	24	76
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	32	698	24	15	660	41	215	11	160	117	24	76
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	32	698	24	15	660	41	215	11	160	117	24	76
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	32	698	24	15	660	41	215	11	160	117	24	76
RTOR Reduct:	0	0	0	0	0	0	0	0	32	0	0	15
RTOR Vol:	32	698	24	15	660	41	215	11	128	117	24	61
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	32	698	24	15	660	41	215	11	128	117	24	61
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.93	0.07	1.00	1.88	0.12	0.95	0.05	1.00	0.83	0.17	1.00
Final Sat.:	1720	3326	114	1720	3239	201	1636	84	1720	1427	293	1720
Capacity Analysis Module:												
Vol/Sat:	0.02	0.21	0.21	0.01	0.20	0.20	0.13	0.13	0.07	0.08	0.08	0.04
Crit Vol:	32				351		215				141	
Crit Moves:	****				****		****				****	

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #8 Camino Ramon/Bishop Drive

Cycle (sec):	100	Critical Vol./Cap.(X):	0.455
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	42	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	1 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	47	461	12	9	842	114	115	2	79	144	7	22
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	47	461	12	9	842	114	115	2	79	144	7	22
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	47	461	12	9	842	114	115	2	79	144	7	22
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	47	461	12	9	842	114	115	2	79	144	7	22
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	47	461	12	9	842	114	115	2	79	144	7	22
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	47	461	12	9	842	114	115	2	79	144	7	22
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	47	461	12	9	842	114	115	2	79	144	7	22
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.95	0.05	1.00	1.76	0.24	1.00	0.02	0.98	1.00	0.24	0.76
Final Sat.:	1650	3216	84	1650	2906	394	1650	41	1609	1650	398	1252
Capacity Analysis Module:												
Vol/Sat:	0.03	0.14	0.14	0.01	0.29	0.29	0.07	0.05	0.05	0.09	0.02	0.02
Crit Vol:	47					478		81		144		
Crit Moves:	****					****		****		****		

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #9 San Ramon/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	0.876
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	D

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected	Protected	Protected	Protected
Rights:	Include	Include	Include	Include
Min. Green:	0 0 0	0 0 0	0 0 0	0 0 0
Lanes:	2 0 1 1 0	2 0 1 1 0	1 0 1 1 0	2 0 2 0 1

Movement:	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Volume Module:												
Base Vol:	89	431	483	294	430	40	15	313	147	1039	530	179
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	89	431	483	294	430	40	15	313	147	1039	530	179
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	89	431	483	294	430	40	15	313	147	1039	530	179
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	89	431	483	294	430	40	15	313	147	1039	530	179
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	89	431	483	294	430	40	15	313	147	1039	530	179
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	162
RTOR Vol:	89	431	483	294	430	40	15	313	147	1039	530	17
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	89	431	483	294	430	40	15	313	147	1039	530	17
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	1.00	1.00	2.00	1.83	0.17	1.00	1.36	0.64	2.00	2.00	1.00
Final Sat.:	3000	1650	1650	3000	3019	281	1650	2245	1055	3000	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.03	0.26	0.29	0.10	0.14	0.14	0.01	0.14	0.14	0.35	0.16	0.01
Crit Vol:			483	147				230		520		
Crit Moves:			****	****				****		****		

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #10 680 SB OFF/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	0.574
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	44	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:		Split Phase			Split Phase			Permitted			Permitted	
Rights:		Include			Include			Include			Ignore	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:		0 0 1! 0 0			1 1 0 0 2			0 0 3 1 0			0 0 3 0 1	
Volume Module:												
Base Vol:	5	0	101	817	21	344	0	1150	10	0	1260	1445
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	0	101	817	21	344	0	1150	10	0	1260	1445
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	0	101	817	21	344	0	1150	10	0	1260	1445
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	5	0	101	817	21	344	0	1150	10	0	1260	1445
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	0	101	817	21	344	0	1150	10	0	1260	1445
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	5	0	101	817	21	344	0	1150	10	0	1260	1445
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	5	0	101	817	21	344	0	1150	10	0	1260	1445
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.05	0.00	0.95	1.95	0.05	2.00	0.00	3.97	0.03	0.00	3.00	1.00
Final Sat.:	81	0	1639	3049	86	3127	0	6821	59	0	5160	1720
Capacity Analysis Module:												
Vol/Sat:	0.06	0.00	0.06	0.27	0.24	0.11	0.00	0.17	0.17	0.00	0.24	0.84
Crit Vol:			106	419			0				420	
Crit Moves:			****	****			****				****	

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                    Level Of Service Computation Report
             CCTALOS Method (Future Volume Alternative)
******************************************************************************
Intersection #11 680 NB OFF/Bollinger
******************************************************************************
Cycle (sec):          100             Critical Vol./Cap.(X):        0.713
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):    xxxxxx
Optimal Cycle:         65             Level Of Service:                 C
******************************************************************************
Approach:     North Bound     South Bound      East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Split Phase     Split Phase      Permitted        Permitted
Rights:         Include         Include          Ignore           Ignore
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Lanes:       1  0  0  0  2   0  0  0  0  0   0  0  3  0  1   0  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     439    0   923     0    0     0     0 1305   248     0 2325   892
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  439    0   923     0    0     0     0 1305   248     0 2325   892
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  439    0   923     0    0     0     0 1305   248     0 2325   892
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   439    0   923     0    0     0     0 1305   248     0 2325   892
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  439    0   923     0    0     0     0 1305   248     0 2325   892
RTOR Reduct:    0    0     0     0    0     0     0    0     0     0    0     0
RTOR Vol:     439    0   923     0    0     0     0 1305   248     0 2325   892
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   439    0   923     0    0     0     0 1305   248     0 2325   892
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1800 1800  1800  1800 1800  1800  1800 1800  1800  1800 1800  1800
Adjustment:  1.00 1.00  0.91  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 0.00  2.00  0.00 0.00  0.00  0.00 3.00  1.00  0.00 3.00  1.00
Final Sat.:  1800    0  3272     0    0     0     0 5400  1800     0 5400  1800
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.24 0.00  0.28  0.00 0.00  0.00  0.00 0.24  0.14  0.00 0.43  0.50
Crit Vol:                462          0           0                    775
Crit Moves:             ****                   ****                   ****
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                     Level Of Service Computation Report
                CCTALOS Method (Future Volume Alternative)
******************************************************************************************
Intersection #12 Sunset/Bollinger
******************************************************************************************
Cycle (sec):         100            Critical Vol./Cap.(X):          0.680
Loss Time (sec):       0 (Y+R=4.0 sec) Average Delay (sec/veh):     xxxxxx
Optimal Cycle:        71            Level Of Service:                   B
******************************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
-------------|----------------||----------------||----------------||----------------|
Control:        Split Phase      Split Phase       Protected        Protected
Rights:           Include           Ignore          Include          Include
Min. Green:     0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  1  0  0  1    0  1  0  0  2    2  0  3  0  1    1  0  4  0  1
-------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:      494    35    99   142    13   902   402  1883    43    28  1817   140
Growth Adj:   1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:   494    35    99   142    13   902   402  1883    43    28  1817   140
Added Vol:       0     0     0     0     0     0     0     0     0     0     0     0
PasserByVol:     0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:   494    35    99   142    13   902   402  1883    43    28  1817   140
User Adj:     1.00  1.00  1.00  1.00  1.00  0.72  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:      1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:    494    35    99   142    13   649   402  1883    43    28  1817   140
Reduct Vol:      0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   494    35    99   142    13   649   402  1883    43    28  1817   140
RTOR Reduct:     0     0    28     0     0     0     0     0    43     0     0   140
RTOR Vol:      494    35    71   142    13   649   402  1883     0    28  1817     0
PCE Adj:      1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:      1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:    494    35    71   142    13   649   402  1883     0    28  1817     0
-------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:     1650  1650  1650  1650  1650  1650  1650  1650  1650  1650  1650  1650
Adjustment:   0.91  1.00  1.00  1.00  1.00  0.91  0.91  1.00  1.00  1.00  1.00  1.00
Lanes:        1.87  0.13  1.00  0.92  0.08  2.00  2.00  3.00  1.00  1.00  4.00  1.00
Final Sat.:   2801   218  1650  1512   138  3000  3000  4950  1650  1650  6600  1650
-------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:      0.18  0.16  0.04  0.09  0.09  0.22  0.13  0.38  0.00  0.02  0.28  0.00
Crit Vol:      264                     155         201                     454
Crit Moves:   ****                    ****        ****                    ****
******************************************************************************************
```

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---------------------------------------------------------------------------------
---------------------------------------------------------------------------------
                    Level Of Service Computation Report
               CCTALOS Method (Future Volume Alternative)
*********************************************************************************
Intersection #13 Camino Ramon/Bollinger
*********************************************************************************
Cycle (sec):          100             Critical Vol./Cap.(X):           0.738
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         87             Level Of Service:                    C
*********************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:      L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:         1  0  1  0  1    2  0  0  1  1    2  0  3  0  1    1  0  3  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      347    34    36   518    18   603   350  1868    18    12  1011   146
Growth Adj:   1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:   347    34    36   518    18   603   350  1868    18    12  1011   146
Added Vol:       0     0     0     0     0     0     0     0     0     0     0     0
PasserByVol:     0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:   347    34    36   518    18   603   350  1868    18    12  1011   146
User Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:      1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:    347    34    36   518    18   603   350  1868    18    12  1011   146
Reduct Vol:      0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   347    34    36   518    18   603   350  1868    18    12  1011   146
RTOR Reduct:     0     0    12     0     0   193     0     0    18     0     0     0
RTOR Vol:      347    34    24   518    18   411   350  1868     0    12  1011   146
PCE Adj:      1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:      1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:    347    34    24   518    18   411   350  1868     0    12  1011   146
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1650  1650  1650  1650  1650  1650  1650  1650  1650  1650  1650  1650
Adjustment:   1.00  1.00  1.00  0.91  1.00  0.91  0.91  1.00  1.00  1.00  1.00  1.00
Lanes:        1.00  1.00  1.00  2.00  0.08  1.92  2.00  3.00  1.00  1.00  3.50  0.50
Final Sat.:   1650  1650  1650  3000   139  2874  3000  4950  1650  1650  5767   833
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.21  0.02  0.01  0.17  0.13  0.14  0.12  0.38  0.00  0.01  0.18  0.18
Crit Vol:      347                           214         623          12
Crit Moves:   ****                          ****        ****        ****
*********************************************************************************
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                       Level Of Service Computation Report
                   CCTALOS Method (Future Volume Alternative)
****************************************************************************************
Intersection #14 Bishop 2 Drive/Bollinger
****************************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):         0.562
Loss Time (sec):        0 (Y+R=4.0 sec)  Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         52                Level Of Service:                  A
****************************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  0  0  1   0  0  0  0  0   0  0  2  1  0   1  0  3  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    150     0    50    0     0     0    0  2300     0   50  1150     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse: 150     0    50    0     0     0    0  2300     0   50  1150     0
Added Vol:     0     0     0    0     0     0    0     0     0    0     0     0
PasserByVol:   0     0     0    0     0     0    0     0     0    0     0     0
Initial Fut: 150     0    50    0     0     0    0  2300     0   50  1150     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:  150     0    50    0     0     0    0  2300     0   50  1150     0
Reduct Vol:    0     0     0    0     0     0    0     0     0    0     0     0
Reduced Vol: 150     0    50    0     0     0    0  2300     0   50  1150     0
RTOR Reduct:   0     0    50    0     0     0    0     0     0    0     0     0
RTOR Vol:    150     0     0    0     0     0    0  2300     0   50  1150     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:  150     0     0    0     0     0    0  2300     0   50  1150     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1720 1720  1720  1720 1720  1720  1720 1720  1720  1720 1720  1720
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 0.00  1.00  0.00 0.00  0.00  0.00 3.00  0.00  1.00 3.00  0.00
Final Sat.:  1720    0  1720     0    0     0     0 5160     0  1720 5160     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.09 0.00  0.00  0.00 0.00  0.00  0.00 0.45  0.00  0.03 0.22  0.00
Crit Vol:    150                      0              767          50
Crit Moves:  ****                                    ****         ****
****************************************************************************************
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                     Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
*******************************************************************************
Intersection #15 Market/Bollinger Drive
*******************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):         0.543
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         50              Level Of Service:                  A
*******************************************************************************
Approach:     North Bound      South Bound       East Bound        West Bound
Movement:    L  -  T  -  R   L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Split Phase      Split Phase       Protected         Protected
Rights:          Include          Include          Include           Include
Min. Green:    0    0    0    0    0     0     0    0     0     0    0     0
Lanes:       1  1  0  0  1   1  0  0  1  0    1  0  3  0  1    2  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     395    2   136    13    5    12    37 1912   460    42  824     8
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  395    2   136    13    5    12    37 1912   460    42  824     8
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  395    2   136    13    5    12    37 1912   460    42  824     8
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   395    2   136    13    5    12    37 1912   460    42  824     8
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  395    2   136    13    5    12    37 1912   460    42  824     8
RTOR Reduct:    0    0    23     0    0     0     0    0   217     0    0     0
RTOR Vol:     395    2   113    13    5    12    37 1912   243    42  824     8
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   395    2   113    13    5    12    37 1912   243    42  824     8
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  0.91 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  0.91 1.00  1.00
Lanes:       1.99 0.01  1.00  1.00 0.29  0.71  1.00 3.00  1.00  2.00 2.97  0.03
Final Sat.:  2985   17  1650  1650  485  1165  1650 4950  1650  3000 4902    48
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.13 0.12  0.07  0.01 0.01  0.01  0.02 0.39  0.15  0.01 0.17  0.17
Crit Vol:     199                            17         637          21
Crit Moves:  ****                          ****        ****        ****
*******************************************************************************
```

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--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                       Level Of Service Computation Report
                   CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #16 Alcosta/Bollinger
********************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         0.814
Loss Time (sec):       0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       123               Level Of Service:                  D
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        2  0  1  1  0   2  0  2  0  1   1  0  2  0  1   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     154  411   127   239  404   165   260 1450   338   218  651   165
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  154  411   127   239  404   165   260 1450   338   218  651   165
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  154  411   127   239  404   165   260 1450   338   218  651   165
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   154  411   127   239  404   165   260 1450   338   218  651   165
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  154  411   127   239  404   165   260 1450   338   218  651   165
RTOR Reduct:    0    0     0     0    0   165     0    0    85     0    0   131
RTOR Vol:     154  411   127   239  404     0   260 1450   253   218  651    34
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   154  411   127   239  404     0   260 1450   253   218  651    34
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  0.91 1.00  1.00  0.91 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       2.00 1.53  0.47  2.00 2.00  1.00  1.00 2.00  1.00  1.00 2.00  1.00
Final Sat.:  3000 2521   779  3000 3300  1650  1650 3300  1650  1650 3300  1650
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.05 0.16  0.16  0.08 0.12  0.00  0.16 0.44  0.15  0.13 0.20  0.02
Crit Vol:                269   120                   725         218
Crit Moves:             ****  ****                  ****        ****
********************************************************************************
```

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #17 Alcosta/Norris

Cycle (sec):	100	Critical Vol./Cap.(X):	0.431
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	40	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	2 0	1	2 0	1 0	1	1 0	1 0	1
Volume Module:												
Base Vol:	125	548	35	76	356	127	374	77	158	44	138	139
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	125	548	35	76	356	127	374	77	158	44	138	139
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	125	548	35	76	356	127	374	77	158	44	138	139
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	125	548	35	76	356	127	374	77	158	44	138	139
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	125	548	35	76	356	127	374	77	158	44	138	139
RTOR Reduct:	0	0	0	0	0	127	0	0	125	0	0	76
RTOR Vol:	125	548	35	76	356	0	374	77	33	44	138	63
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	125	548	35	76	356	0	374	77	33	44	138	63
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.88	0.12	1.00	2.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1650	3102	198	1650	3300	1650	3000	1650	1650	1650	1650	1650
Capacity Analysis Module:												
Vol/Sat:	0.08	0.18	0.18	0.05	0.11	0.00	0.12	0.05	0.02	0.03	0.08	0.04
Crit Vol:		292		76			187				138	
Crit Moves:		****		****			****				****	

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                 Level Of Service Computation Report
              CCTALOS Method (Future Volume Alternative)
******************************************************************************
Intersection #18 San Ramon/Norris
******************************************************************************
Cycle (sec):           90               Critical Vol./Cap.(X):          0.545
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         50               Level Of Service:                   A
******************************************************************************
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Protected        Protected        Protected        Protected
Rights:            Include          Include          Include          Include
Min. Green:      0    0     0    0    0     0    0    0     0    0    0     0
Lanes:         1  0  1  1  0   2  0  1  1  0   1  0  1  1  0   1  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      100  300   100   150  300   100   100  200   100   250  500   350
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   100  300   100   150  300   100   100  200   100   250  500   350
Added Vol:       0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:     0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   100  300   100   150  300   100   100  200   100   250  500   350
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    100  300   100   150  300   100   100  200   100   250  500   350
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   100  300   100   150  300   100   100  200   100   250  500   350
RTOR Reduct:     0    0     0     0    0     0     0    0     0     0    0    83
RTOR Vol:      100  300   100   150  300   100   100  200   100   250  500   267
PCE Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    100  300   100   150  300   100   100  200   100   250  500   267
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:   1.00 1.00  1.00  0.91 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:        1.00 1.50  0.50  2.00 1.50  0.50  1.00 1.33  0.67  1.00 1.00  1.00
Final Sat.:   1650 2475   825  3000 2475   825  1650 2200  1100  1650 1650  1650
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.06 0.12  0.12  0.05 0.12  0.12  0.06 0.09  0.09  0.15 0.30  0.16
Crit Vol:      100                     200     100                     500
Crit Moves:   ****                    ****    ****                    ****
******************************************************************************
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #19 Bollinger/Crow

Cycle (sec):	100	Critical Vol./Cap.(X):	0.449
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	34	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:		Permitted			Permitted			Protected			Protected	
Rights:		Include			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:		1 0 1 0 1			0 0 1! 0 0			1 0 2 0 1			1 0 2 0 1	
Volume Module:												
Base Vol:	181	32	52	30	36	8	16	825	142	90	1004	29
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	181	32	52	30	36	8	16	825	142	90	1004	29
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	181	32	52	30	36	8	16	825	142	90	1004	29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	181	32	52	30	36	8	16	825	142	90	1004	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	181	32	52	30	36	8	16	825	142	90	1004	29
RTOR Reduct:	0	0	52	0	0	0	0	0	142	0	0	29
RTOR Vol:	181	32	0	30	36	8	16	825	0	90	1004	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	181	32	0	30	36	8	16	825	0	90	1004	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	0.40	0.49	0.11	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1720	1720	1720	697	837	186	1720	3440	1720	1720	3440	1720
Capacity Analysis Module:												
Vol/Sat:	0.11	0.02	0.00	0.04	0.04	0.04	0.01	0.24	0.00	0.05	0.29	0.00
Crit Vol:	181				74		16				502	
Crit Moves:	****				****		****				****	

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                  Level Of Service Computation Report
                CCTALOS Method (Future Volume Alternative)
*********************************************************************************
Intersection #20 Dougherty/Bollinger
*********************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):          0.473
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         43              Level Of Service:                   A
*********************************************************************************
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:      L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|-----------------||-----------------||-----------------||-----------------|
Control:        Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
Lanes:         0  0  0  0  0   1  0  0  0  2   2  0  2  0  0   0  0  2  0  1
------------|-----------------||-----------------||-----------------||-----------------|
Volume Module:
Base Vol:       0    0    0   281    0  287   622  698    0     0  380  366
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:    0    0    0   281    0  287   622  698    0     0  380  366
Added Vol:      0    0    0     0    0    0     0    0    0     0    0    0
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:    0    0    0   281    0  287   622  698    0     0  380  366
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:     0    0    0   281    0  287   622  698    0     0  380  366
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:    0    0    0   281    0  287   622  698    0     0  380  366
RTOR Reduct:    0    0    0     0    0  287     0    0    0     0    0  281
RTOR Vol:       0    0    0   281    0    0   622  698    0     0  380   85
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Final Vol.:     0    0    0   281    0    0   622  698    0     0  380   85
------------|-----------------||-----------------||-----------------||-----------------|
Saturation Flow Module:
Sat/Lane:    1720 1720 1720  1720 1720 1720  1720 1720 1720  1720 1720 1720
Adjustment:  1.00 1.00 1.00  1.00 1.00 0.91  0.91 1.00 1.00  1.00 1.00 1.00
Lanes:       0.00 0.00 0.00  1.00 0.00 2.00  2.00 2.00 0.00  0.00 2.00 1.00
Final Sat.:     0    0    0  1720    0 3127  3127 3440    0     0 3440 1720
------------|-----------------||-----------------||-----------------||-----------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00 0.00  0.16 0.00 0.00  0.20 0.20 0.00  0.00 0.11 0.05
Crit Vol:            0        281              311                   190
Crit Moves:                   ****             ****                  ****
*********************************************************************************
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--------------------------------------------------------------------------------
                     Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #21 San Ramon/Montevideo
********************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):          0.805
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):       xxxxxx
Optimal Cycle:       117                Level Of Service:                   D
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:     0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        0  0  1  1  0   1  0  2  0  0   0  0  0  0  0   1  0  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module: 5:00 To 6:00
Base Vol:       0   705   345   687   842     0     0     0     0   172     0   643
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:    0   705   345   687   842     0     0     0     0   172     0   643
Added Vol:      0     0     0     0     0     0     0     0     0     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:    0   705   345   687   842     0     0     0     0   172     0   643
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:     0   705   345   687   842     0     0     0     0   172     0   643
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:    0   705   345   687   842     0     0     0     0   172     0   643
RTOR Reduct:    0     0     0     0     0     0     0     0     0     0     0   643
RTOR Vol:       0   705   345   687   842     0     0     0     0   172     0     0
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:     0   705   345   687   842     0     0     0     0   172     0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1720  1720  1720  1720  1720  1720  1720  1720  1720  1720  1720  1720
Adjustment:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Lanes:       0.00  1.34  0.66  1.00  2.00  0.00  0.00  0.00  0.00  1.00  0.00  1.00
Final Sat.:     0  2310  1130  1720  3440     0     0     0     0  1720     0  1720
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.31  0.31  0.40  0.24  0.00  0.00  0.00  0.00  0.10  0.00  0.00
Crit Vol:                 525   687                     0              172
Crit Moves:              ****  ****                                   ****
********************************************************************************
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                    Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
*******************************************************************************
Intersection #22 Alcosts/Montevideo
*******************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         0.284
Loss Time (sec):       0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        32               Level Of Service:                  A
*******************************************************************************
Approach:     North Bound      South Bound       East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Protected        Protected       Split Phase      Split Phase
Rights:          Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:       1  0  2  0  0   0  0  2  0  1   1  0  0  0  1   0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module: 5:00 To 6:00
Base Vol:      66   262     0    0   616   210  114     0    43    0     0     0
Growth Adj:  1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Initial Bse:   66   262     0    0   616   210  114     0    43    0     0     0
Added Vol:      0     0     0    0     0     0    0     0     0    0     0     0
PasserByVol:    0     0     0    0     0     0    0     0     0    0     0     0
Initial Fut:   66   262     0    0   616   210  114     0    43    0     0     0
User Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Volume:    66   262     0    0   616   210  114     0    43    0     0     0
Reduct Vol:     0     0     0    0     0     0    0     0     0    0     0     0
Reduced Vol:   66   262     0    0   616   210  114     0    43    0     0     0
RTOR Reduct:    0     0     0    0     0   114    0     0    43    0     0     0
RTOR Vol:      66   262     0    0   616    96  114     0     0    0     0     0
PCE Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Final Vol.:    66   262     0    0   616    96  114     0     0    0     0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1720  1720  1720 1720  1720  1720 1720  1720  1720 1720  1720  1720
Adjustment:  1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Lanes:       1.00  2.00  0.00 0.00  2.00  1.00 1.00  0.00  1.00 0.00  0.00  0.00
Final Sat.:  1720  3440     0    0  3440  1720 1720     0  1720    0     0     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.04  0.08  0.00 0.00  0.18  0.06 0.07  0.00  0.00 0.00  0.00  0.00
Crit Vol:      66                     308       114                      0
Crit Moves:  ****                    ****      ****
*******************************************************************************
```

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                     Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #23 Dougherty/Crow
********************************************************************************
Cycle (sec):          100               Critical Vol./Cap.(X):         0.570
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         53               Level Of Service:                  A
********************************************************************************
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:       L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Protected         Protected         Protected         Protected
Rights:           Include           Include           Include           Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        2  0  0  0  2    0  0  0  0  0    0  0  3  0  1    2  0  2  0  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:     135    0   811     0    0     0     0 1195   137   547  541     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  135    0   811     0    0     0     0 1195   137   547  541     0
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  135    0   811     0    0     0     0 1195   137   547  541     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   135    0   811     0    0     0     0 1195   137   547  541     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  135    0   811     0    0     0     0 1195   137   547  541     0
RTOR Reduct:    0    0   301     0    0     0     0    0    74     0    0     0
RTOR Vol:     135    0   510     0    0     0     0 1195    63   547  541     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   135    0   510     0    0     0     0 1195    63   547  541     0
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1720 1720  1720  1720 1720  1720  1720 1720  1720  1720 1720  1720
Adjustment:  0.91 1.00  0.91  1.00 1.00  1.00  1.00 1.00  1.00  0.91 1.00  1.00
Lanes:       2.00 0.00  2.00  0.00 0.00  0.00  0.00 3.00  1.00  2.00 2.00  0.00
Final Sat.:  3127    0  3127     0    0     0     0 5160  1720  3127 3440     0
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.04 0.00  0.16  0.00 0.00  0.00  0.00 0.23  0.04  0.17 0.16  0.00
Crit Vol:                255     0                     398         274
Crit Moves:             ****                          ****        ****
********************************************************************************
```

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #24 Alcosta/Old Ranch

Cycle (sec): 100 Critical Vol./Cap.(X): 0.255
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 31 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1!	0 0	2 0	0	1 1
Volume Module: 5:00 To 6:00												
Base Vol:	2	212	161	164	242	1	1	0	0	127	1	176
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	212	161	164	242	1	1	0	0	127	1	176
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	2	212	161	164	242	1	1	0	0	127	1	176
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	2	212	161	164	242	1	1	0	0	127	1	176
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	2	212	161	164	242	1	1	0	0	127	1	176
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	164
RTOR Vol:	2	212	161	164	242	1	1	0	0	127	1	12
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	2	212	161	164	242	1	1	0	0	127	1	12
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00	0.91
Lanes:	1.00	1.14	0.86	1.00	1.99	0.01	2.00	0.00	0.00	2.00	0.15	1.85
Final Sat.:	1650	1876	1424	1650	3286	14	3000	0	0	3000	254	2769
Capacity Analysis Module:												
Vol/Sat:	0.00	0.11	0.11	0.10	0.07	0.07	0.00	0.00	0.00	0.04	0.00	0.00
Crit Vol:			187	164			1			64		
Crit Moves:			****	****			****			****		

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-------------------------------------------------------------------------------
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                    Level Of Service Computation Report
                CCTALOS Method (Future Volume Alternative)
*******************************************************************************
Intersection #25 Doughert/Old Ranch
*******************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):          0.365
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         36              Level Of Service:                   A
*******************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected       Split Phase      Split Phase
Rights:           Include          Include          Include          Include
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
Lanes:        1  0  2  0  0   0  0  1  1  0   1  0  0  0  2   0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module: 5:00 To 6:00 PM
Base Vol:     232 1052    0     0  494   47   102    0  120     0    0    0
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:  232 1052    0     0  494   47   102    0  120     0    0    0
Added Vol:      0    0    0     0    0    0     0    0    0     0    0    0
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:  232 1052    0     0  494   47   102    0  120     0    0    0
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:   232 1052    0     0  494   47   102    0  120     0    0    0
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:  232 1052    0     0  494   47   102    0  120     0    0    0
RTOR Reduct:    0    0    0     0    0    0     0    0  120     0    0    0
RTOR Vol:     232 1052    0     0  494   47   102    0    0     0    0    0
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Final Vol.:   232 1052    0     0  494   47   102    0    0     0    0    0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1720 1720 1720  1720 1720 1720  1720 1720 1720  1720 1720 1720
Adjustment:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 0.91  1.00 1.00 1.00
Lanes:       1.00 2.00 0.00  0.00 1.83 0.17  1.00 0.00 2.00  0.00 0.00 0.00
Final Sat.:  1720 3440    0     0 3141  299  1720    0 3127     0    0    0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.13 0.31 0.00  0.00 0.16 0.16  0.06 0.00 0.00  0.00 0.00 0.00
Crit Vol:          526          0             102                     0
Crit Moves:       ****       ****            ****
*******************************************************************************
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #26 Sunset/Center Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.379
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	30	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	1	1 0	1 0	1	1 0	0 1	0	0 1	0 0	1!	0 0
Volume Module:												
Base Vol:	250	200	50	25	575	75	50	15	175	100	25	15
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	250	200	50	25	575	75	50	15	175	100	25	15
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	250	200	50	25	575	75	50	15	175	100	25	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	250	200	50	25	575	75	50	15	175	100	25	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	250	200	50	25	575	75	50	15	175	100	25	15
RTOR Reduct:	0	0	0	0	0	0	0	0	138	0	0	0
RTOR Vol:	250	200	50	25	575	75	50	15	38	100	25	15
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	250	200	50	25	575	75	50	15	38	100	25	15
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.60	0.40	1.00	1.77	0.23	0.77	0.23	1.00	0.71	0.18	0.11
Final Sat.:	3127	2752	688	1720	3043	397	1323	397	1720	1229	307	184
Capacity Analysis Module:												
Vol/Sat:	0.08	0.07	0.07	0.01	0.19	0.19	0.04	0.04	0.02	0.08	0.08	0.08
Crit Vol:	125				325		50					140
Crit Moves:	****				****		****					****

```
------------------------------------------------------------------------------
------------------------------------------------------------------------------
                   Level Of Service Computation Report
               CCTALOS Method (Future Volume Alternative)
******************************************************************************
Intersection #27 Bishop Drive/Sunset
******************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.470
Loss Time (sec):       0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        43              Level Of Service:                  A
******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        0  1  0  1  0    0  1  0  1  0    1  0  0  1  0    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     140    50    75    20   325    25    15   100   250   100    50    20
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:  140    50    75    20   325    25    15   100   250   100    50    20
Added Vol:      0     0     0     0     0     0     0     0     0     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:  140    50    75    20   325    25    15   100   250   100    50    20
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:   140    50    75    20   325    25    15   100   250   100    50    20
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  140    50    75    20   325    25    15   100   250   100    50    20
RTOR Reduct:    0     0     0     0     0     0     0     0     0     0     0     0
RTOR Vol:     140    50    75    20   325    25    15   100   250   100    50    20
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:   140    50    75    20   325    25    15   100   250   100    50    20
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650  1650  1650  1650  1650  1650  1650  1650  1650  1650  1650  1650
Adjustment:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Lanes:       1.00  0.43  0.57  0.11  1.76  0.13  1.00  0.29  0.71  1.00  0.71  0.29
Final Sat.:  1650   716   934   178  2899   223  1650   471  1179  1650  1179   471
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.08  0.07  0.08  0.11  0.11  0.11  0.01  0.21  0.21  0.06  0.04  0.04
Crit Vol:     140                           185         350         100
Crit Moves:  ****                          ****        ****        ****
******************************************************************************
```

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #28 Bollinger Canyon/Norris Canyon

Cycle (sec):	100	Critical Vol./Cap.(X):	0.371
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	10.4
Optimal Cycle:	0	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 1 1 0			1 0 1 1 0			0 0 1! 0 0			0 0 1! 0 0		
Volume Module:												
Base Vol:	72	197	59	69	213	20	6	84	146	36	79	44
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	72	197	59	69	213	20	6	84	146	36	79	44
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	72	197	59	69	213	20	6	84	146	36	79	44
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	72	197	59	69	213	20	6	84	146	36	79	44
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	72	197	59	69	213	20	6	84	146	36	79	44
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	72	197	59	69	213	20	6	84	146	36	79	44
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.54	0.46	1.00	1.83	0.17	0.02	0.36	0.62	0.22	0.50	0.28
Final Sat.:	533	903	280	530	1055	100	16	226	393	133	292	163
Capacity Analysis Module:												
Vol/Sat:	0.14	0.22	0.21	0.13	0.20	0.20	0.37	0.37	0.37	0.27	0.27	0.27
Crit Moves:		****			****			****			****	
Delay/Veh:	10.1	10.1	9.8	10.1	10.0	9.9	11.2	11.2	11.2	10.6	10.6	10.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.1	10.1	9.8	10.1	10.0	9.9	11.2	11.2	11.2	10.6	10.6	10.6
LOS by Move:	B	B	A	B	B	A	B	B	B	B	B	B
ApproachDel:		10.0			10.1			11.2			10.6	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		10.0			10.1			11.2			10.6	
LOS by Appr:		B			B			B			B	
AllWayAvgQ:	0.1	0.3	0.2	0.1	0.2	0.2	0.5	0.5	0.5	0.3	0.3	0.3

Note: Queue reported is the number of cars per lane.

```
-------------------------------------------------------------------------------
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                   Level Of Service Computation Report
               CCTALOS Method (Future Volume Alternative)
*******************************************************************************
Intersection #29 Bollinger/Canyon Lakes
*******************************************************************************
Cycle (sec):        100              Critical Vol./Cap.(X):         0.539
Loss Time (sec):      0 (Y+R=4.0 sec) Average Delay (sec/veh):     xxxxxx
Optimal Cycle:       40              Level Of Service:                  A
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  0  1  0   0  1  0  0  1   1  0  1  1  0   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      52    6     6    90    7   173   301 1402   107    24  638    89
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   52    6     6    90    7   173   301 1402   107    24  638    89
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   52    6     6    90    7   173   301 1402   107    24  638    89
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    52    6     6    90    7   173   301 1402   107    24  638    89
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   52    6     6    90    7   173   301 1402   107    24  638    89
RTOR Reduct:    0    0     0     0    0   173     0    0     0     0    0    89
RTOR Vol:      52    6     6    90    7     0   301 1402   107    24  638     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    52    6     6    90    7     0   301 1402   107    24  638     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1720 1720  1720  1720 1720  1720  1720 1720  1720  1720 1720  1720
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 0.50  0.50  0.93 0.07  1.00  1.00 1.86  0.14  1.00 2.00  1.00
Final Sat.:  1720  860   860  1596  124  1720  1720 3196   244  1720 3440  1720
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03 0.01  0.01  0.06 0.06  0.00  0.17 0.44  0.44  0.01 0.19  0.00
Crit Vol:      52                   97              755          24
Crit Moves:  ****                 ****             ****        ****
*******************************************************************************
```

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------------------------------------------------------------------------------
------------------------------------------------------------------------------
                  Level Of Service Computation Report
              CCTALOS Method (Future Volume Alternative)
******************************************************************************
Intersection #30 Camino Ramon/Center Street
******************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):         0.000
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:          0              Level Of Service:
******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  0  0  0  0   0  0  0  0  0   0  0  0  0  0   0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0    0    0     0    0    0     0    0    0     0
Growth Adj:  0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00
Initial Bse:    0    0     0    0    0     0    0    0     0    0    0     0
Added Vol:      0    0     0    0    0     0    0    0     0    0    0     0
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:    0    0     0    0    0     0    0    0     0    0    0     0
User Adj:    0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00
PHF Adj:     0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00
PHF Volume:     0    0     0    0    0     0    0    0     0    0    0     0
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:    0    0     0    0    0     0    0    0     0    0    0     0
RTOR Reduct:    0    0     0    0    0     0    0    0     0    0    0     0
RTOR Vol:       0    0     0    0    0     0    0    0     0    0    0     0
PCE Adj:     0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00
MLF Adj:     0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00
Final Vol.:     0    0     0    0    0     0    0    0     0    0    0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:       0    0     0    0    0     0    0    0     0    0    0     0
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00
Final Sat.:     0    0     0    0    0     0    0    0     0    0    0     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00
Crit Vol:            0                0                0                0
Crit Moves:
******************************************************************************
```

TRAFFIX ANALYSIS

Existing + Project

Scenario Report

Scenario:	AM Ext+Prj I.
Command:	Default Command
Volume:	AM Existing + Project Network
Geometry:	Ext + Proj
Impact Fee:	Default Impact Fee
Trip Generation:	AM PRJ Existing Flex Retail
Trip Distribution:	ONE
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/C	Future LOS	Future Del/ Veh	Future V/C	Change in
# 1 San Ramon/Crow	A	xxxxx	0.559	A	xxxxx	0.567	+ 0.008 V/C
# 2 680 SB OFF/Crow	A	xxxxx	0.588	B	xxxxx	0.609	+ 0.020 V/C
# 3 680 NB ON/Crow	A	xxxxx	0.523	A	xxxxx	0.541	+ 0.018 V/C
# 4 Camino Ramon/Crow	A	xxxxx	0.568	B	xxxxx	0.633	+ 0.065 V/C
# 5 Alcosta/Crow	A	xxxxx	0.436	A	xxxxx	0.452	+ 0.015 V/C
# 6 Camino Ramon/Norris	A	xxxxx	0.462	A	xxxxx	0.508	+ 0.046 V/C
# 7 Camino Ramon/Executive	A	xxxxx	0.357	A	xxxxx	0.399	+ 0.042 V/C
# 8 Camino Ramon/Bishop Drive	A	xxxxx	0.410	A	xxxxx	0.452	+ 0.042 V/C
# 9 San Ramon/Bollinger	C	xxxxx	0.794	D	xxxxx	0.823	+ 0.029 V/C
# 10 680 SB OFF/Bollinger	A	xxxxx	0.500	A	xxxxx	0.553	+ 0.054 V/C
# 11 680 NB OFF/Bollinger	C	xxxxx	0.753	D	xxxxx	0.876	+ 0.123 V/C
# 12 Sunset/Bollinger	B	xxxxx	0.652	B	xxxxx	0.668	+ 0.016 V/C
# 13 Camino Ramon/Bollinger	A	xxxxx	0.523	B	xxxxx	0.629	+ 0.106 V/C
# 14 Bishop 2 Drive/Bollinger	A	xxxxx	0.371	A	xxxxx	0.430	+ 0.060 V/C
# 15 Market/Bollinger Drive	A	xxxxx	0.452	A	xxxxx	0.524	+ 0.072 V/C
# 16 Alcosta/Bollinger	C	xxxxx	0.707	D	xxxxx	0.800	+ 0.093 V/C
# 17 Alcosta/Norris	A	xxxxx	0.395	A	xxxxx	0.410	+ 0.015 V/C
# 18 San Ramon/Norris	A	xxxxx	0.549	A	xxxxx	0.555	+ 0.006 V/C
# 19 Bollinger/Crow	A	xxxxx	0.455	A	xxxxx	0.476	+ 0.022 V/C
# 20 Dougherty/Bollinger	A	xxxxx	0.502	A	xxxxx	0.535	+ 0.032 V/C
# 21 San Ramon/Montevideo	B	xxxxx	0.615	B	xxxxx	0.621	+ 0.005 V/C
# 22 Alcosts/Montevideo	A	xxxxx	0.270	A	xxxxx	0.313	+ 0.043 V/C
# 23 Dougherty/Crow	A	xxxxx	0.409	A	xxxxx	0.424	+ 0.015 V/C
# 24 Alcosta/Old Ranch	A	xxxxx	0.306	A	xxxxx	0.320	+ 0.013 V/C
# 25 Doughert/Old Ranch	B	xxxxx	0.639	B	xxxxx	0.652	+ 0.013 V/C

Intersection	Base LOS	Base Del/Veh	Base V/C	Future LOS	Future Del/Veh	Future V/C	Change in
# 26 Sunset/Center Street	A	xxxxx	0.258	A	xxxxx	0.270	+ 0.012 V/C
# 27 Bishop Drive/Sunset	A	xxxxx	0.388	A	xxxxx	0.409	+ 0.022 V/C
# 28 Bollinger Canyon/Norris Canyon	C	20.6	0.855	C	23.5	0.902	+ 0.047 V/C
# 29 Bollinger/Canyon Lakes	A	xxxxx	0.592	B	xxxxx	0.650	+ 0.058 V/C
# 30 Camino Ramon/Center Street	A	xxxxx	0.213	A	xxxxx	0.256	+ 0.044 V/C

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #1 San Ramon/Crow

Cycle (sec):	180		Critical Vol./Cap.(X):	0.567
Loss Time (sec):	12	(Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	53		Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	91	238	410	340	225	131	171	975	124	492	1228	466
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	91	238	410	340	225	131	171	975	124	492	1228	466
Added Vol:	0	6	0	0	21	0	0	42	0	0	16	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	91	244	410	340	246	131	171	1017	124	492	1244	468
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	91	244	410	340	246	131	171	1017	124	492	1244	468
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	91	244	410	340	246	131	171	1017	124	492	1244	468
RTOR Reduct:	0	0	271	0	0	94	0	0	50	0	0	187
RTOR Vol:	91	244	139	340	246	37	171	1017	74	492	1244	281
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	91	244	139	340	246	37	171	1017	74	492	1244	281
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3000	3300	1650	3000	3300	1650	3000	4950	1650	3000	4950	1650
Capacity Analysis Module:												
Vol/Sat:	0.03	0.07	0.08	0.11	0.07	0.02	0.06	0.21	0.04	0.16	0.25	0.17
Crit Vol:			139	170				339		246		
Crit Moves:			****	****				****		****		

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #2 680 SB OFF/Crow

Cycle (sec):	100	Critical Vol./Cap.(X):	0.609
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	48	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Permitted			Permitted		
Rights:		Include			Include			Ignore			Ignore	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0 0 0 0			2 0 0 0 2			0 0 3 0 1			0 0 3 0 1		
Volume Module:												
Base Vol:	0	0	0	1149	0	838	0	934	497	0	1280	749
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	1149	0	838	0	934	497	0	1280	749
Added Vol:	0	0	0	56	0	0	0	42	0	0	18	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	1205	0	838	0	976	497	0	1298	749
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	1205	0	838	0	976	497	0	1298	749
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	1205	0	838	0	976	497	0	1298	749
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	0	0	0	1205	0	838	0	976	497	0	1298	749
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	1205	0	838	0	976	497	0	1298	749
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	1.00	1.00	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	2.00	0.00	3.00	1.00	0.00	3.00	1.00
Final Sat.:	0	0	0	3272	0	3272	0	5400	1800	0	5400	1800
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.37	0.00	0.26	0.00	0.18	0.28	0.00	0.24	0.42
Crit Vol:		0		603			0				433	
Crit Moves:				****			****				****	

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #3 680 NB ON/Crow

Cycle (sec):	100	Critical Vol./Cap.(X):	0.541
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	41	Level Of Service:	A

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Split Phase	Split Phase	Permitted	Permitted
Rights:	Include	Include	Ignore	Ignore
Min. Green:	0 0 0	0 0 0	0 0 0	0 0 0
Lanes:	1 0 1! 0 1	0 0 0 0 0	0 0 3 0 1	0 0 3 0 1

	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Volume Module:												
Base Vol:	453	0	874	0	0	0	0	1364	915	0	1151	551
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	453	0	874	0	0	0	0	1364	915	0	1151	551
Added Vol:	0	0	0	0	0	0	0	98	0	0	18	24
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	453	0	874	0	0	0	0	1462	915	0	1169	575
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	453	0	874	0	0	0	0	1462	915	0	1169	575
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	453	0	874	0	0	0	0	1462	915	0	1169	575
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	453	0	874	0	0	0	0	1462	915	0	1169	575
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	453	0	874	0	0	0	0	1462	915	0	1169	575
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.02	xxxx	1.98	0.00	0.00	0.00	0.00	3.00	1.00	0.00	3.00	1.00
Final Sat.:	1676	0	3233	0	0	0	0	5400	1800	0	5400	1800
Capacity Analysis Module:												
Vol/Sat:	0.27	0.00	0.27	0.00	0.00	0.00	0.00	0.27	0.51	0.00	0.22	0.32
Crit Vol:			442		0			487		0		
Crit Moves:			****					****		****		

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #4 Camino Ramon/Crow

Cycle (sec):	100	Critical Vol./Cap.(X):	0.633
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	62	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 1 0 1			1 0 1 1 0			1 0 3 0 1			1 0 3 1 0		
Volume Module:												
Base Vol:	109	61	57	126	126	68	184	1046	579	231	1560	204
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	109	61	57	126	126	68	184	1046	579	231	1560	204
Added Vol:	43	0	15	0	1	0	0	0	98	33	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	152	61	72	126	127	68	184	1046	677	264	1560	204
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	152	61	72	126	127	68	184	1046	677	264	1560	204
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	152	61	72	126	127	68	184	1046	677	264	1560	204
RTOR Reduct:	0	0	72	0	0	0	0	0	84	0	0	0
RTOR Vol:	152	61	0	126	127	68	184	1046	593	264	1560	204
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	152	61	0	126	127	68	184	1046	593	264	1560	204
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	1.30	0.70	1.00	3.00	1.00	1.00	3.54	0.46
Final Sat.:	3000	1650	1650	1650	2149	1151	1650	4950	1650	1650	5837	763
Capacity Analysis Module:												
Vol/Sat:	0.05	0.04	0.00	0.08	0.06	0.06	0.11	0.21	0.36	0.16	0.27	0.27
Crit Vol:		61		126					593	264		
Crit Moves:		****		****					****	****		

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #5 Alcosta/Crow

Cycle (sec):	100	Critical Vol./Cap.(X):	0.452
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	42	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	3 0	1	2 0	3 0	0
Volume Module:												
Base Vol:	275	0	225	0	0	0	0	608	464	521	1653	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	275	0	225	0	0	0	0	608	464	521	1653	0
Added Vol:	0	0	9	0	0	0	0	15	0	48	33	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	275	0	234	0	0	0	0	623	464	569	1686	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	275	0	234	0	0	0	0	623	464	569	1686	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	275	0	234	0	0	0	0	623	464	569	1686	0
RTOR Reduct:	0	0	234	0	0	0	0	0	151	0	0	0
RTOR Vol:	275	0	0	0	0	0	0	623	313	569	1686	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	275	0	0	0	0	0	0	623	313	569	1686	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	3.00	1.00	2.00	3.00	0.00
Final Sat.:	3127	0	1720	0	0	0	0	5160	1720	3127	5160	0
Capacity Analysis Module:												
Vol/Sat:	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.18	0.18	0.33	0.00
Crit Vol:	138				0				313	285		
Crit Moves:	****								****	****		

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                      Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
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Intersection #6 Camino Ramon/Norris
********************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):        0.508
Loss Time (sec):       0 (Y+R=4.0 sec) Average Delay (sec/veh):     xxxxxx
Optimal Cycle:        46               Level Of Service:                 A
********************************************************************************
Approach:     North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        1  0  2  0  1    1  0  1  1  0    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      78  159    59   131  569   108    76  336   120   117  261    90
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   78  159    59   131  569   108    76  336   120   117  261    90
Added Vol:      4   58     0     0  132     0     0    0    12     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   82  217    59   131  701   108    76  336   132   117  261    90
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    82  217    59   131  701   108    76  336   132   117  261    90
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   82  217    59   131  701   108    76  336   132   117  261    90
RTOR Reduct:    0    0    59     0    0     0     0    0     0     0    0     0
RTOR Vol:      82  217     0   131  701   108    76  336   132   117  261    90
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    82  217     0   131  701   108    76  336   132   117  261    90
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 2.00  1.00  1.00 1.73  0.27  1.00 1.44  0.56  1.00 1.49  0.51
Final Sat.:  1650 3300  1650  1650 2859   441  1650 2369   931  1650 2454   846
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.05 0.07  0.00  0.08 0.25  0.25  0.05 0.14  0.14  0.07 0.11  0.11
Crit Vol:      82                         405                234   117
Crit Moves:  ****                        ****               ****  ****
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                      Level Of Service Computation Report
                  CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #7 Camino Ramon/Executive
********************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):         0.399
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         31              Level Of Service:                  A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected         Permitted        Permitted
Rights:          Include          Include           Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  1  1  0   1  0  1  1  0   0  1  0  0  1   0  1  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     178  307    71   63  417   202   44   39    23   43   26    45
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:  178  307    71   63  417   202   44   39    23   43   26    45
Added Vol:      1   62     0    0  143     0    0    0     1    0    0     0
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  179  369    71   63  560   202   44   39    24   43   26    45
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   179  369    71   63  560   202   44   39    24   43   26    45
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  179  369    71   63  560   202   44   39    24   43   26    45
RTOR Reduct:    0    0     0    0    0     0    0    0    24    0    0    45
RTOR Vol:     179  369    71   63  560   202   44   39     0   43   26     0
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:   179  369    71   63  560   202   44   39     0   43   26     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1720 1720  1720 1720 1720  1720 1720 1720  1720 1720 1720  1720
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       1.00 1.68  0.32 1.00 1.47  0.53 0.53 0.47  1.00 0.62 0.38  1.00
Final Sat.:  1720 2885   555 1720 2528   912  912  808  1720 1072  648  1720
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.10 0.13  0.13 0.04 0.22  0.22 0.05 0.05  0.00 0.04 0.04  0.00
Crit Vol:     179                        381        83         43
Crit Moves:  ****                       ****      ****       ****
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #8 Camino Ramon/Bishop Drive

Cycle (sec):	100	Critical Vol./Cap.(X):	0.452
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	42	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	2 0	1 0	1	1 0	1 0	1	1 0	1 0	1
Volume Module:												
Base Vol:	0	605	161	68	108	144	62	16	28	26	4	231
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	605	161	68	108	144	62	16	28	26	4	231
Added Vol:	0	18	34	22	149	-27	22	12	10	33	9	22
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	623	195	90	257	117	84	28	38	59	13	253
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	623	195	90	257	117	84	28	38	59	13	253
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	623	195	90	257	117	84	28	38	59	13	253
RTOR Reduct:	0	0	0	0	0	84	0	0	0	0	0	50
RTOR Vol:	0	623	195	90	257	33	84	28	38	59	13	204
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	623	195	90	257	33	84	28	38	59	13	204
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.52	0.48	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1650	2513	787	3000	1650	1650	1650	1650	1650	1650	1650	1650
Capacity Analysis Module:												
Vol/Sat:	0.00	0.25	0.25	0.03	0.16	0.02	0.05	0.02	0.02	0.04	0.01	0.12
Crit Vol:		409		45			84					204
Crit Moves:		****		****			****					****

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #9 San Ramon/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	0.823
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	129	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	1 1	0	2 0	1 1	0	1 0	1 1	0	2 0	2 0	1
Volume Module:												
Base Vol:	206	491	446	260	276	26	38	761	200	397	308	200
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	206	491	446	260	276	26	38	761	200	397	308	200
Added Vol:	0	0	20	21	0	0	0	42	0	9	16	6
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	206	491	466	281	276	26	38	803	200	406	324	206
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	206	491	466	281	276	26	38	803	200	406	324	206
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	206	491	466	281	276	26	38	803	200	406	324	206
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	155
RTOR Vol:	206	491	466	281	276	26	38	803	200	406	324	51
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	206	491	466	281	276	26	38	803	200	406	324	51
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	1.03	0.97	2.00	1.83	0.17	1.00	1.60	0.40	2.00	2.00	1.00
Final Sat.:	3000	1693	1607	3000	3016	284	1650	2642	658	3000	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.07	0.29	0.29	0.09	0.09	0.09	0.02	0.30	0.30	0.14	0.10	0.03
Crit Vol:			479	141					502	203		
Crit Moves:			****	****					****	****		

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #10 680 SB OFF/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	0.553
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	42	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Permitted			Permitted		
Rights:	Include			Include			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0 1! 0 0			1 1 0 0 2			0 0 3 1 0			0 0 3 0 1		
Volume Module:												
Base Vol:	3	0	101	733	12	248	0	1375	8	0	680	834
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	0	101	733	12	248	0	1375	8	0	680	834
Added Vol:	0	0	0	130	0	0	0	83	0	0	31	114
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	3	0	101	863	12	248	0	1458	8	0	711	948
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	3	0	101	863	12	248	0	1458	8	0	711	948
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	3	0	101	863	12	248	0	1458	8	0	711	948
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	3	0	101	863	12	248	0	1458	8	0	711	948
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	3	0	101	863	12	248	0	1458	8	0	711	948
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.03	0.00	0.97	1.97	0.03	2.00	0.00	3.98	0.02	0.00	3.00	1.00
Final Sat.:	50	0	1670	3084	47	3127	0	6842	38	0	5160	1720
Capacity Analysis Module:												
Vol/Sat:	0.06	0.00	0.06	0.28	0.25	0.08	0.00	0.21	0.21	0.00	0.14	0.55
Crit Vol:			104	437				367		0		
Crit Moves:			****	****				****		****		

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                       Level Of Service Computation Report
                  CCTALOS Method (Future Volume Alternative)
*********************************************************************************
Intersection #11 680 NB OFF/Bollinger
*********************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):          0.876
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:        150              Level Of Service:                   D
*********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Permitted        Permitted
Rights:          Include          Include           Ignore           Ignore
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  0  0  2   0  0  0  0  0   0  0  3  0  1   0  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     280     0  1646     0     0     0     0  1349   386     0  1218   511
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:  280     0  1646     0     0     0     0  1349   386     0  1218   511
Added Vol:      0     0   275     0     0     0     0   213     0     0   145    57
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:  280     0  1921     0     0     0     0  1562   386     0  1363   568
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:   280     0  1921     0     0     0     0  1562   386     0  1363   568
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  280     0  1921     0     0     0     0  1562   386     0  1363   568
RTOR Reduct:    0     0     0     0     0     0     0     0     0     0     0     0
RTOR Vol:     280     0  1921     0     0     0     0  1562   386     0  1363   568
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:   280     0  1921     0     0     0     0  1562   386     0  1363   568
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1800  1800  1800  1800  1800  1800  1800  1800  1800  1800  1800  1800
Adjustment:  1.00  1.00  0.91  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Lanes:       1.00  0.00  2.00  0.00  0.00  0.00  0.00  3.00  1.00  0.00  3.00  1.00
Final Sat.:  1800     0  3272     0     0     0     0  5400  1800     0  5400  1800
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.16  0.00  0.59  0.00  0.00  0.00  0.00  0.29  0.21  0.00  0.25  0.32
Crit Vol:                 961           0                 521           0
Crit Moves:              ****                            ****        ****
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                      Level Of Service Computation Report
                  CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #12 Sunset/Bollinger
********************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):          0.668
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         69              Level Of Service:                   B
********************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  1  0  0  1   0  1  0  0  2   2  0  3  0  1   1  0  4  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      52     9    34    83    39   204  1033 1495   567   215 1407   145
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   52     9    34    83    39   204  1033 1495   567   215 1407   145
Added Vol:      0     0     0    13     0    53   -69  557     0     0  148   -33
Prj. I (Fle:    0     0     0     7     0     4    15  -15     0     0   -4     2
Initial Fut:   52     9    34   103    39   261   979 2037   567   215 1551   114
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    52     9    34   103    39   261   979 2037   567   215 1551   114
Reduct Vol:     0     0     0     0     0     0     0    0     0     0    0     0
Reduced Vol:   52     9    34   103    39   261   979 2037   567   215 1551   114
RTOR Reduct:    0     0    34     0     0   261     0    0    29     0    0   103
RTOR Vol:      52     9     0   103    39     0   979 2037   538   215 1551    11
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    52     9     0   103    39     0   979 2037   538   215 1551    11
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  0.91 1.00  1.00  1.00 1.00  0.91  0.91 1.00  1.00  1.00 1.00  1.00
Lanes:       1.70 0.30  1.00  0.73 0.27  2.00  2.00 3.00  1.00  1.00 4.00  1.00
Final Sat.:  2557  487  1650  1197  453  3000  3000 4950  1650  1650 6600  1650
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.02 0.02  0.00  0.09 0.09  0.00  0.33 0.41  0.33  0.13 0.24  0.01
Crit Vol:      31                    142         490                    388
Crit Moves:  ****                   ****        ****                   ****
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #13 Camino Ramon/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	0.629
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	61	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 1 0 1			1 0 1 0 1			2 0 3 0 1			1 0 3 1 0		
Volume Module:												
Base Vol:	12	19	0	30	41	41	672	747	242	24	1703	74
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	12	19	0	30	41	41	672	747	242	24	1703	74
Added Vol:	39	16	15	40	124	27	27	229	315	117	35	12
Prj. I (Fle:	0	0	0	0	0	0	8	-16	0	0	-2	2
Initial Fut:	51	35	15	70	165	68	707	960	557	141	1736	88
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	51	35	15	70	165	68	707	960	557	141	1736	88
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	51	35	15	70	165	68	707	960	557	141	1736	88
RTOR Reduct:	0	0	15	0	0	68	0	0	28	0	0	0
RTOR Vol:	51	35	0	70	165	0	707	960	529	141	1736	88
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	51	35	0	70	165	0	707	960	529	141	1736	88
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	2.00	3.00	1.00	1.00	3.81	0.19
Final Sat.:	3000	1650	1650	1650	1650	1650	3000	4950	1650	1650	6282	318
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.00	0.04	0.10	0.00	0.24	0.19	0.32	0.09	0.28	0.28
Crit Vol:	26				165		354					456
Crit Moves:	****				****		****					****

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                    Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #14 Bishop 2 Drive/Bollinger
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.430
Loss Time (sec):       0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        40              Level Of Service:                  A
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
Lanes:        1  0  0  1  0    2  0  0  1  0    1  0  2  1  0    1  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      10    0    8     46    0    0      0  746   32     37 1735  224
Growth Adj:  1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
Initial Bse:   10    0    8     46    0    0      0  746   32     37 1735  224
Added Vol:     28    0   25     38    0   37     11   43  228    204  100   41
Prj. I (Fle:    0    0    0     16    0    2      0  -16    0      0   -2    2
Initial Fut:   38    0   33    100    0   39     11  773  260    241 1833  267
User Adj:    1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
PHF Volume:    38    0   33    100    0   39     11  773  260    241 1833  267
Reduct Vol:     0    0    0      0    0    0      0    0    0      0    0    0
Reduced Vol:   38    0   33    100    0   39     11  773  260    241 1833  267
RTOR Reduct:    0    0    0      0    0    0      0    0    0      0    0   55
RTOR Vol:      38    0   33    100    0   39     11  773  260    241 1833  212
PCE Adj:     1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
Final Vol.:    38    0   33    100    0   39     11  773  260    241 1833  212
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650 1650   1650 1650 1650   1650 1650 1650   1650 1650 1650
Adjustment:  1.00 1.00 1.00   0.91 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
Lanes:       1.00 0.00 1.00   2.00 0.00 1.00   1.00 2.24 0.76   1.00 3.00 1.00
Final Sat.:  1650    0 1650   3000    0 1650   1650 3704 1246   1650 4950 1650
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.02 0.00 0.02   0.03 0.00 0.02   0.01 0.21 0.21   0.15 0.37 0.13
Crit Vol:                33     50               11                    611
Crit Moves:            ****   ****             ****                   ****
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                      Level Of Service Computation Report
                   CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #15 Market/Bollinger Drive
********************************************************************************
Cycle (sec):          100               Critical Vol./Cap.(X):         0.524
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         48               Level Of Service:                  A
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        1  1  0  0  1   1  0  0  1  0   1  0  3  0  1   2  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     243    1    33    2    1     9   11  638   149   41 1765     6
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:  243    1    33    2    1     9   11  638   149   41 1765     6
Added Vol:     18    0     0    0    0     0    0  103     4    0  328     0
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  261    1    33    2    1     9   11  741   153   41 2093     6
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   261    1    33    2    1     9   11  741   153   41 2093     6
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  261    1    33    2    1     9   11  741   153   41 2093     6
RTOR Reduct:    0    0    23    0    0     0    0    0   144    0    0     0
RTOR Vol:     261    1    10    2    1     9   11  741     9   41 2093     6
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:   261    1    10    2    1     9   11  741     9   41 2093     6
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650 1650 1650  1650 1650 1650  1650 1650 1650  1650
Adjustment:  0.91 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 0.91 1.00  1.00
Lanes:       1.99 0.01  1.00 1.00 0.10  0.90 1.00 3.00  1.00 2.00 2.99  0.01
Final Sat.:  2988   13  1650 1650  165  1485 1650 4950  1650 3000 4936    14
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.09 0.08  0.01 0.00 0.01  0.01 0.01 0.15  0.01 0.01 0.42  0.42
Crit Vol:     131                   10         11                    700
Crit Moves:  ****                 ****       ****                   ****
********************************************************************************
```

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #16 Alcosta/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	0.800
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	114	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	1 1	0	2 0	2 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	542	463	184	146	263	221	190	396	90	281	1094	330
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	542	463	184	146	263	221	190	396	90	281	1094	330
Added Vol:	99	0	0	0	0	48	9	50	44	0	181	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	641	463	184	146	263	269	199	446	134	281	1275	330
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	641	463	184	146	263	269	199	446	134	281	1275	330
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	641	463	184	146	263	269	199	446	134	281	1275	330
RTOR Reduct:	0	0	0	0	0	199	0	0	134	0	0	80
RTOR Vol:	641	463	184	146	263	70	199	446	0	281	1275	250
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	641	463	184	146	263	70	199	446	0	281	1275	250
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.43	0.57	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3000	2362	938	3000	3300	1650	1650	3300	1650	1650	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.21	0.20	0.20	0.05	0.08	0.04	0.12	0.14	0.00	0.17	0.39	0.15
Crit Vol:	321				132		199				638	
Crit Moves:	****				****		****				****	

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                     Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
*******************************************************************************
Intersection #17 Alcosta/Norris
*******************************************************************************
Cycle (sec):          100               Critical Vol./Cap.(X):         0.410
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         39               Level Of Service:                  A
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        1  0  1  1  0    1  0  2  0  1    2  0  1  0  1    1  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     285  379    66   235  461   216   143   71   206    42   58    84
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  285  379    66   235  461   216   143   71   206    42   58    84
Added Vol:      0    9     0     0   48     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  285  388    66   235  509   216   143   71   206    42   58    84
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   285  388    66   235  509   216   143   71   206    42   58    84
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  285  388    66   235  509   216   143   71   206    42   58    84
RTOR Reduct:    0    0     0     0    0    79     0    0   206     0    0    84
RTOR Vol:     285  388    66   235  509   137   143   71     0    42   58     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   285  388    66   235  509   137   143   71     0    42   58     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  0.91 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.71  0.29  1.00 2.00  1.00  2.00 1.00  1.00  1.00 1.00  1.00
Final Sat.:  1650 2820   480  1650 3300  1650  3000 1650  1650  1650 1650  1650
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.17 0.14  0.14  0.14 0.15  0.08  0.05 0.04  0.00  0.03 0.04  0.00
Crit Vol:     285                     255       72                     58
Crit Moves:  ****                    ****      ****                   ****
*******************************************************************************
```

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                    Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #18 San Ramon/Norris
********************************************************************************
Cycle (sec):          90               Critical Vol./Cap.(X):         0.555
Loss Time (sec):       0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        51               Level Of Service:                  A
********************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  1  1  0   2  0  1  1  0   1  0  1  1  0   1  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      74  325   326   406  144    27    78  493    51    85  148   237
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   74  325   326   406  144    27    78  493    51    85  148   237
Added Vol:      0    6     0     0   21     0     0   14     0     0    6     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   74  331   326   406  165    27    78  507    51    85  154   237
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    74  331   326   406  165    27    78  507    51    85  154   237
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   74  331   326   406  165    27    78  507    51    85  154   237
RTOR Reduct:    0    0     0     0    0     0     0    0     0     0    0   223
RTOR Vol:      74  331   326   406  165    27    78  507    51    85  154    14
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    74  331   326   406  165    27    78  507    51    85  154    14
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  1.00 1.00  1.00  0.91 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.01  0.99  2.00 1.72  0.28  1.00 1.82  0.18  1.00 1.00  1.00
Final Sat.:  1650 1663  1637  3000 2836   464  1650 2998   302  1650 1650  1650
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.04 0.20  0.20  0.14 0.06  0.06  0.05 0.17  0.17  0.05 0.09  0.01
Crit Vol:                329   203                            279    85
Crit Moves:             ****  ****                           ****  ****
********************************************************************************
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                  Level Of Service Computation Report
              CCTALOS Method (Future Volume Alternative)
*******************************************************************************
Intersection #19 Bollinger/Crow
*******************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.476
Loss Time (sec):       0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        36              Level Of Service:                  A
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:       1  0  1  0  1    0  0  1! 0  0    1  0  2  0  1    1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     116   41   133   18   67    18    34  951    70    88  758    21
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  116   41   133   18   67    18    34  951    70    88  758    21
Added Vol:     16    0     0    0    0     0     0   42    42     0   16     0
PasserByVol:    0    0     0    0    0     0     0    0     0     0    0     0
Initial Fut:  132   41   133   18   67    18    34  993   112    88  774    21
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   132   41   133   18   67    18    34  993   112    88  774    21
Reduct Vol:     0    0     0    0    0     0     0    0     0     0    0     0
Reduced Vol:  132   41   133   18   67    18    34  993   112    88  774    21
RTOR Reduct:    0    0    88    0    0     0     0    0   112     0    0    18
RTOR Vol:     132   41    45   18   67    18    34  993     0    88  774     3
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   132   41    45   18   67    18    34  993     0    88  774     3
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1720 1720  1720 1720 1720  1720  1720 1720  1720  1720 1720  1720
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.00  1.00 0.17 0.66  0.17  1.00 2.00  1.00  1.00 2.00  1.00
Final Sat.:  1720 1720  1720  301 1119   301  1720 3440  1720  1720 3440  1720
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.08 0.02  0.03 0.06 0.06  0.06  0.02 0.29  0.00  0.05 0.23  0.00
Crit Vol:     132                         103        497          88
Crit Moves:  ****                        ****       ****        ****
*******************************************************************************
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                      Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #20 Dougherty/Bollinger
********************************************************************************
Cycle (sec):          100               Critical Vol./Cap.(X):        0.535
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):     xxxxxx
Optimal Cycle:         49               Level Of Service:                 A
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:       Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        0  0  0  0  0    1  0  0  0  2    2  0  1  1  0    0  0  2  0  1
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:     -16     0     0   404     0   496   165   290    -4     0   739   331
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:  -16     0     0   404     0   496   165   290    -4     0   739   331
Added Vol:     16     0     0     0     0    18     4    32     4     0   106     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:    0     0     0   404     0   514   169   322     0     0   845   331
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:     0     0     0   404     0   514   169   322     0     0   845   331
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:    0     0     0   404     0   514   169   322     0     0   845   331
RTOR Reduct:    0     0     0     0     0    93     0     0     0     0     0   331
RTOR Vol:       0     0     0   404     0   421   169   322     0     0   845     0
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:     0     0     0   404     0   421   169   322     0     0   845     0
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1720  1720  1720  1720  1720  1720  1720  1720  1720  1720  1720  1720
Adjustment:  1.00  1.00  1.00  1.00  1.00  0.91  0.91  1.00  1.00  1.00  1.00  1.00
Lanes:       0.00  0.00  0.00  1.00  0.00  2.00  2.00  2.00  0.00  0.00  2.00  1.00
Final Sat.:     0     0     0  1720     0  3127  3127  3440     0     0  3440  1720
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.00  0.00  0.23  0.00  0.13  0.05  0.09  0.00  0.00  0.25  0.00
Crit Vol:           0          404               84                      422
Crit Moves:                    ****              ****                    ****
********************************************************************************
```

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #21 San Ramon/Montevideo

Cycle (sec):	100	Critical Vol./Cap.(X):	0.621
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	60	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:		Protected			Protected			Protected			Protected	
Rights:		Include			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:		0 0 1 1 0			1 0 2 0 0			0 0 0 0 0			1 0 0 0 1	
Volume Module: 7:45 To 8:45												
Base Vol:	0	590	117	510	364	0	0	0	0	195	0	528
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	590	117	510	364	0	0	0	0	195	0	528
Added Vol:	0	10	0	4	5	0	0	0	0	0	0	10
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	600	117	514	369	0	0	0	0	195	0	538
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	600	117	514	369	0	0	0	0	195	0	538
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	600	117	514	369	0	0	0	0	195	0	538
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	514
RTOR Vol:	0	600	117	514	369	0	0	0	0	195	0	24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	600	117	514	369	0	0	0	0	195	0	24
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	1.67	0.33	1.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	2879	561	1720	3440	0	0	0	0	1720	0	1720
Capacity Analysis Module:												
Vol/Sat:	0.00	0.21	0.21	0.30	0.11	0.00	0.00	0.00	0.00	0.11	0.00	0.01
Crit Vol:			359	514				0		195		
Crit Moves:			****	****						****		

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                       Level Of Service Computation Report
                    CCTALOS Method (Future Volume Alternative)
*******************************************************************************
Intersection #22 Alcosts/Montevideo
*******************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):          0.313
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         33              Level Of Service:                   A
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected       Split Phase      Split Phase
Rights:          Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  2  0  0    0  0  2  0  1    1  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module: 7:45 To 8:45
Base Vol:      54   540     0     0   265   118   194     0    80     0     0     0
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:   54   540     0     0   265   118   194     0    80     0     0     0
Added Vol:      0    51     0     0    28    16    48     0     0     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:   54   591     0     0   293   134   242     0    80     0     0     0
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:    54   591     0     0   293   134   242     0    80     0     0     0
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   54   591     0     0   293   134   242     0    80     0     0     0
RTOR Reduct:    0     0     0     0     0   134     0     0    54     0     0     0
RTOR Vol:      54   591     0     0   293     0   242     0    26     0     0     0
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:    54   591     0     0   293     0   242     0    26     0     0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1720  1720  1720  1720  1720  1720  1720  1720  1720  1720  1720  1720
Adjustment:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Lanes:       1.00  2.00  0.00  0.00  2.00  1.00  1.00  0.00  1.00  0.00  0.00  0.00
Final Sat.:  1720  3440     0     0  3440  1720  1720     0  1720     0     0     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03  0.17  0.00  0.00  0.09  0.00  0.14  0.00  0.02  0.00  0.00  0.00
Crit Vol:           296           0                 242                     0
Crit Moves:        ****        ****                ****
*******************************************************************************
```

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #23 Dougherty/Crow

Cycle (sec):	100	Critical Vol./Cap.(X):	0.424
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	40	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	0	0 2	0 0	0	0 0	0 0	3	0 1	2 0	2	0 0
Volume Module:												
Base Vol:	210	0	409	0	0	0	0	426	106	694	1177	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	210	0	409	0	0	0	0	426	106	694	1177	0
Added Vol:	18	0	0	0	0	0	0	11	4	0	32	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	228	0	409	0	0	0	0	437	110	694	1209	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	228	0	409	0	0	0	0	437	110	694	1209	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	228	0	409	0	0	0	0	437	110	694	1209	0
RTOR Reduct:	0	0	382	0	0	0	0	0	110	0	0	0
RTOR Vol:	228	0	27	0	0	0	0	437	0	694	1209	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	228	0	27	0	0	0	0	437	0	694	1209	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	0.00	2.00	0.00	0.00	0.00	0.00	3.00	1.00	2.00	2.00	0.00
Final Sat.:	3127	0	3127	0	0	0	0	5160	1720	3127	3440	0
Capacity Analysis Module:												
Vol/Sat:	0.07	0.00	0.01	0.00	0.00	0.00	0.00	0.08	0.00	0.22	0.35	0.00
Crit Vol:	114				0		0				605	
Crit Moves:	****						****				****	

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #24 Alcosta/Old Ranch

Cycle (sec): 100   Critical Vol./Cap.(X): 0.320
Loss Time (sec): 0 (Y+R=4.0 sec)   Average Delay (sec/veh): xxxxxx
Optimal Cycle: 34   Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:		Split Phase			Split Phase			Split Phase			Split Phase	
Rights:		Include			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 1 0 1 0			1 0 1 1 0			0 0 1! 0 0			1 0 1! 0 1		
Volume Module:												
Base Vol:	10	226	114	130	205	1	9	1	2	341	1	216
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	10	226	114	130	205	1	9	1	2	341	1	216
Added Vol:	0	26	0	9	19	0	0	0	0	0	0	25
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	10	252	114	139	224	1	9	1	2	341	1	241
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	10	252	114	139	224	1	9	1	2	341	1	241
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	10	252	114	139	224	1	9	1	2	341	1	241
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	139
RTOR Vol:	10	252	114	139	224	1	9	1	2	341	1	102
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	10	252	114	139	224	1	9	1	2	341	1	102
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	0.91
Lanes:	0.05	1.34	0.61	1.00	1.99	0.01	0.75	0.08	0.17	1.99	0.01	1.00
Final Sat.:	88	2212	1001	1650	3285	15	1238	138	275	2985	17	1500
Capacity Analysis Module:												
Vol/Sat:	0.11	0.11	0.11	0.08	0.07	0.07	0.01	0.01	0.01	0.11	0.06	0.07
Crit Vol:			188	139				12		171		
Crit Moves:			****	****				****		****		

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #25 Doughert/Old Ranch

Cycle (sec):	100	Critical Vol./Cap.(X):	0.652
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	66	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 2 0 0			0 0 1 1 0			1 0 0 0 2			0 0 0 0 0		
Volume Module:												
Base Vol:	153	489	0	0	1534	184	87	0	136	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	153	489	0	0	1534	184	87	0	136	0	0	0
Added Vol:	11	0	0	0	0	13	5	0	5	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	164	489	0	0	1534	197	92	0	141	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	164	489	0	0	1534	197	92	0	141	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	164	489	0	0	1534	197	92	0	141	0	0	0
RTOR Reduct:	0	0	0	0	0	0	0	0	141	0	0	0
RTOR Vol:	164	489	0	0	1534	197	92	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	164	489	0	0	1534	197	92	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	1.77	0.23	1.00	0.00	2.00	0.00	0.00	0.00
Final Sat.:	1720	3440	0	0	3049	391	1720	0	3127	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.10	0.14	0.00	0.00	0.50	0.50	0.05	0.00	0.00	0.00	0.00	0.00
Crit Vol:	164					866	92				0	
Crit Moves:	****					****	****					

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--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
                CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #26 Sunset/Center Street
********************************************************************************
Cycle (sec):          100             Critical Vol./Cap.(X):         0.270
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):    xxxxxx
Optimal Cycle:         25             Level Of Service:                  A
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
Lanes:        2  0  2  1  0   1  0  1  1  0   0  1  0  0  1   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     302  691   153     7  171    23    48    6   142    12    1     3
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  302  691   153     7  171    23    48    6   142    12    1     3
Added Vol:      0   32  -134     5   58     0     0    0     0     9    0     4
Prj. I (Fle:    0    0    17     0    0     0     0    0     0    11    0     0
Initial Fut:  302  723    36    12  229    23    48    6   142    32    1     7
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   302  723    36    12  229    23    48    6   142    32    1     7
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  302  723    36    12  229    23    48    6   142    32    1     7
RTOR Reduct:    0    0     0     0    0     0     0    0   142     0    0     0
RTOR Vol:     302  723    36    12  229    23    48    6     0    32    1     7
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   302  723    36    12  229    23    48    6     0    32    1     7
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1720 1720  1720  1720 1720  1720  1720 1720  1720  1720 1720  1720
Adjustment:  0.91 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       2.00 2.86  0.14  1.00 1.82  0.18  0.89 0.11  1.00  1.00 0.12  0.88
Final Sat.:  3127 4915   245  1720 3126   314  1529  191  1720  1720  215  1505
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.10 0.15  0.15  0.01 0.07  0.07  0.03 0.03  0.00  0.02 0.00  0.00
Crit Vol:               253               126          54           32
Crit Moves:             ****              ****        ****         ****
********************************************************************************
```

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #27 Bishop Drive/Sunset

Cycle (sec):	100	Critical Vol./Cap.(X):	0.409
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	39	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0 1	1	0 1	0 1	0	1 0	0 1	0	2 0	0 1	0
Volume Module:												
Base Vol:	299	393	49	11	14	20	25	82	90	95	71	11
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	299	393	49	11	14	20	25	82	90	95	71	11
Added Vol:	1	0	35	0	0	0	0	1	1	61	1	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	300	393	84	11	14	20	25	83	91	156	72	11
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	300	393	84	11	14	20	25	83	91	156	72	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	300	393	84	11	14	20	25	83	91	156	72	11
RTOR Reduct:	0	0	84	0	0	0	0	0	0	0	0	0
RTOR Vol:	300	393	0	11	14	20	25	83	91	156	72	11
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	300	393	0	11	14	20	25	83	91	156	72	11
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Lanes:	1.00	1.00	1.00	0.49	0.62	0.89	1.00	0.48	0.52	2.00	0.87	0.13
Final Sat.:	1650	1650	1500	807	1027	1467	1650	787	863	3000	1431	219
Capacity Analysis Module:												
Vol/Sat:	0.18	0.24	0.00	0.01	0.01	0.01	0.02	0.11	0.11	0.05	0.05	0.05
Crit Vol:		393				22			174	78		
Crit Moves:		****				****			****	****		

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-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
           2000 HCM 4-Way Stop Method (Future Volume Alternative)
*******************************************************************************
Intersection #28 Bollinger Canyon/Norris Canyon
*******************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):        0.902
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):      23.5
Optimal Cycle:          0              Level Of Service:                C
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  1  1  0    1  0  1  1  0    0  0  1!  0  0   0  0  1!  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      99  281    66   121  360    11    12  279   164    69   61    87
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   99  281    66   121  360    11    12  279   164    69   61    87
Added Vol:      0   16     0     0   42     0     0   14     0     0    6     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   99  297    66   121  402    11    12  293   164    69   67    87
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    99  297    66   121  402    11    12  293   164    69   67    87
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   99  297    66   121  402    11    12  293   164    69   67    87
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    99  297    66   121  402    11    12  293   164    69   67    87
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.64  0.36  1.00 1.95  0.05  0.03 0.62  0.35  0.31 0.30  0.39
Final Sat.:   414  728   165   423  877    24    13  325   182   138  134   174
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.24 0.41  0.40  0.29 0.46  0.46  0.90 0.90  0.90  0.50 0.50  0.50
Crit Moves:       ****             ****        ****                   ****
Delay/Veh:   13.5 15.4  15.0  14.1 16.5  16.4  43.4 43.4  43.4  17.2 17.2  17.2
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  13.5 15.4  15.0  14.1 16.5  16.4  43.4 43.4  43.4  17.2 17.2  17.2
LOS by Move:    B    C     B     B    C     C     E    E     E     C    C     C
ApproachDel:      14.9             15.9             43.4             17.2
Delay Adj:        1.00             1.00             1.00             1.00
ApprAdjDel:       14.9             15.9             43.4             17.2
LOS by Appr:        B                C                E                C
AllWayAvgQ:   0.3  0.6   0.6   0.4  0.8   0.8   4.9  4.9   4.9   0.8  0.8   0.8
*******************************************************************************
Note: Queue reported is the number of cars per lane.
```

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                     Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #29 Bollinger/Canyon Lakes
********************************************************************************
Cycle (sec):          100               Critical Vol./Cap.(X):          0.650
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         53               Level Of Service:                   B
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:     0     0     0     0     0     0     0     0     0     0     0     0
Lanes:        1  0  0  1  0   0  1  0  0  1   1  0  1  1  0   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     124     4    11     36     1   257   172   480    13     33  1276    79
Growth Adj:  1.00  1.00  1.00   1.00  1.00  1.00  1.00  1.00  1.00   1.00  1.00  1.00
Initial Bse:  124     4    11     36     1   257   172   480    13     33  1276    79
Added Vol:      0     0     0      0     0    18     4    46     0      0   162     0
PasserByVol:    0     0     0      0     0     0     0     0     0      0     0     0
Initial Fut:  124     4    11     36     1   275   176   526    13     33  1438    79
User Adj:    1.00  1.00  1.00   1.00  1.00  1.00  1.00  1.00  1.00   1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00   1.00  1.00  1.00  1.00  1.00  1.00   1.00  1.00  1.00
PHF Volume:   124     4    11     36     1   275   176   526    13     33  1438    79
Reduct Vol:     0     0     0      0     0     0     0     0     0      0     0     0
Reduced Vol:  124     4    11     36     1   275   176   526    13     33  1438    79
RTOR Reduct:    0     0     0      0     0   176     0     0     0      0     0    36
RTOR Vol:     124     4    11     36     1    99   176   526    13     33  1438    43
PCE Adj:     1.00  1.00  1.00   1.00  1.00  1.00  1.00  1.00  1.00   1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00   1.00  1.00  1.00  1.00  1.00  1.00   1.00  1.00  1.00
Final Vol.:   124     4    11     36     1    99   176   526    13     33  1438    43
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1720  1720  1720   1720  1720  1720  1720  1720  1720   1720  1720  1720
Adjustment:  1.00  1.00  1.00   1.00  1.00  1.00  1.00  1.00  1.00   1.00  1.00  1.00
Lanes:       1.00  0.27  0.73   0.97  0.03  1.00  1.00  1.95  0.05   1.00  2.00  1.00
Final Sat.:  1720   459  1261   1674    46  1720  1720  3357    83   1720  3440  1720
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.07  0.01  0.01   0.02  0.02  0.06  0.10  0.16  0.16   0.02  0.42  0.03
Crit Vol:     124                            99   176                      719
Crit Moves:  ****                          ****  ****                     ****
********************************************************************************
```

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-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
                CCTALOS Method (Future Volume Alternative)
*******************************************************************************
Intersection #30 Camino Ramon/Center Street
*******************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):         0.256
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):     xxxxxx
Optimal Cycle:         31              Level Of Service:                  A
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        0  0  1  1  0    0  0  1  1  0    0  0  0  1  0    0  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  765     0     0  162     0     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  765     0     0  162     0     0    0     0     0    0     0
Added Vol:      0   53     1     0  191     1     0    0     0     0    0     0
Prj. I (Fle:    0    0    10     0    0     0     0    8     0     0    2     0
Initial Fut:    0  818    11     0  353     1     0    8     0     0    2     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0  818    11     0  353     1     0    8     0     0    2     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0  818    11     0  353     1     0    8     0     0    2     0
RTOR Reduct:    0    0     0     0    0     0     0    0     0     0    0     0
RTOR Vol:       0  818    11     0  353     1     0    8     0     0    2     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:     0  818    11     0  353     1     0    8     0     0    2     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.00 1.97  0.03  0.00 1.99  0.01  0.00 1.00  0.00  0.00 1.00  0.00
Final Sat.:     0 3256    44     0 3291     9     0 1650     0     0 1650     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.25  0.25  0.00 0.11  0.11  0.00 0.00  0.00  0.00 0.00  0.00
Crit Vol:         415            0                      8          0
Crit Moves:       ****        ****                   ****       ****
*******************************************************************************
```

Scenario Report

Scenario:	PM Ext+Prj I.
Command:	Default Command
Volume:	PM Existing + Project Network
Geometry:	Ext + Proj
Impact Fee:	Default Impact Fee
Trip Generation:	PM PRJ Existing Flex Retail
Trip Distribution:	ONE
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/C	Future LOS	Future Del/ Veh	Future V/C	Change in
# 1 San Ramon/Crow	C	xxxxx	0.738	C	xxxxx	0.751	+ 0.013 V/C
# 2 680 SB OFF/Crow	A	xxxxx	0.566	A	xxxxx	0.577	+ 0.011 V/C
# 3 680 NB ON/Crow	A	xxxxx	0.598	B	xxxxx	0.618	+ 0.020 V/C
# 4 Camino Ramon/Crow	C	xxxxx	0.763	D	xxxxx	0.817	+ 0.053 V/C
# 5 Alcosta/Crow	B	xxxxx	0.669	C	xxxxx	0.718	+ 0.050 V/C
# 6 Camino Ramon/Norris	A	xxxxx	0.592	B	xxxxx	0.670	+ 0.077 V/C
# 7 Camino Ramon/Executive	A	xxxxx	0.429	A	xxxxx	0.506	+ 0.077 V/C
# 8 Camino Ramon/Bishop Drive	A	xxxxx	0.427	A	xxxxx	0.586	+ 0.159 V/C
# 9 San Ramon/Bollinger	D	xxxxx	0.876	E	xxxxx	0.920	+ 0.043 V/C
# 10 680 SB OFF/Bollinger	A	xxxxx	0.574	B	xxxxx	0.637	+ 0.063 V/C
# 11 680 NB OFF/Bollinger	C	xxxxx	0.713	D	xxxxx	0.883	+ 0.170 V/C
# 12 Sunset/Bollinger	E	xxxxx	0.961	F	xxxxx	1.058	+ 0.097 V/C
# 13 Camino Ramon/Bollinger	A	xxxxx	0.531	B	xxxxx	0.698	+ 0.167 V/C
# 14 Bishop 2 Drive/Bollinger	A	xxxxx	0.566	D	xxxxx	0.831	+ 0.265 V/C
# 15 Market/Bollinger Drive	A	xxxxx	0.543	B	xxxxx	0.669	+ 0.126 V/C
# 16 Alcosta/Bollinger	D	xxxxx	0.814	E	xxxxx	0.919	+ 0.105 V/C
# 17 Alcosta/Norris	A	xxxxx	0.431	A	xxxxx	0.447	+ 0.016 V/C
# 18 San Ramon/Norris	A	xxxxx	0.545	A	xxxxx	0.571	+ 0.025 V/C
# 19 Bollinger/Crow	A	xxxxx	0.449	A	xxxxx	0.504	+ 0.055 V/C
# 20 Dougherty/Bollinger	A	xxxxx	0.479	A	xxxxx	0.533	+ 0.054 V/C
# 21 San Ramon/Montevideo	D	xxxxx	0.805	D	xxxxx	0.818	+ 0.013 V/C
# 22 Alcosts/Montevideo	A	xxxxx	0.284	A	xxxxx	0.358	+ 0.074 V/C
# 23 Dougherty/Crow	A	xxxxx	0.570	A	xxxxx	0.581	+ 0.012 V/C
# 24 Alcosta/Old Ranch	A	xxxxx	0.256	A	xxxxx	0.296	+ 0.040 V/C
# 25 Doughert/Old Ranch	A	xxxxx	0.365	A	xxxxx	0.379	+ 0.014 V/C

Intersection	Base LOS	Base Del/Veh	Base V/C	Future LOS	Future Del/Veh	Future V/C	Change in
# 26 Sunset/Center Street	A	xxxxx	0.505	B	xxxxx	0.648	+ 0.143 V/C
# 27 Bishop Drive/Sunset	B	xxxxx	0.603	B	xxxxx	0.665	+ 0.062 V/C
# 28 Bollinger Canyon/Norris Canyon	B	10.4	0.371	B	11.6	0.445	+ 0.074 V/C
# 29 Bollinger/Canyon Lakes	A	xxxxx	0.539	B	xxxxx	0.631	+ 0.092 V/C
# 30 Camino Ramon/Center Street	A	xxxxx	0.110	A	xxxxx	0.233	+ 0.124 V/C

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                    Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #1 San Ramon/Crow
********************************************************************************
Cycle (sec):            180                Critical Vol./Cap.(X):         0.751
Loss Time (sec):         12 (Y+R=4.0 sec)  Average Delay (sec/veh):      xxxxxx
Optimal Cycle:           92                Level Of Service:                  C
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        2  0  2  0  1   2  0  2  0  1   2  0  3  0  1   2  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     158  579   626   414  435   190   312 1090   117   466 1201   559
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  158  579   626   414  435   190   312 1090   117   466 1201   559
Added Vol:      0   26     0    14   15     0     0   43     0     0   63    13
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  158  605   626   428  450   190   312 1133   117   466 1264   572
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   158  605   626   428  450   190   312 1133   117   466 1264   572
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  158  605   626   428  450   190   312 1133   117   466 1264   572
RTOR Reduct:    0    0   256     0    0   172     0    0    87     0    0   235
RTOR Vol:     158  605   370   428  450    18   312 1133    30   466 1264   337
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   158  605   370   428  450    18   312 1133    30   466 1264   337
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  0.91 1.00  1.00  0.91 1.00  1.00  0.91 1.00  1.00  0.91 1.00  1.00
Lanes:       2.00 2.00  1.00  2.00 2.00  1.00  2.00 3.00  1.00  2.00 3.00  1.00
Final Sat.:  3000 3300  1650  3000 3300  1650  3000 4950  1650  3000 4950  1650
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.05 0.18  0.22  0.14 0.14  0.01  0.10 0.23  0.02  0.16 0.26  0.20
Crit Vol:                370   214                     378         233
Crit Moves:             ****  ****                    ****        ****
********************************************************************************
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                      Level Of Service Computation Report
                    CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #2 680 SB OFF/Crow
********************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):         0.577
Loss Time (sec):        0 (Y+R=4.0 sec)  Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         44                Level Of Service:                  A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Permitted        Permitted
Rights:           Include          Include          Ignore           Ignore
Min. Green:     0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        0  0  0  0  0   2  0  0  0  2   0  0  3  0  1   0  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0     0     0  512     0   869     0  1624   599     0  1264   448
Growth Adj:  1.00  1.00  1.00 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:    0     0     0  512     0   869     0  1624   599     0  1264   448
Added Vol:      0     0     0   53     0     0     0    57     0     0    75     0
PasserByVol:    0     0     0    0     0     0     0     0     0     0     0     0
Initial Fut:    0     0     0  565     0   869     0  1681   599     0  1339   448
User Adj:    1.00  1.00  1.00 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:     0     0     0  565     0   869     0  1681   599     0  1339   448
Reduct Vol:     0     0     0    0     0     0     0     0     0     0     0     0
Reduced Vol:    0     0     0  565     0   869     0  1681   599     0  1339   448
RTOR Reduct:    0     0     0    0     0     0     0     0     0     0     0     0
RTOR Vol:       0     0     0  565     0   869     0  1681   599     0  1339   448
PCE Adj:     1.00  1.00  1.00 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:     0     0     0  565     0   869     0  1681   599     0  1339   448
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1800  1800  1800 1800  1800  1800  1800  1800  1800  1800  1800  1800
Adjustment:  1.00  1.00  1.00 0.91  1.00  0.91  1.00  1.00  1.00  1.00  1.00  1.00
Lanes:       0.00  0.00  0.00 2.00  0.00  2.00  0.00  3.00  1.00  0.00  3.00  1.00
Final Sat.:     0     0     0 3272     0  3272     0  5400  1800     0  5400  1800
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.00  0.00 0.17  0.00  0.27  0.00  0.31  0.33  0.00  0.25  0.25
Crit Vol:             0                    435         560             0
Crit Moves:                               ****        ****        ****
********************************************************************************
```

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #3 680 NB ON/Crow

Cycle (sec):	100	Critical Vol./Cap.(X):	0.618
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	49	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Permitted			Permitted		
Rights:	Include			Include			Ignore			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 1! 0 1			0 0 0 0 0			0 0 3 0 1			0 0 3 0 1		
Volume Module:												
Base Vol:	607	0	898	0	0	0	0	1574	884	0	1339	1142
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	607	0	898	0	0	0	0	1574	884	0	1339	1142
Added Vol:	0	0	0	0	0	0	0	110	0	0	75	76
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	607	0	898	0	0	0	0	1684	884	0	1414	1218
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	607	0	898	0	0	0	0	1684	884	0	1414	1218
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	607	0	898	0	0	0	0	1684	884	0	1414	1218
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	607	0	898	0	0	0	0	1684	884	0	1414	1218
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	607	0	898	0	0	0	0	1684	884	0	1414	1218
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.21	0.00	1.79	0.00	0.00	0.00	0.00	3.00	1.00	0.00	3.00	1.00
Final Sat.:	1980	0	2929	0	0	0	0	5400	1800	0	5400	1800
Capacity Analysis Module:												
Vol/Sat:	0.31	0.00	0.31	0.00	0.00	0.00	0.00	0.31	0.49	0.00	0.26	0.68
Crit Vol:	502				0			561		0		
Crit Moves:	****							****		****		

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                      Level Of Service Computation Report
                  CCTALOS Method (Future Volume Alternative)
*********************************************************************************
Intersection #4 Camino Ramon/Crow
*********************************************************************************
Cycle (sec):          100                 Critical Vol./Cap.(X):          0.817
Loss Time (sec):        0 (Y+R=4.0 sec)  Average Delay (sec/veh):        xxxxxx
Optimal Cycle:        124                 Level Of Service:                   D
*********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        2  0  1  0  1   1  0  1  1  0   1  0  3  0  1   1  0  3  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     464  288   141   287  134   120   117 1592   206   154 1157   182
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  464  288   141   287  134   120   117 1592   206   154 1157   182
Added Vol:    151    4   100     0    3     0     0    0   110    84    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  615  292   241   287  137   120   117 1592   316   238 1157   182
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   615  292   241   287  137   120   117 1592   316   238 1157   182
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  615  292   241   287  137   120   117 1592   316   238 1157   182
RTOR Reduct:    0    0   238     0    0     0     0    0   316     0    0     0
RTOR Vol:     615  292     3   287  137   120   117 1592     0   238 1157   182
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   615  292     3   287  137   120   117 1592     0   238 1157   182
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  0.91 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       2.00 1.00  1.00  1.00 1.07  0.93  1.00 3.00  1.00  1.00 3.46  0.54
Final Sat.:  3000 1650  1650  1650 1759  1541  1650 4950  1650  1650 5703   897
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.21 0.18  0.00  0.17 0.08  0.08  0.07 0.32  0.00  0.14 0.20  0.20
Crit Vol:          292         287                   531         238
Crit Moves:        ****        ****                  ****        ****
*********************************************************************************
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                    Level Of Service Computation Report
                  CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #5 Alcosta/Crow
********************************************************************************
Cycle (sec):          100                 Critical Vol./Cap.(X):         0.718
Loss Time (sec):        0 (Y+R=4.0 sec)   Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         81                 Level Of Service:                  C
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        2  0  0  0  1   0  0  0  0  0    0  0  3  0  1    2  0  3  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     498     0   623     0     0     0     0  1581   261   318   915     0
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:  498     0   623     0     0     0     0  1581   261   318   915     0
Added Vol:      0     0    52     0     0     0     0   100     0    22    84     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:  498     0   675     0     0     0     0  1681   261   340   999     0
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:   498     0   675     0     0     0     0  1681   261   340   999     0
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  498     0   675     0     0     0     0  1681   261   340   999     0
RTOR Reduct:    0     0   187     0     0     0     0     0   261     0     0     0
RTOR Vol:     498     0   488     0     0     0     0  1681     0   340   999     0
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:   498     0   488     0     0     0     0  1681     0   340   999     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1720  1720  1720  1720  1720  1720  1720  1720  1720  1720  1720  1720
Adjustment:  0.91  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.91  1.00  1.00
Lanes:       2.00  0.00  1.00  0.00  0.00  0.00  0.00  3.00  1.00  2.00  3.00  0.00
Final Sat.:  3127     0  1720     0     0     0     0  5160  1720  3127  5160     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.16  0.00  0.28  0.00  0.00  0.00  0.00  0.33  0.00  0.11  0.19  0.00
Crit Vol:                 488     0                       560         170
Crit Moves:              ****                            ****        ****
********************************************************************************
```

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #6 Camino Ramon/Norris

Cycle (sec):	100	Critical Vol./Cap.(X):	0.670
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	69	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	2	0 1	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	132	864	101	136	386	112	200	282	78	49	342	77
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	132	864	101	136	386	112	200	282	78	49	342	77
Added Vol:	23	255	0	0	197	0	0	0	16	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	155	1119	101	136	583	112	200	282	94	49	342	77
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	155	1119	101	136	583	112	200	282	94	49	342	77
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	155	1119	101	136	583	112	200	282	94	49	342	77
RTOR Reduct:	0	0	49	0	0	0	0	0	0	0	0	0
RTOR Vol:	155	1119	52	136	583	112	200	282	94	49	342	77
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	155	1119	52	136	583	112	200	282	94	49	342	77
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.68	0.32	1.00	1.50	0.50	1.00	1.63	0.37
Final Sat.:	1650	3300	1650	1650	2768	532	1650	2475	825	1650	2694	606
Capacity Analysis Module:												
Vol/Sat:	0.09	0.34	0.03	0.08	0.21	0.21	0.12	0.11	0.11	0.03	0.13	0.13
Crit Vol:		560		136			200					210
Crit Moves:		****		****			****					****

Level Of Service Computation Report

CCTALOS Method (Future Volume Alternative)

Intersection #7 Camino Ramon/Executive

Cycle (sec):	100	Critical Vol./Cap.(X):	0.506
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	38	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	1 1	0	0 1	0 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	32	698	24	15	660	41	215	11	160	117	24	76
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	32	698	24	15	660	41	215	11	160	117	24	76
Added Vol:	5	277	0	0	213	0	0	0	5	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	37	975	24	15	873	41	215	11	165	117	24	76
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	37	975	24	15	873	41	215	11	165	117	24	76
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	37	975	24	15	873	41	215	11	165	117	24	76
RTOR Reduct:	0	0	0	0	0	0	0	0	37	0	0	15
RTOR Vol:	37	975	24	15	873	41	215	11	128	117	24	61
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	37	975	24	15	873	41	215	11	128	117	24	61
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.95	0.05	1.00	1.91	0.09	0.95	0.05	1.00	0.83	0.17	1.00
Final Sat.:	1720	3357	83	1720	3286	154	1636	84	1720	1427	293	1720
Capacity Analysis Module:												
Vol/Sat:	0.02	0.29	0.29	0.01	0.27	0.27	0.13	0.13	0.07	0.08	0.08	0.04
Crit Vol:			500	15			215				141	
Crit Moves:			****	****			****				****	

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                     Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
*******************************************************************************
Intersection #8 Camino Ramon/Bishop Drive
*******************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):          0.586
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         55              Level Of Service:                   A
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  1  1  0    2  0  1  0  1    1  0  1  0  1    1  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0   373    12  320    49   596  115     2    79  144     7   110
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0   373    12  320    49   596  115     2    79  144     7   110
Added Vol:     0   133   126   80    38   101   68    69    76  126   132    82
PasserByVol:   0     0     0    0     0     0    0     0     0    0     0     0
Initial Fut:   0   506   138  400    87   697  183    71   155  270   139   192
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0   506   138  400    87   697  183    71   155  270   139   192
Reduct Vol:    0     0     0    0     0     0    0     0     0    0     0     0
Reduced Vol:   0   506   138  400    87   697  183    71   155  270   139   192
RTOR Reduct:   0     0     0    0     0   183    0     0     0    0     0   192
RTOR Vol:      0   506   138  400    87   514  183    71   155  270   139     0
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    0   506   138  400    87   514  183    71   155  270   139     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650 1650 1650  1650 1650 1650  1650 1650 1650  1650
Adjustment:  1.00 1.00  1.00 0.91 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       1.00 1.57  0.43 2.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Sat.:  1650 2593   707 3000 1650  1650 1650 1650  1650 1650 1650  1650
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.20  0.20 0.13 0.05  0.31 0.11 0.04  0.09 0.16 0.08  0.00
Crit Vol:          322        200                             155  270
Crit Moves:        ****       ****                            ****  ****
*******************************************************************************
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                     Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #9 San Ramon/Bollinger
********************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):          0.920
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:        180              Level Of Service:                   E
********************************************************************************
Approach:      North Bound      South Bound       East Bound        West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        2  0  1  1  0   2  0  1  1  0   1  0  1  1  0   2  0  2  0  1
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:      89  431   483   294  430    40    15  313   147  1039  530   179
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   89  431   483   294  430    40    15  313   147  1039  530   179
Added Vol:      0    0    24    15    0     0     0   43     0    32   63    26
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   89  431   507   309  430    40    15  356   147  1071  593   205
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    89  431   507   309  430    40    15  356   147  1071  593   205
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   89  431   507   309  430    40    15  356   147  1071  593   205
RTOR Reduct:    0    0     0     0    0     0     0    0     0     0    0   170
RTOR Vol:      89  431   507   309  430    40    15  356   147  1071  593    35
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    89  431   507   309  430    40    15  356   147  1071  593    35
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  0.91 1.00  1.00  0.91 1.00  1.00  1.00 1.00  1.00  0.91 1.00  1.00
Lanes:       2.00 1.00  1.00  2.00 1.83  0.17  1.00 1.42  0.58  2.00 2.00  1.00
Final Sat.:  3000 1650  1650  3000 3019   281  1650 2336   964  3000 3300  1650
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.03 0.26  0.31  0.10 0.14  0.14  0.01 0.15  0.15  0.36 0.18  0.02
Crit Vol:               507   155                    252         536
Crit Moves:             ****  ****                   ****        ****
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #10 680 SB OFF/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	0.637
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	51	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Permitted			Permitted		
Rights:	Include			Include			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0 1! 0 0			1 1 0 0 2			0 0 3 1 0			0 0 3 0 1		
Volume Module:												
Base Vol:	5	0	101	817	21	344	0	1150	10	0	1260	1445
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	0	101	817	21	344	0	1150	10	0	1260	1445
Added Vol:	0	0	0	123	0	0	0	81	0	0	121	375
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	0	101	940	21	344	0	1231	10	0	1381	1820
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	5	0	101	940	21	344	0	1231	10	0	1381	1820
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	0	101	940	21	344	0	1231	10	0	1381	1820
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	5	0	101	940	21	344	0	1231	10	0	1381	1820
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	5	0	101	940	21	344	0	1231	10	0	1381	1820
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.05	0.00	0.95	1.96	0.04	2.00	0.00	3.97	0.03	0.00	3.00	1.00
Final Sat.:	81	0	1639	3059	75	3127	0	6825	55	0	5160	1720
Capacity Analysis Module:												
Vol/Sat:	0.06	0.00	0.06	0.31	0.28	0.11	0.00	0.18	0.18	0.00	0.27	1.06
Crit Vol:			106	480			0				460	
Crit Moves:			****	****			****				****	

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                    Level Of Service Computation Report
                CCTALOS Method (Future Volume Alternative)
*******************************************************************************
Intersection #11 680 NB OFF/Bollinger
*******************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):          0.883
Loss Time (sec):        0 (Y+R=4.0 sec)  Average Delay (sec/veh):       xxxxxx
Optimal Cycle:        159                Level Of Service:                   D
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:       Split Phase      Split Phase        Permitted        Permitted
Rights:          Include          Include           Ignore           Ignore
Min. Green:     0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  0  0  2    0  0  0  0  0    0  0  3  0  1    0  0  3  0  1
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:      439    0   923     0    0     0     0 1305   248     0 2325   892
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   439    0   923     0    0     0     0 1305   248     0 2325   892
Added Vol:       0    0   256     0    0     0     0  204     0     0  496   176
PasserByVol:     0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   439    0  1179     0    0     0     0 1509   248     0 2821  1068
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    439    0  1179     0    0     0     0 1509   248     0 2821  1068
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   439    0  1179     0    0     0     0 1509   248     0 2821  1068
RTOR Reduct:     0    0     0     0    0     0     0    0     0     0    0     0
RTOR Vol:      439    0  1179     0    0     0     0 1509   248     0 2821  1068
PCE Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    439    0  1179     0    0     0     0 1509   248     0 2821  1068
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:     1800 1800  1800  1800 1800  1800  1800 1800  1800  1800 1800  1800
Adjustment:   1.00 1.00  0.91  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:        1.00 0.00  2.00  0.00 0.00  0.00  0.00 3.00  1.00  0.00 3.00  1.00
Final Sat.:   1800    0  3272     0    0     0     0 5400  1800     0 5400  1800
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:      0.24 0.00  0.36  0.00 0.00  0.00  0.00 0.28  0.14  0.00 0.52  0.59
Crit Vol:                 590          0           0                       940
Crit Moves:               ****                    ****                     ****
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #12 Sunset/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	1.058
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 1	0 0	1	0 1	0 0	2	2 0	3 0	1	1 0	4 0	1
Volume Module:												
Base Vol:	494	35	99	142	13	1384	402	1883	43	28	1335	187
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	494	35	99	142	13	1384	402	1883	43	28	1335	187
Added Vol:	0	0	0	34	0	46	199	262	0	0	627	55
Prj. I (Fle:	0	0	0	29	0	48	59	-59	0	0	-48	24
Initial Fut:	494	35	99	205	13	1478	660	2086	43	28	1914	266
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	494	35	99	205	13	1478	660	2086	43	28	1914	266
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	494	35	99	205	13	1478	660	2086	43	28	1914	266
RTOR Reduct:	0	0	28	0	0	363	0	0	43	0	0	205
RTOR Vol:	494	35	71	205	13	1115	660	2086	0	28	1914	61
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	494	35	71	205	13	1115	660	2086	0	28	1914	61
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00
Lanes:	1.87	0.13	1.00	0.94	0.06	2.00	2.00	3.00	1.00	1.00	4.00	1.00
Final Sat.:	2801	218	1650	1552	98	3000	3000	4950	1650	1650	6600	1650
Capacity Analysis Module:												
Vol/Sat:	0.18	0.16	0.04	0.13	0.13	0.37	0.22	0.42	0.00	0.02	0.29	0.04
Crit Vol:	264					558	330				478	
Crit Moves:	****					****	****				****	

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #13 Camino Ramon/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	0.698
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	76	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	1 0	1	1 0	1 0	1	2 0	3 0	1	1 0	3 1	0
Volume Module:												
Base Vol:	347	34	36	207	18	121	350	1868	18	12	1058	11
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	347	34	36	207	18	121	350	1868	18	12	1058	11
Added Vol:	285	113	107	114	30	92	102	117	77	30	299	52
Prj. I (Fle:	0	0	0	0	0	0	29	-59	0	0	-24	24
Initial Fut:	632	147	143	321	48	213	481	1926	95	42	1333	87
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	632	147	143	321	48	213	481	1926	95	42	1333	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	632	147	143	321	48	213	481	1926	95	42	1333	87
RTOR Reduct:	0	0	42	0	0	213	0	0	95	0	0	0
RTOR Vol:	632	147	101	321	48	0	481	1926	0	42	1333	87
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	632	147	101	321	48	0	481	1926	0	42	1333	87
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	2.00	3.00	1.00	1.00	3.75	0.25
Final Sat.:	3000	1650	1650	1650	1650	1650	3000	4950	1650	1650	6196	404
Capacity Analysis Module:												
Vol/Sat:	0.21	0.09	0.06	0.19	0.03	0.00	0.16	0.39	0.00	0.03	0.22	0.22
Crit Vol:		147		321				642		42		
Crit Moves:		****		****				****		****		

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #14 Bishop 2 Drive/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	0.831
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	135	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:		Protected			Protected			Protected			Protected	
Rights:		Include			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:		1 0 0 1 0			2 0 0 1 0			1 0 2 1 0			1 0 3 0 1	
Volume Module:												
Base Vol:	150	0	50	311	0	0	0	1989	0	50	1062	88
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	150	0	50	311	0	0	0	1989	0	50	1062	88
Added Vol:	196	0	179	195	0	39	45	251	41	41	146	248
Prj. I (Fle:	0	0	0	59	0	24	0	-59	0	0	-24	24
Initial Fut:	346	0	229	565	0	63	45	2181	41	91	1184	360
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	346	0	229	565	0	63	45	2181	41	91	1184	360
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	346	0	229	565	0	63	45	2181	41	91	1184	360
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	311
RTOR Vol:	346	0	229	565	0	63	45	2181	41	91	1184	49
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	346	0	229	565	0	63	45	2181	41	91	1184	49
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.00	1.00	2.00	0.00	1.00	1.00	2.94	0.06	1.00	3.00	1.00
Final Sat.:	1650	0	1650	3000	0	1650	1650	4859	91	1650	4950	1650
Capacity Analysis Module:												
Vol/Sat:	0.21	0.00	0.14	0.19	0.00	0.04	0.03	0.45	0.45	0.06	0.24	0.03
Crit Vol:			229	283					741	91		
Crit Moves:			****	****					****	****		

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                     Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #15 Market/Bollinger Drive
********************************************************************************
Cycle (sec):        100               Critical Vol./Cap.(X):          0.669
Loss Time (sec):      0 (Y+R=4.0 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:       69               Level Of Service:                   B
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        1  1  0  0  1    1  0  0  1  0    1  0  3  0  1    2  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     395    2   136    13    5    12    37 1912   460    42  824     8
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  395    2   136    13    5    12    37 1912   460    42  824     8
Added Vol:     16    0     0     0    0     0     0  598    27     0  419     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  411    2   136    13    5    12    37 2510   487    42 1243     8
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   411    2   136    13    5    12    37 2510   487    42 1243     8
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  411    2   136    13    5    12    37 2510   487    42 1243     8
RTOR Reduct:    0    0    23     0    0     0     0    0   226     0    0     0
RTOR Vol:     411    2   113    13    5    12    37 2510   261    42 1243     8
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   411    2   113    13    5    12    37 2510   261    42 1243     8
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  0.91 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  0.91 1.00  1.00
Lanes:       1.99 0.01  1.00  1.00 0.29  0.71  1.00 3.00  1.00  2.00 2.98  0.02
Final Sat.:  2985   16  1650  1650  485  1165  1650 4950  1650  3000 4918    32
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.14 0.13  0.07  0.01 0.01  0.01  0.02 0.51  0.16  0.01 0.25  0.25
Crit Vol:     206                           17         837         21
Crit Moves:  ****                         ****        ****       ****
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                      Level Of Service Computation Report
                  CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #16 Alcosta/Bollinger
********************************************************************************
Cycle (sec):          100               Critical Vol./Cap.(X):          0.919
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:        180               Level Of Service:                   E
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        2  0  1  1  0   2  0  2  0  1   1  0  2  0  1   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     154  411   127   239  404   165   260 1450   338   218  651   165
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  154  411   127   239  404   165   260 1450   338   218  651   165
Added Vol:    155    0     0     0    0    22    52  347   199     0  242     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  309  411   127   239  404   187   312 1797   537   218  893   165
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   309  411   127   239  404   187   312 1797   537   218  893   165
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  309  411   127   239  404   187   312 1797   537   218  893   165
RTOR Reduct:    0    0     0     0    0   187     0    0   170     0    0   131
RTOR Vol:     309  411   127   239  404     0   312 1797   367   218  893    34
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   309  411   127   239  404     0   312 1797   367   218  893    34
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  0.91 1.00  1.00  0.91 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       2.00 1.53  0.47  2.00 2.00  1.00  1.00 2.00  1.00  1.00 2.00  1.00
Final Sat.:  3000 2521   779  3000 3300  1650  1650 3300  1650  1650 3300  1650
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.10 0.16  0.16  0.08 0.12  0.00  0.19 0.54  0.22  0.13 0.27  0.02
Crit Vol:                269   120                  899          218
Crit Moves:             ****  ****                 ****         ****
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                    Level Of Service Computation Report
               CCTALOS Method (Future Volume Alternative)
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Intersection #17 Alcosta/Norris
********************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):         0.447
Loss Time (sec):        0 (Y+R=4.0 sec)  Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         41                Level Of Service:                  A
********************************************************************************
Approach:     North Bound      South Bound       East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:       Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:       1  0  1  1  0   1  0  2  0  1   2  0  1  0  1   1  0  1  0  1
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:     125  548    35    76  356   127   374   77   158    44  138   139
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  125  548    35    76  356   127   374   77   158    44  138   139
Added Vol:      0   52     0     0   22     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  125  600    35    76  378   127   374   77   158    44  138   139
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   125  600    35    76  378   127   374   77   158    44  138   139
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  125  600    35    76  378   127   374   77   158    44  138   139
RTOR Reduct:    0    0     0     0    0   127     0    0   125     0    0    76
RTOR Vol:     125  600    35    76  378     0   374   77    33    44  138    63
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   125  600    35    76  378     0   374   77    33    44  138    63
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  0.91 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.89  0.11  1.00 2.00  1.00  2.00 1.00  1.00  1.00 1.00  1.00
Final Sat.:  1650 3118   182  1650 3300  1650  3000 1650  1650  1650 1650  1650
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.08 0.19  0.19  0.05 0.11  0.00  0.12 0.05  0.02  0.03 0.08  0.04
Crit Vol:                318    76              187                    138
Crit Moves:             ****  ****             ****                   ****
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #18 San Ramon/Norris

Cycle (sec):	90	Critical Vol./Cap.(X):	0.571
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	53	Level Of Service:	A

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected	Protected	Protected	Protected
Rights:	Include	Include	Include	Include
Min. Green:	0 0 0	0 0 0	0 0 0	0 0 0
Lanes:	1 0 1 1 0	2 0 1 1 0	1 0 1 1 0	1 0 1 0 1

	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Volume Module:												
Base Vol:	100	300	100	150	300	100	100	200	100	250	500	350
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	100	300	100	150	300	100	100	200	100	250	500	350
Added Vol:	0	26	0	0	15	0	0	27	0	0	34	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	100	326	100	150	315	100	100	227	100	250	534	350
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	100	326	100	150	315	100	100	227	100	250	534	350
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	100	326	100	150	315	100	100	227	100	250	534	350
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	83
RTOR Vol:	100	326	100	150	315	100	100	227	100	250	534	267
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	100	326	100	150	315	100	100	227	100	250	534	267
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.53	0.47	2.00	1.52	0.48	1.00	1.39	0.61	1.00	1.00	1.00
Final Sat.:	1650	2525	775	3000	2505	795	1650	2291	1009	1650	1650	1650
Capacity Analysis Module:												
Vol/Sat:	0.06	0.13	0.13	0.05	0.13	0.13	0.06	0.10	0.10	0.15	0.32	0.16
Crit Vol:	100					208	100				534	
Crit Moves:	****					****	****				****	

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                         Level Of Service Computation Report
                      CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #19 Bollinger/Crow
********************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):          0.504
Loss Time (sec):        0 (Y+R=4.0 sec)  Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         38                Level Of Service:                   A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Permitted        Permitted         Protected         Protected
Rights:          Include          Include           Include           Include
Min. Green:    0     0     0     0     0     0     0     0     0     0     0     0
Lanes:        1  0  1  0  1    0  0  1! 0  0    1  0  2  0  1    1  0  2  0  1
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:     181    32    52    30    36     8    16   825   142    90  1004    29
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:  181    32    52    30    36     8    16   825   142    90  1004    29
Added Vol:     63     0     0     0     0     0     0    43    43     0    63     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:  244    32    52    30    36     8    16   868   185    90  1067    29
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:   244    32    52    30    36     8    16   868   185    90  1067    29
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  244    32    52    30    36     8    16   868   185    90  1067    29
RTOR Reduct:    0     0    52     0     0     0     0     0   185     0     0    29
RTOR Vol:     244    32     0    30    36     8    16   868     0    90  1067     0
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:   244    32     0    30    36     8    16   868     0    90  1067     0
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1720  1720  1720  1720  1720  1720  1720  1720  1720  1720  1720  1720
Adjustment:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Lanes:       1.00  1.00  1.00  0.40  0.49  0.11  1.00  2.00  1.00  1.00  2.00  1.00
Final Sat.:  1720  1720  1720   697   837   186  1720  3440  1720  1720  3440  1720
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.14  0.02  0.00  0.04  0.04  0.04  0.01  0.25  0.00  0.05  0.31  0.00
Crit Vol:     244                     74          16                     534
Crit Moves:  ****                   ****        ****                    ****
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #20 Dougherty/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	0.533
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	49	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:		Protected			Protected			Protected			Protected	
Rights:		Include			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:		0 0 0 0 0			1 0 0 0 2			2 0 1 1 0			0 0 2 0 1	
Volume Module:												
Base Vol:	-23	0	0	281	0	287	622	730	-32	0	403	366
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	-23	0	0	281	0	287	622	730	-32	0	403	366
Added Vol:	23	0	0	0	0	20	31	212	32	0	151	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	281	0	307	653	942	0	0	554	366
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	281	0	307	653	942	0	0	554	366
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	281	0	307	653	942	0	0	554	366
RTOR Reduct:	0	0	0	0	0	307	0	0	0	0	0	281
RTOR Vol:	0	0	0	281	0	0	653	942	0	0	554	85
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	281	0	0	653	942	0	0	554	85
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.00	2.00	2.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	1720	0	3127	3127	3440	0	0	3440	1720
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.16	0.00	0.00	0.21	0.27	0.00	0.00	0.16	0.05
Crit Vol:		0		281			327				277	
Crit Moves:				****			****				****	

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #21 San Ramon/Montevideo

Cycle (sec): 100 Critical Vol./Cap.(X): 0.818
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 125 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1	1 0	1 0	2	0 0	0 0	0	0 0	1 0	0	0 1
Volume Module: 5:00 To 6:00												
Base Vol:	0	705	345	687	842	0	0	0	0	172	0	643
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	705	345	687	842	0	0	0	0	172	0	643
Added Vol:	0	13	0	16	16	0	0	0	0	0	0	11
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	718	345	703	858	0	0	0	0	172	0	654
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	718	345	703	858	0	0	0	0	172	0	654
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	718	345	703	858	0	0	0	0	172	0	654
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	654
RTOR Vol:	0	718	345	703	858	0	0	0	0	172	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	718	345	703	858	0	0	0	0	172	0	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	1.35	0.65	1.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	2324	1116	1720	3440	0	0	0	0	1720	0	1720
Capacity Analysis Module:												
Vol/Sat:	0.00	0.31	0.31	0.41	0.25	0.00	0.00	0.00	0.00	0.10	0.00	0.00
Crit Vol:			532	703				0		172		
Crit Moves:			****	****						****		

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                   Level Of Service Computation Report
              CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #22 Alcosts/Montevideo
********************************************************************************
Cycle (sec):          100               Critical Vol./Cap.(X):         0.358
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         36               Level Of Service:                  A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Protected         Protected        Split Phase      Split Phase
Rights:          Include           Include           Include          Include
Min. Green:    0     0     0    0     0     0     0     0     0     0     0     0
Lanes:        1  0  2  0  0    0  0  2  0  1    1  0  0  0  1    0  0  0  0  0
------------|----------------||----------------||----------------||----------------|
Volume Module: 5:00 To 6:00
Base Vol:      66   262     0     0   616   210   114     0    43     0     0     0
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:   66   262     0     0   616   210   114     0    43     0     0     0
Added Vol:      0    73     0     0    91   108    82     0     0     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:   66   335     0     0   707   318   196     0    43     0     0     0
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:    66   335     0     0   707   318   196     0    43     0     0     0
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   66   335     0     0   707   318   196     0    43     0     0     0
RTOR Reduct:    0     0     0     0     0   196     0     0    43     0     0     0
RTOR Vol:      66   335     0     0   707   122   196     0     0     0     0     0
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:    66   335     0     0   707   122   196     0     0     0     0     0
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1720  1720  1720  1720  1720  1720  1720  1720  1720  1720  1720  1720
Adjustment:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Lanes:       1.00  2.00  0.00  0.00  2.00  1.00  1.00  0.00  1.00  0.00  0.00  0.00
Final Sat.:  1720  3440     0     0  3440  1720  1720     0  1720     0     0     0
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.04  0.10  0.00  0.00  0.21  0.07  0.11  0.00  0.00  0.00  0.00  0.00
Crit Vol:      66                     354         196                     0
Crit Moves:  ****                    ****        ****
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                     Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #23 Dougherty/Crow
********************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):        0.581
Loss Time (sec):        0 (Y+R=4.0 sec)  Average Delay (sec/veh):     xxxxxx
Optimal Cycle:         54                Level Of Service:                 A
********************************************************************************
Approach:      North Bound       South Bound        East Bound        West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:       Protected         Protected         Protected         Protected
Rights:         Include           Include           Include           Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        2  0  0  0  2    0  0  0  0  0    0  0  3  0  1    2  0  2  0  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:     135     0   811     0     0     0     0  1195   137   547   541     0
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:  135     0   811     0     0     0     0  1195   137   547   541     0
Added Vol:     20     0     0     0     0     0     0    61    31     0    45     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:  155     0   811     0     0     0     0  1256   168   547   586     0
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:   155     0   811     0     0     0     0  1256   168   547   586     0
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  155     0   811     0     0     0     0  1256   168   547   586     0
RTOR Reduct:    0     0   301     0     0     0     0     0    85     0     0     0
RTOR Vol:     155     0   510     0     0     0     0  1256    83   547   586     0
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:   155     0   510     0     0     0     0  1256    83   547   586     0
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1720  1720  1720  1720  1720  1720  1720  1720  1720  1720  1720  1720
Adjustment:  0.91  1.00  0.91  1.00  1.00  1.00  1.00  1.00  1.00  0.91  1.00  1.00
Lanes:       2.00  0.00  2.00  0.00  0.00  0.00  0.00  3.00  1.00  2.00  2.00  0.00
Final Sat.:  3127     0  3127     0     0     0     0  5160  1720  3127  3440     0
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.05  0.00  0.16  0.00  0.00  0.00  0.00  0.24  0.05  0.17  0.17  0.00
Crit Vol:                 255     0                       419         274
Crit Moves:              ****                            ****        ****
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                      Level Of Service Computation Report
                  CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #24 Alcosta/Old Ranch
********************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):         0.296
Loss Time (sec):        0 (Y+R=4.0 sec)  Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         32                Level Of Service:                  A
********************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Split Phase      Split Phase      Split Phase      Split Phase
Rights:            Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  1  0  1  0    1  0  1  1  0    1  0  0  0  0    1  0  1! 0  1
------------|---------------||---------------||---------------||---------------|
Volume Module: 5:00 To 6:00
Base Vol:       2  212   161  164  242     1    1    0     0  127    1   176
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:    2  212   161  164  242     1    1    0     0  127    1   176
Added Vol:      0   41     0   45   46     0    0    0     0    0    0    32
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:    2  253   161  209  288     1    1    0     0  127    1   208
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:     2  253   161  209  288     1    1    0     0  127    1   208
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:    2  253   161  209  288     1    1    0     0  127    1   208
RTOR Reduct:    0    0     0    0    0     0    0    0     0    0    0   208
RTOR Vol:       2  253   161  209  288     1    1    0     0  127    1     0
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:     2  253   161  209  288     1    1    0     0  127    1     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650 1650 1650  1650 1650 1650  1650 1650 1650  1650
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 0.91 1.00  0.91
Lanes:       0.01 1.22  0.77 1.00 1.99  0.01 1.00 0.00  0.00 1.98 0.02  1.00
Final Sat.:    16 2007  1277 1650 3289    11 1650    0     0 2976   26  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.13 0.13  0.13 0.13 0.09  0.09 0.00 0.00  0.00 0.04 0.04  0.00
Crit Vol:          208          209               1               64
Crit Moves:        ****        ****            ****             ****
********************************************************************************
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #25 Dougherty/Old Ranch

Cycle (sec):	100	Critical Vol./Cap.(X):	0.379
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	37	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	2	0 0	0 0	1	1 0	1 0	0	0 2	0 0	0	0 0
Volume Module: 5:00 To 6:00 PM												
Base Vol:	232	1052	0	0	494	47	102	0	120	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	232	1052	0	0	494	47	102	0	120	0	0	0
Added Vol:	18	0	0	0	0	15	22	0	23	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	250	1052	0	0	494	62	124	0	143	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	250	1052	0	0	494	62	124	0	143	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	250	1052	0	0	494	62	124	0	143	0	0	0
RTOR Reduct:	0	0	0	0	0	0	0	0	143	0	0	0
RTOR Vol:	250	1052	0	0	494	62	124	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	250	1052	0	0	494	62	124	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	1.78	0.22	1.00	0.00	2.00	0.00	0.00	0.00
Final Sat.:	1720	3440	0	0	3056	384	1720	0	3127	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.15	0.31	0.00	0.00	0.16	0.16	0.07	0.00	0.00	0.00	0.00	0.00
Crit Vol:	250					278	124				0	
Crit Moves:	****					****	****					

```
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                  Level Of Service Computation Report
              CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #26 Sunset/Center Street
********************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):         0.648
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        53                Level Of Service:                  B
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:      Split Phase      Split Phase       Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        2  0  2  1  0   1  0  1  1  0   0  1  0  0  1   1  0  0  1  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:     250  200   97    25 1057   75    50   15  175   100   25   15
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:  250  200   97    25 1057   75    50   15  175   100   25   15
Added Vol:      0  131  123    13  152    0     0    0    0   -72    0   12
Prj. I (Fle:    0    0   83     0    0    0     0    0    0    77    0    0
Initial Fut:  250  331  303    38 1209   75    50   15  175   105   25   27
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:   250  331  303    38 1209   75    50   15  175   105   25   27
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:  250  331  303    38 1209   75    50   15  175   105   25   27
RTOR Reduct:    0    0    0     0    0    0     0    0  138     0    0    0
RTOR Vol:     250  331  303    38 1209   75    50   15   38   105   25   27
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Final Vol.:   250  331  303    38 1209   75    50   15   38   105   25   27
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1720 1720 1720  1720 1720 1720  1720 1720 1720  1720 1720 1720
Adjustment:  0.91 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:       2.00 2.00 1.00  1.00 1.88 0.12  0.77 0.23 1.00  1.00 0.48 0.52
Final Sat.:  3127 3440 1720  1720 3239  201  1323  397 1720  1720  827  893
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.08 0.10 0.18  0.02 0.37 0.37  0.04 0.04 0.02  0.06 0.03 0.03
Crit Vol:                303        642            65         105
Crit Moves:             ****       ****          ****        ****
********************************************************************************
```

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #27 Bishop Drive/Sunset

Cycle (sec):	100	Critical Vol./Cap.(X):	0.665
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	68	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 0 1 1			0 1 0 1 0			1 0 0 1 0			2 0 0 1 0		
Volume Module:												
Base Vol:	140	50	75	20	325	25	15	100	250	582	50	20
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	140	50	75	20	325	25	15	100	250	582	50	20
Added Vol:	4	0	140	0	0	0	0	5	4	161	5	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	144	50	215	20	325	25	15	105	254	743	55	20
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	144	50	215	20	325	25	15	105	254	743	55	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	144	50	215	20	325	25	15	105	254	743	55	20
RTOR Reduct:	0	0	215	0	0	0	0	0	0	0	0	0
RTOR Vol:	144	50	0	20	325	25	15	105	254	743	55	20
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	144	50	0	20	325	25	15	105	254	743	55	20
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Lanes:	1.00	1.00	1.00	0.11	1.76	0.13	1.00	0.29	0.71	2.00	0.73	0.27
Final Sat.:	1650	1650	1500	178	2899	223	1650	483	1167	3000	1210	440
Capacity Analysis Module:												
Vol/Sat:	0.09	0.03	0.00	0.11	0.11	0.11	0.01	0.22	0.22	0.25	0.05	0.05
Crit Vol:	144					185			359	372		
Crit Moves:	****					****			****	****		

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--------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM 4-Way Stop Method (Future Volume Alternative)
********************************************************************************
Intersection #28 Bollinger Canyon/Norris Canyon
********************************************************************************
Cycle (sec):          100               Critical Vol./Cap.(X):          0.445
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):         11.6
Optimal Cycle:          0               Level Of Service:                   B
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        1  0  1  1  0   1  0  1  1  0   0  0  1! 0  0   0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     72  197   59    69  213   20     6   84  146    36   79   44
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:  72  197   59    69  213   20     6   84  146    36   79   44
Added Vol:     0   63    0     0   43    0     0   27    0     0   34    0
PasserByVol:   0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:  72  260   59    69  256   20     6  111  146    36  113   44
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:   72  260   59    69  256   20     6  111  146    36  113   44
Reduct Vol:    0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:  72  260   59    69  256   20     6  111  146    36  113   44
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Final Vol.:   72  260   59    69  256   20     6  111  146    36  113   44
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:       1.00 1.63 0.37  1.00 1.86 0.14  0.02 0.42 0.56  0.19 0.58 0.23
Final Sat.:  505  902  210   499 1003   79    13  249  328   102  322  125
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.14 0.29 0.28  0.14 0.26 0.25  0.45 0.45 0.45  0.35 0.35 0.35
Crit Moves:       ****            ****       ****                  ****
Delay/Veh:   10.6 11.3 11.0  10.6 11.0 11.0  12.8 12.8 12.8  12.0 12.0 12.0
Delay Adj:   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:  10.6 11.3 11.0  10.6 11.0 11.0  12.8 12.8 12.8  12.0 12.0 12.0
LOS by Move:   B    B    B     B    B    B     B    B    B     B    B    B
ApproachDel:      11.1             11.0             12.8             12.0
Delay Adj:        1.00             1.00             1.00             1.00
ApprAdjDel:       11.1             11.0             12.8             12.0
LOS by Appr:        B                B                B                B
AllWayAvgQ:    0.2  0.4  0.3   0.1  0.3  0.3   0.7  0.7  0.7   0.4  0.4  0.4
********************************************************************************
Note: Queue reported is the number of cars per lane.
```

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #29 Bollinger/Canyon Lakes

Cycle (sec):	100	Critical Vol./Cap.(X):	0.631
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	50	Level Of Service:	B

Approach:	North Bound	South Bound	East Bound	West Bound
Control:	Permitted	Permitted	Protected	Protected
Rights:	Include	Include	Include	Include
Lanes:	1 0 0 1 0	0 1 0 0 1	1 0 1 1 0	1 0 2 0 1

Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	52	6	6	90	7	173	301	1402	107	24	638	89
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	52	6	6	90	7	173	301	1402	107	24	638	89
Added Vol:	0	0	0	0	0	20	31	316	0	0	222	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	52	6	6	90	7	193	332	1718	107	24	860	89
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	52	6	6	90	7	193	332	1718	107	24	860	89
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	52	6	6	90	7	193	332	1718	107	24	860	89
RTOR Reduct:	0	0	0	0	0	193	0	0	0	0	0	89
RTOR Vol:	52	6	6	90	7	0	332	1718	107	24	860	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	52	6	6	90	7	0	332	1718	107	24	860	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.50	0.50	0.93	0.07	1.00	1.00	1.88	0.12	1.00	2.00	1.00
Final Sat.:	1720	860	860	1596	124	1720	1720	3238	202	1720	3440	1720
Capacity Analysis Module:												
Vol/Sat:	0.03	0.01	0.01	0.06	0.06	0.00	0.19	0.53	0.53	0.01	0.25	0.00
Crit Vol:	52				97				913	24		
Crit Moves:	****				****				****	****		

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #30 Camino Ramon/Center Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.233
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	30	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1 1	0	0 0	1 1	0	0 0	0 1	0	0 0	0 1	0
Volume Module:												
Base Vol:	0	395	0	0	272	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	395	0	0	272	0	0	0	0	0	0	0
Added Vol:	0	260	4	0	236	4	0	0	0	0	0	0
Prj. I (Fle:	0	0	53	0	0	0	0	29	0	0	24	0
Initial Fut:	0	655	57	0	508	4	0	29	0	0	24	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	655	57	0	508	4	0	29	0	0	24	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	655	57	0	508	4	0	29	0	0	24	0
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	0	655	57	0	508	4	0	29	0	0	24	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	655	57	0	508	4	0	29	0	0	24	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	1.84	0.16	0.00	1.98	0.02	0.00	1.00	0.00	0.00	1.00	0.00
Final Sat.:	0	3036	264	0	3274	26	0	1650	0	0	1650	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.22	0.22	0.00	0.16	0.16	0.00	0.02	0.00	0.00	0.01	0.00
Crit Vol:			356	0				29		0		
Crit Moves:			****	****				****		****		

TRAFFIX ANALYSIS

Existing + Project (Mitigation)

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                    Level Of Service Computation Report
               CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #9 San Ramon/Bollinger
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.682
Loss Time (sec):       0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        72              Level Of Service:                  B
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        2  0  2  0  1    2  0  1  1  0    1  0  1  1  0    2  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     206   491   446   260   276    26    38   761   200   397   308   200
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:  206   491   446   260   276    26    38   761   200   397   308   200
Added Vol:      0     0    20    21     0     0     0    42     0     9    16     6
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:  206   491   466   281   276    26    38   803   200   406   324   206
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:   206   491   466   281   276    26    38   803   200   406   324   206
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  206   491   466   281   276    26    38   803   200   406   324   206
RTOR Reduct:    0     0   223     0     0     0     0     0     0     0     0   155
RTOR Vol:     206   491   243   281   276    26    38   803   200   406   324    51
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:   206   491   243   281   276    26    38   803   200   406   324    51
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650  1650  1650  1650  1650  1650  1650  1650  1650  1650  1650  1650
Adjustment:  0.91  1.00  1.00  0.91  1.00  1.00  1.00  1.00  1.00  0.91  1.00  1.00
Lanes:       2.00  2.00  1.00  2.00  1.83  0.17  1.00  1.60  0.40  2.00  2.00  1.00
Final Sat.:  3000  3300  1650  3000  3016   284  1650  2642   658  3000  3300  1650
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.07  0.15  0.15  0.09  0.09  0.09  0.02  0.30  0.30  0.14  0.10  0.03
Crit Vol:           245         141                             502   203
Crit Moves:        ****        ****                            ****  ****
********************************************************************************
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-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
*******************************************************************************
Intersection #9 San Ramon/Bollinger
*******************************************************************************
Cycle (sec):          100               Critical Vol./Cap.(X):         0.743
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         89               Level Of Service:                  C
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        2  0  2  0  1   2  0  1  1  0   1  0  1  1  0   2  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      89  431   483   294  430    40    15  313   147  1039  530   179
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   89  431   483   294  430    40    15  313   147  1039  530   179
Added Vol:      0    0    24    15    0     0     0   43     0    32   63    26
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   89  431   507   309  430    40    15  356   147  1071  593   205
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    89  431   507   309  430    40    15  356   147  1071  593   205
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   89  431   507   309  430    40    15  356   147  1071  593   205
RTOR Reduct:    0    0   507     0    0     0     0    0     0     0    0   170
RTOR Vol:      89  431     0   309  430    40    15  356   147  1071  593    35
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    89  431     0   309  430    40    15  356   147  1071  593    35
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  0.91 1.00  1.00  0.91 1.00  1.00  1.00 1.00  1.00  0.91 1.00  1.00
Lanes:       2.00 2.00  1.00  2.00 1.83  0.17  1.00 1.42  0.58  2.00 2.00  1.00
Final Sat.:  3000 3300  1650  3000 3019   281  1650 2336   964  3000 3300  1650
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03 0.13  0.00  0.10 0.14  0.14  0.01 0.15  0.15  0.36 0.18  0.02
Crit Vol:          215         155                     252         536
Crit Moves:        ****        ****                    ****        ****
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #12 Sunset/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	0.668
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	69	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 1	0 0	1	0 1	0 0	1	2 0	3 0	1	1 0	4 0	1
Volume Module:												
Base Vol:	52	9	34	83	39	204	1033	1495	567	215	1407	145
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	52	9	34	83	39	204	1033	1495	567	215	1407	145
Added Vol:	0	0	0	13	0	53	-69	557	0	0	148	-33
Prj. I (Fle:	0	0	0	7	0	4	15	-15	0	0	-4	2
Initial Fut:	52	9	34	103	39	261	979	2037	567	215	1551	114
User Adj:	1.00	1.00	1.00	1.00	1.00	0.45	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	52	9	34	103	39	117	979	2037	567	215	1551	114
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	52	9	34	103	39	117	979	2037	567	215	1551	114
RTOR Reduct:	0	0	34	0	0	117	0	0	29	0	0	103
RTOR Vol:	52	9	0	103	39	0	979	2037	538	215	1551	11
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	52	9	0	103	39	0	979	2037	538	215	1551	11
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00
Lanes:	1.70	0.30	1.00	0.73	0.27	1.00	2.00	3.00	1.00	1.00	4.00	1.00
Final Sat.:	2557	487	1650	1197	453	1650	3000	4950	1650	1650	6600	1650
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.00	0.09	0.09	0.00	0.33	0.41	0.33	0.13	0.24	0.01
Crit Vol:	31				142		490				388	
Crit Moves:	****				****		****				****	

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

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Intersection #12 Sunset/Bollinger

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Cycle (sec):	100	Critical Vol./Cap.(X):	0.869
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	175	Level Of Service:	D

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Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:		Split Phase			Split Phase			Protected			Protected	
Rights:		Include			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 1 0 0 1			0 1 0 0 1			2 0 3 0 1			1 0 4 0 1		
Volume Module:												
Base Vol:	494	35	99	142	13	1384	402	1883	43	28	1335	187
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	494	35	99	142	13	1384	402	1883	43	28	1335	187
Added Vol:	0	0	0	34	0	46	199	262	0	0	627	55
Prj. I (Fle:	0	0	0	29	0	48	59	-59	0	0	-48	24
Initial Fut:	494	35	99	205	13	1478	660	2086	43	28	1914	266
User Adj:	1.00	1.00	1.00	1.00	1.00	0.45	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	494	35	99	205	13	665	660	2086	43	28	1914	266
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	494	35	99	205	13	665	660	2086	43	28	1914	266
RTOR Reduct:	0	0	28	0	0	363	0	0	43	0	0	205
RTOR Vol:	494	35	71	205	13	302	660	2086	0	28	1914	61
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	494	35	71	205	13	302	660	2086	0	28	1914	61
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00
Lanes:	1.87	0.13	1.00	0.94	0.06	1.00	2.00	3.00	1.00	1.00	4.00	1.00
Final Sat.:	2801	218	1650	1552	98	1650	3000	4950	1650	1650	6600	1650
Capacity Analysis Module:												
Vol/Sat:	0.18	0.16	0.04	0.13	0.13	0.18	0.22	0.42	0.00	0.02	0.29	0.04
Crit Vol:	264					302	330				478	
Crit Moves:	****					****	****				****	

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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #16 Alcosta/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	0.800
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	114	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	1 1	0	2 0	2 0	1	1 0	3 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	542	463	184	146	263	221	190	396	90	281	1094	330
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	542	463	184	146	263	221	190	396	90	281	1094	330
Added Vol:	99	0	0	0	0	48	9	50	44	0	181	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	641	463	184	146	263	269	199	446	134	281	1275	330
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	641	463	184	146	263	269	199	446	134	281	1275	330
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	641	463	184	146	263	269	199	446	134	281	1275	330
RTOR Reduct:	0	0	0	0	0	199	0	0	134	0	0	80
RTOR Vol:	641	463	184	146	263	70	199	446	0	281	1275	250
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	641	463	184	146	263	70	199	446	0	281	1275	250
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.43	0.57	2.00	2.00	1.00	1.00	3.00	1.00	1.00	2.00	1.00
Final Sat.:	3000	2362	938	3000	3300	1650	1650	4950	1650	1650	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.21	0.20	0.20	0.05	0.08	0.04	0.12	0.09	0.00	0.17	0.39	0.15
Crit Vol:	321				132		199				638	
Crit Moves:	****				****		****				****	

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #16 Alcosta/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	0.738
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	87	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 1 1 0			2 0 2 0 1			1 0 3 0 1			1 0 2 0 1		
Volume Module:												
Base Vol:	154	411	127	239	404	165	260	1450	338	218	651	165
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	154	411	127	239	404	165	260	1450	338	218	651	165
Added Vol:	155	0	0	0	0	22	52	347	199	0	242	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	309	411	127	239	404	187	312	1797	537	218	893	165
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	309	411	127	239	404	187	312	1797	537	218	893	165
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	309	411	127	239	404	187	312	1797	537	218	893	165
RTOR Reduct:	0	0	0	0	0	187	0	0	170	0	0	131
RTOR Vol:	309	411	127	239	404	0	312	1797	367	218	893	34
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	309	411	127	239	404	0	312	1797	367	218	893	34
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.53	0.47	2.00	2.00	1.00	1.00	3.00	1.00	1.00	2.00	1.00
Final Sat.:	3000	2521	779	3000	3300	1650	1650	4950	1650	1650	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.10	0.16	0.16	0.08	0.12	0.00	0.19	0.36	0.22	0.13	0.27	0.02
Crit Vol:			269	120				599		218		
Crit Moves:			****	****				****		****		

TRAFFIX ANALYSIS

2020

Scenario Report

Scenario:	AM 2020
Command:	Default Command
Volume:	AM 2020
Geometry:	2020 GP
Impact Fee:	Default Impact Fee
Trip Generation:	No
Trip Distribution:	ONE
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/Veh	Base V/C	Future LOS	Future Del/Veh	Future V/C	Change in
# 1 San Ramon/Crow	B	xxxxx	0.613	B	xxxxx	0.613	+ 0.000 V/C
# 2 680 SB OFF/Crow	A	xxxxx	0.557	A	xxxxx	0.557	+ 0.000 V/C
# 3 680 NB ON/Crow	A	xxxxx	0.598	A	xxxxx	0.598	+ 0.000 V/C
# 4 Camino Ramon/Crow	A	xxxxx	0.586	A	xxxxx	0.586	+ 0.000 V/C
# 5 Alcosta/Crow	A	xxxxx	0.526	A	xxxxx	0.526	+ 0.000 V/C
# 6 Camino Ramon/Norris	A	xxxxx	0.558	A	xxxxx	0.558	+ 0.000 V/C
# 7 Camino Ramon/Executive	A	xxxxx	0.430	A	xxxxx	0.430	+ 0.000 V/C
# 8 Camino Ramon/Bishop Drive	A	xxxxx	0.427	A	xxxxx	0.427	+ 0.000 V/C
# 9 San Ramon/Bollinger	C	xxxxx	0.750	C	xxxxx	0.750	+ 0.000 V/C
# 10 680 SB OFF/Bollinger	A	xxxxx	0.564	A	xxxxx	0.564	+ 0.000 V/C
# 11 680 NB OFF/Bollinger	C	xxxxx	0.765	C	xxxxx	0.765	+ 0.000 V/C
# 12 Sunset/Bollinger	D	xxxxx	0.803	D	xxxxx	0.803	+ 0.000 V/C
# 13 Camino Ramon/Bollinger	B	xxxxx	0.621	B	xxxxx	0.621	+ 0.000 V/C
# 14 Bishop 2 Drive/Bollinger	A	xxxxx	0.358	A	xxxxx	0.358	+ 0.000 V/C
# 15 Market/Bollinger Drive	A	xxxxx	0.430	A	xxxxx	0.430	+ 0.000 V/C
# 16 Alcosta/Bollinger	B	xxxxx	0.665	B	xxxxx	0.665	+ 0.000 V/C
# 17 Alcosta/Norris	A	xxxxx	0.476	A	xxxxx	0.476	+ 0.000 V/C
# 18 San Ramon/Norris	A	xxxxx	0.600	A	xxxxx	0.600	+ 0.000 V/C
# 19 Bollinger/Crow	A	xxxxx	0.552	A	xxxxx	0.552	+ 0.000 V/C
# 20 Dougherty/Bollinger	B	xxxxx	0.613	B	xxxxx	0.613	+ 0.000 V/C
# 21 San Ramon/Montevideo	B	xxxxx	0.694	B	xxxxx	0.694	+ 0.000 V/C
# 22 Alcosts/Montevideo	A	xxxxx	0.327	A	xxxxx	0.327	+ 0.000 V/C
# 23 Dougherty/Crow	A	xxxxx	0.450	A	xxxxx	0.450	+ 0.000 V/C
# 24 Alcosta/Old Ranch	A	xxxxx	0.369	A	xxxxx	0.369	+ 0.000 V/C
# 25 Doughert/Old Ranch	A	xxxxx	0.584	A	xxxxx	0.584	+ 0.000 V/C

Intersection	Base LOS	Base Del/ Veh	Base V/C	Future LOS	Future Del/ Veh	Future V/C	Change in
# 26 Sunset/Center Street	A	xxxxx	0.284	A	xxxxx	0.284	+ 0.000 V/C
# 27 Bishop Drive/Sunset	A	xxxxx	0.389	A	xxxxx	0.389	+ 0.000 V/C
# 28 Bollinger Canyon/Norris Canyon	E	44.0	1.130	E	44.0	1.130	+ 0.000 V/C
# 29 Bollinger/Canyon Lakes	A	xxxxx	0.586	A	xxxxx	0.586	+ 0.000 V/C
# 30 Camino Ramon/Center Street		xxxxx	0.000		xxxxx	0.000	+ 0.000 V/C

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #1 San Ramon/Crow

Cycle (sec):	100	Critical Vol./Cap.(X):	0.613
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	59	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:		Protected			Protected			Protected			Protected	
Rights:		Include			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	91	238	450	390	225	131	171	1040	124	530	1350	490
Growth Adj:	1.23	1.23	1.00	1.00	1.23	1.23	1.21	1.00	1.21	1.00	1.00	1.00
Initial Bse:	111	292	450	390	276	160	206	1040	149	530	1350	490
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	111	292	450	390	276	160	206	1040	149	530	1350	490
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	111	292	450	390	276	160	206	1040	149	530	1350	490
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	111	292	450	390	276	160	206	1040	149	530	1350	490
RTOR Reduct:	0	0	292	0	0	113	0	0	61	0	0	215
RTOR Vol:	111	292	159	390	276	47	206	1040	88	530	1350	276
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	111	292	159	390	276	47	206	1040	88	530	1350	276
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3000	3300	1650	3000	3300	1650	3000	4950	1650	3000	4950	1650
Capacity Analysis Module:												
Vol/Sat:	0.04	0.09	0.10	0.13	0.08	0.03	0.07	0.21	0.05	0.18	0.27	0.17
Crit Vol:			159	195				347		265		
Crit Moves:			****	****				****		****		

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--------------------------------------------------------------------------------
                    Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #2 680 SB OFF/Crow
********************************************************************************
Cycle (sec):          100               Critical Vol./Cap.(X):          0.557
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         42               Level Of Service:                   A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Permitted        Permitted
Rights:          Include          Include          Ignore           Ignore
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        0  0  0  0  0   3  0  0  0  2   0  0  3  0  1   0  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0     0     0 1355     0   980     0  1125   755     0  1390   790
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:   0     0     0 1355     0   980     0  1125   755     0  1390   790
Added Vol:     0     0     0    0     0     0     0     0     0     0     0     0
PasserByVol:   0     0     0    0     0     0     0     0     0     0     0     0
Initial Fut:   0     0     0 1355     0   980     0  1125   755     0  1390   790
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:    0     0     0 1355     0   980     0  1125   755     0  1390   790
Reduct Vol:    0     0     0    0     0     0     0     0     0     0     0     0
Reduced Vol:   0     0     0 1355     0   980     0  1125   755     0  1390   790
RTOR Reduct:   0     0     0    0     0     0     0     0     0     0     0     0
RTOR Vol:      0     0     0 1355     0   980     0  1125   755     0  1390   790
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:    0     0     0 1355     0   980     0  1125   755     0  1390   790
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1800  1800  1800  1800  1800  1800  1800  1800  1800  1800  1800  1800
Adjustment:  1.00  1.00  1.00  0.87  1.00  0.91  1.00  1.00  1.00  1.00  1.00  1.00
Lanes:       0.00  0.00  0.00  3.00  0.00  2.00  0.00  3.00  1.00  0.00  3.00  1.00
Final Sat.:    0     0     0 4698     0  3272     0  5400  1800     0  5400  1800
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.00  0.00  0.29  0.00  0.30  0.00  0.21  0.42  0.00  0.26  0.44
Crit Vol:            0                     490     0                       463
Crit Moves:                               ****  ****                      ****
********************************************************************************
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                      Level Of Service Computation Report
                  CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #3 680 NB ON/Crow
********************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):          0.598
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         46              Level Of Service:                   A
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:       Split Phase      Split Phase        Permitted        Permitted
Rights:           Include          Include           Ignore           Ignore
Min. Green:     0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        2  0  0  0  2    0  0  0  0  0    0  0  3  0  1    0  0  4  0  1
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:     534     0   874     0     0     0     0  1530   950     0  1646   551
Growth Adj:  1.00  1.18  1.18  1.18  1.18  1.18  1.21  1.00  1.00  1.21  1.00  1.21
Initial Bse:  534     0  1030     0     0     0     0  1530   950     0  1646   664
Added Vol:      0     0     0     0     0     0     0     0     0     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:  534     0  1030     0     0     0     0  1530   950     0  1646   664
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:   534     0  1030     0     0     0     0  1530   950     0  1646   664
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  534     0  1030     0     0     0     0  1530   950     0  1646   664
RTOR Reduct:    0     0     0     0     0     0     0     0     0     0     0     0
RTOR Vol:     534     0  1030     0     0     0     0  1530   950     0  1646   664
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:   534     0  1030     0     0     0     0  1530   950     0  1646   664
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1800  1800  1800  1800  1800  1800  1800  1800  1800  1800  1800  1800
Adjustment:  0.91  1.00  0.91  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Lanes:       2.00  0.00  2.00  0.00  0.00  0.00  0.00  3.00  1.00  0.00  4.00  1.00
Final Sat.:  3272     0  3272     0     0     0     0  5400  1800     0  7200  1800
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.16  0.00  0.31  0.00  0.00  0.00  0.00  0.28  0.53  0.00  0.23  0.37
Crit Vol:                 515           0                  510           0
Crit Moves:              ****                             ****        ****
********************************************************************************
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                   Level Of Service Computation Report
               CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #4 Camino Ramon/Crow
********************************************************************************
Cycle (sec):          100             Critical Vol./Cap.(X):          0.586
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         55             Level Of Service:                   A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        2  0  1  0  1   2  0  1  1  0   2  0  4  0  1   2  0  3  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     109   61    57   126  126    68   184 1046   579   231 1560   204
Growth Adj:  1.21 1.21  1.21  1.21 1.21  1.21  1.21 1.21  1.21  1.21 1.21  1.21
Initial Bse:  131   74    69   152  152    82   222 1260   698   278 1880   246
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  131   74    69   152  152    82   222 1260   698   278 1880   246
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   131   74    69   152  152    82   222 1260   698   278 1880   246
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  131   74    69   152  152    82   222 1260   698   278 1880   246
RTOR Reduct:    0    0    69     0    0     0     0    0    72     0    0     0
RTOR Vol:     131   74     0   152  152    82   222 1260   625   278 1880   246
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   131   74     0   152  152    82   222 1260   625   278 1880   246
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  0.91 1.00  1.00  0.91 1.00  1.00  0.91 1.00  1.00  0.91 1.00  1.00
Lanes:       2.00 1.00  1.00  2.00 1.30  0.70  2.00 4.00  1.00  2.00 3.54  0.46
Final Sat.:  3000 1650  1650  3000 2143  1157  3000 6600  1650  3000 5837   763
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.04 0.04  0.00  0.05 0.07  0.07  0.07 0.19  0.38  0.09 0.32  0.32
Crit Vol:      66                       117               625   139
Crit Moves:  ****                      ****              ****  ****
********************************************************************************
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-------------------------------------------------------------------------------
                   Level Of Service Computation Report
               CCTALOS Method (Future Volume Alternative)
*******************************************************************************
Intersection #5 Alcosta/Crow
*******************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):         0.526
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         48              Level Of Service:                  A
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        2  0  0  0  2   0  0  0  0  0   0  0  3  0  1   2  0  3  0  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:     275     0   225     0     0     0     0   608   464   521  1653     0
Growth Adj:  1.24  1.24  1.24  1.24  1.24  1.24  1.21  1.21  1.21  1.21  1.21  1.21
Initial Bse:  341     0   279     0     0     0     0   733   559   628  1992     0
Added Vol:      0     0     0     0     0     0     0     0     0     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:  341     0   279     0     0     0     0   733   559   628  1992     0
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:   341     0   279     0     0     0     0   733   559   628  1992     0
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  341     0   279     0     0     0     0   733   559   628  1992     0
RTOR Reduct:    0     0   279     0     0     0     0     0   187     0     0     0
RTOR Vol:     341     0     0     0     0     0     0   733   372   628  1992     0
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:   341     0     0     0     0     0     0   733   372   628  1992     0
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1720  1720  1720  1720  1720  1720  1720  1720  1720  1720  1720  1720
Adjustment:  0.91  1.00  0.91  1.00  1.00  1.00  1.00  1.00  1.00  0.91  1.00  1.00
Lanes:       2.00  0.00  2.00  0.00  0.00  0.00  0.00  3.00  1.00  2.00  3.00  0.00
Final Sat.:  3127     0  3127     0     0     0     0  5160  1720  3127  5160     0
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.11  0.00  0.00  0.00  0.00  0.00  0.00  0.14  0.22  0.20  0.39  0.00
Crit Vol:     170                       0                       372   314
Crit Moves:  ****                                              ****  ****
*******************************************************************************
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                   Level Of Service Computation Report
               CCTALOS Method (Future Volume Alternative)
*********************************************************************************
Intersection #6 Camino Ramon/Norris
*********************************************************************************
Cycle (sec):          100               Critical Vol./Cap.(X):          0.558
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         52               Level Of Service:                   A
*********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:       Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        1  0  2  0  1    1  0  1  1  0    1  0  1  1  0    1  0  1  1  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:      78  159    59   131  569   108    76  336   120   117  261    90
Growth Adj:  1.21 1.21  1.21  1.21 1.21  1.21  1.21 1.21  1.21  1.21 1.21  1.21
Initial Bse:   94  193    71   159  689   131    92  405   145   141  315   108
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   94  193    71   159  689   131    92  405   145   141  315   108
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    94  193    71   159  689   131    92  405   145   141  315   108
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   94  193    71   159  689   131    92  405   145   141  315   108
RTOR Reduct:    0    0    71     0    0     0     0    0     0     0    0     0
RTOR Vol:      94  193     0   159  689   131    92  405   145   141  315   108
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    94  193     0   159  689   131    92  405   145   141  315   108
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 2.00  1.00  1.00 1.68  0.32  1.00 1.47  0.53  1.00 1.49  0.51
Final Sat.:  1650 3300  1650  1650 2774   526  1650 2432   868  1650 2454   846
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.06 0.06  0.00  0.10 0.25  0.25  0.06 0.17  0.17  0.09 0.13  0.13
Crit Vol:      94                     410                   275   141
Crit Moves:  ****                    ****                  ****  ****
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                  Level Of Service Computation Report
              CCTALOS Method (Future Volume Alternative)
******************************************************************************
Intersection #7 Camino Ramon/Executive
******************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):          0.430
Loss Time (sec):       0 (Y+R=4.0 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:        33              Level Of Service:                   A
******************************************************************************
Approach:      North Bound       South Bound        East Bound        West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected         Protected          Permitted         Permitted
Rights:           Include           Include            Include           Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        1  0  1  1  0    1  0  1  1  0    0  1  0  0  1    0  1  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     178  307    71    63  417   202    44   39    23    43   26    45
Growth Adj:  1.21 1.21  1.21  1.21 1.21  1.21  1.19 1.19  1.19  1.19 1.19  1.19
Initial Bse:  216  372    86    76  505   245    52   46    27    51   31    54
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  216  372    86    76  505   245    52   46    27    51   31    54
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   216  372    86    76  505   245    52   46    27    51   31    54
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  216  372    86    76  505   245    52   46    27    51   31    54
RTOR Reduct:    0    0     0     0    0     0     0    0    27     0    0    54
RTOR Vol:     216  372    86    76  505   245    52   46     0    51   31     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   216  372    86    76  505   245    52   46     0    51   31     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1720 1720  1720  1720 1720  1720  1720 1720  1720  1720 1720  1720
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.62  0.38  1.00 1.35  0.65  0.53 0.47  1.00  0.62 0.38  1.00
Final Sat.:  1720 2794   646  1720 2317  1123   912  808  1720  1072  648  1720
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.13 0.13  0.13  0.04 0.22  0.22  0.06 0.06  0.00  0.05 0.05  0.00
Crit Vol:     216                     375            99            51
Crit Moves:  ****                    ****          ****          ****
******************************************************************************
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #8 Camino Ramon/Bishop Drive

Cycle (sec):	100	Critical Vol./Cap.(X):	0.427
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	40	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	1 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	75	829	161	22	216	82	62	16	28	26	4	7
Growth Adj:	1.21	1.21	1.21	1.21	1.21	1.21	1.07	1.07	1.07	1.07	1.07	1.07
Initial Bse:	91	1004	195	27	262	99	67	17	30	28	4	8
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	91	1004	195	27	262	99	67	17	30	28	4	8
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	91	1004	195	27	262	99	67	17	30	28	4	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	91	1004	195	27	262	99	67	17	30	28	4	8
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	91	1004	195	27	262	99	67	17	30	28	4	8
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	91	1004	195	27	262	99	67	17	30	28	4	8
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.67	0.33	1.00	1.45	0.55	1.00	0.36	0.64	1.00	0.36	0.64
Final Sat.:	1650	2763	537	1650	2392	908	1650	600	1050	1650	600	1050
Capacity Analysis Module:												
Vol/Sat:	0.06	0.36	0.36	0.02	0.11	0.11	0.04	0.03	0.03	0.02	0.01	0.01
Crit Vol:		599		27			67				12	
Crit Moves:		****		****			****				****	

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #9 San Ramon/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	0.750
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	91	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	2 0	1	2 0	1 1	0	1 0	1 1	0	2 0	2 0	1
Volume Module:												
Base Vol:	206	491	475	280	276	26	38	800	200	470	360	230
Growth Adj:	1.23	1.23	1.00	1.00	1.23	1.23	1.24	1.00	1.24	1.00	1.00	1.00
Initial Bse:	252	601	475	280	338	32	47	800	247	470	360	230
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	252	601	475	280	338	32	47	800	247	470	360	230
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	252	601	475	280	338	32	47	800	247	470	360	230
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	252	601	475	280	338	32	47	800	247	470	360	230
RTOR Reduct:	0	0	259	0	0	0	0	0	0	0	0	154
RTOR Vol:	252	601	217	280	338	32	47	800	247	470	360	76
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	252	601	217	280	338	32	47	800	247	470	360	76
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	1.83	0.17	1.00	1.53	0.47	2.00	2.00	1.00
Final Sat.:	3000	3300	1650	3000	3016	284	1650	2521	779	3000	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.08	0.18	0.13	0.09	0.11	0.11	0.03	0.32	0.32	0.16	0.11	0.05
Crit Vol:		301		140				524		235		
Crit Moves:		****		****				****		****		

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-------------------------------------------------------------------------------
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                      Level Of Service Computation Report
                  CCTALOS Method (Future Volume Alternative)
*******************************************************************************
Intersection #10 680 SB OFF/Bollinger
*******************************************************************************
Cycle (sec):          100               Critical Vol./Cap.(X):          0.564
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         43               Level Of Service:                   A
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Permitted        Permitted
Rights:          Include          Include          Include          Ignore
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        0  0  1! 0  0   1  1  0  0  2   0  0  3  1  0   0  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      3     0   101  855    12   289     0  1545    10     0   768   950
Growth Adj: 1.00  1.00  1.00 1.00  1.17  1.00  1.24  1.00  1.00  1.24  1.00  1.00
Initial Bse:   3     0   101  855    14   289     0  1545    10     0   768   950
Added Vol:     0     0     0    0     0     0     0     0     0     0     0     0
PasserByVol:   0     0     0    0     0     0     0     0     0     0     0     0
Initial Fut:   3     0   101  855    14   289     0  1545    10     0   768   950
User Adj:   1.00  1.00  1.00 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:    1.00  1.00  1.00 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:    3     0   101  855    14   289     0  1545    10     0   768   950
Reduct Vol:    0     0     0    0     0     0     0     0     0     0     0     0
Reduced Vol:   3     0   101  855    14   289     0  1545    10     0   768   950
RTOR Reduct:   0     0     0    0     0     0     0     0     0     0     0     0
RTOR Vol:      3     0   101  855    14   289     0  1545    10     0   768   950
PCE Adj:    1.00  1.00  1.00 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:    1.00  1.00  1.00 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:    3     0   101  855    14   289     0  1545    10     0   768   950
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1720  1720  1720 1720  1720  1720  1720  1720  1720  1720  1720  1720
Adjustment: 1.00  1.00  1.00 0.91  1.00  0.91  1.00  1.00  1.00  1.00  1.00  1.00
Lanes:      0.03  0.00  0.97 1.97  0.03  2.00  0.00  3.97  0.03  0.00  3.00  1.00
Final Sat.:   50     0  1670 3077    55  3127     0  6836    44     0  5160  1720
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.06  0.00  0.06 0.28  0.25  0.09  0.00  0.23  0.23  0.00  0.15  0.55
Crit Vol:                104  435                                389     0
Crit Moves:             ****  ****                              ****  ****
*******************************************************************************
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-------------------------------------------------------------------------------
                     Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
*******************************************************************************
Intersection #11 680 NB OFF/Bollinger
*******************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         0.765
Loss Time (sec):       0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        79               Level Of Service:                  C
*******************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Split Phase      Split Phase        Permitted        Permitted
Rights:           Include          Include           Ignore           Ignore
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  0  0  3   0  0  0  0  0   0  0  3  0  1   0  0  3  1  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     327     0  1921     0     0     0     0  1924   577     0  1391   600
Growth Adj:  1.00  1.17  1.00  1.17  1.17  1.17  1.24  1.00  1.00  1.24  1.00  1.00
Initial Bse:  327     0  1921     0     0     0     0  1924   577     0  1391   600
Added Vol:      0     0     0     0     0     0     0     0     0     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:  327     0  1921     0     0     0     0  1924   577     0  1391   600
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:   327     0  1921     0     0     0     0  1924   577     0  1391   600
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  327     0  1921     0     0     0     0  1924   577     0  1391   600
RTOR Reduct:    0     0     0     0     0     0     0     0     0     0     0     0
RTOR Vol:     327     0  1921     0     0     0     0  1924   577     0  1391   600
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:   327     0  1921     0     0     0     0  1924   577     0  1391   600
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1800  1800  1800  1800  1800  1800  1800  1800  1800  1800  1800  1800
Adjustment:  1.00  1.00  0.87  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.91
Lanes:       1.00  0.00  3.00  0.00  0.00  0.00  0.00  3.00  1.00  0.00  3.49  1.51
Final Sat.:  1800     0  4698     0     0     0     0  5400  1800     0  6288  2465
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.18  0.00  0.41  0.00  0.00  0.00  0.00  0.36  0.32  0.00  0.22  0.24
Crit Vol:                 640           0                 641           0
Crit Moves:              ****                            ****        ****
*******************************************************************************
```

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #12 Sunset/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	0.803
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	116	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	0 1	0	0 1	0 0	2	2 0	4 0	1	2 0	4 0	1
Volume Module:												
Base Vol:	56	9	36	89	39	152	1277	1848	720	215	1783	70
Growth Adj:	1.00	1.07	1.00	1.00	1.07	1.00	1.00	1.00	1.00	1.24	1.00	1.24
Initial Bse:	56	10	36	89	42	152	1277	1848	720	266	1783	87
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	56	10	36	89	42	152	1277	1848	720	266	1783	87
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	56	10	36	89	42	152	1277	1848	720	266	1783	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	56	10	36	89	42	152	1277	1848	720	266	1783	87
RTOR Reduct:	0	0	0	0	0	152	0	0	31	0	0	87
RTOR Vol:	56	10	36	89	42	0	1277	1848	689	266	1783	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	56	10	36	89	42	0	1277	1848	689	266	1783	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	0.91	0.91	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	0.21	0.79	0.68	0.32	2.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3000	349	1301	1122	528	3000	3000	6600	1650	3000	6600	1650
Capacity Analysis Module:												
Vol/Sat:	0.02	0.03	0.03	0.08	0.08	0.00	0.43	0.28	0.42	0.09	0.27	0.00
Crit Vol:			46		131		639				446	
Crit Moves:			****		****		****				****	

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #13 Camino Ramon/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	0.621
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	60	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 0	1	2 0	0 1	1	2 0	4 0	1	2 0	4 0	1
Volume Module:												
Base Vol:	13	19	0	76	41	111	672	747	242	24	2012	373
Growth Adj:	1.00	1.07	1.07	1.07	1.07	1.00	1.24	1.24	1.24	1.24	1.00	1.24
Initial Bse:	13	20	0	82	44	111	831	923	299	30	2012	461
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	13	20	0	82	44	111	831	923	299	30	2012	461
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	13	20	0	82	44	111	831	923	299	30	2012	461
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	13	20	0	82	44	111	831	923	299	30	2012	461
RTOR Reduct:	0	0	0	0	0	111	0	0	13	0	0	45
RTOR Vol:	13	20	0	82	44	0	831	923	286	30	2012	416
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	13	20	0	82	44	0	831	923	286	30	2012	416
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	0.91	1.00	0.91	0.91	1.00	1.00	0.91	1.00	1.00
Lanes:	1.00	1.00	1.00	2.00	1.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	1650	1650	1650	3000	1650	1500	3000	6600	1650	3000	6600	1650
Capacity Analysis Module:												
Vol/Sat:	0.01	0.01	0.00	0.03	0.03	0.00	0.28	0.14	0.17	0.01	0.30	0.25
Crit Vol:		20		41			415				503	
Crit Moves:		****		****			****				****	

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                      Level Of Service Computation Report
                  CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #14 Bishop 2 Drive/Bollinger
********************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):         0.358
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         36              Level Of Service:                  A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        0  1  0  0  1   1  0  0  1  0   2  0  3  1  0   2  0  3  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     10     0     8    0     0     0    0   792    32   37  1959     0
Growth Adj: 1.07  1.07  1.07 1.00  1.00  1.00 1.24  1.24  1.24 1.24  1.24  1.24
Initial Bse:  11     0     9    0     0     0    0   979    40   46  2421     0
Added Vol:     0     0     0    0     0     0    0     0     0    0     0     0
PasserByVol:   0     0     0    0     0     0    0     0     0    0     0     0
Initial Fut:  11     0     9    0     0     0    0   979    40   46  2421     0
User Adj:   1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Volume:   11     0     9    0     0     0    0   979    40   46  2421     0
Reduct Vol:    0     0     0    0     0     0    0     0     0    0     0     0
Reduced Vol:  11     0     9    0     0     0    0   979    40   46  2421     0
RTOR Reduct:   0     0     9    0     0     0    0     0     0    0     0     0
RTOR Vol:     11     0     0    0     0     0    0   979    40   46  2421     0
PCE Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
MLF Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Final Vol.:   11     0     0    0     0     0    0   979    40   46  2421     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1720  1720  1720 1720  1720  1720 1720  1720  1720 1720  1720  1720
Adjustment: 1.00  1.00  1.00 1.00  1.00  1.00 0.91  1.00  1.00 0.91  1.00  1.00
Lanes:      1.00  0.00  1.00 1.00  1.00  0.00 2.00  3.84  0.16 2.00  4.00  0.00
Final Sat.: 1720     0  1720 1720  1720     0 3127  6613   267 3127  6880     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.01  0.00  0.00 0.00  0.00  0.00 0.00  0.15  0.15 0.01  0.35  0.00
Crit Vol:     11                      0          0                     605
Crit Moves: ****                                ****                  ****
********************************************************************************
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #15 Market/Bollinger Drive

Cycle (sec):	100	Critical Vol./Cap.(X):	0.430
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	40	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 1 0 0 1			1 0 0 1 0			2 0 4 0 1			2 0 3 1 0		
Volume Module:												
Base Vol:	243	1	33	2	1	9	11	638	149	41	1765	6
Growth Adj:	1.07	1.07	1.07	1.07	1.07	1.07	1.24	1.24	1.24	1.24	1.24	1.24
Initial Bse:	261	1	35	2	1	10	14	789	184	51	2182	7
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	261	1	35	2	1	10	14	789	184	51	2182	7
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	261	1	35	2	1	10	14	789	184	51	2182	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	261	1	35	2	1	10	14	789	184	51	2182	7
RTOR Reduct:	0	0	28	0	0	0	0	0	143	0	0	0
RTOR Vol:	261	1	8	2	1	10	14	789	41	51	2182	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	261	1	8	2	1	10	14	789	41	51	2182	7
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00
Lanes:	1.99	0.01	1.00	1.00	0.10	0.90	2.00	4.00	1.00	2.00	3.99	0.01
Final Sat.:	2987	14	1650	1650	165	1485	3000	6600	1650	3000	6578	22
Capacity Analysis Module:												
Vol/Sat:	0.09	0.08	0.00	0.00	0.01	0.01	0.00	0.12	0.02	0.02	0.33	0.33
Crit Vol:	131				11		7				547	
Crit Moves:	****				****		****				****	

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #16 Alcosta/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	0.665
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	68	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	1 1	0	2 0	2 0	1	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	542	463	184	146	263	221	190	396	90	281	1094	330
Growth Adj:	1.21	1.21	1.21	1.21	1.21	1.21	1.24	1.24	1.24	1.24	1.24	1.24
Initial Bse:	653	558	222	176	317	266	235	489	111	347	1352	408
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	653	558	222	176	317	266	235	489	111	347	1352	408
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	653	558	222	176	317	266	235	489	111	347	1352	408
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	653	558	222	176	317	266	235	489	111	347	1352	408
RTOR Reduct:	0	0	0	0	0	129	0	0	111	0	0	97
RTOR Vol:	653	558	222	176	317	137	235	489	0	347	1352	311
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	653	558	222	176	317	137	235	489	0	347	1352	311
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	1.43	0.57	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3000	2362	938	3000	3300	1650	3000	4950	1650	3000	4950	1650
Capacity Analysis Module:												
Vol/Sat:	0.22	0.24	0.24	0.06	0.10	0.08	0.08	0.10	0.00	0.12	0.27	0.19
Crit Vol:	327				158		117				451	
Crit Moves:	****				****		****				****	

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                     Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #17 Alcosta/Norris
********************************************************************************
Cycle (sec):          100                 Critical Vol./Cap.(X):          0.476
Loss Time (sec):        0 (Y+R=4.0 sec)   Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         44                 Level Of Service:                   A
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  1  1  0    1  0  2  0  1    2  0  1  0  1    1  0  1  0  1
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:     285   379    66   235   461   216   143    71   206    42    58    84
Growth Adj:  1.21  1.21  1.21  1.21  1.21  1.21  1.21  1.21  1.21  1.21  1.21  1.21
Initial Bse:  343   457    80   283   556   260   172    86   248    51    70   101
Added Vol:      0     0     0     0     0     0     0     0     0     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:  343   457    80   283   556   260   172    86   248    51    70   101
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:   343   457    80   283   556   260   172    86   248    51    70   101
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  343   457    80   283   556   260   172    86   248    51    70   101
RTOR Reduct:    0     0     0     0     0    95     0     0   248     0     0   101
RTOR Vol:     343   457    80   283   556   166   172    86     0    51    70     0
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:   343   457    80   283   556   166   172    86     0    51    70     0
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1650  1650  1650  1650  1650  1650  1650  1650  1650  1650  1650  1650
Adjustment:  1.00  1.00  1.00  1.00  1.00  1.00  0.91  1.00  1.00  1.00  1.00  1.00
Lanes:       1.00  1.70  0.30  1.00  2.00  1.00  2.00  1.00  1.00  1.00  1.00  1.00
Final Sat.:  1650  2811   489  1650  3300  1650  3000  1650  1650  1650  1650  1650
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.21  0.16  0.16  0.17  0.17  0.10  0.06  0.05  0.00  0.03  0.04  0.00
Crit Vol:     343                     278          86                        70
Crit Moves:  ****                    ****        ****                      ****
********************************************************************************
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                     Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #18 San Ramon/Norris
********************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):          0.600
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         57              Level Of Service:                   A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  2  0  1    2  0  1  1  0    1  0  1  1  0    1  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      74  325   326   406  144    27    78  493    51    85  148   237
Growth Adj:  1.21 1.21  1.21  1.21 1.21  1.21  1.21 1.21  1.21  1.21 1.21  1.21
Initial Bse:   89  392   393   489  174    33    94  594    61   102  178   286
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   89  392   393   489  174    33    94  594    61   102  178   286
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    89  392   393   489  174    33    94  594    61   102  178   286
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   89  392   393   489  174    33    94  594    61   102  178   286
RTOR Reduct:    0    0   102     0    0     0     0    0     0     0    0   269
RTOR Vol:      89  392   290   489  174    33    94  594    61   102  178    17
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    89  392   290   489  174    33    94  594    61   102  178    17
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  1.00 1.00  1.00  0.91 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 2.00  1.00  2.00 1.68  0.32  1.00 1.81  0.19  1.00 1.00  1.00
Final Sat.:  1650 3300  1650  3000 2779   521  1650 2991   309  1650 1650  1650
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.05 0.12  0.18  0.16 0.06  0.06  0.06 0.20  0.20  0.06 0.11  0.01
Crit Vol:                290   245                    328          102
Crit Moves:             ****  ****                   ****         ****
********************************************************************************
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                   Level Of Service Computation Report
               CCTALOS Method (Future Volume Alternative)
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Intersection #19 Bollinger/Crow
*******************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):         0.552
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        42                Level Of Service:                  A
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  1  0  1   0  0  1! 0  0   1  0  2  0  1   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     116    41   133    18    67    18    34   951    70    88   758    21
Growth Adj:  1.24  1.24  1.24  1.24  1.24  1.24  1.21  1.21  1.21  1.21  1.21  1.21
Initial Bse:  143    51   164    22    83    22    41  1146    84   106   913    25
Added Vol:      0     0     0     0     0     0     0     0     0     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:  143    51   164    22    83    22    41  1146    84   106   913    25
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:   143    51   164    22    83    22    41  1146    84   106   913    25
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  143    51   164    22    83    22    41  1146    84   106   913    25
RTOR Reduct:    0     0   106     0     0     0     0     0    84     0     0    22
RTOR Vol:     143    51    58    22    83    22    41  1146     0   106   913     3
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:   143    51    58    22    83    22    41  1146     0   106   913     3
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1720  1720  1720  1720  1720  1720  1720  1720  1720  1720  1720  1720
Adjustment:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Lanes:       1.00  1.00  1.00  0.17  0.66  0.17  1.00  2.00  1.00  1.00  2.00  1.00
Final Sat.:  1720  1720  1720   301  1119   301  1720  3440  1720  1720  3440  1720
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.08  0.03  0.03  0.07  0.07  0.07  0.02  0.33  0.00  0.06  0.27  0.00
Crit Vol:     143                           127         573         106
Crit Moves:  ****                          ****        ****        ****
*******************************************************************************
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #20 Dougherty/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	0.613
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	59	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	3 0	1	2 0	3 0	1	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	182	590	66	499	905	613	206	354	84	102	894	409
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	182	590	66	499	905	613	206	354	84	102	894	409
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	182	590	66	499	905	613	206	354	84	102	894	409
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	182	590	66	499	905	613	206	354	84	102	894	409
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	182	590	66	499	905	613	206	354	84	102	894	409
RTOR Reduct:	0	0	56	0	0	113	0	0	84	0	0	274
RTOR Vol:	182	590	10	499	905	500	206	354	0	102	894	135
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	182	590	10	499	905	500	206	354	0	102	894	135
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3000	4950	1650	3000	4950	1650	3000	4950	1650	3000	4950	1650
Capacity Analysis Module:												
Vol/Sat:	0.06	0.12	0.01	0.17	0.18	0.30	0.07	0.07	0.00	0.03	0.18	0.08
Crit Vol:	91					500	103				298	
Crit Moves:	****					****	****				****	

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                     Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #21 San Ramon/Montevideo
********************************************************************************
Cycle (sec):          100               Critical Vol./Cap.(X):          0.694
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         74               Level Of Service:                   B
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:     0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        0  0  1  1  0   1  0  2  0  0   0  0  0  0  0   1  0  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module: 7:45 To 8:45
Base Vol:       0  590  117  433  441    0    0    0    0  195    0  528
Growth Adj:  1.23 1.23 1.23 1.23 1.23 1.23 1.00 1.00 1.00 1.18 1.18 1.18
Initial Bse:    0  723  143  530  540    0    0    0    0  230    0  623
Added Vol:      0    0    0    0    0    0    0    0    0    0    0    0
PasserByVol:    0    0    0    0    0    0    0    0    0    0    0    0
Initial Fut:    0  723  143  530  540    0    0    0    0  230    0  623
User Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:     0  723  143  530  540    0    0    0    0  230    0  623
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:    0  723  143  530  540    0    0    0    0  230    0  623
RTOR Reduct:    0    0    0    0    0    0    0    0    0    0    0  530
RTOR Vol:       0  723  143  530  540    0    0    0    0  230    0   93
PCE Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.:     0  723  143  530  540    0    0    0    0  230    0   93
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1720 1720 1720 1720 1720 1720 1720 1720 1720 1720 1720 1720
Adjustment:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes:       0.00 1.67 0.33 1.00 2.00 0.00 0.00 0.00 0.00 1.00 0.00 1.00
Final Sat.:     0 2871  569 1720 3440    0    0    0    0 1720    0 1720
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.25 0.25 0.31 0.16 0.00 0.00 0.00 0.00 0.13 0.00 0.05
Crit Vol:                433  530                     0        230
Crit Moves:             ****  ****                            ****
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #22 Alcosts/Montevideo

Cycle (sec):	100	Critical Vol./Cap.(X):	0.327
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	34	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	2 0	0	0 0	2 0	1	1 0	0 0	1	0 0	0 0	0
Volume Module: 7:45 To 8:45												
Base Vol:	54	540	0	0	265	118	194	0	80	0	0	0
Growth Adj:	1.21	1.21	1.21	1.21	1.21	1.21	1.23	1.23	1.23	1.23	1.23	1.23
Initial Bse:	65	651	0	0	319	142	238	0	98	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	65	651	0	0	319	142	238	0	98	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	65	651	0	0	319	142	238	0	98	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	65	651	0	0	319	142	238	0	98	0	0	0
RTOR Reduct:	0	0	0	0	0	142	0	0	65	0	0	0
RTOR Vol:	65	651	0	0	319	0	238	0	33	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	65	651	0	0	319	0	238	0	33	0	0	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1720	3440	0	0	3440	1720	1720	0	1720	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.04	0.19	0.00	0.00	0.09	0.00	0.14	0.00	0.02	0.00	0.00	0.00
Crit Vol:		325		0			238				0	
Crit Moves:		****		****			****					

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #23 Dougherty/Crow

Cycle (sec):	100	Critical Vol./Cap.(X):	0.495
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	45	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ignore			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 0 0 2			0 0 0 0 0			0 0 3 0 1			2 0 2 0 0		
Volume Module:												
Base Vol:	210	0	409	0	0	0	0	426	106	694	1177	0
Growth Adj:	1.24	1.24	1.24	1.24	1.24	1.24	1.21	1.21	1.21	1.21	1.21	1.21
Initial Bse:	260	0	506	0	0	0	0	513	128	836	1418	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	260	0	506	0	0	0	0	513	128	836	1418	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	260	0	506	0	0	0	0	513	128	836	1418	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	260	0	506	0	0	0	0	513	128	836	1418	0
RTOR Reduct:	0	0	0	0	0	0	0	0	128	0	0	0
RTOR Vol:	260	0	506	0	0	0	0	513	0	836	1418	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	260	0	506	0	0	0	0	513	0	836	1418	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	0.00	2.00	0.00	0.00	0.00	0.00	3.00	1.00	2.00	2.00	0.00
Final Sat.:	3127	0	3127	0	0	0	0	5160	1720	3127	3440	0
Capacity Analysis Module:												
Vol/Sat:	0.08	0.00	0.16	0.00	0.00	0.00	0.00	0.10	0.00	0.27	0.41	0.00
Crit Vol:	130				0		0				709	
Crit Moves:	****						****				****	

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #24 Alcosta/Old Ranch

Cycle (sec):	100	Critical Vol./Cap.(X):	0.365
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	36	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 1 1 0			1 0 1 1 0			1 0 1! 0 0			2 0 0 1 1		
Volume Module:												
Base Vol:	10	226	114	130	205	1	9	1	2	341	1	216
Growth Adj:	1.21	1.21	1.21	1.21	1.21	1.21	1.24	1.24	1.24	1.24	1.24	1.24
Initial Bse:	12	272	137	157	247	1	11	1	2	422	1	268
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	12	272	137	157	247	1	11	1	2	422	1	268
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	12	272	137	157	247	1	11	1	2	422	1	268
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	12	272	137	157	247	1	11	1	2	422	1	268
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	157
RTOR Vol:	12	272	137	157	247	1	11	1	2	422	1	111
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	12	272	137	157	247	1	11	1	2	422	1	111
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00	0.91
Lanes:	1.00	1.33	0.67	1.00	1.99	0.01	1.50	0.17	0.33	2.00	0.02	1.98
Final Sat.:	1650	2194	1106	1650	3284	16	2250	275	550	3000	36	2967
Capacity Analysis Module:												
Vol/Sat:	0.01	0.12	0.12	0.09	0.08	0.08	0.00	0.00	0.00	0.14	0.03	0.04
Crit Vol:		205		157			7			211		
Crit Moves:		****		****			****			****		

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #25 Doughert/Old Ranch

```
Cycle (sec):          100                 Critical Vol./Cap.(X):        0.584
Loss Time (sec):        0 (Y+R=4.0 sec)   Average Delay (sec/veh):     xxxxxx
Optimal Cycle:         55                 Level Of Service:                 A
```

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	3 0	0	0 0	2 1	0	1 0	0 0	2	0 0	0 0	0
Volume Module:												
Base Vol:	153	489	0	0	1534	184	87	0	136	0	0	0
Growth Adj:	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24
Initial Bse:	189	604	0	0	1896	227	108	0	169	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	189	604	0	0	1896	227	108	0	169	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	189	604	0	0	1896	227	108	0	169	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	189	604	0	0	1896	227	108	0	169	0	0	0
RTOR Reduct:	0	0	0	0	0	0	0	0	169	0	0	0
RTOR Vol:	189	604	0	0	1896	227	108	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	189	604	0	0	1896	227	108	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	1.00
Lanes:	1.00	3.00	0.00	0.00	2.68	0.32	1.00	0.00	2.00	0.00	0.00	0.00
Final Sat.:	1720	5160	0	0	4607	553	1720	0	3127	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.11	0.12	0.00	0.00	0.41	0.41	0.06	0.00	0.00	0.00	0.00	0.00
Crit Vol:	189				708		108				0	
Crit Moves:	****				****		****					

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------------------------------------------------------------------------------------
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                     Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #26 Sunset/Center Street
********************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):          0.284
Loss Time (sec):       0 (Y+R=4.0 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:        26               Level Of Service:                   A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected         Permitted        Permitted
Rights:           Include          Include           Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        2  0  1  1  0    1  0  1  1  0    0  1  0  0  1    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    302   691    78     7   109    23    48     6   142    12     1     3
Growth Adj:  1.07 1.07  1.07  1.07 1.07  1.07  1.07 1.07  1.07  1.07 1.07  1.07
Initial Bse: 324   741    84     8   117    25    52     6   152    13     1     3
Added Vol:     0     0     0     0     0     0     0     0     0     0     0     0
PasserByVol:   0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut: 324   741    84     8   117    25    52     6   152    13     1     3
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:  324   741    84     8   117    25    52     6   152    13     1     3
Reduct Vol:    0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol: 324   741    84     8   117    25    52     6   152    13     1     3
RTOR Reduct:   0     0     0     0     0     0     0     0   152     0     0     0
RTOR Vol:    324   741    84     8   117    25    52     6     0    13     1     3
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:  324   741    84     8   117    25    52     6     0    13     1     3
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1720 1720  1720  1720 1720  1720  1720 1720  1720  1720 1720  1720
Adjustment:  0.91 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       2.00 1.80  0.20  1.00 1.65  0.35  0.89 0.11  1.00  0.75 0.06  0.19
Final Sat.:  3127 3091   349  1720 2841   599  1529  191  1720  1290  108   323
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.10 0.24  0.24  0.00 0.04  0.04  0.03 0.03  0.00  0.01 0.01  0.01
Crit Vol:          413           8                52                            17
Crit Moves:        ****       ****              ****                          ****
********************************************************************************
```

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #27 Bishop Drive/Sunset

Cycle (sec):	100	Critical Vol./Cap.(X):	0.389
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	37	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 1	0 1	0	0 1	0 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	299	393	49	11	14	20	25	82	90	33	71	11
Growth Adj:	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Initial Bse:	321	422	53	12	15	21	27	88	97	35	76	12
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	321	422	53	12	15	21	27	88	97	35	76	12
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	321	422	53	12	15	21	27	88	97	35	76	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	321	422	53	12	15	21	27	88	97	35	76	12
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	321	422	53	12	15	21	27	88	97	35	76	12
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	321	422	53	12	15	21	27	88	97	35	76	12
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.81	1.06	0.13	0.49	0.62	0.89	1.00	0.48	0.52	1.00	0.87	0.13
Final Sat.:	1332	1750	218	807	1027	1467	1650	787	863	1650	1429	221
Capacity Analysis Module:												
Vol/Sat:	0.24	0.24	0.24	0.01	0.01	0.01	0.02	0.11	0.11	0.02	0.05	0.05
Crit Vol:			398			24			185	35		
Crit Moves:			****			****			****	****		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #28 Bollinger Canyon/Norris Canyon

Cycle (sec):	100	Critical Vol./Cap.(X):	1.130
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	44.0
Optimal Cycle:	0	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1	1 0	1 0	1	1 0	0 0	1!	0 0	0 0	1!	0 0
Volume Module:												
Base Vol:	99	281	66	121	360	11	12	279	164	69	61	87
Growth Adj:	1.24	1.24	1.24	1.24	1.24	1.24	1.21	1.21	1.21	1.21	1.21	1.21
Initial Bse:	122	347	82	150	445	14	14	336	198	83	74	105
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	122	347	82	150	445	14	14	336	198	83	74	105
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	122	347	82	150	445	14	14	336	198	83	74	105
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	122	347	82	150	445	14	14	336	198	83	74	105
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	122	347	82	150	445	14	14	336	198	83	74	105
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.62	0.38	1.00	1.94	0.06	0.03	0.61	0.36	0.32	0.28	0.40
Final Sat.:	399	693	166	403	831	25	13	298	175	137	121	172
Capacity Analysis Module:												
Vol/Sat:	0.31	0.50	0.49	0.37	0.54	0.53	1.13	1.13	1.13	0.61	0.61	0.61
Crit Moves:		****			****				****		****	
Delay/Veh:	15.5	19.0	18.4	16.6	20.1	20.0	107.7	108	107.7	22.7	22.7	22.7
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.5	19.0	18.4	16.6	20.1	20.0	107.7	108	107.7	22.7	22.7	22.7
LOS by Move:	C	C	C	C	C	C	F	F	F	C	C	C
ApproachDel:		18.1			19.2			107.7			22.7	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		18.1			19.2			107.7			22.7	
LOS by Appr:		C			C			F			C	
AllWayAvgQ:	0.4	1.0	0.9	0.6	1.1	1.1	13.1	13.1	13.1	1.4	1.4	1.4

Note: Queue reported is the number of cars per lane.

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                    Level Of Service Computation Report
               CCTALOS Method (Future Volume Alternative)
*******************************************************************************
Intersection #29 Bollinger/Canyon Lakes
*******************************************************************************
Cycle (sec):          100             Critical Vol./Cap.(X):          0.586
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         55             Level Of Service:                   A
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  0  1  0   0  1  0  0  1   1  0  3  0  1   1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     124    4    11    36    1   257   172  480    13    33 1276    79
Growth Adj:  1.07 1.07  1.07  1.07 1.07  1.07  1.24 1.24  1.24  1.24 1.24  1.24
Initial Bse:  133    4    12    39    1   276   213  593    16    41 1577    98
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  133    4    12    39    1   276   213  593    16    41 1577    98
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   133    4    12    39    1   276   213  593    16    41 1577    98
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  133    4    12    39    1   276   213  593    16    41 1577    98
RTOR Reduct:    0    0     0     0    0   213     0    0    16     0    0     0
RTOR Vol:     133    4    12    39    1    63   213  593     0    41 1577    98
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   133    4    12    39    1    63   213  593     0    41 1577    98
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 0.27  0.73  0.97 0.03  1.00  1.00 3.00  1.00  1.00 2.83  0.17
Final Sat.:  1650  440  1210  1605   45  1650  1650 4950  1650  1650 4661   289
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.08 0.01  0.01  0.02 0.02  0.04  0.13 0.12  0.00  0.02 0.34  0.34
Crit Vol:     133                            63   213                     558
Crit Moves:  ****                          ****  ****                    ****
*******************************************************************************
```

```
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
                CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #30 Camino Ramon/Center Street
********************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):         0.000
Loss Time (sec):        0 (Y+R=4.0 sec)  Average Delay (sec/veh):      xxxxxx
Optimal Cycle:          0                Level Of Service:
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        0  0  0  0  0    0  0  0  0  0    0  0  0  0  0    0  0  0  0  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:      0     0     0    0     0     0    0     0     0    0     0     0
Growth Adj:  0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00  0.00
Initial Bse:   0     0     0    0     0     0    0     0     0    0     0     0
Added Vol:     0     0     0    0     0     0    0     0     0    0     0     0
PasserByVol:   0     0     0    0     0     0    0     0     0    0     0     0
Initial Fut:   0     0     0    0     0     0    0     0     0    0     0     0
User Adj:    0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00  0.00
PHF Adj:     0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00  0.00
PHF Volume:    0     0     0    0     0     0    0     0     0    0     0     0
Reduct Vol:    0     0     0    0     0     0    0     0     0    0     0     0
Reduced Vol:   0     0     0    0     0     0    0     0     0    0     0     0
RTOR Reduct:   0     0     0    0     0     0    0     0     0    0     0     0
RTOR Vol:      0     0     0    0     0     0    0     0     0    0     0     0
PCE Adj:     0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00  0.00
MLF Adj:     0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00  0.00
Final Vol.:    0     0     0    0     0     0    0     0     0    0     0     0
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:      0     0     0    0     0     0    0     0     0    0     0     0
Adjustment:  1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Lanes:       0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00  0.00
Final Sat.:    0     0     0    0     0     0    0     0     0    0     0     0
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00  0.00
Crit Vol:          0                0                0                0
Crit Moves:
********************************************************************************
```

Scenario Report

Scenario:	PM 2020
Command:	Default Command
Volume:	PM 2020
Geometry:	2020 GP
Impact Fee:	Default Impact Fee
Trip Generation:	No
Trip Distribution:	None
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/C	Future LOS	Future Del/ Veh	Future V/C	Change in
# 1 San Ramon/Crow	D	xxxxx	0.865	D	xxxxx	0.865	+ 0.000 V/C
# 2 680 SB OFF/Crow	B	xxxxx	0.664	B	xxxxx	0.664	+ 0.000 V/C
# 3 680 NB ON/Crow	B	xxxxx	0.641	B	xxxxx	0.641	+ 0.000 V/C
# 4 Camino Ramon/Crow	B	xxxxx	0.683	B	xxxxx	0.683	+ 0.000 V/C
# 5 Alcosta/Crow	B	xxxxx	0.692	B	xxxxx	0.692	+ 0.000 V/C
# 6 Camino Ramon/Norris	C	xxxxx	0.725	C	xxxxx	0.725	+ 0.000 V/C
# 7 Camino Ramon/Executive	A	xxxxx	0.516	A	xxxxx	0.516	+ 0.000 V/C
# 8 Camino Ramon/Bishop Drive	A	xxxxx	0.538	A	xxxxx	0.538	+ 0.000 V/C
# 9 San Ramon/Bollinger	D	xxxxx	0.812	D	xxxxx	0.812	+ 0.000 V/C
# 10 680 SB OFF/Bollinger	B	xxxxx	0.615	B	xxxxx	0.615	+ 0.000 V/C
# 11 680 NB OFF/Bollinger	B	xxxxx	0.695	B	xxxxx	0.695	+ 0.000 V/C
# 12 Sunset/Bollinger	D	xxxxx	0.854	D	xxxxx	0.854	+ 0.000 V/C
# 13 Camino Ramon/Bollinger	B	xxxxx	0.680	B	xxxxx	0.680	+ 0.000 V/C
# 14 Bishop 2 Drive/Bollinger	A	xxxxx	0.527	A	xxxxx	0.527	+ 0.000 V/C
# 15 Market/Bollinger Drive	A	xxxxx	0.530	A	xxxxx	0.530	+ 0.000 V/C
# 16 Alcosta/Bollinger	C	xxxxx	0.745	C	xxxxx	0.745	+ 0.000 V/C
# 17 Alcosta/Norris	A	xxxxx	0.523	A	xxxxx	0.523	+ 0.000 V/C
# 18 San Ramon/Norris	B	xxxxx	0.662	B	xxxxx	0.662	+ 0.000 V/C
# 19 Bollinger/Crow	A	xxxxx	0.548	A	xxxxx	0.548	+ 0.000 V/C
# 20 Dougherty/Bollinger	B	xxxxx	0.628	B	xxxxx	0.628	+ 0.000 V/C
# 21 San Ramon/Montevideo	D	xxxxx	0.881	D	xxxxx	0.881	+ 0.000 V/C
# 22 Alcosts/Montevideo	A	xxxxx	0.345	A	xxxxx	0.345	+ 0.000 V/C
# 23 Dougherty/Crow	A	xxxxx	0.546	A	xxxxx	0.546	+ 0.000 V/C
# 24 Alcosta/Old Ranch	A	xxxxx	0.311	A	xxxxx	0.311	+ 0.000 V/C
# 25 Doughert/Old Ranch	A	xxxxx	0.369	A	xxxxx	0.369	+ 0.000 V/C

Intersection	Base LOS	Base Del/Veh	Base V/C	Future LOS	Future Del/Veh	Future V/C	Change in
# 26 Sunset/Center Street	A	xxxxx	0.413	A	xxxxx	0.413	+ 0.000 V/C
# 27 Bishop Drive/Sunset	A	xxxxx	0.511	A	xxxxx	0.511	+ 0.000 V/C
# 28 Bollinger Canyon/Norris Canyon	B	12.0	0.489	B	12.0	0.489	+ 0.000 V/C
# 29 Bollinger/Canyon Lakes	A	xxxxx	0.504	A	xxxxx	0.504	+ 0.000 V/C
# 30 Camino Ramon/Center Street		xxxxx	0.000		xxxxx	0.000	+ 0.000 V/C

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                     Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #1 San Ramon/Crow
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.865
Loss Time (sec):       0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       169              Level Of Service:                  D
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0     0    0    0     0    0    0     0    0    0
Lanes:        2  0  2  0  1   2  0  2  0  1   2  0  3  0  1   2  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     158  579   709   505  435   190   312 1322   117   525 1417   617
Growth Adj:  1.22 1.22  1.00  1.00 1.22  1.22  1.21 1.00  1.21  1.00 1.00  1.00
Initial Bse:  193  706   709   505  530   232   378 1322   142   525 1417   617
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  193  706   709   505  530   232   378 1322   142   525 1417   617
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   193  706   709   505  530   232   378 1322   142   525 1417   617
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  193  706   709   505  530   232   378 1322   142   525 1417   617
RTOR Reduct:    0    0   289     0    0   208     0    0   106     0    0   278
RTOR Vol:     193  706   420   505  530    23   378 1322    36   525 1417   339
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   193  706   420   505  530    23   378 1322    36   525 1417   339
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  0.91 1.00  1.00  0.91 1.00  1.00  0.91 1.00  1.00  0.91 1.00  1.00
Lanes:       2.00 2.00  1.00  2.00 2.00  1.00  2.00 3.00  1.00  2.00 3.00  1.00
Final Sat.:  3000 3300  1650  3000 3300  1650  3000 4950  1650  3000 4950  1650
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.06 0.21  0.25  0.17 0.16  0.01  0.13 0.27  0.02  0.18 0.29  0.21
Crit Vol:                420   253                   441         263
Crit Moves:             ****  ****                  ****        ****
********************************************************************************
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--------------------------------------------------------------------------------
                     Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #2 680 SB OFF/Crow
********************************************************************************
Cycle (sec):          100               Critical Vol./Cap.(X):           0.664
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):        xxxxxx
Optimal Cycle:         55               Level Of Service:                    B
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase        Permitted        Permitted
Rights:           Include          Include           Ignore           Ignore
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        0  0  0  0  0   3  0  0  0  2   0  0  3  0  1   0  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0     0     0  699     0  1026     0  1890   646     0  1533   571
Growth Adj:  1.18  1.18  1.18 1.00  1.18  1.00  1.21  1.00  1.00  1.21  1.00  1.00
Initial Bse:   0     0     0  699     0  1026     0  1890   646     0  1533   571
Added Vol:     0     0     0    0     0     0     0     0     0     0     0     0
PasserByVol:   0     0     0    0     0     0     0     0     0     0     0     0
Initial Fut:   0     0     0  699     0  1026     0  1890   646     0  1533   571
User Adj:    1.00  1.00  1.00 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:    0     0     0  699     0  1026     0  1890   646     0  1533   571
Reduct Vol:    0     0     0    0     0     0     0     0     0     0     0     0
Reduced Vol:   0     0     0  699     0  1026     0  1890   646     0  1533   571
RTOR Reduct:   0     0     0    0     0     0     0     0     0     0     0     0
RTOR Vol:      0     0     0  699     0  1026     0  1890   646     0  1533   571
PCE Adj:     1.00  1.00  1.00 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:    0     0     0  699     0  1026     0  1890   646     0  1533   571
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1800  1800  1800 1800  1800  1800  1800  1800  1800  1800  1800  1800
Adjustment:  1.00  1.00  1.00 0.87  1.00  0.91  1.00  1.00  1.00  1.00  1.00  1.00
Lanes:       0.00  0.00  0.00 3.00  0.00  2.00  0.00  3.00  1.00  0.00  3.00  1.00
Final Sat.:    0     0     0 4698     0  3272     0  5400  1800     0  5400  1800
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.00  0.00 0.15  0.00  0.31  0.00  0.35  0.36  0.00  0.28  0.32
Crit Vol:           0                    513         630               0
Crit Moves:                             ****        ****             ****
********************************************************************************
```

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #3 680 NB ON/Crow

Cycle (sec):	100	Critical Vol./Cap.(X):	0.641
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	52	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Permitted			Permitted		
Rights:	Include			Include			Ignore			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 0 0 2			0 0 0 0 0			0 0 3 0 1			0 0 4 0 1		
Volume Module:												
Base Vol:	717	0	898	0	0	0	0	1709	880	0	1387	1142
Growth Adj:	1.00	1.18	1.18	1.18	1.18	1.18	1.21	1.00	1.00	1.21	1.00	1.21
Initial Bse:	717	0	1061	0	0	0	0	1709	880	0	1387	1385
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	717	0	1061	0	0	0	0	1709	880	0	1387	1385
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	717	0	1061	0	0	0	0	1709	880	0	1387	1385
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	717	0	1061	0	0	0	0	1709	880	0	1387	1385
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	717	0	1061	0	0	0	0	1709	880	0	1387	1385
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	717	0	1061	0	0	0	0	1709	880	0	1387	1385
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	0.00	2.00	0.00	0.00	0.00	0.00	3.00	1.00	0.00	4.00	1.00
Final Sat.:	3272	0	3272	0	0	0	0	5400	1800	0	7200	1800
Capacity Analysis Module:												
Vol/Sat:	0.22	0.00	0.32	0.00	0.00	0.00	0.00	0.32	0.49	0.00	0.19	0.77
Crit Vol:			530		0			570		0		
Crit Moves:			****					****		****		

Level Of Service Computation Report

CCTALOS Method (Future Volume Alternative)

Intersection #4 Camino Ramon/Crow

Cycle (sec): 100 Critical Vol./Cap.(X): 0.683

Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx

Optimal Cycle: 72 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	1 0	1	2 0	1 1	0	2 0	4 0	1	2 0	3 1	0
Volume Module:												
Base Vol:	464	288	141	287	134	120	117	1592	206	154	1157	182
Growth Adj:	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21
Initial Bse:	563	349	171	348	163	146	142	1931	250	187	1403	221
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	563	349	171	348	163	146	142	1931	250	187	1403	221
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	563	349	171	348	163	146	142	1931	250	187	1403	221
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	563	349	171	348	163	146	142	1931	250	187	1403	221
RTOR Reduct:	0	0	103	0	0	0	0	0	250	0	0	0
RTOR Vol:	563	349	68	348	163	146	142	1931	0	187	1403	221
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	563	349	68	348	163	146	142	1931	0	187	1403	221
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	1.00	1.00	2.00	1.06	0.94	2.00	4.00	1.00	2.00	3.46	0.54
Final Sat.:	3000	1650	1650	3000	1741	1559	3000	6600	1650	3000	5703	897
Capacity Analysis Module:												
Vol/Sat:	0.19	0.21	0.04	0.12	0.09	0.09	0.05	0.29	0.00	0.06	0.25	0.25
Crit Vol:		349		174				483		93		
Crit Moves:		****		****				****		****		

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------------------------------------------------------------------------------
------------------------------------------------------------------------------
                   Level Of Service Computation Report
               CCTALOS Method (Future Volume Alternative)
******************************************************************************
Intersection #5 Alcosta/Crow
******************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):          0.692
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         74              Level Of Service:                   B
******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        2  0  0  0  2   0  0  0  0  0   0  0  3  0  1   2  0  3  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     498    0   623     0    0     0     0 1581   261   318  915     0
Growth Adj:  1.24 1.24  1.24  1.24 1.24  1.24  1.21 1.21  1.21  1.21 1.21  1.21
Initial Bse:  615    0   769     0    0     0     0 1918   317   386 1110     0
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  615    0   769     0    0     0     0 1918   317   386 1110     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   615    0   769     0    0     0     0 1918   317   386 1110     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  615    0   769     0    0     0     0 1918   317   386 1110     0
RTOR Reduct:    0    0   212     0    0     0     0    0   317     0    0     0
RTOR Vol:     615    0   557     0    0     0     0 1918     0   386 1110     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   615    0   557     0    0     0     0 1918     0   386 1110     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1720 1720  1720  1720 1720  1720  1720 1720  1720  1720 1720  1720
Adjustment:  0.91 1.00  0.91  1.00 1.00  1.00  1.00 1.00  1.00  0.91 1.00  1.00
Lanes:       2.00 0.00  2.00  0.00 0.00  0.00  0.00 3.00  1.00  2.00 3.00  0.00
Final Sat.:  3127    0  3127     0    0     0     0 5160  1720  3127 5160     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.20 0.00  0.18  0.00 0.00  0.00  0.00 0.37  0.00  0.12 0.22  0.00
Crit Vol:     308                    0                 639         193
Crit Moves:  ****                                     ****        ****
******************************************************************************
```

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #6 Camino Ramon/Norris

Cycle (sec):	100	Critical Vol./Cap.(X):	0.725
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	83	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 2 0 1			1 0 1 1 0			1 0 1 1 0			1 0 1 1 0		
Volume Module:												
Base Vol:	132	864	101	136	386	112	200	282	78	49	342	77
Growth Adj:	1.23	1.23	1.23	1.23	1.23	1.23	1.21	1.21	1.21	1.21	1.21	1.21
Initial Bse:	163	1065	125	168	476	138	243	342	95	59	415	93
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	163	1065	125	168	476	138	243	342	95	59	415	93
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	163	1065	125	168	476	138	243	342	95	59	415	93
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	163	1065	125	168	476	138	243	342	95	59	415	93
RTOR Reduct:	0	0	59	0	0	0	0	0	0	0	0	0
RTOR Vol:	163	1065	65	168	476	138	243	342	95	59	415	93
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	163	1065	65	168	476	138	243	342	95	59	415	93
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.55	0.45	1.00	1.57	0.43	1.00	1.63	0.37
Final Sat.:	1650	3300	1650	1650	2558	742	1650	2585	715	1650	2694	606
Capacity Analysis Module:												
Vol/Sat:	0.10	0.32	0.04	0.10	0.19	0.19	0.15	0.13	0.13	0.04	0.15	0.15
Crit Vol:		533		168			243					254
Crit Moves:		****		****			****					****

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #7 Camino Ramon/Executive

Cycle (sec):	100	Critical Vol./Cap.(X):	0.516
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	38	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	1 1	0	0 1	0 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	32	698	24	15	660	41	215	11	160	117	24	76
Growth Adj:	1.22	1.22	1.22	1.22	1.22	1.22	1.18	1.18	1.18	1.18	1.18	1.18
Initial Bse:	39	854	29	18	807	50	254	13	189	138	28	90
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	39	854	29	18	807	50	254	13	189	138	28	90
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	39	854	29	18	807	50	254	13	189	138	28	90
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	39	854	29	18	807	50	254	13	189	138	28	90
RTOR Reduct:	0	0	0	0	0	0	0	0	39	0	0	18
RTOR Vol:	39	854	29	18	807	50	254	13	150	138	28	71
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	39	854	29	18	807	50	254	13	150	138	28	71
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.93	0.07	1.00	1.88	0.12	0.95	0.05	1.00	0.83	0.17	1.00
Final Sat.:	1720	3326	114	1720	3239	201	1636	84	1720	1427	293	1720
Capacity Analysis Module:												
Vol/Sat:	0.02	0.26	0.26	0.01	0.25	0.25	0.16	0.16	0.09	0.10	0.10	0.04
Crit Vol:	39				429		254				167	
Crit Moves:	****				****		****				****	

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #8 Camino Ramon/Bishop Drive

Cycle (sec):	100	Critical Vol./Cap.(X):	0.538
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	49	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	1 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	47	461	12	9	842	114	115	2	79	144	7	22
Growth Adj:	1.22	1.22	1.22	1.22	1.22	1.22	1.09	1.09	1.09	1.09	1.09	1.09
Initial Bse:	57	564	15	11	1030	139	125	2	86	157	8	24
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	57	564	15	11	1030	139	125	2	86	157	8	24
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	57	564	15	11	1030	139	125	2	86	157	8	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	57	564	15	11	1030	139	125	2	86	157	8	24
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	57	564	15	11	1030	139	125	2	86	157	8	24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	57	564	15	11	1030	139	125	2	86	157	8	24
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.95	0.05	1.00	1.76	0.24	1.00	0.02	0.98	1.00	0.24	0.76
Final Sat.:	1650	3216	84	1650	2906	394	1650	41	1609	1650	398	1252
Capacity Analysis Module:												
Vol/Sat:	0.03	0.18	0.18	0.01	0.35	0.35	0.08	0.05	0.05	0.09	0.02	0.02
Crit Vol:	57					585		88		157		
Crit Moves:	****					****		****		****		

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                      Level Of Service Computation Report
                  CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #9 San Ramon/Bollinger
********************************************************************************
Cycle (sec):          100                 Critical Vol./Cap.(X):         0.812
Loss Time (sec):        0 (Y+R=4.0 sec)  Average Delay (sec/veh):       xxxxxx
Optimal Cycle:        121                 Level Of Service:                  D
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        2  0  2  0  1   2  0  1  1  0   1  0  1  1  0   2  0  2  0  1
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:      89   431   410   358   430    40    15   386   147  1085   580   195
Growth Adj:  1.22  1.22  1.00  1.00  1.22  1.22  1.23  1.00  1.23  1.00  1.00  1.00
Initial Bse:  108   525   410   358   524    49    18   386   181  1085   580   195
Added Vol:      0     0     0     0     0     0     0     0     0     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:  108   525   410   358   524    49    18   386   181  1085   580   195
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:   108   525   410   358   524    49    18   386   181  1085   580   195
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  108   525   410   358   524    49    18   386   181  1085   580   195
RTOR Reduct:    0     0   410     0     0     0     0     0     0     0     0   195
RTOR Vol:     108   525     0   358   524    49    18   386   181  1085   580     0
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:   108   525     0   358   524    49    18   386   181  1085   580     0
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1650  1650  1650  1650  1650  1650  1650  1650  1650  1650  1650  1650
Adjustment:  0.91  1.00  1.00  0.91  1.00  1.00  1.00  1.00  1.00  0.91  1.00  1.00
Lanes:       2.00  2.00  1.00  2.00  1.83  0.17  1.00  1.36  0.64  2.00  2.00  1.00
Final Sat.:  3000  3300  1650  3000  3019   281  1650  2246  1054  3000  3300  1650
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.04  0.16  0.00  0.12  0.17  0.17  0.01  0.17  0.17  0.36  0.18  0.00
Crit Vol:           263         179                                284   543
Crit Moves:         ****        ****                               ****  ****
********************************************************************************
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #10 680 SB OFF/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	0.615
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	48	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Permitted			Permitted		
Rights:	Include			Include			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1!	0 0	1	1 0	0 2	0 0	3	1 0	0 0	3	0 1
Volume Module:												
Base Vol:	5	0	101	825	21	401	0	1142	12	0	1454	1665
Growth Adj:	1.00	1.00	1.00	1.00	1.17	1.00	1.23	1.00	1.00	1.23	1.00	1.00
Initial Bse:	5	0	101	825	24	401	0	1142	12	0	1454	1665
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	0	101	825	24	401	0	1142	12	0	1454	1665
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	5	0	101	825	24	401	0	1142	12	0	1454	1665
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	0	101	825	24	401	0	1142	12	0	1454	1665
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	5	0	101	825	24	401	0	1142	12	0	1454	1665
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	5	0	101	825	24	401	0	1142	12	0	1454	1665
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.05	0.00	0.95	1.94	0.06	2.00	0.00	3.96	0.04	0.00	3.00	1.00
Final Sat.:	81	0	1639	3037	99	3127	0	6808	72	0	5160	1720
Capacity Analysis Module:												
Vol/Sat:	0.06	0.00	0.06	0.27	0.25	0.13	0.00	0.17	0.17	0.00	0.28	0.97
Crit Vol:			106	425			0				485	
Crit Moves:			****	****			****				****	

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-------------------------------------------------------------------------------
                      Level Of Service Computation Report
                  CCTALOS Method (Future Volume Alternative)
*******************************************************************************
Intersection #11 680 NB OFF/Bollinger
*******************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):          0.695
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         61              Level Of Service:                   B
*******************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Split Phase      Split Phase        Permitted        Permitted
Rights:           Include          Include           Ignore           Ignore
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:         1  0  0  0  3   0  0  0  0  0   0  0  3  0  1   0  0  3  1  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      512    0  1076     0    0     0     0 1688   380     0 2607  1088
Growth Adj:   1.00 1.17  1.00  1.17 1.17  1.00  1.23 1.00  1.00  1.23 1.00  1.00
Initial Bse:   512    0  1076     0    0     0     0 1688   380     0 2607  1088
Added Vol:       0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:     0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   512    0  1076     0    0     0     0 1688   380     0 2607  1088
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    512    0  1076     0    0     0     0 1688   380     0 2607  1088
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   512    0  1076     0    0     0     0 1688   380     0 2607  1088
RTOR Reduct:     0    0     0     0    0     0     0    0     0     0    0     0
RTOR Vol:      512    0  1076     0    0     0     0 1688   380     0 2607  1088
PCE Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    512    0  1076     0    0     0     0 1688   380     0 2607  1088
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1800 1800  1800  1800 1800  1800  1800 1800  1800  1800 1800  1800
Adjustment:   1.00 1.00  0.87  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.91
Lanes:        1.00 0.00  3.00  0.00 0.00  0.00  0.00 3.00  1.00  0.00 3.53  1.47
Final Sat.:   1800    0  4698     0    0     0     0 5400  1800     0 6350  2409
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.28 0.00  0.23  0.00 0.00  0.00  0.00 0.31  0.21  0.00 0.41  0.45
Crit Vol:      512                     0           0                     739
Crit Moves:   ****                              ****                    ****
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #12 Sunset/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	0.854
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	156	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 0 1 0			0 1 0 0 2			2 0 4 0 1			2 0 4 0 1		
Volume Module:												
Base Vol:	495	35	108	142	13	900	420	2291	53	28	2150	140
Growth Adj:	1.00	1.09	1.00	1.00	1.09	1.00	1.00	1.00	1.00	1.23	1.00	1.23
Initial Bse:	495	38	108	142	14	900	420	2291	53	35	2150	173
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	495	38	108	142	14	900	420	2291	53	35	2150	173
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	495	38	108	142	14	900	420	2291	53	35	2150	173
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	495	38	108	142	14	900	420	2291	53	35	2150	173
RTOR Reduct:	0	0	0	0	0	231	0	0	53	0	0	142
RTOR Vol:	495	38	108	142	14	669	420	2291	0	35	2150	31
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	495	38	108	142	14	669	420	2291	0	35	2150	31
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	0.91	0.91	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	0.26	0.74	0.91	0.09	2.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3000	430	1220	1501	149	3000	3000	6600	1650	3000	6600	1650
Capacity Analysis Module:												
Vol/Sat:	0.17	0.09	0.09	0.09	0.09	0.22	0.14	0.35	0.00	0.01	0.33	0.02
Crit Vol:	248					335	210				538	
Crit Moves:	****					****	****				****	

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                     Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
*******************************************************************************
Intersection #13 Camino Ramon/Bollinger
*******************************************************************************
Cycle (sec):          100               Critical Vol./Cap.(X):         0.680
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         71               Level Of Service:                  B
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  1  0  1   2  0  0  1  1   2  0  4  0  1   2  0  4  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     347    34    36   518    18   606   380  2151    22    12  1197   146
Growth Adj:  1.00  1.09  1.09  1.09  1.09  1.00  1.00  1.00  1.00  1.23  1.00  1.23
Initial Bse:  347    37    39   564    20   606   380  2151    22    15  1197   180
Added Vol:      0     0     0     0     0     0     0     0     0     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:  347    37    39   564    20   606   380  2151    22    15  1197   180
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:   347    37    39   564    20   606   380  2151    22    15  1197   180
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  347    37    39   564    20   606   380  2151    22    15  1197   180
RTOR Reduct:    0     0     8     0     0   209     0     0    22     0     0   180
RTOR Vol:     347    37    31   564    20   397   380  2151     0    15  1197     0
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:   347    37    31   564    20   397   380  2151     0    15  1197     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650  1650  1650  1650  1650  1650  1650  1650  1650  1650  1650  1650
Adjustment:  1.00  1.00  1.00  0.91  1.00  0.91  0.91  1.00  1.00  0.91  1.00  1.00
Lanes:       1.00  1.00  1.00  2.00  0.09  1.91  2.00  4.00  1.00  2.00  4.00  1.00
Final Sat.:  1650  1650  1650  3000   155  2859  3000  6600  1650  3000  6600  1650
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.21  0.02  0.02  0.19  0.13  0.14  0.13  0.33  0.00  0.00  0.18  0.00
Crit Vol:     347                           208          538           7
Crit Moves:  ****                          ****         ****        ****
*******************************************************************************
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #14 Bishop 2 Drive/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	0.527
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	48	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 1	0	0 1	1 0	0	1 0	2 0	3	1 0	2 0	3	1 0
Volume Module:												
Base Vol:	150	0	50	0	0	0	0	2300	0	50	1150	0
Growth Adj:	1.09	1.09	1.09	1.00	1.00	1.00	1.23	1.23	1.23	1.23	1.23	1.23
Initial Bse:	163	0	54	0	0	0	0	2836	0	62	1418	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	163	0	54	0	0	0	0	2836	0	62	1418	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	163	0	54	0	0	0	0	2836	0	62	1418	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	163	0	54	0	0	0	0	2836	0	62	1418	0
RTOR Reduct:	0	0	34	0	0	0	0	0	0	0	0	0
RTOR Vol:	163	0	20	0	0	0	0	2836	0	62	1418	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	163	0	20	0	0	0	0	2836	0	62	1418	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00
Lanes:	1.00	0.00	1.00	1.00	1.00	0.00	2.00	4.00	0.00	2.00	4.00	0.00
Final Sat.:	1720	0	1720	1720	1720	0	3127	6880	0	3127	6880	0
Capacity Analysis Module:												
Vol/Sat:	0.09	0.00	0.01	0.00	0.00	0.00	0.00	0.41	0.00	0.02	0.21	0.00
Crit Vol:	163				0			709		31		
Crit Moves:	****							****		****		

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #15 Market/Bollinger Drive

Cycle (sec):	100	Critical Vol./Cap.(X):	0.530
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	48	Level Of Service:	A

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Split Phase	Split Phase	Protected	Protected
Rights:	Include	Include	Include	Include
Min. Green:	0 0 0	0 0 0	0 0 0	0 0 0
Lanes:	1 1 0 0 1	1 0 0 1 0	2 0 4 0 1	2 0 3 1 0

Volume Module:	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Base Vol:	395	2	136	13	5	12	37	1912	460	42	824	8
Growth Adj:	1.09	1.09	1.09	1.09	1.09	1.09	1.23	1.23	1.23	1.23	1.23	1.23
Initial Bse:	430	2	148	14	5	13	46	2357	567	52	1016	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	430	2	148	14	5	13	46	2357	567	52	1016	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	430	2	148	14	5	13	46	2357	567	52	1016	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	430	2	148	14	5	13	46	2357	567	52	1016	10
RTOR Reduct:	0	0	28	0	0	0	0	0	236	0	0	0
RTOR Vol:	430	2	119	14	5	13	46	2357	331	52	1016	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	430	2	119	14	5	13	46	2357	331	52	1016	10

Saturation Flow Module:	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00
Lanes:	1.99	0.01	1.00	1.00	0.29	0.71	2.00	4.00	1.00	2.00	3.96	0.04
Final Sat.:	2985	17	1650	1650	485	1165	3000	6600	1650	3000	6537	63

Capacity Analysis Module:	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Vol/Sat:	0.14	0.13	0.07	0.01	0.01	0.01	0.02	0.36	0.20	0.02	0.16	0.16
Crit Vol:	216					18		589		26		
Crit Moves:	****					****		****		****		

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #16 Alcosta/Bollinger

Cycle (sec): 100 — Critical Vol./Cap.(X): 0.745
Loss Time (sec): 0 (Y+R=4.0 sec) — Average Delay (sec/veh): xxxxxx
Optimal Cycle: 89 — Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	1 1	0	2 0	2 0	1	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	154	411	127	239	404	165	260	1450	338	218	651	165
Growth Adj:	1.21	1.21	1.21	1.21	1.21	1.21	1.23	1.23	1.23	1.23	1.23	1.23
Initial Bse:	187	499	154	290	490	200	321	1788	417	269	803	203
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	187	499	154	290	490	200	321	1788	417	269	803	203
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	187	499	154	290	490	200	321	1788	417	269	803	203
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	187	499	154	290	490	200	321	1788	417	269	803	203
RTOR Reduct:	0	0	0	0	0	176	0	0	103	0	0	159
RTOR Vol:	187	499	154	290	490	24	321	1788	314	269	803	44
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	187	499	154	290	490	24	321	1788	314	269	803	44
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	1.53	0.47	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3000	2521	779	3000	3300	1650	3000	4950	1650	3000	4950	1650
Capacity Analysis Module:												
Vol/Sat:	0.06	0.20	0.20	0.10	0.15	0.01	0.11	0.36	0.19	0.09	0.16	0.03
Crit Vol:			326	145				596		134		
Crit Moves:			****	****				****		****		

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                   Level Of Service Computation Report
               CCTALOS Method (Future Volume Alternative)
******************************************************************************
Intersection #17 Alcosta/Norris
******************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):          0.523
Loss Time (sec):       0 (Y+R=4.0 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:        48              Level Of Service:                   A
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:     0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        1  0  1  1  0   1  0  2  0  1   2  0  1  0  1   1  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     125  548   35   76  356  127  374   77  158   44  138  139
Growth Adj:  1.21 1.21 1.21 1.21 1.21 1.21 1.21 1.21 1.21 1.21 1.21 1.21
Initial Bse:  152  665   42   92  432  154  454   93  192   53  167  169
Added Vol:      0    0    0    0    0    0    0    0    0    0    0    0
PasserByVol:    0    0    0    0    0    0    0    0    0    0    0    0
Initial Fut:  152  665   42   92  432  154  454   93  192   53  167  169
User Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:   152  665   42   92  432  154  454   93  192   53  167  169
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:  152  665   42   92  432  154  454   93  192   53  167  169
RTOR Reduct:    0    0    0    0    0  154    0    0  152    0    0   92
RTOR Vol:     152  665   42   92  432    0  454   93   40   53  167   76
PCE Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.:   152  665   42   92  432    0  454   93   40   53  167   76
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650 1650 1650 1650 1650 1650 1650 1650 1650 1650 1650
Adjustment:  1.00 1.00 1.00 1.00 1.00 1.00 0.91 1.00 1.00 1.00 1.00 1.00
Lanes:       1.00 1.88 0.12 1.00 2.00 1.00 2.00 1.00 1.00 1.00 1.00 1.00
Final Sat.:  1650 3102  198 1650 3300 1650 3000 1650 1650 1650 1650 1650
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.09 0.21 0.21 0.06 0.13 0.00 0.15 0.06 0.02 0.03 0.10 0.05
Crit Vol:          354        92             227                  167
Crit Moves:        ****       ****           ****                 ****
******************************************************************************
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                    Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #18 San Ramon/Norris
********************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):         0.662
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        67                Level Of Service:                  B
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  2  0  1    2  0  1  1  0    1  0  1  1  0    1  0  1  0  1
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:     100  300   100   150  300   100   100  200   100   250  500   350
Growth Adj:  1.21 1.21  1.21  1.21 1.21  1.21  1.21 1.21  1.21  1.21 1.21  1.21
Initial Bse:  121  364   121   182  364   121   121  243   121   303  607   425
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  121  364   121   182  364   121   121  243   121   303  607   425
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   121  364   121   182  364   121   121  243   121   303  607   425
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  121  364   121   182  364   121   121  243   121   303  607   425
RTOR Reduct:    0    0   121     0    0     0     0    0     0     0    0   100
RTOR Vol:     121  364     0   182  364   121   121  243   121   303  607   324
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   121  364     0   182  364   121   121  243   121   303  607   324
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  1.00 1.00  1.00  0.91 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 2.00  1.00  2.00 1.50  0.50  1.00 1.33  0.67  1.00 1.00  1.00
Final Sat.:  1650 3300  1650  3000 2475   825  1650 2200  1100  1650 1650  1650
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.07 0.11  0.00  0.06 0.15  0.15  0.07 0.11  0.11  0.18 0.37  0.20
Crit Vol:     121                    243        121                    607
Crit Moves:  ****                   ****       ****                   ****
********************************************************************************
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                    Level Of Service Computation Report
               CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #19 Bollinger/Crow
********************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):          0.548
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         41              Level Of Service:                   A
********************************************************************************
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|-----------------||---------------||---------------||---------------|
Control:        Permitted         Permitted        Protected        Protected
Rights:          Include           Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:         1  0  1  0  1    0  0  1! 0  0    1  0  2  0  1    1  0  2  0  1
------------|-----------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     181    32    52    30    36     8    16   825   142    90  1004    29
Growth Adj:  1.23  1.23  1.23  1.23  1.23  1.23  1.21  1.21  1.21  1.21  1.21  1.21
Initial Bse:  223    39    64    37    44    10    19  1001   172   109  1218    35
Added Vol:      0     0     0     0     0     0     0     0     0     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:  223    39    64    37    44    10    19  1001   172   109  1218    35
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:   223    39    64    37    44    10    19  1001   172   109  1218    35
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  223    39    64    37    44    10    19  1001   172   109  1218    35
RTOR Reduct:    0     0    64     0     0     0     0     0   172     0     0    35
RTOR Vol:     223    39     0    37    44    10    19  1001     0   109  1218     0
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:   223    39     0    37    44    10    19  1001     0   109  1218     0
------------|-----------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1720  1720  1720  1720  1720  1720  1720  1720  1720  1720  1720  1720
Adjustment:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Lanes:       1.00  1.00  1.00  0.40  0.49  0.11  1.00  2.00  1.00  1.00  2.00  1.00
Final Sat.:  1720  1720  1720   697   837   186  1720  3440  1720  1720  3440  1720
------------|-----------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.13  0.02  0.00  0.05  0.05  0.05  0.01  0.29  0.00  0.06  0.35  0.00
Crit Vol:     223                      91          19                      609
Crit Moves:  ****                    ****        ****                    ****
********************************************************************************
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------------------------------------------------------------------------------

                   Level Of Service Computation Report
               CCTALOS Method (Future Volume Alternative)
******************************************************************************
Intersection #20 Dougherty/Bollinger
******************************************************************************
Cycle (sec):          100               Critical Vol./Cap.(X):          0.628
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         61               Level Of Service:                   B
******************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        2  0  3  0  1    2  0  3  0  1    2  0  3  0  1    2  0  3  0  1
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:     127  985   164   346  560   354   468 1092   193   115  469   451
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  127  985   164   346  560   354   468 1092   193   115  469   451
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  127  985   164   346  560   354   468 1092   193   115  469   451
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   127  985   164   346  560   354   468 1092   193   115  469   451
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  127  985   164   346  560   354   468 1092   193   115  469   451
RTOR Reduct:    0    0    63     0    0   257     0    0    70     0    0   190
RTOR Vol:     127  985   101   346  560    97   468 1092   123   115  469   261
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   127  985   101   346  560    97   468 1092   123   115  469   261
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  0.91 1.00  1.00  0.91 1.00  1.00  0.91 1.00  1.00  0.91 1.00  1.00
Lanes:       2.00 3.00  1.00  2.00 3.00  1.00  2.00 3.00  1.00  2.00 3.00  1.00
Final Sat.:  3000 4950  1650  3000 4950  1650  3000 4950  1650  3000 4950  1650
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.04 0.20  0.06  0.12 0.11  0.06  0.16 0.22  0.07  0.04 0.09  0.16
Crit Vol:          328         173               234                          261
Crit Moves:        ****        ****              ****                        ****
******************************************************************************
```

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #21 San Ramon/Montevideo

Cycle (sec):	100	Critical Vol./Cap.(X):	0.881
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0 1 1 0			1 0 2 0 0			0 0 0 0 0			1 0 0 0 1		

Volume Module: 5:00 To 6:00

	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Base Vol:	0	705	345	583	946	0	0	0	0	172	0	643
Growth Adj:	1.22	1.22	1.22	1.18	1.26	1.22	1.22	1.22	1.22	1.09	1.22	1.22
Initial Bse:	0	859	421	688	1188	0	0	0	0	187	0	784
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	859	421	688	1188	0	0	0	0	187	0	784
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	859	421	688	1188	0	0	0	0	187	0	784
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	859	421	688	1188	0	0	0	0	187	0	784
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	688
RTOR Vol:	0	859	421	688	1188	0	0	0	0	187	0	96
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	859	421	688	1188	0	0	0	0	187	0	96

Saturation Flow Module:

	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	1.34	0.66	1.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	2310	1130	1720	3440	0	0	0	0	1720	0	1720

Capacity Analysis Module:

	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Vol/Sat:	0.00	0.37	0.37	0.40	0.35	0.00	0.00	0.00	0.00	0.11	0.00	0.06
Crit Vol:			640	688				0		187		
Crit Moves:			****	****						****		

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--------------------------------------------------------------------------------
                 Level Of Service Computation Report
             CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #22 Alcosts/Montevideo
********************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):          0.345
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         35              Level Of Service:                   A
********************************************************************************
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Protected        Protected       Split Phase      Split Phase
Rights:           Include          Include          Include          Include
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
Lanes:        1  0  2  0  0   0  0  2  0  1   1  0  0  0  1   0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module: 5:00 To 6:00
Base Vol:      66  262    0     0  616  210   114    0   43     0    0    0
Growth Adj:  1.21 1.21 1.21  1.21 1.21 1.21  1.22 1.22 1.22  1.22 1.22 1.22
Initial Bse:   80  318    0     0  747  255   139    0   52     0    0    0
Added Vol:      0    0    0     0    0    0     0    0    0     0    0    0
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:   80  318    0     0  747  255   139    0   52     0    0    0
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:    80  318    0     0  747  255   139    0   52     0    0    0
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:   80  318    0     0  747  255   139    0   52     0    0    0
RTOR Reduct:    0    0    0     0    0  139     0    0   52     0    0    0
RTOR Vol:      80  318    0     0  747  116   139    0    0     0    0    0
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Final Vol.:    80  318    0     0  747  116   139    0    0     0    0    0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1720 1720 1720  1720 1720 1720  1720 1720 1720  1720 1720 1720
Adjustment:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:       1.00 2.00 0.00  0.00 2.00 1.00  1.00 0.00 1.00  0.00 0.00 0.00
Final Sat.:  1720 3440    0     0 3440 1720  1720    0 1720     0    0    0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.05 0.09 0.00  0.00 0.22 0.07  0.08 0.00 0.00  0.00 0.00 0.00
Crit Vol:      80                   374        139                     0
Crit Moves:  ****                  ****       ****
********************************************************************************
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #23 Dougherty/Crow

Cycle (sec):	100	Critical Vol./Cap.(X):	0.546
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	50	Level Of Service:	A

Approach:	North Bound	South Bound	East Bound	West Bound
Control:	Protected	Protected	Protected	Protected
Rights:	Ignore	Include	Include	Include
Lanes:	2 0 0 0 2	0 0 0 0 0	0 0 3 0 1	2 0 2 0 0

Movement:	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	135	0	811	0	0	0	0	1195	137	547	541	0
Growth Adj:	1.23	1.23	1.23	1.23	1.23	1.23	1.21	1.21	1.21	1.21	1.21	1.21
Initial Bse:	166	0	1000	0	0	0	0	1450	166	664	656	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	166	0	1000	0	0	0	0	1450	166	664	656	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	166	0	1000	0	0	0	0	1450	166	664	656	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	166	0	1000	0	0	0	0	1450	166	664	656	0
RTOR Reduct:	0	0	0	0	0	0	0	0	92	0	0	0
RTOR Vol:	166	0	1000	0	0	0	0	1450	75	664	656	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	166	0	1000	0	0	0	0	1450	75	664	656	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	0.00	2.00	0.00	0.00	0.00	0.00	3.00	1.00	2.00	2.00	0.00
Final Sat.:	3127	0	3127	0	0	0	0	5160	1720	3127	3440	0
Capacity Analysis Module:												
Vol/Sat:	0.05	0.00	0.32	0.00	0.00	0.00	0.00	0.28	0.04	0.21	0.19	0.00
Crit Vol:	83				0			483		332		
Crit Moves:	****							****		****		

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                       Level Of Service Computation Report
                   CCTALOS Method (Future Volume Alternative)
*******************************************************************************
Intersection #24 Alcosta/Old Ranch
*******************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):         0.310
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         33              Level Of Service:                  A
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Protected        Protected        Split Phase      Split Phase
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0    0    0    0     0    0    0     0    0    0
Lanes:        1  0  1  1  0   1  0  1  1  0    1  0  1! 0  0    2  0  0  1  1
------------|---------------||---------------||---------------||---------------|
Volume Module: 5:00 To 6:00
Base Vol:      2  212   161   164  242     1     1    0     0   127    1   176
Growth Adj:  1.21 1.21  1.21  1.21 1.21  1.21  1.24 1.24  1.24  1.24 1.24  1.24
Initial Bse:   2  257   195   199  294     1     1    0     0   157    1   217
Added Vol:     0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:   0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   2  257   195   199  294     1     1    0     0   157    1   217
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    2  257   195   199  294     1     1    0     0   157    1   217
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   2  257   195   199  294     1     1    0     0   157    1   217
RTOR Reduct:   0    0     0     0    0     0     0    0     0     0    0   199
RTOR Vol:      2  257   195   199  294     1     1    0     0   157    1    18
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    2  257   195   199  294     1     1    0     0   157    1    18
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  0.91 1.00  1.00  0.91 1.00  0.91
Lanes:       1.00 1.14  0.86  1.00 1.99  0.01  2.00 0.00  0.00  2.00 0.13  1.87
Final Sat.:  1650 1876  1424  1650 3286    14  3000    0     0  3000  207  2811
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.14  0.14  0.12 0.09  0.09  0.00 0.00  0.00  0.05 0.01  0.01
Crit Vol:               226   199                 1                78
Crit Moves:             ****  ****              ****             ****
*******************************************************************************
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #25 Dougherт/Old Ranch

Cycle (sec):	100	Critical Vol./Cap.(X):	0.369
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	36	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:		Protected			Protected			Split Phase			Split Phase	
Rights:		Include			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 3 0 0			0 0 2 1 0			1 0 0 0 2			0 0 0 0 0		
Volume Module: 5:00 To 6:00 PM												
Base Vol:	232	1052	0	0	494	47	102	0	120	0	0	0
Growth Adj:	1.23	1.23	1.23	1.23	1.23	1.23	1.24	1.24	1.24	1.24	1.24	1.24
Initial Bse:	286	1297	0	0	609	58	126	0	148	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	286	1297	0	0	609	58	126	0	148	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	286	1297	0	0	609	58	126	0	148	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	286	1297	0	0	609	58	126	0	148	0	0	0
RTOR Reduct:	0	0	0	0	0	0	0	0	148	0	0	0
RTOR Vol:	286	1297	0	0	609	58	126	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	286	1297	0	0	609	58	126	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	1.00
Lanes:	1.00	3.00	0.00	0.00	2.74	0.26	1.00	0.00	2.00	0.00	0.00	0.00
Final Sat.:	1720	5160	0	0	4712	448	1720	0	3127	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.17	0.25	0.00	0.00	0.13	0.13	0.07	0.00	0.00	0.00	0.00	0.00
Crit Vol:	286					222	126				0	
Crit Moves:	****					****	****					

```
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
              CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #26 Sunset/Center Street
********************************************************************************
Cycle (sec):          100               Critical Vol./Cap.(X):          0.413
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         32               Level Of Service:                   A
********************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Protected        Protected         Permitted        Permitted
Rights:           Include          Include           Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:         2  0  1  1  0   1  0  1  1  0    0  1  0  0  1    0  0  1! 0  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:     250  200    50    25  575    75    50   15   175   100   25    15
Growth Adj:  1.09 1.09  1.09  1.09 1.09  1.09  1.09 1.09  1.09  1.09 1.09  1.09
Initial Bse:  272  218    54    27  626    82    54   16   190   109   27    16
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  272  218    54    27  626    82    54   16   190   109   27    16
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   272  218    54    27  626    82    54   16   190   109   27    16
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  272  218    54    27  626    82    54   16   190   109   27    16
RTOR Reduct:    0    0     0     0    0     0     0    0   150     0    0     0
RTOR Vol:     272  218    54    27  626    82    54   16    41   109   27    16
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   272  218    54    27  626    82    54   16    41   109   27    16
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1720 1720  1720  1720 1720  1720  1720 1720  1720  1720 1720  1720
Adjustment:  0.91 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       2.00 1.60  0.40  1.00 1.77  0.23  0.77 0.23  1.00  0.71 0.18  0.11
Final Sat.:  3127 2752   688  1720 3043   397  1323  397  1720  1229  307   184
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.09 0.08  0.08  0.02 0.21  0.21  0.04 0.04  0.02  0.09 0.09  0.09
Crit Vol:     136                    354         54                           152
Crit Moves:  ****                   ****       ****                          ****
********************************************************************************
```

```
---------------------------------------------------------------------------------
---------------------------------------------------------------------------------
                     Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
*********************************************************************************
Intersection #27 Bishop Drive/Sunset
*********************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):          0.511
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         47              Level Of Service:                   A
*********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        0  1  0  1  0    0  1  0  1  0    1  0  0  1  0    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     140    50    75    20   325    25    15   100   250   100    50    20
Growth Adj:  1.09  1.09  1.09  1.09  1.09  1.09  1.09  1.09  1.09  1.09  1.09  1.09
Initial Bse:  152    54    82    22   354    27    16   109   272   109    54    22
Added Vol:      0     0     0     0     0     0     0     0     0     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:  152    54    82    22   354    27    16   109   272   109    54    22
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:   152    54    82    22   354    27    16   109   272   109    54    22
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  152    54    82    22   354    27    16   109   272   109    54    22
RTOR Reduct:    0     0     0     0     0     0     0     0     0     0     0     0
RTOR Vol:     152    54    82    22   354    27    16   109   272   109    54    22
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:   152    54    82    22   354    27    16   109   272   109    54    22
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650  1650  1650  1650  1650  1650  1650  1650  1650  1650  1650  1650
Adjustment:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Lanes:       1.00  0.43  0.57  0.11  1.76  0.13  1.00  0.29  0.71  1.00  0.71  0.29
Final Sat.:  1650   716   934   178  2899   223  1650   471  1179  1650  1179   471
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.09  0.08  0.09  0.12  0.12  0.12  0.01  0.23  0.23  0.07  0.05  0.05
Crit Vol:     152                           201         381         109
Crit Moves:  ****                          ****        ****        ****
*********************************************************************************
```

```
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
           2000 HCM 4-Way Stop Method (Future Volume Alternative)
********************************************************************************
Intersection #28 Bollinger Canyon/Norris Canyon
********************************************************************************
Cycle (sec):          100             Critical Vol./Cap.(X):         0.489
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):       12.0
Optimal Cycle:          0             Level Of Service:                  B
********************************************************************************
Approach:     North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Stop Sign        Stop Sign        Stop Sign        Stop Sign
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Lanes:       1  0  1  1  0    1  0  1  1  0    0  0  1!  0  0    0  0  1!  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      72  197   59    69  213   20     6   84  146    36   79   44
Growth Adj:  1.23 1.23 1.23  1.23 1.23 1.23  1.21 1.21 1.21  1.21 1.21 1.21
Initial Bse:   89  243   73    85  263   25     7  102  177    44   96   53
Added Vol:      0    0    0     0    0    0     0    0    0     0    0    0
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:   89  243   73    85  263   25     7  102  177    44   96   53
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:    89  243   73    85  263   25     7  102  177    44   96   53
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:   89  243   73    85  263   25     7  102  177    44   96   53
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Final Vol.:    89  243   73    85  263   25     7  102  177    44   96   53
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:       1.00 1.54 0.46  1.00 1.83 0.17  0.02 0.36 0.62  0.22 0.50 0.28
Final Sat.:   495  833  258   491  972   92    15  208  362   121  266  148
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.18 0.29 0.28  0.17 0.27 0.27  0.49 0.49 0.49  0.36 0.36 0.36
Crit Moves:       ****            ****            ****       ****
Delay/Veh:   11.1 11.5 11.1  11.1 11.4 11.2  13.7 13.7 13.7  12.3 12.3 12.3
Delay Adj:   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:  11.1 11.5 11.1  11.1 11.4 11.2  13.7 13.7 13.7  12.3 12.3 12.3
LOS by Move:    B    B    B     B    B    B     B    B    B     B    B    B
ApproachDel:      11.3             11.3             13.7             12.3
Delay Adj:        1.00             1.00             1.00             1.00
ApprAdjDel:       11.3             11.3             13.7             12.3
LOS by Appr:        B                B                B                B
AllWayAvgQ:   0.2  0.4  0.3   0.2  0.3  0.3   0.8  0.8  0.8   0.5  0.5  0.5
********************************************************************************
Note: Queue reported is the number of cars per lane.
```

```
------------------------------------------------------------------------------
------------------------------------------------------------------------------

                  Level Of Service Computation Report
              CCTALOS Method (Future Volume Alternative)
******************************************************************************
Intersection #29 Bollinger/Canyon Lakes
******************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):          0.504
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         46              Level Of Service:                   A
******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase      Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  0  1  0   0  1  0  0  1   1  0  3  0  1   1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      52     6     6    90     7   173   301  1402   107    24   638    89
Growth Adj:  1.09  1.09  1.09  1.09  1.09  1.09  1.23  1.23  1.23  1.23  1.23  1.23
Initial Bse:   57     7     7    98     8   188   371  1729   132    30   787   110
Added Vol:      0     0     0     0     0     0     0     0     0     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:   57     7     7    98     8   188   371  1729   132    30   787   110
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:    57     7     7    98     8   188   371  1729   132    30   787   110
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   57     7     7    98     8   188   371  1729   132    30   787   110
RTOR Reduct:    0     0     0     0     0   188     0     0    57     0     0     0
RTOR Vol:      57     7     7    98     8     0   371  1729    75    30   787   110
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:    57     7     7    98     8     0   371  1729    75    30   787   110
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650  1650  1650  1650  1650  1650  1650  1650  1650  1650  1650  1650
Adjustment:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Lanes:       1.00  0.50  0.50  0.93  0.07  1.00  1.00  3.00  1.00  1.00  2.63  0.37
Final Sat.:  1650   825   825  1531   119  1650  1650  4950  1650  1650  4344   606
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03  0.01  0.01  0.06  0.06  0.00  0.22  0.35  0.05  0.02  0.18  0.18
Crit Vol:      57                     106          371                       299
Crit Moves:  ****                    ****         ****                      ****
******************************************************************************
```

```
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------

                     Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
*******************************************************************************
Intersection #30 Camino Ramon/Center Street
*******************************************************************************
Cycle (sec):          100             Critical Vol./Cap.(X):          0.000
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:          0             Level Of Service:
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Lanes:       0  0  0  0  0   0  0  0  0  0   0  0  0  0  0   0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0    0    0    0    0    0    0    0    0    0    0
Growth Adj:  0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00
Initial Bse:   0    0    0    0    0    0    0    0    0    0    0    0
Added Vol:     0    0    0    0    0    0    0    0    0    0    0    0
PasserByVol:   0    0    0    0    0    0    0    0    0    0    0    0
Initial Fut:   0    0    0    0    0    0    0    0    0    0    0    0
User Adj:    0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00
PHF Adj:     0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00
PHF Volume:    0    0    0    0    0    0    0    0    0    0    0    0
Reduct Vol:    0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:   0    0    0    0    0    0    0    0    0    0    0    0
RTOR Reduct:   0    0    0    0    0    0    0    0    0    0    0    0
RTOR Vol:      0    0    0    0    0    0    0    0    0    0    0    0
PCE Adj:     0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00
MLF Adj:     0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00
Final Vol.:    0    0    0    0    0    0    0    0    0    0    0    0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:      0    0    0    0    0    0    0    0    0    0    0    0
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00
Final Sat.:    0    0    0    0    0    0    0    0    0    0    0    0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00 0.00 0.00  0.00
Crit Vol:         0               0               0               0
Crit Moves:
*******************************************************************************
```

TRAFFIX ANALYSIS

2020 + Project

Scenario Report

Scenario:	AM 2020 + Flex Retail
Command:	Default Command
Volume:	AM 2020 + Project Network
Geometry:	2020 + Proj
Impact Fee:	Default Impact Fee
Trip Generation:	AM PRJ 2020 Flex Retail
Trip Distribution:	ONE
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/Veh	Base V/C	Future LOS	Future Del/Veh	Future V/C	Change in
# 1 San Ramon/Crow	B	xxxxx	0.613	B	xxxxx	0.617	+ 0.004 V/C
# 2 680 SB OFF/Crow	A	xxxxx	0.557	A	xxxxx	0.560	+ 0.003 V/C
# 3 680 NB ON/Crow	A	xxxxx	0.598	B	xxxxx	0.608	+ 0.010 V/C
# 4 Camino Ramon/Crow	A	xxxxx	0.586	B	xxxxx	0.624	+ 0.038 V/C
# 5 Alcosta/Crow	A	xxxxx	0.526	A	xxxxx	0.535	+ 0.009 V/C
# 6 Camino Ramon/Norris	A	xxxxx	0.558	A	xxxxx	0.583	+ 0.025 V/C
# 7 Camino Ramon/Executive	A	xxxxx	0.430	A	xxxxx	0.454	+ 0.023 V/C
# 8 Camino Ramon/Bishop Drive	A	xxxxx	0.492	A	xxxxx	0.532	+ 0.040 V/C
# 9 San Ramon/Bollinger	C	xxxxx	0.750	C	xxxxx	0.763	+ 0.014 V/C
# 10 680 SB OFF/Bollinger	A	xxxxx	0.565	A	xxxxx	0.593	+ 0.029 V/C
# 11 680 NB OFF/Bollinger	C	xxxxx	0.765	D	xxxxx	0.818	+ 0.052 V/C
# 12 Sunset/Bollinger	C	xxxxx	0.793	D	xxxxx	0.804	+ 0.012 V/C
# 13 Camino Ramon/Bollinger	B	xxxxx	0.628	B	xxxxx	0.693	+ 0.065 V/C
# 14 Bishop 2 Drive/Bollinger	A	xxxxx	0.348	A	xxxxx	0.385	+ 0.038 V/C
# 15 Market/Bollinger Drive	A	xxxxx	0.430	A	xxxxx	0.463	+ 0.033 V/C
# 16 Alcosta/Bollinger	B	xxxxx	0.665	C	xxxxx	0.712	+ 0.047 V/C
# 17 Alcosta/Norris	A	xxxxx	0.476	A	xxxxx	0.485	+ 0.009 V/C
# 18 San Ramon/Norris	A	xxxxx	0.600	B	xxxxx	0.603	+ 0.003 V/C
# 19 Bollinger/Crow	A	xxxxx	0.552	A	xxxxx	0.566	+ 0.014 V/C
# 20 Dougherty/Bollinger	B	xxxxx	0.613	B	xxxxx	0.634	+ 0.021 V/C
# 21 San Ramon/Montevideo	B	xxxxx	0.694	B	xxxxx	0.697	+ 0.003 V/C
# 22 Alcosts/Montevideo	A	xxxxx	0.327	A	xxxxx	0.355	+ 0.028 V/C
# 23 Dougherty/Crow	A	xxxxx	0.495	A	xxxxx	0.504	+ 0.009 V/C
# 24 Alcosta/Old Ranch	A	xxxxx	0.365	A	xxxxx	0.375	+ 0.010 V/C
# 25 Doughert/Old Ranch	A	xxxxx	0.584	A	xxxxx	0.592	+ 0.008 V/C

Intersection	Base LOS	Base Del/Veh	Base V/C	Future LOS	Future Del/Veh	Future V/C	Change in
# 26 Sunset/Center Street	A	xxxxx	0.223	A	xxxxx	0.234	+ 0.011 V/C
# 27 Bishop Drive/Sunset	A	xxxxx	0.416	A	xxxxx	0.438	+ 0.022 V/C
# 28 Bollinger Canyon/Norris Canyon	E	44.0	1.130	E	48.1	1.166	+ 0.036 V/C
# 29 Bollinger/Canyon Lakes	A	xxxxx	0.586	B	xxxxx	0.611	+ 0.025 V/C
# 30 Camino Ramon/Center Street	A	xxxxx	0.262	A	xxxxx	0.308	+ 0.046 V/C

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #1 San Ramon/Crow

Cycle (sec): 100 Critical Vol./Cap.(X): 0.617
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 60 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 2 0 1			2 0 2 0 1			2 0 3 0 1			2 0 3 0 1		
Volume Module:												
Base Vol:	91	238	450	390	225	131	171	1040	124	530	1350	490
Growth Adj:	1.23	1.23	1.00	1.00	1.23	1.23	1.21	1.00	1.21	1.00	1.00	1.00
Initial Bse:	111	292	450	390	276	160	206	1040	149	530	1350	490
Added Vol:	0	5	0	0	13	0	0	22	0	0	13	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	111	297	450	390	289	160	206	1062	149	530	1363	492
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	111	297	450	390	289	160	206	1062	149	530	1363	492
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	111	297	450	390	289	160	206	1062	149	530	1363	492
RTOR Reduct:	0	0	292	0	0	113	0	0	61	0	0	215
RTOR Vol:	111	297	159	390	289	47	206	1062	88	530	1363	278
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	111	297	159	390	289	47	206	1062	88	530	1363	278
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3000	3300	1650	3000	3300	1650	3000	4950	1650	3000	4950	1650
Capacity Analysis Module:												
Vol/Sat:	0.04	0.09	0.10	0.13	0.09	0.03	0.07	0.21	0.05	0.18	0.28	0.17
Crit Vol:			159	195				354		265		
Crit Moves:			****	****				****		****		

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                      Level Of Service Computation Report
                  CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #2 680 SB OFF/Crow
********************************************************************************
Cycle (sec):          100             Critical Vol./Cap.(X):          0.560
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):     xxxxxx
Optimal Cycle:         42             Level Of Service:                   A
********************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:      L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Split Phase      Split Phase        Permitted        Permitted
Rights:            Include          Include           Ignore           Ignore
Min. Green:     0     0     0    0     0     0    0     0     0    0     0     0
Lanes:         0  0  0  0  0    3  0  0  0  2    0  0  3  0  1    0  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0     0     0 1355     0   980     0 1125   755     0 1390   790
Growth Adj:  1.18  1.18  1.18 1.00  1.18  1.00  1.21 1.00  1.00  1.21 1.00  1.00
Initial Bse:    0     0     0 1355     0   980     0 1125   755     0 1390   790
Added Vol:      0     0     0   30     0     0     0   22     0     0   16     0
PasserByVol:    0     0     0    0     0     0     0    0     0     0    0     0
Initial Fut:    0     0     0 1385     0   980     0 1147   755     0 1406   790
User Adj:    1.00  1.00  1.00 1.00  1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00  1.00  1.00 1.00  1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0     0     0 1385     0   980     0 1147   755     0 1406   790
Reduct Vol:     0     0     0    0     0     0     0    0     0     0    0     0
Reduced Vol:    0     0     0 1385     0   980     0 1147   755     0 1406   790
RTOR Reduct:    0     0     0    0     0     0     0    0     0     0    0     0
RTOR Vol:       0     0     0 1385     0   980     0 1147   755     0 1406   790
PCE Adj:     1.00  1.00  1.00 1.00  1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00  1.00  1.00 1.00  1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:     0     0     0 1385     0   980     0 1147   755     0 1406   790
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1800  1800  1800 1800  1800  1800  1800 1800  1800  1800 1800  1800
Adjustment:  1.00  1.00  1.00 0.87  1.00  0.91  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.00  0.00  0.00 3.00  0.00  2.00  0.00 3.00  1.00  0.00 3.00  1.00
Final Sat.:     0     0     0 4698     0  3272     0 5400  1800     0 5400  1800
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.00  0.00 0.29  0.00  0.30  0.00 0.21  0.42  0.00 0.26  0.44
Crit Vol:           0                     490     0                     469
Crit Moves:                              ****  ****                    ****
********************************************************************************
```

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #3 680 NB ON/Crow

Cycle (sec):	100	Critical Vol./Cap.(X):	0.608
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	47	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Permitted			Permitted		
Rights:	Include			Include			Ignore			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	0	0 2	0 0	0	0 0	0 0	3	0 1	0 0	3	1 1
Volume Module:												
Base Vol:	534	0	874	0	0	0	0	1530	950	0	1646	551
Growth Adj:	1.00	1.18	1.18	1.18	1.18	1.18	1.21	1.00	1.00	1.21	1.00	1.21
Initial Bse:	534	0	1030	0	0	0	0	1530	950	0	1646	664
Added Vol:	0	0	0	0	0	0	0	52	0	0	16	21
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	534	0	1030	0	0	0	0	1582	950	0	1662	685
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	534	0	1030	0	0	0	0	1582	950	0	1662	685
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	534	0	1030	0	0	0	0	1582	950	0	1662	685
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	534	0	1030	0	0	0	0	1582	950	0	1662	685
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	534	0	1030	0	0	0	0	1582	950	0	1662	685
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91
Lanes:	2.00	0.00	2.00	0.00	0.00	0.00	0.00	3.00	1.00	0.00	3.54	1.46
Final Sat.:	3272	0	3272	0	0	0	0	5400	1800	0	6373	2388
Capacity Analysis Module:												
Vol/Sat:	0.16	0.00	0.31	0.00	0.00	0.00	0.00	0.29	0.53	0.00	0.26	0.29
Crit Vol:			515		0			527		0		
Crit Moves:			****					****		****		

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                  Level Of Service Computation Report
                CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #4 Camino Ramon/Crow
********************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):        0.624
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):     xxxxxx
Optimal Cycle:        61                Level Of Service:                 B
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        2  0  1  0  1   2  0  1  1  0   2  0  4  0  1   2  0  3  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     109   61    57   126  126    68   184 1046   579   231 1560   204
Growth Adj:  1.21 1.21  1.21  1.21 1.21  1.21  1.21 1.21  1.21  1.21 1.21  1.21
Initial Bse:  131   74    69   152  152    82   222 1260   698   278 1880   246
Added Vol:     37    0    13     0    1     0     0    0    52    18    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  168   74    82   152  153    82   222 1260   750   296 1880   246
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   168   74    82   152  153    82   222 1260   750   296 1880   246
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  168   74    82   152  153    82   222 1260   750   296 1880   246
RTOR Reduct:    0    0    82     0    0     0     0    0    93     0    0     0
RTOR Vol:     168   74     0   152  153    82   222 1260   657   296 1880   246
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   168   74     0   152  153    82   222 1260   657   296 1880   246
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  0.91 1.00  1.00  0.91 1.00  1.00  0.91 1.00  1.00  0.91 1.00  1.00
Lanes:       2.00 1.00  1.00  2.00 1.30  0.70  2.00 4.00  1.00  2.00 3.54  0.46
Final Sat.:  3000 1650  1650  3000 2148  1152  3000 6600  1650  3000 5837   763
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.06 0.04  0.00  0.05 0.07  0.07  0.07 0.19  0.40  0.10 0.32  0.32
Crit Vol:      84                  117                     657   148
Crit Moves:  ****                 ****                    ****  ****
********************************************************************************
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                    Level Of Service Computation Report
                  CCTALOS Method (Future Volume Alternative)
*******************************************************************************
Intersection #5 Alcosta/Crow
*******************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):         0.535
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        49                Level Of Service:                  A
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        2  0  0  0  2   0  0  0  0  0   0  0  3  0  1   2  0  3  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     275    0   225     0    0     0     0  608   464   521 1653     0
Growth Adj:  1.24 1.24  1.24  1.24 1.24  1.24  1.21 1.21  1.21  1.21 1.21  1.21
Initial Bse:  341    0   279     0    0     0     0  733   559   628 1992     0
Added Vol:      0    0     6     0    0     0     0   13     0    29   18     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  341    0   285     0    0     0     0  746   559   657 2010     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   341    0   285     0    0     0     0  746   559   657 2010     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  341    0   285     0    0     0     0  746   559   657 2010     0
RTOR Reduct:    0    0   285     0    0     0     0    0   187     0    0     0
RTOR Vol:     341    0     0     0    0     0     0  746   372   657 2010     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   341    0     0     0    0     0     0  746   372   657 2010     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1720 1720  1720  1720 1720  1720  1720 1720  1720  1720 1720  1720
Adjustment:  0.91 1.00  0.91  1.00 1.00  1.00  1.00 1.00  1.00  0.91 1.00  1.00
Lanes:       2.00 0.00  2.00  0.00 0.00  0.00  0.00 3.00  1.00  2.00 3.00  0.00
Final Sat.:  3127    0  3127     0    0     0     0 5160  1720  3127 5160     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.11 0.00  0.00  0.00 0.00  0.00  0.00 0.14  0.22  0.21 0.39  0.00
Crit Vol:     170                    0                     372   328
Crit Moves:  ****                                         ****  ****
*******************************************************************************
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-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                  Level Of Service Computation Report
              CCTALOS Method (Future Volume Alternative)
*******************************************************************************
Intersection #6 Camino Ramon/Norris
*******************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):         0.583
Loss Time (sec):        0 (Y+R=4.0 sec)  Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         55                Level Of Service:                  A
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  2  0  1    1  0  1  1  0    1  0  1  1  0    1  0  1  1  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:      78  159    59   131  569   108    76  336   120   117  261    90
Growth Adj:  1.21 1.21  1.21  1.21 1.21  1.21  1.21 1.21  1.21  1.21 1.21  1.21
Initial Bse:   94  193    71   159  689   131    92  405   145   141  315   108
Added Vol:      3   50     0     0   71     0     0    0     7     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   97  243    71   159  760   131    92  405   152   141  315   108
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    97  243    71   159  760   131    92  405   152   141  315   108
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   97  243    71   159  760   131    92  405   152   141  315   108
RTOR Reduct:    0    0    71     0    0     0     0    0     0     0    0     0
RTOR Vol:      97  243     0   159  760   131    92  405   152   141  315   108
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    97  243     0   159  760   131    92  405   152   141  315   108
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 2.00  1.00  1.00 1.71  0.29  1.00 1.46  0.54  1.00 1.49  0.51
Final Sat.:  1650 3300  1650  1650 2816   484  1650 2401   899  1650 2454   846
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.06 0.07  0.00  0.10 0.27  0.27  0.06 0.17  0.17  0.09 0.13  0.13
Crit Vol:      97                     445                    278   141
Crit Moves:  ****                    ****                   ****  ****
*******************************************************************************
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #7 Camino Ramon/Executive

Cycle (sec):	100	Critical Vol./Cap.(X):	0.454
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	34	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	1 1	0	0 1	0 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	178	307	71	63	417	202	44	39	23	43	26	45
Growth Adj:	1.21	1.21	1.21	1.21	1.21	1.21	1.19	1.19	1.19	1.19	1.19	1.19
Initial Bse:	216	372	86	76	505	245	52	46	27	51	31	54
Added Vol:	1	54	0	0	78	0	0	0	1	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	217	426	86	76	583	245	52	46	28	51	31	54
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	217	426	86	76	583	245	52	46	28	51	31	54
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	217	426	86	76	583	245	52	46	28	51	31	54
RTOR Reduct:	0	0	0	0	0	0	0	0	28	0	0	54
RTOR Vol:	217	426	86	76	583	245	52	46	0	51	31	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	217	426	86	76	583	245	52	46	0	51	31	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.66	0.34	1.00	1.41	0.59	0.53	0.47	1.00	0.62	0.38	1.00
Final Sat.:	1720	2862	578	1720	2423	1017	912	808	1720	1072	648	1720
Capacity Analysis Module:												
Vol/Sat:	0.13	0.15	0.15	0.04	0.24	0.24	0.06	0.06	0.00	0.05	0.05	0.00
Crit Vol:	217				414			99		51		
Crit Moves:	****				****			****		****		

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                     Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #8 Camino Ramon/Bishop Drive
********************************************************************************
Cycle (sec):          100            Critical Vol./Cap.(X):         0.532
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):     xxxxxx
Optimal Cycle:         49            Level Of Service:                  A
********************************************************************************
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:      L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:     0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        0  0  1  1  0    2  0  1  1  0    1  0  1  0  1    1  0  1  0  1
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:       0   727   161     76   146   166     62    16    28     26     4   285
Growth Adj:  1.00  1.00  1.21   1.00  1.00  1.00   1.07  1.07  1.07   1.07  1.07  1.00
Initial Bse:    0   727   195     76   146   166     67    17    30     28     4   285
Added Vol:      0    10    34     22    84   -27     22    12    10     33     9    22
PasserByVol:    0     0     0      0     0     0      0     0     0      0     0     0
Initial Fut:    0   737   229     98   230   139     89    29    40     61    13   307
User Adj:    1.00  1.00  1.00   1.00  1.00  1.00   1.00  1.00  1.00   1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00   1.00  1.00  1.00   1.00  1.00  1.00   1.00  1.00  1.00
PHF Volume:     0   737   229     98   230   139     89    29    40     61    13   307
Reduct Vol:     0     0     0      0     0     0      0     0     0      0     0     0
Reduced Vol:    0   737   229     98   230   139     89    29    40     61    13   307
RTOR Reduct:    0     0     0      0     0     0      0     0     0      0     0    54
RTOR Vol:       0   737   229     98   230   139     89    29    40     61    13   253
PCE Adj:     1.00  1.00  1.00   1.00  1.00  1.00   1.00  1.00  1.00   1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00   1.00  1.00  1.00   1.00  1.00  1.00   1.00  1.00  1.00
Final Vol.:     0   737   229     98   230   139     89    29    40     61    13   253
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1650  1650  1650   1650  1650  1650   1650  1650  1650   1650  1650  1650
Adjustment:  1.00  1.00  1.00   0.91  1.00  1.00   1.00  1.00  1.00   1.00  1.00  1.00
Lanes:       0.00  1.53  0.47   2.00  1.25  0.75   1.00  1.00  1.00   1.00  1.00  1.00
Final Sat.:     0  2518   782   3000  2057  1243   1650  1650  1650   1650  1650  1650
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.29  0.29   0.03  0.11  0.11   0.05  0.02  0.02   0.04  0.01  0.15
Crit Vol:                 483     49                 89                             253
Crit Moves:              ****   ****               ****                            ****
********************************************************************************
```

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--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
                CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #9 San Ramon/Bollinger
********************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):        0.763
Loss Time (sec):       0 (Y+R=4.0 sec) Average Delay (sec/veh):     xxxxxx
Optimal Cycle:        96               Level Of Service:                 C
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        2  0  2  0  1   2  0  1  1  0   1  0  1  1  0   2  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     206  491  475  280  276   26   38  800  200  470  360  230
Growth Adj:  1.23 1.23 1.00 1.00 1.23 1.23 1.24 1.00 1.24 1.00 1.00 1.00
Initial Bse:  252  601  475  280  338   32   47  800  247  470  360  230
Added Vol:      0    0   12   13    0    0    0   22    0    8   13    5
PasserByVol:    0    0    0    0    0    0    0    0    0    0    0    0
Initial Fut:  252  601  487  293  338   32   47  822  247  478  373  235
User Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:   252  601  487  293  338   32   47  822  247  478  373  235
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:  252  601  487  293  338   32   47  822  247  478  373  235
RTOR Reduct:    0    0  263    0    0    0    0    0    0    0    0  161
RTOR Vol:     252  601  224  293  338   32   47  822  247  478  373   74
PCE Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.:   252  601  224  293  338   32   47  822  247  478  373   74
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650 1650 1650 1650 1650 1650 1650 1650 1650 1650 1650
Adjustment:  0.91 1.00 1.00 0.91 1.00 1.00 1.00 1.00 1.00 0.91 1.00 1.00
Lanes:       2.00 2.00 1.00 2.00 1.83 0.17 1.00 1.54 0.46 2.00 2.00 1.00
Final Sat.:  3000 3300 1650 3000 3016  284 1650 2537  763 3000 3300 1650
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.08 0.18 0.14 0.10 0.11 0.11 0.03 0.32 0.32 0.16 0.11 0.04
Crit Vol:          301       147                          535  239
Crit Moves:       ****      ****                         ****  ****
********************************************************************************
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-----------------------------------------------------------------------------
-----------------------------------------------------------------------------
                    Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
*****************************************************************************
Intersection #10 680 SB OFF/Bollinger
*****************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):         0.593
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):     xxxxxx
Optimal Cycle:         46              Level Of Service:                  A
*****************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Permitted        Permitted
Rights:          Include          Include          Include          Ignore
Min. Green:     0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        0  0  1! 0  0    1  1  0  0  2    0  0  3  1  0    0  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       3     0   101  733    12   248     0  1545     8     0   768   950
Growth Adj:  1.00  1.00  1.00 1.17  1.17  1.17  1.24  1.00  1.24  1.24  1.00  1.00
Initial Bse:    3     0   101  855    14   289     0  1545    10     0   768   950
Added Vol:      0     0     0   69     0     0     0    47     0     0    26    98
PasserByVol:    0     0     0    0     0     0     0     0     0     0     0     0
Initial Fut:    3     0   101  924    14   289     0  1592    10     0   794  1048
User Adj:    1.00  1.00  1.00 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:     3     0   101  924    14   289     0  1592    10     0   794  1048
Reduct Vol:     0     0     0    0     0     0     0     0     0     0     0     0
Reduced Vol:    3     0   101  924    14   289     0  1592    10     0   794  1048
RTOR Reduct:    0     0     0    0     0     0     0     0     0     0     0     0
RTOR Vol:       3     0   101  924    14   289     0  1592    10     0   794  1048
PCE Adj:     1.00  1.00  1.00 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:     3     0   101  924    14   289     0  1592    10     0   794  1048
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1720  1720  1720 1720  1720  1720  1720  1720  1720  1720  1720  1720
Adjustment:  1.00  1.00  1.00 0.91  1.00  0.91  1.00  1.00  1.00  1.00  1.00  1.00
Lanes:       0.03  0.00  0.97 1.97  0.03  2.00  0.00  3.98  0.02  0.00  3.00  1.00
Final Sat.:    50     0  1670 3080    51  3127     0  6838    42     0  5160  1720
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.06  0.00  0.06 0.30  0.27  0.09  0.00  0.23  0.23  0.00  0.15  0.61
Crit Vol:                 104  469                     400           0
Crit Moves:              **** ****                    ****        ****
*****************************************************************************
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #11 680 NB OFF/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	0.818
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	102	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:		Split Phase			Split Phase			Permitted			Permitted	
Rights:		Include			Include			Ignore			Ignore	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:		1 0 0 0 3			0 0 0 0 0			0 0 3 0 1			0 0 3 1 1	
Volume Module:												
Base Vol:	327	0	1921	0	0	0	0	1924	577	0	1391	600
Growth Adj:	1.00	1.17	1.00	1.17	1.17	1.17	1.24	1.00	1.00	1.24	1.00	1.00
Initial Bse:	327	0	1921	0	0	0	0	1924	577	0	1391	600
Added Vol:	0	0	145	0	0	0	0	116	0	0	124	49
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	327	0	2066	0	0	0	0	2040	577	0	1515	649
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	327	0	2066	0	0	0	0	2040	577	0	1515	649
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	327	0	2066	0	0	0	0	2040	577	0	1515	649
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	327	0	2066	0	0	0	0	2040	577	0	1515	649
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	327	0	2066	0	0	0	0	2040	577	0	1515	649
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91
Lanes:	1.00	0.00	3.00	0.00	0.00	0.00	0.00	3.00	1.00	0.00	3.50	1.50
Final Sat.:	1800	0	4698	0	0	0	0	5400	1800	0	6301	2454
Capacity Analysis Module:												
Vol/Sat:	0.18	0.00	0.44	0.00	0.00	0.00	0.00	0.38	0.32	0.00	0.24	0.26
Crit Vol:			689		0			680		0		
Crit Moves:			****					****		****		

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #12 Sunset/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	0.804
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	117	Level Of Service:	D

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Split Phase	Split Phase	Protected	Protected
Rights:	Include	Include	Include	Include
Min. Green:	0 0 0	0 0 0	0 0 0	0 0 0
Lanes:	2 0 0 1 0	0 1 0 0 2	2 0 4 0 1	2 0 4 0 1

	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Volume Module:												
Base Vol:	56	9	36	89	39	219	1277	1848	720	215	1716	178
Growth Adj:	1.00	1.07	1.00	1.00	1.07	1.00	1.00	1.00	1.00	1.24	1.00	1.00
Initial Bse:	56	10	36	89	42	219	1277	1848	720	266	1716	178
Added Vol:	0	0	0	13	0	53	-69	329	0	0	120	-33
PasserByVol:	0	0	0	7	0	4	15	-15	0	0	-4	2
Initial Fut:	56	10	36	109	42	276	1223	2162	720	266	1832	147
User Adj:	1.00	1.00	1.00	1.00	1.00	0.45	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	56	10	36	109	42	124	1223	2162	720	266	1832	147
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	56	10	36	109	42	124	1223	2162	720	266	1832	147
RTOR Reduct:	0	0	0	0	0	124	0	0	31	0	0	109
RTOR Vol:	56	10	36	109	42	0	1223	2162	689	266	1832	38
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	56	10	36	109	42	0	1223	2162	689	266	1832	38
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	0.91	0.91	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	0.21	0.79	0.72	0.28	2.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3000	349	1301	1192	458	3000	3000	6600	1650	3000	6600	1650
Capacity Analysis Module:												
Vol/Sat:	0.02	0.03	0.03	0.09	0.09	0.00	0.41	0.33	0.42	0.09	0.28	0.02
Crit Vol:			46		151		612				458	
Crit Moves:			****		****		****				****	

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                    Level Of Service Computation Report
              CCTALOS Method (Future Volume Alternative)
*********************************************************************************
Intersection #13 Camino Ramon/Bollinger
*********************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):          0.693
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         74              Level Of Service:                   B
*********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        2  0  1  0  1    1  0  0  1  1    2  0  4  0  1    2  0  4  0  1
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:      13    19     0    33    41    44   672   747   242    24  2104    93
Growth Adj:  1.00  1.07  1.07  1.00  1.07  1.00  1.24  1.24  1.24  1.24  1.00  1.00
Initial Bse:   13    20     0    33    44    44   831   923   299    30  2104    93
Added Vol:     23     9     9    27    72    27    27   133   182    69    23    10
PasserByVol:    0     0     0     0     0     0     8   -16     0     0    -2     2
Initial Fut:   36    29     9    60   116    71   866  1040   481    99  2125   105
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:    36    29     9    60   116    71   866  1040   481    99  2125   105
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   36    29     9    60   116    71   866  1040   481    99  2125   105
RTOR Reduct:    0     0     9     0     0    71     0     0    20     0     0    60
RTOR Vol:      36    29     0    60   116     0   866  1040   461    99  2125    45
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:    36    29     0    60   116     0   866  1040   461    99  2125    45
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1650  1650  1650  1650  1650  1650  1650  1650  1650  1650  1650  1650
Adjustment:  0.91  1.00  1.00  1.00  1.00  0.91  0.91  1.00  1.00  0.91  1.00  1.00
Lanes:       2.00  1.00  1.00  1.00  1.00  1.00  2.00  4.00  1.00  2.00  4.00  1.00
Final Sat.:  3000  1650  1650  1650  1650  1500  3000  6600  1650  3000  6600  1650
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.01  0.02  0.00  0.04  0.07  0.00  0.29  0.16  0.28  0.03  0.32  0.03
Crit Vol:      18                     116          433                     531
Crit Moves:  ****                    ****         ****                    ****
*********************************************************************************
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                      Level Of Service Computation Report
                  CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #14 Bishop 2 Drive/Bollinger
********************************************************************************
Cycle (sec):          100                 Critical Vol./Cap.(X):          0.385
Loss Time (sec):        0 (Y+R=4.0 sec)  Average Delay (sec/veh):        xxxxxx
Optimal Cycle:         37                 Level Of Service:                   A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected         Protected
Rights:           Include          Include          Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        1  0  0  1  0   2  0  0  1  0   2  0  3  1  0   2  0  4  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      10    0    8    49    0    0     0  930   32    37 2144  277
Growth Adj:  1.07 1.07 1.07  1.00 1.00 1.00  1.24 1.00 1.24  1.24 1.00 1.00
Initial Bse:   11    0    9    49    0    0     0  930   40    46 2144  277
Added Vol:     14    0   13    38    0   37    11   37  120   111   52   41
PasserByVol:    0    0    0    16    0    2     0  -16    0     0   -2    2
Initial Fut:   25    0   22   103    0   39    11  951  160   157 2194  320
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:    25    0   22   103    0   39    11  951  160   157 2194  320
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:   25    0   22   103    0   39    11  951  160   157 2194  320
RTOR Reduct:    0    0    0     0    0    0     0    0    0     0    0   57
RTOR Vol:      25    0   22   103    0   39    11  951  160   157 2194  263
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Final Vol.:    25    0   22   103    0   39    11  951  160   157 2194  263
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650 1650  1650 1650 1650  1650 1650 1650  1650 1650 1650
Adjustment:  1.00 1.00 1.00  0.91 1.00 1.00  0.91 1.00 1.00  0.91 1.00 1.00
Lanes:       1.00 0.00 1.00  2.00 0.00 1.00  2.00 3.43 0.57  2.00 4.00 1.00
Final Sat.:  1650    0 1650  3000    0 1650  3000 5652  948  3000 6600 1650
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01 0.00 0.01  0.03 0.00 0.02  0.00 0.17 0.17  0.05 0.33 0.16
Crit Vol:      25               52                6                549
Crit Moves:  ****             ****             ****                ****
********************************************************************************
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #15 Market/Bollinger Drive

Cycle (sec):	100	Critical Vol./Cap.(X):	0.463
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	42	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 1 0 0 1			1 0 0 1 0			2 0 4 0 1			2 0 3 1 0		
Volume Module:												
Base Vol:	243	1	33	2	1	9	11	638	149	41	1765	6
Growth Adj:	1.07	1.07	1.07	1.07	1.07	1.07	1.24	1.24	1.24	1.24	1.24	1.24
Initial Bse:	261	1	35	2	1	10	14	789	184	51	2182	7
Added Vol:	9	0	0	0	0	0	0	87	3	0	195	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	270	1	35	2	1	10	14	876	187	51	2377	7
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	270	1	35	2	1	10	14	876	187	51	2377	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	270	1	35	2	1	10	14	876	187	51	2377	7
RTOR Reduct:	0	0	28	0	0	0	0	0	148	0	0	0
RTOR Vol:	270	1	8	2	1	10	14	876	39	51	2377	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	270	1	8	2	1	10	14	876	39	51	2377	7
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00
Lanes:	1.99	0.01	1.00	1.00	0.10	0.90	2.00	4.00	1.00	2.00	3.99	0.01
Final Sat.:	2988	13	1650	1650	165	1485	3000	6600	1650	3000	6579	21
Capacity Analysis Module:												
Vol/Sat:	0.09	0.08	0.00	0.00	0.01	0.01	0.00	0.13	0.02	0.02	0.36	0.36
Crit Vol:	135				11		7					596
Crit Moves:	****				****		****					****

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                     Level Of Service Computation Report
                  CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #16 Alcosta/Bollinger
********************************************************************************
Cycle (sec):           100              Critical Vol./Cap.(X):          0.712
Loss Time (sec):         0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:          79              Level Of Service:                   C
********************************************************************************
Approach:      North Bound      South Bound       East Bound        West Bound
Movement:     L  -  T  -  R   L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected         Protected         Protected
Rights:           Include          Include           Include           Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        2  0  1  1  0   2  0  2  0  1    2  0  3  0  1    2  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     542  463   184   146  263   221   190  396    90   281 1094   330
Growth Adj:  1.21 1.21  1.21  1.21 1.21  1.21  1.24 1.24  1.24  1.24 1.24  1.24
Initial Bse:  653  558   222   176  317   266   235  489   111   347 1352   408
Added Vol:     64    0     0     0    0    29     6   40    40     0  103     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  717  558   222   176  317   295   241  529   151   347 1455   408
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   717  558   222   176  317   295   241  529   151   347 1455   408
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  717  558   222   176  317   295   241  529   151   347 1455   408
RTOR Reduct:    0    0     0     0    0   132     0    0   151     0    0    97
RTOR Vol:     717  558   222   176  317   163   241  529     0   347 1455   311
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   717  558   222   176  317   163   241  529     0   347 1455   311
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  0.91 1.00  1.00  0.91 1.00  1.00  0.91 1.00  1.00  0.91 1.00  1.00
Lanes:       2.00 1.43  0.57  2.00 2.00  1.00  2.00 3.00  1.00  2.00 3.00  1.00
Final Sat.:  3000 2362   938  3000 3300  1650  3000 4950  1650  3000 4950  1650
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.24 0.24  0.24  0.06 0.10  0.10  0.08 0.11  0.00  0.12 0.29  0.19
Crit Vol:     359                           163   120                    485
Crit Moves:  ****                          ****  ****                   ****
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                      Level Of Service Computation Report
                  CCTALOS Method (Future Volume Alternative)
*******************************************************************************
Intersection #17 Alcosta/Norris
*******************************************************************************
Cycle (sec):          100                 Critical Vol./Cap.(X):          0.485
Loss Time (sec):        0 (Y+R=4.0 sec)   Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         44                 Level Of Service:                   A
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  1  1  0   1  0  2  0  1   2  0  1  0  1   1  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     285  379    66   235  461   216   143   71   206    42   58    84
Growth Adj:  1.21 1.21  1.21  1.21 1.21  1.21  1.21 1.21  1.21  1.21 1.21  1.21
Initial Bse:  343  457    80   283  556   260   172   86   248    51   70   101
Added Vol:      0    6     0     0   29     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  343  463    80   283  585   260   172   86   248    51   70   101
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   343  463    80   283  585   260   172   86   248    51   70   101
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  343  463    80   283  585   260   172   86   248    51   70   101
RTOR Reduct:    0    0     0     0    0    95     0    0   248     0    0   101
RTOR Vol:     343  463    80   283  585   166   172   86     0    51   70     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   343  463    80   283  585   166   172   86     0    51   70     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  0.91 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.71  0.29  1.00 2.00  1.00  2.00 1.00  1.00  1.00 1.00  1.00
Final Sat.:  1650 2816   484  1650 3300  1650  3000 1650  1650  1650 1650  1650
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.21 0.16  0.16  0.17 0.18  0.10  0.06 0.05  0.00  0.03 0.04  0.00
Crit Vol:     343                    292         86                     70
Crit Moves:  ****                   ****       ****                   ****
*******************************************************************************
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #18 San Ramon/Norris

Cycle (sec):	100	Critical Vol./Cap.(X):	0.603
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	57	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	2 0	1	2 0	1 1	0	1 0	1 1	0	1 0	1 0	1
Volume Module:												
Base Vol:	74	325	326	406	144	27	78	493	51	85	148	237
Growth Adj:	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21
Initial Bse:	89	392	393	489	174	33	94	594	61	102	178	286
Added Vol:	0	5	0	0	13	0	0	10	0	0	6	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	89	397	393	489	187	33	94	604	61	102	184	286
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	89	397	393	489	187	33	94	604	61	102	184	286
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	89	397	393	489	187	33	94	604	61	102	184	286
RTOR Reduct:	0	0	102	0	0	0	0	0	0	0	0	269
RTOR Vol:	89	397	290	489	187	33	94	604	61	102	184	17
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	89	397	290	489	187	33	94	604	61	102	184	17
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	2.00	1.70	0.30	1.00	1.82	0.18	1.00	1.00	1.00
Final Sat.:	1650	3300	1650	3000	2810	490	1650	2995	305	1650	1650	1650
Capacity Analysis Module:												
Vol/Sat:	0.05	0.12	0.18	0.16	0.07	0.07	0.06	0.20	0.20	0.06	0.11	0.01
Crit Vol:			290	245				333		102		
Crit Moves:			****	****				****		****		

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                   Level Of Service Computation Report
               CCTALOS Method (Future Volume Alternative)
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Intersection #19 Bollinger/Crow
*******************************************************************************
Cycle (sec):          100               Critical Vol./Cap.(X):          0.566
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         43               Level Of Service:                   A
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  1  0  1   0  0  1! 0  0   1  0  2  0  1   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     116   41   133    18   67    18    34  951    70    88  758    21
Growth Adj:  1.24 1.24  1.24  1.24 1.24  1.24  1.21 1.21  1.21  1.21 1.21  1.21
Initial Bse:  143   51   164    22   83    22    41 1146    84   106  913    25
Added Vol:     13    0     0     0    0     0     0   22    22     0   13     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  156   51   164    22   83    22    41 1168   106   106  926    25
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   156   51   164    22   83    22    41 1168   106   106  926    25
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  156   51   164    22   83    22    41 1168   106   106  926    25
RTOR Reduct:    0    0   106     0    0     0     0    0   106     0    0    22
RTOR Vol:     156   51    58    22   83    22    41 1168     0   106  926     3
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   156   51    58    22   83    22    41 1168     0   106  926     3
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1720 1720  1720  1720 1720  1720  1720 1720  1720  1720 1720  1720
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.00  1.00  0.17 0.66  0.17  1.00 2.00  1.00  1.00 2.00  1.00
Final Sat.:  1720 1720  1720   301 1119   301  1720 3440  1720  1720 3440  1720
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.09 0.03  0.03  0.07 0.07  0.07  0.02 0.34  0.00  0.06 0.27  0.00
Crit Vol:     156                     127         584          106
Crit Moves:  ****                    ****        ****         ****
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                      Level Of Service Computation Report
                  CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #20 Dougherty/Bollinger
********************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):         0.634
Loss Time (sec):        0 (Y+R=4.0 sec)  Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         62                Level Of Service:                  B
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        2  0  3  0  1   2  0  3  0  1   2  0  3  0  1   2  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     182  590    66   499  905   613   206  354    84   102  894   409
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  182  590    66   499  905   613   206  354    84   102  894   409
Added Vol:      8    0     0     0    0    10     3   26     3     0   63     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  190  590    66   499  905   623   209  380    87   102  957   409
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   190  590    66   499  905   623   209  380    87   102  957   409
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  190  590    66   499  905   623   209  380    87   102  957   409
RTOR Reduct:    0    0    56     0    0   115     0    0    87     0    0   274
RTOR Vol:     190  590    10   499  905   508   209  380     0   102  957   135
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   190  590    10   499  905   508   209  380     0   102  957   135
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  0.91 1.00  1.00  0.91 1.00  1.00  0.91 1.00  1.00  0.91 1.00  1.00
Lanes:       2.00 3.00  1.00  2.00 3.00  1.00  2.00 3.00  1.00  2.00 3.00  1.00
Final Sat.:  3000 4950  1650  3000 4950  1650  3000 4950  1650  3000 4950  1650
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.06 0.12  0.01  0.17 0.18  0.31  0.07 0.08  0.00  0.03 0.19  0.08
Crit Vol:      95                           508   105                    319
Crit Moves:  ****                          ****  ****                   ****
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                   Level Of Service Computation Report
                CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #21 San Ramon/Montevideo
********************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):          0.697
Loss Time (sec):        0 (Y+R=4.0 sec)  Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         75                Level Of Service:                   B
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        0  0  1  1  0   1  0  2  0  0   0  0  0  0  0   1  0  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module: 7:45 To 8:45
Base Vol:       0  590   117   433  441    0     0    0    0   195    0   528
Growth Adj:  1.23 1.23  1.23  1.23 1.23 1.23  1.00 1.00 1.00  1.18 1.18  1.18
Initial Bse:    0  723   143   530  540    0     0    0    0   230    0   623
Added Vol:      0    6     0     3    5    0     0    0    0     0    0     5
PasserByVol:    0    0     0     0    0    0     0    0    0     0    0     0
Initial Fut:    0  729   143   533  545    0     0    0    0   230    0   628
User Adj:    1.00 1.00  1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00  1.00
PHF Volume:     0  729   143   533  545    0     0    0    0   230    0   628
Reduct Vol:     0    0     0     0    0    0     0    0    0     0    0     0
Reduced Vol:    0  729   143   533  545    0     0    0    0   230    0   628
RTOR Reduct:    0    0     0     0    0    0     0    0    0     0    0   533
RTOR Vol:       0  729   143   533  545    0     0    0    0   230    0    95
PCE Adj:     1.00 1.00  1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00  1.00
Final Vol.:     0  729   143   533  545    0     0    0    0   230    0    95
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1720 1720  1720  1720 1720 1720  1720 1720 1720  1720 1720  1720
Adjustment:  1.00 1.00  1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00  1.00
Lanes:       0.00 1.67  0.33  1.00 2.00 0.00  0.00 0.00 0.00  1.00 0.00  1.00
Final Sat.:     0 2875   565  1720 3440    0     0    0    0  1720    0  1720
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.25  0.25  0.31 0.16 0.00  0.00 0.00 0.00  0.13 0.00  0.06
Crit Vol:                436   533                        0   230
Crit Moves:             ****  ****                            ****
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                   Level Of Service Computation Report
              CCTALOS Method (Future Volume Alternative)
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Intersection #22 Alcosts/Montevideo
********************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):          0.355
Loss Time (sec):        0 (Y+R=4.0 sec)  Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         35                Level Of Service:                   A
********************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:      L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:         Protected        Protected       Split Phase      Split Phase
Rights:            Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:         1  0  2  0  0    0  0  2  0  1    1  0  0  0  1    0  0  0  0  0
------------|----------------||----------------||----------------||----------------|
Volume Module: 7:45 To 8:45
Base Vol:      54   540     0     0   265   118   194     0    80     0     0     0
Growth Adj:  1.21  1.21  1.21  1.21  1.21  1.21  1.23  1.23  1.23  1.23  1.23  1.23
Initial Bse:   65   651     0     0   319   142   238     0    98     0     0     0
Added Vol:      0    33     0     0    26    14    31     0     0     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:   65   684     0     0   345   156   269     0    98     0     0     0
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:    65   684     0     0   345   156   269     0    98     0     0     0
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   65   684     0     0   345   156   269     0    98     0     0     0
RTOR Reduct:    0     0     0     0     0   156     0     0    65     0     0     0
RTOR Vol:      65   684     0     0   345     0   269     0    33     0     0     0
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:    65   684     0     0   345     0   269     0    33     0     0     0
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1720  1720  1720  1720  1720  1720  1720  1720  1720  1720  1720  1720
Adjustment:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Lanes:       1.00  2.00  0.00  0.00  2.00  1.00  1.00  0.00  1.00  0.00  0.00  0.00
Final Sat.:  1720  3440     0     0  3440  1720  1720     0  1720     0     0     0
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.04  0.20  0.00  0.00  0.10  0.00  0.16  0.00  0.02  0.00  0.00  0.00
Crit Vol:           342           0                269                       0
Crit Moves:         ****        ****               ****
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #23 Dougherty/Crow

Cycle (sec):	100	Critical Vol./Cap.(X):	0.504
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	46	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ignore			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	0	0 2	0 0	0	0 0	0 0	3	0 1	2 0	2	0 0
Volume Module:												
Base Vol:	210	0	409	0	0	0	0	426	106	694	1177	0
Growth Adj:	1.24	1.24	1.24	1.24	1.24	1.24	1.21	1.21	1.21	1.21	1.21	1.21
Initial Bse:	260	0	506	0	0	0	0	513	128	836	1418	0
Added Vol:	10	0	0	0	0	0	0	10	3	0	19	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	270	0	506	0	0	0	0	523	131	836	1437	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	270	0	506	0	0	0	0	523	131	836	1437	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	270	0	506	0	0	0	0	523	131	836	1437	0
RTOR Reduct:	0	0	0	0	0	0	0	0	131	0	0	0
RTOR Vol:	270	0	506	0	0	0	0	523	0	836	1437	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	270	0	506	0	0	0	0	523	0	836	1437	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	0.00	2.00	0.00	0.00	0.00	0.00	3.00	1.00	2.00	2.00	0.00
Final Sat.:	3127	0	3127	0	0	0	0	5160	1720	3127	3440	0
Capacity Analysis Module:												
Vol/Sat:	0.09	0.00	0.16	0.00	0.00	0.00	0.00	0.10	0.00	0.27	0.42	0.00
Crit Vol:	135				0		0				719	
Crit Moves:	****						****				****	

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #24 Alcosta/Old Ranch

Cycle (sec):	100	Critical Vol./Cap.(X):	0.375
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	36	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 1 1 0			1 0 1 1 0			1 0 1! 0 0			2 0 0 1 1		
Volume Module:												
Base Vol:	10	226	114	130	205	1	9	1	2	341	1	216
Growth Adj:	1.21	1.21	1.21	1.21	1.21	1.21	1.24	1.24	1.24	1.24	1.24	1.24
Initial Bse:	12	272	137	157	247	1	11	1	2	422	1	268
Added Vol:	0	17	0	8	18	0	0	0	0	0	0	16
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	12	289	137	165	265	1	11	1	2	422	1	284
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	12	289	137	165	265	1	11	1	2	422	1	284
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	12	289	137	165	265	1	11	1	2	422	1	284
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	165
RTOR Vol:	12	289	137	165	265	1	11	1	2	422	1	119
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	12	289	137	165	265	1	11	1	2	422	1	119
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00	0.91
Lanes:	1.00	1.36	0.64	1.00	1.99	0.01	1.50	0.17	0.33	2.00	0.02	1.98
Final Sat.:	1650	2238	1062	1650	3285	15	2250	275	550	3000	34	2969
Capacity Analysis Module:												
Vol/Sat:	0.01	0.13	0.13	0.10	0.08	0.08	0.00	0.00	0.00	0.14	0.04	0.04
Crit Vol:			213	165			7			211		
Crit Moves:			****	****			****			****		

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                     Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #25 Doughert/Old Ranch
********************************************************************************
Cycle (sec):          100             Critical Vol./Cap.(X):          0.592
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         56             Level Of Service:                   A
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Protected        Protected       Split Phase      Split Phase
Rights:          Include          Include         Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  3  0  0   0  0  2  1  0   1  0  0  0  2   0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     153  489     0     0 1534   184    87    0   136     0    0     0
Growth Adj:  1.24 1.24  1.24  1.24 1.24  1.24  1.24 1.24  1.24  1.24 1.24  1.24
Initial Bse:  189  604     0     0 1896   227   108    0   169     0    0     0
Added Vol:      7    0     0     0    0     9     4    0     4     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  196  604     0     0 1896   236   112    0   173     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   196  604     0     0 1896   236   112    0   173     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  196  604     0     0 1896   236   112    0   173     0    0     0
RTOR Reduct:    0    0     0     0    0     0     0    0   173     0    0     0
RTOR Vol:     196  604     0     0 1896   236   112    0     0     0    0     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   196  604     0     0 1896   236   112    0     0     0    0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1720 1720  1720  1720 1720  1720  1720 1720  1720  1720 1720  1720
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.91  1.00 1.00  1.00
Lanes:       1.00 3.00  0.00  0.00 2.67  0.33  1.00 0.00  2.00  0.00 0.00  0.00
Final Sat.:  1720 5160     0     0 4588   572  1720    0  3127     0    0     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.11 0.12  0.00  0.00 0.41  0.41  0.06 0.00  0.00  0.00 0.00  0.00
Crit Vol:     196                     711         112                     0
Crit Moves:  ****                    ****        ****
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                     Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #26 Sunset/Center Street
********************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):          0.234
Loss Time (sec):        0 (Y+R=4.0 sec)  Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         24                Level Of Service:                   A
********************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected         Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:    0    0    0     0    0    0     0    0    0     0    0    0
Lanes:        2  0  2  1  0    1  0  1  1  0    0  1  0  0  1    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     302  691   175     7  184    23    48    6   142    12    1     3
Growth Adj:  1.07 1.07  1.00  1.07 1.00  1.07  1.07 1.07  1.07  1.07 1.07  1.07
Initial Bse:  324  741   175     8  184    25    52    6   152    13    1     3
Added Vol:      0   32  -134     5   58     0     0    0     0     9    0     4
PasserByVol:    0    0    17     0    0     0     0    0     0    11    0     0
Initial Fut:  324  773    58    13  242    25    52    6   152    33    1     7
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   324  773    58    13  242    25    52    6   152    33    1     7
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  324  773    58    13  242    25    52    6   152    33    1     7
RTOR Reduct:    0    0     0     0    0     0     0    0   152     0    0     0
RTOR Vol:     324  773    58    13  242    25    52    6     0    33    1     7
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   324  773    58    13  242    25    52    6     0    33    1     7
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1720 1720  1720  1720 1720  1720  1720 1720  1720  1720 1720  1720
Adjustment:  0.91 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       2.00 2.79  0.21  1.00 1.81  0.19  0.89 0.11  1.00  1.00 0.13  0.87
Final Sat.:  3127 4800   360  1720 3122   318  1529  191  1720  1720  223  1497
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.10 0.16  0.16  0.01 0.08  0.08  0.03 0.03  0.00  0.02 0.00  0.00
Crit Vol:     162                    133               58          33
Crit Moves:  ****                   ****              ****        ****
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #27 Bishop Drive/Sunset

Cycle (sec):	100	Critical Vol./Cap.(X):	0.438
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	41	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0 1	1	0 1	0 1	0	1 0	0 1	0	2 0	0 1	0
Volume Module:												
Base Vol:	299	393	49	11	14	20	25	82	90	102	71	11
Growth Adj:	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.00	1.07	1.07
Initial Bse:	321	422	53	12	15	21	27	88	97	102	76	12
Added Vol:	1	0	35	0	0	0	0	1	1	61	1	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	322	422	88	12	15	21	27	89	98	163	77	12
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	322	422	88	12	15	21	27	89	98	163	77	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	322	422	88	12	15	21	27	89	98	163	77	12
RTOR Reduct:	0	0	88	0	0	0	0	0	0	0	0	0
RTOR Vol:	322	422	0	12	15	21	27	89	98	163	77	12
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	322	422	0	12	15	21	27	89	98	163	77	12
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Lanes:	1.00	1.00	1.00	0.49	0.62	0.89	1.00	0.48	0.52	2.00	0.87	0.13
Final Sat.:	1650	1650	1500	807	1027	1467	1650	787	863	3000	1431	219
Capacity Analysis Module:												
Vol/Sat:	0.20	0.26	0.00	0.01	0.01	0.01	0.02	0.11	0.11	0.05	0.05	0.05
Crit Vol:		422				24		187		82		
Crit Moves:		****				****		****		****		

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                   Level Of Service Computation Report
          2000 HCM 4-Way Stop Method (Future Volume Alternative)
******************************************************************************
Intersection #28 Bollinger Canyon/Norris Canyon
******************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):         1.166
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):       48.1
Optimal Cycle:          0              Level Of Service:                  E
******************************************************************************
Approach:     North Bound      South Bound       East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Stop Sign        Stop Sign        Stop Sign        Stop Sign
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0     0    0    0     0    0    0     0    0    0
Lanes:       1  0  1  1  0   1  0  1  1  0   0  0  1! 0  0   0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      99  281   66   121  360   11    12  279  164    69   61   87
Growth Adj:  1.24 1.24 1.24  1.24 1.24 1.24  1.21 1.21 1.21  1.21 1.21 1.21
Initial Bse:  122  347   82   150  445   14    14  336  198    83   74  105
Added Vol:      0   13    0     0   22    0     0   10    0     0    6    0
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:  122  360   82   150  467   14    14  346  198    83   80  105
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:   122  360   82   150  467   14    14  346  198    83   80  105
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:  122  360   82   150  467   14    14  346  198    83   80  105
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Final Vol.:   122  360   82   150  467   14    14  346  198    83   80  105
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:       1.00 1.63 0.37  1.00 1.94 0.06  0.03 0.62 0.35  0.31 0.30 0.39
Final Sat.:   396  692  160   401  828   24    12  297  170   133  127  167
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.31 0.52 0.51  0.37 0.56 0.56  1.17 1.17 1.17  0.63 0.63 0.63
Crit Moves:       ****             ****             ****             ****
Delay/Veh:   15.6 19.7 19.1  16.7 21.2 21.1 120.9  121 120.9  23.8 23.8 23.8
Delay Adj:   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:  15.6 19.7 19.1  16.7 21.2 21.1 120.9  121 120.9  23.8 23.8 23.8
LOS by Move:    C    C    C     C    C    C     F    F    F     C    C    C
ApproachDel:      18.7             20.2            120.9             23.8
Delay Adj:        1.00             1.00             1.00             1.00
ApprAdjDel:       18.7             20.2            120.9             23.8
LOS by Appr:        C                C                F                C
AllWayAvgQ:   0.4  1.0  1.0   0.6  1.2  1.2  14.7 14.7 14.7   1.5  1.5  1.5
******************************************************************************
Note: Queue reported is the number of cars per lane.
```

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #29 Bollinger/Canyon Lakes

Cycle (sec):	100	Critical Vol./Cap.(X):	0.611
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	59	Level Of Service:	B

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Split Phase	Split Phase	Protected	Protected
Rights:	Include	Include	Include	Include
Min. Green:	0 0 0	0 0 0	0 0 0	0 0 0
Lanes:	1 0 0 1 0	0 1 0 0 1	1 0 3 0 1	1 0 2 1 0

Movement:	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Volume Module:												
Base Vol:	124	4	11	36	1	257	172	480	13	33	1276	79
Growth Adj:	1.07	1.07	1.07	1.07	1.07	1.07	1.24	1.24	1.24	1.24	1.24	1.24
Initial Bse:	133	4	12	39	1	276	213	593	16	41	1577	98
Added Vol:	0	0	0	0	0	10	3	37	0	0	93	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	133	4	12	39	1	286	216	630	16	41	1670	98
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	133	4	12	39	1	286	216	630	16	41	1670	98
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	133	4	12	39	1	286	216	630	16	41	1670	98
RTOR Reduct:	0	0	0	0	0	216	0	0	16	0	0	0
RTOR Vol:	133	4	12	39	1	70	216	630	0	41	1670	98
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	133	4	12	39	1	70	216	630	0	41	1670	98
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.27	0.73	0.97	0.03	1.00	1.00	3.00	1.00	1.00	2.83	0.17
Final Sat.:	1650	440	1210	1605	45	1650	1650	4950	1650	1650	4677	273
Capacity Analysis Module:												
Vol/Sat:	0.08	0.01	0.01	0.02	0.02	0.04	0.13	0.13	0.00	0.02	0.36	0.36
Crit Vol:	133					70	216					589
Crit Moves:	****					****	****					****

```
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                   Level Of Service Computation Report
               CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #30 Camino Ramon/Center Street
********************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):          0.308
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         33              Level Of Service:                   A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        0  0  1  1  0   0  0  1  1  0   0  0  0  1  0   0  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0   944     0    0   121     0    0     0     0    0     0     0
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0   944     0    0   121     0    0     0     0    0     0     0
Added Vol:     0    45     1    0   126     1    0     0     0    0     0     0
PasserByVol:   0     0    10    0     0     0    0     8     0    0     2     0
Initial Fut:   0   989    11    0   247     1    0     8     0    0     2     0
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0   989    11    0   247     1    0     8     0    0     2     0
Reduct Vol:    0     0     0    0     0     0    0     0     0    0     0     0
Reduced Vol:   0   989    11    0   247     1    0     8     0    0     2     0
RTOR Reduct:   0     0     0    0     0     0    0     0     0    0     0     0
RTOR Vol:      0   989    11    0   247     1    0     8     0    0     2     0
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    0   989    11    0   247     1    0     8     0    0     2     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650 1650 1650  1650 1650 1650  1650 1650 1650  1650
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       0.00 1.98  0.02 0.00 1.99  0.01 0.00 1.00  0.00 0.00 1.00  0.00
Final Sat.:     0 3264    36    0 3287    13    0 1650     0    0 1650     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.30  0.30 0.00 0.08  0.08 0.00 0.00  0.00 0.00 0.00  0.00
Crit Vol:          500          0                      8          0
Crit Moves:       ****       ****                   ****       ****
********************************************************************************
```

Scenario Report

Scenario:	PM 2020 + Flex Retail
Command:	Default Command
Volume:	PM 2020 + Project Network
Geometry:	2020 + Proj
Impact Fee:	Default Impact Fee
Trip Generation:	PM PRJ 2020 Flex Retail
Trip Distribution:	ONE
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/C	Future LOS	Future Del/ Veh	Future V/C	Change in
# 1 San Ramon/Crow	D	xxxxx	0.865	D	xxxxx	0.878	+ 0.013 V/C
# 2 680 SB OFF/Crow	B	xxxxx	0.664	B	xxxxx	0.674	+ 0.010 V/C
# 3 680 NB ON/Crow	B	xxxxx	0.641	B	xxxxx	0.660	+ 0.019 V/C
# 4 Camino Ramon/Crow	B	xxxxx	0.683	C	xxxxx	0.712	+ 0.030 V/C
# 5 Alcosta/Crow	B	xxxxx	0.692	C	xxxxx	0.715	+ 0.023 V/C
# 6 Camino Ramon/Norris	C	xxxxx	0.725	C	xxxxx	0.787	+ 0.062 V/C
# 7 Camino Ramon/Executive	A	xxxxx	0.516	A	xxxxx	0.579	+ 0.063 V/C
# 8 Camino Ramon/Bishop Drive	A	xxxxx	0.406	B	xxxxx	0.618	+ 0.212 V/C
# 9 San Ramon/Bollinger	D	xxxxx	0.812	D	xxxxx	0.837	+ 0.025 V/C
# 10 680 SB OFF/Bollinger	B	xxxxx	0.615	B	xxxxx	0.669	+ 0.054 V/C
# 11 680 NB OFF/Bollinger	B	xxxxx	0.695	C	xxxxx	0.749	+ 0.054 V/C
# 12 Sunset/Bollinger	E	xxxxx	0.920	F	xxxxx	1.049	+ 0.129 V/C
# 13 Camino Ramon/Bollinger	A	xxxxx	0.490	B	xxxxx	0.660	+ 0.170 V/C
# 14 Bishop 2 Drive/Bollinger	B	xxxxx	0.611	C	xxxxx	0.797	+ 0.186 V/C
# 15 Market/Bollinger Drive	A	xxxxx	0.530	B	xxxxx	0.609	+ 0.079 V/C
# 16 Alcosta/Bollinger	C	xxxxx	0.745	D	xxxxx	0.802	+ 0.057 V/C
# 17 Alcosta/Norris	A	xxxxx	0.523	A	xxxxx	0.534	+ 0.011 V/C
# 18 San Ramon/Norris	B	xxxxx	0.662	B	xxxxx	0.684	+ 0.022 V/C
# 19 Bollinger/Crow	A	xxxxx	0.548	A	xxxxx	0.588	+ 0.040 V/C
# 20 Dougherty/Bollinger	B	xxxxx	0.628	B	xxxxx	0.636	+ 0.008 V/C
# 21 San Ramon/Montevideo	D	xxxxx	0.881	D	xxxxx	0.892	+ 0.010 V/C
# 22 Alcosts/Montevideo	A	xxxxx	0.345	A	xxxxx	0.413	+ 0.068 V/C
# 23 Dougherty/Crow	A	xxxxx	0.546	A	xxxxx	0.562	+ 0.016 V/C
# 24 Alcosta/Old Ranch	A	xxxxx	0.310	A	xxxxx	0.345	+ 0.035 V/C
# 25 Doughert/Old Ranch	A	xxxxx	0.369	A	xxxxx	0.392	+ 0.023 V/C

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 26 Sunset/Center Street	A	xxxxx	0.503	A	xxxxx	0.550	+ 0.047 V/C
# 27 Bishop Drive/Sunset	B	xxxxx	0.603	B	xxxxx	0.664	+ 0.062 V/C
# 28 Bollinger Canyon/Norris Canyon	B	12.0	0.489	B	13.6	0.567	+ 0.078 V/C
# 29 Bollinger/Canyon Lakes	A	xxxxx	0.504	A	xxxxx	0.562	+ 0.058 V/C
# 30 Camino Ramon/Center Street	A	xxxxx	0.136	A	xxxxx	0.235	+ 0.100 V/C

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                     Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #1 San Ramon/Crow
********************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         0.878
Loss Time (sec):       0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       180               Level Of Service:                  D
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Protected        Protected         Protected        Protected
Rights:           Include          Include           Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        2  0  2  0  1    2  0  2  0  1    2  0  3  0  1    2  0  3  0  1
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:     158   579   709   505   435   190   312  1322   117   525  1417   617
Growth Adj:  1.22  1.22  1.00  1.00  1.22  1.22  1.21  1.00  1.21  1.00  1.00  1.00
Initial Bse:  193   706   709   505   530   232   378  1322   142   525  1417   617
Added Vol:      0    19     0    14    13     0     0    40     0     0    46    13
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:  193   725   709   519   543   232   378  1362   142   525  1463   630
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:   193   725   709   519   543   232   378  1362   142   525  1463   630
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  193   725   709   519   543   232   378  1362   142   525  1463   630
RTOR Reduct:    0     0   289     0     0   208     0     0   106     0     0   285
RTOR Vol:     193   725   420   519   543    23   378  1362    36   525  1463   345
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:   193   725   420   519   543    23   378  1362    36   525  1463   345
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1650  1650  1650  1650  1650  1650  1650  1650  1650  1650  1650  1650
Adjustment:  0.91  1.00  1.00  0.91  1.00  1.00  0.91  1.00  1.00  0.91  1.00  1.00
Lanes:       2.00  2.00  1.00  2.00  2.00  1.00  2.00  3.00  1.00  2.00  3.00  1.00
Final Sat.:  3000  3300  1650  3000  3300  1650  3000  4950  1650  3000  4950  1650
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.06  0.22  0.25  0.17  0.16  0.01  0.13  0.28  0.02  0.18  0.30  0.21
Crit Vol:                 420   260                      454         263
Crit Moves:              ****  ****                     ****        ****
********************************************************************************
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                   Level Of Service Computation Report
               CCTALOS Method (Future Volume Alternative)
*******************************************************************************
Intersection #2 680 SB OFF/Crow
*******************************************************************************
Cycle (sec):           100             Critical Vol./Cap.(X):         0.674
Loss Time (sec):         0 (Y+R=4.0 sec) Average Delay (sec/veh):     xxxxxx
Optimal Cycle:          57             Level Of Service:                  B
*******************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Split Phase      Split Phase        Permitted        Permitted
Rights:          Include          Include          Ignore           Ignore
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        0  0  0  0  0    3  0  0  0  2    0  0  3  0  1    0  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0     0     0  699     0  1026     0 1890   646     0 1533   571
Growth Adj:  1.18  1.18  1.18 1.00  1.18  1.00  1.21 1.00  1.00  1.21 1.00  1.00
Initial Bse:   0     0     0  699     0  1026     0 1890   646     0 1533   571
Added Vol:     0     0     0   49     0     0     0   54     0     0   59     0
PasserByVol:   0     0     0    0     0     0     0    0     0     0    0     0
Initial Fut:   0     0     0  748     0  1026     0 1944   646     0 1592   571
User Adj:    1.00  1.00  1.00 1.00  1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00  1.00  1.00 1.00  1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    0     0     0  748     0  1026     0 1944   646     0 1592   571
Reduct Vol:    0     0     0    0     0     0     0    0     0     0    0     0
Reduced Vol:   0     0     0  748     0  1026     0 1944   646     0 1592   571
RTOR Reduct:   0     0     0    0     0     0     0    0     0     0    0     0
RTOR Vol:      0     0     0  748     0  1026     0 1944   646     0 1592   571
PCE Adj:     1.00  1.00  1.00 1.00  1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00  1.00  1.00 1.00  1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    0     0     0  748     0  1026     0 1944   646     0 1592   571
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1800  1800  1800 1800  1800  1800  1800 1800  1800  1800 1800  1800
Adjustment:  1.00  1.00  1.00 0.87  1.00  0.91  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.00  0.00  0.00 3.00  0.00  2.00  0.00 3.00  1.00  0.00 3.00  1.00
Final Sat.:    0     0     0 4698     0  3272     0 5400  1800     0 5400  1800
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.00  0.00 0.16  0.00  0.31  0.00 0.36  0.36  0.00 0.29  0.32
Crit Vol:          0                      513         648             0
Crit Moves:                              ****        ****          ****
*******************************************************************************
```

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-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
*******************************************************************************
Intersection #3 680 NB ON/Crow
*******************************************************************************
Cycle (sec):          100               Critical Vol./Cap.(X):         0.660
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         55               Level Of Service:                  B
*******************************************************************************
Approach:     North Bound      South Bound       East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Split Phase      Split Phase       Permitted        Permitted
Rights:         Include          Include          Ignore            Ignore
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:       2  0  0  0  2   0  0  0  0  0   0  0  3  0  1   0  0  3  1  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     717    0   898    0    0     0    0 1709   880    0 1387  1142
Growth Adj:  1.00 1.18  1.18 1.18 1.18  1.18 1.21 1.00  1.00 1.21 1.00  1.21
Initial Bse:  717    0  1061    0    0     0    0 1709   880    0 1387  1385
Added Vol:      0    0     0    0    0     0    0  103     0    0   59    54
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  717    0  1061    0    0     0    0 1812   880    0 1446  1439
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   717    0  1061    0    0     0    0 1812   880    0 1446  1439
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  717    0  1061    0    0     0    0 1812   880    0 1446  1439
RTOR Reduct:    0    0     0    0    0     0    0    0     0    0    0     0
RTOR Vol:     717    0  1061    0    0     0    0 1812   880    0 1446  1439
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:   717    0  1061    0    0     0    0 1812   880    0 1446  1439
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1800 1800  1800 1800 1800  1800 1800 1800  1800 1800 1800  1800
Adjustment:  0.91 1.00  0.91 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.91
Lanes:       2.00 0.00  2.00 0.00 0.00  0.00 0.00 3.00  1.00 0.00 3.00  2.00
Final Sat.:  3272    0  3272    0    0     0    0 5400  1800    0 5400  3272
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.22 0.00  0.32 0.00 0.00  0.00 0.00 0.34  0.49 0.00 0.27  0.44
Crit Vol:                530         0               604          0
Crit Moves:             ****                        ****       ****
*******************************************************************************
```

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #4 Camino Ramon/Crow

Cycle (sec):	100	Critical Vol./Cap.(X):	0.712
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	79	Level Of Service:	C

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected	Protected	Protected	Protected
Rights:	Include	Include	Include	Include
Min. Green:	0 0 0	0 0 0	0 0 0	0 0 0
Lanes:	2 0 1 0 1	2 0 1 1 0	2 0 4 0 1	2 0 3 1 0

	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Volume Module:												
Base Vol:	464	288	141	287	134	120	117	1592	206	154	1157	182
Growth Adj:	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21
Initial Bse:	563	349	171	348	163	146	142	1931	250	187	1403	221
Added Vol:	113	4	88	0	3	0	0	0	103	82	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	676	353	259	348	166	146	142	1931	353	269	1403	221
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	676	353	259	348	166	146	142	1931	353	269	1403	221
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	676	353	259	348	166	146	142	1931	353	269	1403	221
RTOR Reduct:	0	0	148	0	0	0	0	0	353	0	0	0
RTOR Vol:	676	353	111	348	166	146	142	1931	0	269	1403	221
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	676	353	111	348	166	146	142	1931	0	269	1403	221
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	1.00	1.00	2.00	1.06	0.94	2.00	4.00	1.00	2.00	3.46	0.54
Final Sat.:	3000	1650	1650	3000	1756	1544	3000	6600	1650	3000	5703	897
Capacity Analysis Module:												
Vol/Sat:	0.23	0.21	0.07	0.12	0.09	0.09	0.05	0.29	0.00	0.09	0.25	0.25
Crit Vol:		353		174				483		134		
Crit Moves:		****		****				****		****		

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                     Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #5 Alcosta/Crow
********************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):         0.715
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        80                Level Of Service:                  C
********************************************************************************
Approach:     North Bound      South Bound       East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Split Phase      Split Phase       Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:       2  0  0  0  2   0  0  0  0  0   0  0  3  0  1   2  0  3  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     498    0   623     0    0     0     0 1581   261   318  915     0
Growth Adj:  1.24 1.24  1.24  1.24 1.24  1.24  1.21 1.21  1.21  1.21 1.21  1.21
Initial Bse:  615    0   769     0    0     0     0 1918   317   386 1110     0
Added Vol:      0    0    36     0    0     0     0   88     0    19   82     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  615    0   805     0    0     0     0 2006   317   405 1192     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   615    0   805     0    0     0     0 2006   317   405 1192     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  615    0   805     0    0     0     0 2006   317   405 1192     0
RTOR Reduct:    0    0   223     0    0     0     0    0   317     0    0     0
RTOR Vol:     615    0   583     0    0     0     0 2006     0   405 1192     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   615    0   583     0    0     0     0 2006     0   405 1192     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1720 1720  1720  1720 1720  1720  1720 1720  1720  1720 1720  1720
Adjustment:  0.91 1.00  0.91  1.00 1.00  1.00  1.00 1.00  1.00  0.91 1.00  1.00
Lanes:       2.00 0.00  2.00  0.00 0.00  0.00  0.00 3.00  1.00  2.00 3.00  0.00
Final Sat.:  3127    0  3127     0    0     0     0 5160  1720  3127 5160     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.20 0.00  0.19  0.00 0.00  0.00  0.00 0.39  0.00  0.13 0.23  0.00
Crit Vol:     308                    0               669         202
Crit Moves:  ****                                   ****         ****
********************************************************************************
```

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #6 Camino Ramon/Norris

Cycle (sec):	100	Critical Vol./Cap.(X):	0.787
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	107	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 2 0 1			1 0 1 1 0			1 0 1 1 0			1 0 1 1 0		
Volume Module:												
Base Vol:	132	864	101	136	386	112	200	282	78	49	342	77
Growth Adj:	1.23	1.23	1.23	1.23	1.23	1.23	1.21	1.21	1.21	1.21	1.21	1.21
Initial Bse:	163	1065	125	168	476	138	243	342	95	59	415	93
Added Vol:	19	204	0	0	189	0	0	0	16	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	182	1269	125	168	665	138	243	342	111	59	415	93
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	182	1269	125	168	665	138	243	342	111	59	415	93
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	182	1269	125	168	665	138	243	342	111	59	415	93
RTOR Reduct:	0	0	59	0	0	0	0	0	0	0	0	0
RTOR Vol:	182	1269	65	168	665	138	243	342	111	59	415	93
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	182	1269	65	168	665	138	243	342	111	59	415	93
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.66	0.34	1.00	1.51	0.49	1.00	1.63	0.37
Final Sat.:	1650	3300	1650	1650	2733	567	1650	2494	806	1650	2694	606
Capacity Analysis Module:												
Vol/Sat:	0.11	0.38	0.04	0.10	0.24	0.24	0.15	0.14	0.14	0.04	0.15	0.15
Crit Vol:		635		168			243					254
Crit Moves:		****		****			****					****

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #7 Camino Ramon/Executive

Cycle (sec):	100	Critical Vol./Cap.(X):	0.579
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	44	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	1 1	0	0 1	0 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	32	698	24	15	660	41	215	11	160	117	24	76
Growth Adj:	1.22	1.22	1.22	1.22	1.22	1.22	1.18	1.18	1.18	1.18	1.18	1.18
Initial Bse:	39	854	29	18	807	50	254	13	189	138	28	90
Added Vol:	5	224	0	0	205	0	0	0	5	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	44	1078	29	18	1012	50	254	13	194	138	28	90
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	44	1078	29	18	1012	50	254	13	194	138	28	90
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	44	1078	29	18	1012	50	254	13	194	138	28	90
RTOR Reduct:	0	0	0	0	0	0	0	0	44	0	0	18
RTOR Vol:	44	1078	29	18	1012	50	254	13	150	138	28	71
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	44	1078	29	18	1012	50	254	13	150	138	28	71
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.95	0.05	1.00	1.91	0.09	0.95	0.05	1.00	0.83	0.17	1.00
Final Sat.:	1720	3349	91	1720	3278	162	1636	84	1720	1427	293	1720
Capacity Analysis Module:												
Vol/Sat:	0.03	0.32	0.32	0.01	0.31	0.31	0.16	0.16	0.09	0.10	0.10	0.04
Crit Vol:	44				531		254				167	
Crit Moves:	****				****		****				****	

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                 Level Of Service Computation Report
             CCTALOS Method (Future Volume Alternative)
******************************************************************************
Intersection #8 Camino Ramon/Bishop Drive
******************************************************************************
Cycle (sec):        100              Critical Vol./Cap.(X):          0.636
Loss Time (sec):      0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       63              Level Of Service:                   B
******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        0  0  1  1  0   2  0  1  1  0   1  0  1  0  1   1  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0   456    12   349   328   503   115     2    79   144     7   132
Growth Adj:  1.00  1.00  1.22  1.00  1.00  1.00  1.09  1.09  1.09  1.09  1.09  1.00
Initial Bse:   0   456    15   349   328   503   125     2    86   157     8   132
Added Vol:     0    80   126    80    29   101    68    69    76   126   132    82
PasserByVol:   0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:   0   536   141   429   357   604   193    71   162   283   140   214
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:    0   536   141   429   357   604   193    71   162   283   140   214
Reduct Vol:    0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   0   536   141   429   357   604   193    71   162   283   140   214
RTOR Reduct:   0     0     0     0     0     0     0     0     0     0     0   214
RTOR Vol:      0   536   141   429   357   604   193    71   162   283   140     0
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:    0   536   141   429   357   604   193    71   162   283   140     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650  1650  1650  1650  1650  1650  1650  1650  1650  1650  1650  1650
Adjustment:  1.00  1.00  1.00  0.91  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Lanes:       0.00  1.58  0.42  2.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Sat.:    0  2614   686  3000  1650  1650  1650  1650  1650  1650  1650  1650
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.21  0.21  0.14  0.22  0.37  0.12  0.04  0.10  0.17  0.08  0.00
Crit Vol:      0                             604               162   283
Crit Moves:  ****                           ****              ****  ****
******************************************************************************
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #9 San Ramon/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	0.837
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	140	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	2 0	1	2 0	1 1	0	1 0	1 1	0	2 0	2 0	1
Volume Module:												
Base Vol:	89	431	410	358	430	40	15	386	147	1085	580	195
Growth Adj:	1.22	1.22	1.00	1.00	1.22	1.22	1.23	1.00	1.23	1.00	1.00	1.00
Initial Bse:	108	525	410	358	524	49	18	386	181	1085	580	195
Added Vol:	0	0	23	13	0	0	0	40	0	25	46	19
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	108	525	433	371	524	49	18	426	181	1110	626	214
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	108	525	433	371	524	49	18	426	181	1110	626	214
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	108	525	433	371	524	49	18	426	181	1110	626	214
RTOR Reduct:	0	0	433	0	0	0	0	0	0	0	0	204
RTOR Vol:	108	525	0	371	524	49	18	426	181	1110	626	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	108	525	0	371	524	49	18	426	181	1110	626	10
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	1.83	0.17	1.00	1.40	0.60	2.00	2.00	1.00
Final Sat.:	3000	3300	1650	3000	3019	281	1650	2315	985	3000	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.04	0.16	0.00	0.12	0.17	0.17	0.01	0.18	0.18	0.37	0.19	0.01
Crit Vol:		263		186					304	555		
Crit Moves:		****		****					****	****		

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                    Level Of Service Computation Report
               CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #10 680 SB OFF/Bollinger
********************************************************************************
Cycle (sec):        100                Critical Vol./Cap.(X):         0.669
Loss Time (sec):      0 (Y+R=4.0 sec)  Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       56                Level Of Service:                  B
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase        Permitted        Permitted
Rights:          Include          Include           Include           Ignore
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:       0  0  1! 0  0   1  1  0  0  2   0  0  3  1  0   0  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      5     0   101  825    21   401     0  1142    12     0  1454  1665
Growth Adj:  1.00 1.00  1.00 1.00  1.17  1.00  1.23  1.00  1.00  1.23  1.00  1.00
Initial Bse:   5     0   101  825    24   401     0  1142    12     0  1454  1665
Added Vol:     0     0     0  115     0     0     0    76     0     0    91   267
PasserByVol:   0     0     0    0     0     0     0     0     0     0     0     0
Initial Fut:   5     0   101  940    24   401     0  1218    12     0  1545  1932
User Adj:    1.00 1.00  1.00 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:    5     0   101  940    24   401     0  1218    12     0  1545  1932
Reduct Vol:    0     0     0    0     0     0     0     0     0     0     0     0
Reduced Vol:   5     0   101  940    24   401     0  1218    12     0  1545  1932
RTOR Reduct:   0     0     0    0     0     0     0     0     0     0     0     0
RTOR Vol:      5     0   101  940    24   401     0  1218    12     0  1545  1932
PCE Adj:     1.00 1.00  1.00 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:    5     0   101  940    24   401     0  1218    12     0  1545  1932
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1720 1720  1720 1720  1720  1720  1720  1720  1720  1720  1720  1720
Adjustment:  1.00 1.00  1.00 0.91  1.00  0.91  1.00  1.00  1.00  1.00  1.00  1.00
Lanes:       0.05 0.00  0.95 1.95  0.05  2.00  0.00  3.96  0.04  0.00  3.00  1.00
Final Sat.:    81    0  1639 3048    87  3127     0  6813    67     0  5160  1720
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.06 0.00  0.06 0.31  0.28  0.13  0.00  0.18  0.18  0.00  0.30  1.12
Crit Vol:                106  482                  0                     515
Crit Moves:             ****  ****              ****                    ****
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                    Level Of Service Computation Report
                CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #11 680 NB OFF/Bollinger
********************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):          0.749
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         74              Level Of Service:                    C
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase        Permitted        Permitted
Rights:           Include          Include           Ignore           Ignore
Min. Green:    0     0     0    0     0     0     0     0     0     0     0     0
Lanes:        1  0  0  0  3   0  0  0  0  0    0  0  3  0  1    0  0  3  1  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     512     0  1076     0     0     0     0  1688   380     0  2607  1088
Growth Adj:  1.00  1.17  1.00  1.17  1.17  1.17  1.23  1.00  1.00  1.23  1.00  1.00
Initial Bse:  512     0  1076     0     0     0     0  1688   380     0  2607  1088
Added Vol:      0     0   239     0     0     0     0   191     0     0   358   126
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:  512     0  1315     0     0     0     0  1879   380     0  2965  1214
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:   512     0  1315     0     0     0     0  1879   380     0  2965  1214
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  512     0  1315     0     0     0     0  1879   380     0  2965  1214
RTOR Reduct:    0     0     0     0     0     0     0     0     0     0     0     0
RTOR Vol:     512     0  1315     0     0     0     0  1879   380     0  2965  1214
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:   512     0  1315     0     0     0     0  1879   380     0  2965  1214
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1800  1800  1800  1800  1800  1800  1800  1800  1800  1800  1800  1800
Adjustment:  1.00  1.00  0.87  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.91
Lanes:       1.00  0.00  3.00  0.00  0.00  0.00  0.00  3.00  1.00  0.00  3.55  1.45
Final Sat.:  1800     0  4698     0     0     0     0  5400  1800     0  6385  2377
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.28  0.00  0.28  0.00  0.00  0.00  0.00  0.35  0.21  0.00  0.46  0.51
Crit Vol:     512                     0           0                       836
Crit Moves:  ****                                ****                    ****
********************************************************************************
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #12 Sunset/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	1.049
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Split Phase	Split Phase	Protected	Protected
Rights:	Include	Include	Include	Include
Min. Green:	0 0 0	0 0 0	0 0 0	0 0 0
Lanes:	2 0 0 1 0	0 1 0 0 2	2 0 4 0 1	2 0 4 0 1

Volume Module:	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Base Vol:	495	35	108	142	13	1264	420	2291	53	28	1786	231
Growth Adj:	1.00	1.09	1.00	1.00	1.09	1.00	1.00	1.00	1.00	1.23	1.00	1.00
Initial Bse:	495	38	108	142	14	1264	420	2291	53	35	1786	231
Added Vol:	0	0	0	34	0	46	199	231	0	0	438	55
PasserByVol:	0	0	0	29	0	48	59	-59	0	0	-48	24
Initial Fut:	495	38	108	205	14	1358	678	2463	53	35	2176	310
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	495	38	108	205	14	1358	678	2463	53	35	2176	310
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	495	38	108	205	14	1358	678	2463	53	35	2176	310
RTOR Reduct:	0	0	0	0	0	373	0	0	53	0	0	205
RTOR Vol:	495	38	108	205	14	985	678	2463	0	35	2176	105
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	495	38	108	205	14	985	678	2463	0	35	2176	105
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	0.91	0.91	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	0.26	0.74	0.94	0.06	2.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3000	430	1220	1544	106	3000	3000	6600	1650	3000	6600	1650
Capacity Analysis Module:												
Vol/Sat:	0.17	0.09	0.09	0.13	0.13	0.33	0.23	0.37	0.00	0.01	0.33	0.06
Crit Vol:	248					493	339				544	
Crit Moves:	****					****	****				****	

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #13 Camino Ramon/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	0.660
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	67	Level Of Service:	B

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected	Protected	Protected	Protected
Rights:	Include	Include	Include	Include
Min. Green:	0 0 0	0 0 0	0 0 0	0 0 0
Lanes:	2 0 1 0 1	1 0 0 1 1	2 0 4 0 1	2 0 4 0 1

Volume Module:	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Base Vol:	347	34	36	226	18	242	380	2151	22	12	1255	14
Growth Adj:	1.00	1.09	1.09	1.00	1.09	1.00	1.00	1.00	1.00	1.23	1.00	1.00
Initial Bse:	347	37	39	226	20	242	380	2151	22	15	1255	14
Added Vol:	175	70	68	112	23	92	102	104	59	24	220	41
PasserByVol:	0	0	0	0	0	0	29	-59	0	0	-24	24
Initial Fut:	522	107	107	338	43	334	511	2196	81	39	1451	79
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	522	107	107	338	43	334	511	2196	81	39	1451	79
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	522	107	107	338	43	334	511	2196	81	39	1451	79
RTOR Reduct:	0	0	21	0	0	281	0	0	81	0	0	79
RTOR Vol:	522	107	86	338	43	53	511	2196	0	39	1451	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	522	107	86	338	43	53	511	2196	0	39	1451	0

Saturation Flow Module:	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	0.91	0.91	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	0.89	1.11	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3000	1650	1650	1650	1471	1663	3000	6600	1650	3000	6600	1650

Capacity Analysis Module:	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Vol/Sat:	0.17	0.06	0.05	0.20	0.03	0.03	0.17	0.33	0.00	0.01	0.22	0.00
Crit Vol:		107		338			256				363	
Crit Moves:		****		****			****				****	

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #14 Bishop 2 Drive/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	0.797
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	112	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 0 1 0			2 0 0 1 0			2 0 3 1 0			2 0 4 0 1		
Volume Module:												
Base Vol:	150	0	50	338	0	0	0	2498	0	50	1310	108
Growth Adj:	1.09	1.09	1.09	1.00	1.00	1.00	1.23	1.00	1.23	1.23	1.00	1.00
Initial Bse:	163	0	54	338	0	0	0	2498	0	62	1310	108
Added Vol:	107	0	101	195	0	39	45	212	26	28	140	248
PasserByVol:	0	0	0	59	0	24	0	-59	0	0	-24	24
Initial Fut:	270	0	155	592	0	63	45	2651	26	90	1426	380
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	270	0	155	592	0	63	45	2651	26	90	1426	380
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	270	0	155	592	0	63	45	2651	26	90	1426	380
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	326
RTOR Vol:	270	0	155	592	0	63	45	2651	26	90	1426	54
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	270	0	155	592	0	63	45	2651	26	90	1426	54
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00
Lanes:	1.00	0.00	1.00	2.00	0.00	1.00	2.00	3.96	0.04	2.00	4.00	1.00
Final Sat.:	1650	0	1650	3000	0	1650	3000	6536	64	3000	6600	1650
Capacity Analysis Module:												
Vol/Sat:	0.16	0.00	0.09	0.20	0.00	0.04	0.02	0.41	0.41	0.03	0.22	0.03
Crit Vol:	270			296				669		45		
Crit Moves:	****			****				****		****		

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                     Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #15 Market/Bollinger Drive
********************************************************************************
Cycle (sec):           100                Critical Vol./Cap.(X):         0.609
Loss Time (sec):         0 (Y+R=4.0 sec)  Average Delay (sec/veh):      xxxxxx
Optimal Cycle:          58                Level Of Service:                  B
********************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Split Phase      Split Phase        Protected        Protected
Rights:          Include          Include           Include          Include
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
Lanes:         1  1  0  0  1   1  0  0  1  0   2  0  4  0  1   2  0  3  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      395    2   136    13    5    12    37 1912   460    42  824     8
Growth Adj:   1.09 1.09  1.09  1.09 1.09  1.09  1.23 1.23  1.23  1.23 1.23  1.23
Initial Bse:   430    2   148    14    5    13    46 2357   567    52 1016    10
Added Vol:      15    0     0     0    0     0     0  488    20     0  401     0
PasserByVol:     0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   445    2   148    14    5    13    46 2845   587    52 1417    10
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    445    2   148    14    5    13    46 2845   587    52 1417    10
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   445    2   148    14    5    13    46 2845   587    52 1417    10
RTOR Reduct:     0    0    28     0    0     0     0    0   245     0    0     0
RTOR Vol:      445    2   119    14    5    13    46 2845   343    52 1417    10
PCE Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    445    2   119    14    5    13    46 2845   343    52 1417    10
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:   0.91 1.00  1.00  1.00 1.00  1.00  0.91 1.00  1.00  0.91 1.00  1.00
Lanes:        1.99 0.01  1.00  1.00 0.29  0.71  2.00 4.00  1.00  2.00 3.97  0.03
Final Sat.:   2985   16  1650  1650  485  1165  3000 6600  1650  3000 6554    46
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.15 0.14  0.07  0.01 0.01  0.01  0.02 0.43  0.21  0.02 0.22  0.22
Crit Vol:      223                          18        711          26
Crit Moves:   ****                        ****       ****        ****
********************************************************************************
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                      Level Of Service Computation Report
                  CCTALOS Method (Future Volume Alternative)
*******************************************************************************
Intersection #16 Alcosta/Bollinger
*******************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):          0.802
Loss Time (sec):        0 (Y+R=4.0 sec)  Average Delay (sec/veh):       xxxxxx
Optimal Cycle:        115                Level Of Service:                   D
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        2  0  1  1  0    2  0  2  0  1    2  0  3  0  1    2  0  3  0  1
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:     154  411   127   239  404   165   260 1450   338   218  651   165
Growth Adj:  1.21 1.21  1.21  1.21 1.21  1.21  1.23 1.23  1.23  1.23 1.23  1.23
Initial Bse:  187  499   154   290  490   200   321 1788   417   269  803   203
Added Vol:    150    0     0     0    0    19    36  282   170     0  232     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  337  499   154   290  490   219   357 2070   587   269 1035   203
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   337  499   154   290  490   219   357 2070   587   269 1035   203
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  337  499   154   290  490   219   357 2070   587   269 1035   203
RTOR Reduct:    0    0     0     0    0   196     0    0   185     0    0   159
RTOR Vol:     337  499   154   290  490    23   357 2070   402   269 1035    44
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   337  499   154   290  490    23   357 2070   402   269 1035    44
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  0.91 1.00  1.00  0.91 1.00  1.00  0.91 1.00  1.00  0.91 1.00  1.00
Lanes:       2.00 1.53  0.47  2.00 2.00  1.00  2.00 3.00  1.00  2.00 3.00  1.00
Final Sat.:  3000 2521   779  3000 3300  1650  3000 4950  1650  3000 4950  1650
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.11 0.20  0.20  0.10 0.15  0.01  0.12 0.42  0.24  0.09 0.21  0.03
Crit Vol:                326   145                   690         134
Crit Moves:             ****  ****                  ****        ****
*******************************************************************************
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #17 Alcosta/Norris

Cycle (sec):	100	Critical Vol./Cap.(X):	0.534
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	49	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 1 1 0			1 0 2 0 1			2 0 1 0 1			1 0 1 0 1		
Volume Module:												
Base Vol:	125	548	35	76	356	127	374	77	158	44	138	139
Growth Adj:	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21
Initial Bse:	152	665	42	92	432	154	454	93	192	53	167	169
Added Vol:	0	36	0	0	19	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	152	701	42	92	451	154	454	93	192	53	167	169
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	152	701	42	92	451	154	454	93	192	53	167	169
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	152	701	42	92	451	154	454	93	192	53	167	169
RTOR Reduct:	0	0	0	0	0	154	0	0	152	0	0	92
RTOR Vol:	152	701	42	92	451	0	454	93	40	53	167	76
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	152	701	42	92	451	0	454	93	40	53	167	76
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.89	0.11	1.00	2.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1650	3111	189	1650	3300	1650	3000	1650	1650	1650	1650	1650
Capacity Analysis Module:												
Vol/Sat:	0.09	0.23	0.23	0.06	0.14	0.00	0.15	0.06	0.02	0.03	0.10	0.05
Crit Vol:			372	92			227				167	
Crit Moves:			****	****			****				****	

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #18 San Ramon/Norris

Cycle (sec):	100	Critical Vol./Cap.(X):	0.684
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	72	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	2 0	1	2 0	1 1	0	1 0	1 1	0	1 0	1 0	1
Volume Module:												
Base Vol:	100	300	100	150	300	100	100	200	100	250	500	350
Growth Adj:	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21
Initial Bse:	121	364	121	182	364	121	121	243	121	303	607	425
Added Vol:	0	19	0	0	13	0	0	27	0	0	30	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	121	383	121	182	377	121	121	270	121	303	637	425
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	121	383	121	182	377	121	121	270	121	303	637	425
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	121	383	121	182	377	121	121	270	121	303	637	425
RTOR Reduct:	0	0	121	0	0	0	0	0	0	0	0	100
RTOR Vol:	121	383	0	182	377	121	121	270	121	303	637	324
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	121	383	0	182	377	121	121	270	121	303	637	324
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	2.00	1.51	0.49	1.00	1.38	0.62	1.00	1.00	1.00
Final Sat.:	1650	3300	1650	3000	2497	803	1650	2276	1024	1650	1650	1650
Capacity Analysis Module:												
Vol/Sat:	0.07	0.12	0.00	0.06	0.15	0.15	0.07	0.12	0.12	0.18	0.39	0.20
Crit Vol:	121					249	121				637	
Crit Moves:	****					****	****				****	

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #19 Bollinger/Crow

Cycle (sec):	100	Critical Vol./Cap.(X):	0.588
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	45	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 0	1	0 0	1! 0	0	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	181	32	52	30	36	8	16	825	142	90	1004	29
Growth Adj:	1.23	1.23	1.23	1.23	1.23	1.23	1.21	1.21	1.21	1.21	1.21	1.21
Initial Bse:	223	39	64	37	44	10	19	1001	172	109	1218	35
Added Vol:	46	0	0	0	0	0	0	40	40	0	46	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	269	39	64	37	44	10	19	1041	212	109	1264	35
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	269	39	64	37	44	10	19	1041	212	109	1264	35
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	269	39	64	37	44	10	19	1041	212	109	1264	35
RTOR Reduct:	0	0	64	0	0	0	0	0	212	0	0	35
RTOR Vol:	269	39	0	37	44	10	19	1041	0	109	1264	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	269	39	0	37	44	10	19	1041	0	109	1264	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	0.40	0.49	0.11	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1720	1720	1720	697	837	186	1720	3440	1720	1720	3440	1720
Capacity Analysis Module:												
Vol/Sat:	0.16	0.02	0.00	0.05	0.05	0.05	0.01	0.30	0.00	0.06	0.37	0.00
Crit Vol:	269				91		19				632	
Crit Moves:	****				****		****				****	

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #20 Dougherty/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	0.636
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	63	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:		Protected			Protected			Protected			Protected	
Rights:		Include			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 3 0 1			2 0 3 0 1			2 0 3 0 1			2 0 3 0 1		
Volume Module:												
Base Vol:	127	985	164	346	560	354	468	1092	193	115	469	451
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	127	985	164	346	560	354	468	1092	193	115	469	451
Added Vol:	21	0	0	0	0	18	23	176	25	0	145	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	148	985	164	346	560	372	491	1268	218	115	614	451
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	148	985	164	346	560	372	491	1268	218	115	614	451
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	148	985	164	346	560	372	491	1268	218	115	614	451
RTOR Reduct:	0	0	63	0	0	270	0	0	81	0	0	190
RTOR Vol:	148	985	101	346	560	102	491	1268	137	115	614	261
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	148	985	101	346	560	102	491	1268	137	115	614	261
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3000	4950	1650	3000	4950	1650	3000	4950	1650	3000	4950	1650
Capacity Analysis Module:												
Vol/Sat:	0.05	0.20	0.06	0.12	0.11	0.06	0.16	0.26	0.08	0.04	0.12	0.16
Crit Vol:		328		173			246					261
Crit Moves:		****		****			****					****

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                  Level Of Service Computation Report
               CCTALOS Method (Future Volume Alternative)
*********************************************************************************
Intersection #21 San Ramon/Montevideo
*********************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):         0.892
Loss Time (sec):        0 (Y+R=4.0 sec)  Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        180                Level Of Service:                  D
*********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0     0    0    0     0    0    0     0    0    0
Lanes:        0  0  1  1  0    1  0  2  0  0    0  0  0  0  0    1  0  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module: 5:00 To 6:00
Base Vol:        0  705   345   583  946     0     0    0     0   172    0   643
Growth Adj:   1.22 1.22  1.22  1.18 1.26  1.22  1.22 1.22  1.22  1.09 1.18  1.18
Initial Bse:     0  859   421   688 1189     0     0    0     0   187    0   756
Added Vol:       0   12     0    12   13     0     0    0     0     0    0    11
PasserByVol:     0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:     0  871   421   700 1202     0     0    0     0   187    0   767
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:      0  871   421   700 1202     0     0    0     0   187    0   767
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:     0  871   421   700 1202     0     0    0     0   187    0   767
RTOR Reduct:     0    0     0     0    0     0     0    0     0     0    0   700
RTOR Vol:        0  871   421   700 1202     0     0    0     0   187    0    67
PCE Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:      0  871   421   700 1202     0     0    0     0   187    0    67
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1720 1720  1720  1720 1720  1720  1720 1720  1720  1720 1720  1720
Adjustment:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:        0.00 1.35  0.65  1.00 2.00  0.00  0.00 0.00  0.00  1.00 0.00  1.00
Final Sat.:      0 2320  1120  1720 3440     0     0    0     0  1720    0  1720
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.00 0.38  0.38  0.41 0.35  0.00  0.00 0.00  0.00  0.11 0.00  0.04
Crit Vol:           646         700                     0           187
Crit Moves:         ****        ****                                ****
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                     Level Of Service Computation Report
                  CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #22 Alcosts/Montevideo
********************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):          0.413
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         39              Level Of Service:                   A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Protected        Protected        Split Phase      Split Phase
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  2  0  0   0  0  2  0  1   1  0  0  0  1   0  0  0  0  0
------------|----------------||----------------||----------------||----------------|
Volume Module: 5:00 To 6:00
Base Vol:      66  262     0     0  616   210   114    0    43     0    0     0
Growth Adj:  1.21 1.21  1.21  1.21 1.21  1.21  1.22 1.22  1.22  1.22 1.22  1.22
Initial Bse:   80  318     0     0  747   255   139    0    52     0    0     0
Added Vol:      0   71     0     0   76    94    79    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   80  389     0     0  823   349   218    0    52     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    80  389     0     0  823   349   218    0    52     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   80  389     0     0  823   349   218    0    52     0    0     0
RTOR Reduct:    0    0     0     0    0   218     0    0    52     0    0     0
RTOR Vol:      80  389     0     0  823   131   218    0     0     0    0     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    80  389     0     0  823   131   218    0     0     0    0     0
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1720 1720  1720  1720 1720  1720  1720 1720  1720  1720 1720  1720
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 2.00  0.00  0.00 2.00  1.00  1.00 0.00  1.00  0.00 0.00  0.00
Final Sat.:  1720 3440     0     0 3440  1720  1720    0  1720     0    0     0
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.05 0.11  0.00  0.00 0.24  0.08  0.13 0.00  0.00  0.00 0.00  0.00
Crit Vol:      80              412              218                    0
Crit Moves:   ****             ****            ****
********************************************************************************
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #23 Dougherty/Crow

```
Cycle (sec):          100              Critical Vol./Cap.(X):        0.562
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):     xxxxxx
Optimal Cycle:         52              Level Of Service:                 A
```

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ignore			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	0 0	2	0 0	0 0	0	0 0	3 0	1	2 0	2 0	0
Volume Module:												
Base Vol:	135	0	811	0	0	0	0	1195	137	547	541	0
Growth Adj:	1.23	1.23	1.23	1.23	1.23	1.23	1.21	1.21	1.21	1.21	1.21	1.21
Initial Bse:	166	0	1000	0	0	0	0	1450	166	664	656	0
Added Vol:	18	0	0	0	0	0	0	51	23	0	43	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	184	0	1000	0	0	0	0	1501	189	664	699	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	184	0	1000	0	0	0	0	1501	189	664	699	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	184	0	1000	0	0	0	0	1501	189	664	699	0
RTOR Reduct:	0	0	0	0	0	0	0	0	101	0	0	0
RTOR Vol:	184	0	1000	0	0	0	0	1501	88	664	699	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	184	0	1000	0	0	0	0	1501	88	664	699	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	0.00	2.00	0.00	0.00	0.00	0.00	3.00	1.00	2.00	2.00	0.00
Final Sat.:	3127	0	3127	0	0	0	0	5160	1720	3127	3440	0
Capacity Analysis Module:												
Vol/Sat:	0.06	0.00	0.32	0.00	0.00	0.00	0.00	0.29	0.05	0.21	0.20	0.00
Crit Vol:	92				0			500		332		
Crit Moves:	****							****		****		

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                     Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #24 Alcosta/Old Ranch
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.345
Loss Time (sec):       0 (Y+R=4.0 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        35              Level Of Service:                  A
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected       Split Phase      Split Phase
Rights:          Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  1  1  0    1  0  1  1  0    1  0  1! 0  0    2  0  0  1  1
------------|---------------||---------------||---------------||---------------|
Volume Module: 5:00 To 6:00
Base Vol:      2   212   161  164   242     1    1     0     0  127     1   176
Growth Adj:  1.21  1.21  1.21 1.21  1.21  1.21 1.24  1.24  1.24 1.24  1.24  1.24
Initial Bse:   2   257   195  199   294     1    1     0     0  157     1   217
Added Vol:     0    40     0   37    39     0    0     0     0    0     0    31
PasserByVol:   0     0     0    0     0     0    0     0     0    0     0     0
Initial Fut:   2   297   195  236   333     1    1     0     0  157     1   248
User Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Volume:    2   297   195  236   333     1    1     0     0  157     1   248
Reduct Vol:    0     0     0    0     0     0    0     0     0    0     0     0
Reduced Vol:   2   297   195  236   333     1    1     0     0  157     1   248
RTOR Reduct:   0     0     0    0     0     0    0     0     0    0     0   236
RTOR Vol:      2   297   195  236   333     1    1     0     0  157     1    12
PCE Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Final Vol.:    2   297   195  236   333     1    1     0     0  157     1    12
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650  1650
Adjustment:  1.00  1.00  1.00 1.00  1.00  1.00 0.91  1.00  1.00 0.91  1.00  0.91
Lanes:       1.00  1.21  0.79 1.00  1.99  0.01 2.00  0.00  0.00 2.00  0.18  1.82
Final Sat.:  1650  1991  1309 1650  3288    12 3000     0     0 3000   298  2729
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.15  0.15 0.14  0.10  0.10 0.00  0.00  0.00 0.05  0.00  0.00
Crit Vol:                 246  236                1                78
Crit Moves:              ****  ****              ****              ****
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                    Level Of Service Computation Report
                  CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #25 Doughert/Old Ranch
********************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):          0.392
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         37              Level Of Service:                   A
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected       Split Phase      Split Phase
Rights:          Include          Include          Include          Include
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
Lanes:        1  0  3  0  0   0  0  2  1  0   1  0  0  0  2   0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module: 5:00 To 6:00 PM
Base Vol:     232 1052    0     0  494   47   102    0  120     0    0    0
Growth Adj:  1.23 1.23 1.23  1.23 1.23 1.23  1.24 1.24 1.24  1.24 1.24 1.24
Initial Bse:  286 1297    0     0  609   58   126    0  148     0    0    0
Added Vol:     17    0    0     0    0   14    18    0   19     0    0    0
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:  303 1297    0     0  609   72   144    0  167     0    0    0
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:   303 1297    0     0  609   72   144    0  167     0    0    0
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:  303 1297    0     0  609   72   144    0  167     0    0    0
RTOR Reduct:    0    0    0     0    0    0     0    0  167     0    0    0
RTOR Vol:     303 1297    0     0  609   72   144    0    0     0    0    0
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Final Vol.:   303 1297    0     0  609   72   144    0    0     0    0    0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1720 1720 1720  1720 1720 1720  1720 1720 1720  1720 1720 1720
Adjustment:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 0.91  1.00 1.00 1.00
Lanes:       1.00 3.00 0.00  0.00 2.68 0.32  1.00 0.00 2.00  0.00 0.00 0.00
Final Sat.:  1720 5160    0     0 4615  545  1720    0 3127     0    0    0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.18 0.25 0.00  0.00 0.13 0.13  0.08 0.00 0.00  0.00 0.00 0.00
Crit Vol:     303                    227      144                      0
Crit Moves:  ****                   ****     ****
********************************************************************************
```

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--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
                CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #26 Sunset/Center Street
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):          0.550
Loss Time (sec):       0 (Y+R=4.0 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:        41              Level Of Service:                   A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Protected        Protected         Permitted        Permitted
Rights:         Include          Include           Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        2  0  2  1  0   1  0  1  1  0   0  1  0  0  1   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     250  200  112    25  990   75    50   15  175   100   25   15
Growth Adj:  1.09 1.09 1.00  1.09 1.00 1.09  1.09 1.09 1.09  1.09 1.09 1.09
Initial Bse:  272  218  112    27  990   82    54   16  190   109   27   16
Added Vol:      0  131  123    13  152    0     0    0    0   -72    0   12
PasserByVol:    0    0   83     0    0    0     0    0    0    77    0    0
Initial Fut:  272  349  318    40 1142   82    54   16  190   114   27   28
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:   272  349  318    40 1142   82    54   16  190   114   27   28
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:  272  349  318    40 1142   82    54   16  190   114   27   28
RTOR Reduct:    0    0    0     0    0    0     0    0  150     0    0    0
RTOR Vol:     272  349  318    40 1142   82    54   16   41   114   27   28
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Final Vol.:   272  349  318    40 1142   82    54   16   41   114   27   28
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1720 1720 1720  1720 1720 1720  1720 1720 1720  1720 1720 1720
Adjustment:  0.91 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:       2.00 2.00 1.00  1.00 1.87 0.13  0.77 0.23 1.00  1.00 0.49 0.51
Final Sat.:  3127 3440 1720  1720 3211  229  1323  397 1720  1720  843  877
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.09 0.10 0.18  0.02 0.36 0.36  0.04 0.04 0.02  0.07 0.03 0.03
Crit Vol:     136                         612         71          114
Crit Moves:  ****                        ****        ****        ****
********************************************************************************
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                    Level Of Service Computation Report
                 CCTALOS Method (Future Volume Alternative)
*********************************************************************************
Intersection #27 Bishop Drive/Sunset
*********************************************************************************
Cycle (sec):        100                Critical Vol./Cap.(X):          0.664
Loss Time (sec):      0 (Y+R=4.0 sec)  Average Delay (sec/veh):       xxxxxx
Optimal Cycle:       68                Level Of Service:                   B
*********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0     0    0     0    0    0     0    0    0     0
Lanes:        1  0  0  1  1   0  1  0  1  0    1  0  0  1  0    2  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     140   50    75    20  325    25    15  100   250   473   50    20
Growth Adj:  1.09 1.09  1.09  1.09 1.09  1.09  1.09 1.09  1.09  1.00 1.09  1.09
Initial Bse:  152   54    82    22  354    27    16  109   272   473   54    22
Added Vol:      4    0   140     0    0     0     0    5     4   161    5     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  156   54   222    22  354    27    16  114   276   634   59    22
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   156   54   222    22  354    27    16  114   276   634   59    22
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  156   54   222    22  354    27    16  114   276   634   59    22
RTOR Reduct:    0    0   222     0    0     0     0    0     0     0    0     0
RTOR Vol:     156   54     0    22  354    27    16  114   276   634   59    22
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   156   54     0    22  354    27    16  114   276   634   59    22
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  1.00 1.00  0.91  1.00 1.00  1.00  1.00 1.00  1.00  0.91 1.00  1.00
Lanes:       1.00 1.00  1.00  0.11 1.76  0.13  1.00 0.29  0.71  2.00 0.73  0.27
Final Sat.:  1650 1650  1500   178 2899   223  1650  482  1168  3000 1208   442
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.09 0.03  0.00  0.12 0.12  0.12  0.01 0.24  0.24  0.21 0.05  0.05
Crit Vol:     156                     201                   390   317
Crit Moves:  ****                    ****                  ****  ****
*********************************************************************************
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                  Level Of Service Computation Report
          2000 HCM 4-Way Stop Method (Future Volume Alternative)
***************************************************************************
Intersection #28 Bollinger Canyon/Norris Canyon
***************************************************************************
Cycle (sec):          100             Critical Vol./Cap.(X):          0.567
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):       13.6
Optimal Cycle:          0             Level Of Service:                   B
***************************************************************************
Approach:     North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Stop Sign        Stop Sign        Stop Sign        Stop Sign
Rights:          Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  1  1  0    1  0  1  1  0    0  0  1!  0  0    0  0  1!  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      72  197    59    69  213    20     6   84   146    36   79    44
Growth Adj:  1.23 1.23  1.23  1.23 1.23  1.23  1.21 1.21  1.21  1.21 1.21  1.21
Initial Bse:   89  243    73    85  263    25     7  102   177    44   96    53
Added Vol:      0   46     0     0   40     0     0   27     0     0   30     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   89  289    73    85  303    25     7  129   177    44  126    53
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    89  289    73    85  303    25     7  129   177    44  126    53
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   89  289    73    85  303    25     7  129   177    44  126    53
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    89  289    73    85  303    25     7  129   177    44  126    53
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.60  0.40  1.00 1.85  0.15  0.02 0.41  0.57  0.20 0.56  0.24
Final Sat.:   471  819   212   466  929    76    13  227   312    99  286   121
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.19 0.35  0.34  0.18 0.33  0.32  0.57 0.57  0.57  0.44 0.44  0.44
Crit Moves:       ****             ****                    ****  ****
Delay/Veh:   11.7 12.8  12.4  11.6 12.6  12.5  16.2 16.2  16.2  14.2 14.2  14.2
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  11.7 12.8  12.4  11.6 12.6  12.5  16.2 16.2  16.2  14.2 14.2  14.2
LOS by Move:    B    B     B     B    B     B     C    C     C     B    B     B
ApproachDel:      12.5             12.4             16.2             14.2
Delay Adj:        1.00             1.00             1.00             1.00
ApprAdjDel:       12.5             12.4             16.2             14.2
LOS by Appr:        B                B                C                B
AllWayAvgQ:   0.2  0.5   0.5   0.2  0.4   0.4   1.1  1.1   1.1   0.6  0.6   0.6
***************************************************************************
Note: Queue reported is the number of cars per lane.
```

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #29 Bollinger/Canyon Lakes

Cycle (sec):	100	Critical Vol./Cap.(X):	0.562
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	52	Level Of Service:	A

Approach:	North Bound	South Bound	East Bound	West Bound
Control:	Split Phase	Split Phase	Protected	Protected
Rights:	Include	Include	Include	Include
Min. Green:	0 0 0	0 0 0	0 0 0	0 0 0
Lanes:	1 0 0 1 0	0 1 0 0 1	1 0 3 0 1	1 0 2 1 0

Movement:	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Volume Module:												
Base Vol:	52	6	6	90	7	173	301	1402	107	24	638	89
Growth Adj:	1.09	1.09	1.09	1.09	1.09	1.09	1.23	1.23	1.23	1.23	1.23	1.23
Initial Bse:	57	7	7	98	8	188	371	1729	132	30	787	110
Added Vol:	0	0	0	0	0	19	24	258	0	0	213	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	57	7	7	98	8	207	395	1987	132	30	1000	110
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	57	7	7	98	8	207	395	1987	132	30	1000	110
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	57	7	7	98	8	207	395	1987	132	30	1000	110
RTOR Reduct:	0	0	0	0	0	207	0	0	57	0	0	0
RTOR Vol:	57	7	7	98	8	0	395	1987	75	30	1000	110
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	57	7	7	98	8	0	395	1987	75	30	1000	110
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.50	0.50	0.93	0.07	1.00	1.00	3.00	1.00	1.00	2.70	0.30
Final Sat.:	1650	825	825	1531	119	1650	1650	4950	1650	1650	4460	490
Capacity Analysis Module:												
Vol/Sat:	0.03	0.01	0.01	0.06	0.06	0.00	0.24	0.40	0.05	0.02	0.22	0.22
Crit Vol:	57				106		395					370
Crit Moves:	****				****		****					****

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                     Level Of Service Computation Report
                  CCTALOS Method (Future Volume Alternative)
*******************************************************************************
Intersection #30 Camino Ramon/Center Street
*******************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):         0.235
Loss Time (sec):        0 (Y+R=4.0 sec)  Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         30                Level Of Service:                  A
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        0  0  1  1  0    0  0  1  1  0    0  0  0  1  0    0  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0   431     0    0   488     0    0     0     0    0     0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   0   431     0    0   488     0    0     0     0    0     0     0
Added Vol:     0   206     4    0   227     4    0     0     0    0     0     0
PasserByVol:   0     0    53    0     0     0    0    29     0    0    24     0
Initial Fut:   0   637    57    0   715     4    0    29     0    0    24     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    0   637    57    0   715     4    0    29     0    0    24     0
Reduct Vol:    0     0     0    0     0     0    0     0     0    0     0     0
Reduced Vol:   0   637    57    0   715     4    0    29     0    0    24     0
RTOR Reduct:   0     0     0    0     0     0    0     0     0    0     0     0
RTOR Vol:      0   637    57    0   715     4    0    29     0    0    24     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    0   637    57    0   715     4    0    29     0    0    24     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.00 1.84  0.16  0.00 1.99  0.01  0.00 1.00  0.00  0.00 1.00  0.00
Final Sat.:     0 3029   271     0 3282    18     0 1650     0     0 1650     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.21  0.21  0.00 0.22  0.22  0.00 0.02  0.00  0.00 0.01  0.00
Crit Vol:       0                         360         29           0
Crit Moves:  ****                        ****        ****        ****
*******************************************************************************
```

TRAFFIX ANALYSIS

2020 + Project (Mitigation)

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-------------------------------------------------------------------------------
                   Level Of Service Computation Report
               CCTALOS Method (Future Volume Alternative)
*******************************************************************************
Intersection #12 Sunset/Bollinger
*******************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):        0.804
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       117                Level Of Service:                 D
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Split Phase      Split Phase       Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        2  0  0  1  0   0  1  0  0  1   2  0  4  0  1   2  0  4  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      56    9   36     89   39  219   1277 1848  720    215 1716  178
Growth Adj:  1.00 1.07 1.00   1.00 1.07 1.00   1.00 1.00 1.00   1.24 1.00 1.00
Initial Bse:   56   10   36     89   42  219   1277 1848  720    266 1716  178
Added Vol:      0    0    0     13    0   53    -69  329    0      0  120  -33
PasserByVol:    0    0    0      7    0    4     15  -15    0      0   -4    2
Initial Fut:   56   10   36    109   42  276   1223 2162  720    266 1832  147
User Adj:    1.00 1.00 1.00   1.00 1.00 0.45   1.00 1.00 1.00   1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
PHF Volume:    56   10   36    109   42  124   1223 2162  720    266 1832  147
Reduct Vol:     0    0    0      0    0    0      0    0    0      0    0    0
Reduced Vol:   56   10   36    109   42  124   1223 2162  720    266 1832  147
RTOR Reduct:    0    0    0      0    0  124      0    0   31      0    0  109
RTOR Vol:      56   10   36    109   42    0   1223 2162  689    266 1832   38
PCE Adj:     1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
Final Vol.:    56   10   36    109   42    0   1223 2162  689    266 1832   38
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650 1650   1650 1650 1650   1650 1650 1650   1650 1650 1650
Adjustment:  0.91 1.00 1.00   1.00 1.00 1.00   0.91 1.00 1.00   0.91 1.00 1.00
Lanes:       2.00 0.21 0.79   0.72 0.28 1.00   2.00 4.00 1.00   2.00 4.00 1.00
Final Sat.:  3000  349 1301   1192  458 1650   3000 6600 1650   3000 6600 1650
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.02 0.03 0.03   0.09 0.09 0.00   0.41 0.33 0.42   0.09 0.28 0.02
Crit Vol:                36         151         612                    458
Crit Moves:              ****       ****        ****                   ****
*******************************************************************************
```

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #12 Sunset/Bollinger

Cycle (sec):	100	Critical Vol./Cap.(X):	0.865
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	169	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 0 1 0			0 1 0 0 1			2 0 4 0 1			2 0 4 0 1		
Volume Module:												
Base Vol:	495	35	108	142	13	1264	420	2291	53	28	1786	231
Growth Adj:	1.00	1.09	1.00	1.00	1.09	1.00	1.00	1.00	1.00	1.23	1.00	1.00
Initial Bse:	495	38	108	142	14	1264	420	2291	53	35	1786	231
Added Vol:	0	0	0	34	0	46	199	231	0	0	438	55
PasserByVol:	0	0	0	29	0	48	59	-59	0	0	-48	24
Initial Fut:	495	38	108	205	14	1358	678	2463	53	35	2176	310
User Adj:	1.00	1.00	1.00	1.00	1.00	0.45	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	495	38	108	205	14	611	678	2463	53	35	2176	310
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	495	38	108	205	14	611	678	2463	53	35	2176	310
RTOR Reduct:	0	0	0	0	0	373	0	0	53	0	0	205
RTOR Vol:	495	38	108	205	14	238	678	2463	0	35	2176	105
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	495	38	108	205	14	238	678	2463	0	35	2176	105
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	0.26	0.74	0.94	0.06	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3000	430	1220	1544	106	1650	3000	6600	1650	3000	6600	1650
Capacity Analysis Module:												
Vol/Sat:	0.17	0.09	0.09	0.13	0.13	0.14	0.23	0.37	0.00	0.01	0.33	0.06
Crit Vol:	248					238	339				544	
Crit Moves:	****					****	****				****	

```
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
               CCTALOS Method (Future Volume Alternative)
********************************************************************************
Intersection #28 Bollinger Canyon/Norris Canyon
********************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):          0.724
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         83              Level Of Service:                   C
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Split Phase      Split Phase
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  1  1  0   1  0  1  1  0   0  0  1!  0  0   0  0  1!  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      99  281    66   121  360    11    12  279   164    69   61    87
Growth Adj:  1.24 1.24  1.24  1.24 1.24  1.24  1.21 1.21  1.21  1.21 1.21  1.21
Initial Bse:  122  347    82   150  445    14    14  336   198    83   74   105
Added Vol:      0   13     0     0   22     0     0    3     0     0   12     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  122  360    82   150  467    14    14  339   198    83   86   105
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   122  360    82   150  467    14    14  339   198    83   86   105
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  122  360    82   150  467    14    14  339   198    83   86   105
RTOR Reduct:    0    0     0     0    0     0     0    0     0     0    0     0
RTOR Vol:     122  360    82   150  467    14    14  339   198    83   86   105
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   122  360    82   150  467    14    14  339   198    83   86   105
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.63  0.37  1.00 1.94  0.06  0.03 0.61  0.36  0.30 0.31  0.39
Final Sat.:  1650 2691   609  1650 3207    93    43 1015   591   502  516   632
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.07 0.13  0.13  0.09 0.15  0.15  0.33 0.33  0.33  0.17 0.17  0.17
Crit Vol:          221         150                        551               273
Crit Moves:        ****        ****                      ****              ****
********************************************************************************
```

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #28 Bollinger Canyon/Norris Canyon

Cycle (sec):	100	Critical Vol./Cap.(X):	0.485
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	44	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	1 1	0	0 0	1!	0 0	0 0	1!	0 0
Volume Module:												
Base Vol:	72	197	59	69	213	20	6	84	146	36	79	44
Growth Adj:	1.23	1.23	1.23	1.23	1.23	1.23	1.21	1.21	1.21	1.21	1.21	1.21
Initial Bse:	89	243	73	85	263	25	7	102	177	44	96	53
Added Vol:	0	46	0	0	40	0	0	32	0	0	24	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	89	289	73	85	303	25	7	134	177	44	120	53
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	89	289	73	85	303	25	7	134	177	44	120	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	89	289	73	85	303	25	7	134	177	44	120	53
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	89	289	73	85	303	25	7	134	177	44	120	53
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	89	289	73	85	303	25	7	134	177	44	120	53
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.60	0.40	1.00	1.85	0.15	0.02	0.42	0.56	0.20	0.55	0.25
Final Sat.:	1650	2636	664	1650	3051	249	38	694	918	332	912	406
Capacity Analysis Module:												
Vol/Sat:	0.05	0.11	0.11	0.05	0.10	0.10	0.19	0.19	0.19	0.13	0.13	0.13
Crit Vol:			181	85					318		217	
Crit Moves:			****	****					****		****	

APPENDIX H

QUEUING ANALYSIS

2020 + Project

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	89	29	40	61	13	307	0	737	229	98	230	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		0	200		0	0		0	0		0
Storage Lanes	1		1	1		1	0		0	2		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.97	1.00	1.00
Frt			0.850			0.850		0.964				0.850
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	0	3412	0	3433	1863	1583
Flt Permitted	0.748			0.736						0.199		
Satd. Flow (perm)	1393	1863	1583	1371	1863	1583	0	3412	0	719	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			43			182		92				151
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		780			600			300			100	
Travel Time (s)		17.7			13.6			6.8			2.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	97	32	43	66	14	334	0	801	249	107	250	151
Shared Lane Traffic (%)												
Lane Group Flow (vph)	97	32	43	66	14	334	0	1050	0	107	250	151
v/c Ratio	0.24	0.08	0.12	0.14	0.03	0.65		0.63		0.32	0.28	0.18
Control Delay	10.2	16.7	8.3	10.1	12.4	13.5		12.7		13.9	10.6	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.1		0.0	0.0	0.0
Total Delay	10.2	16.7	8.3	10.1	12.4	13.5		12.7		13.9	10.6	3.3
Queue Length 50th (ft)	14	5	0	11	3	33		98		8	40	0
Queue Length 95th (ft)	33	27	21	25	12	90		#228		30	99	28
Internal Link Dist (ft)		700			520			220			20	
Turn Bay Length (ft)	180			200								
Base Capacity (vph)	409	622	557	464	618	647		1656		339	878	826
Starvation Cap Reductn	0	0	0	0	0	0		54		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0		0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0		0		0	0	0
Reduced v/c Ratio	0.24	0.05	0.08	0.14	0.02	0.52		0.66		0.32	0.28	0.18

Intersection Summary

Area Type: Other

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1223	2162	720	266	1832	147	56	10	36	109	42	276
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	600		0	250		0	0		0	0		0
Storage Lanes	2		1	2		1	2		0	0		2
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.97	0.86	1.00	0.97	0.86	1.00	0.97	1.00	1.00	1.00	1.00	0.88
Frt			0.850			0.850		0.883				0.850
Flt Protected	0.950			0.950			0.950				0.965	
Satd. Flow (prot)	3433	6408	1583	3433	6408	1583	3433	1645	0	0	1798	2787
Flt Permitted	0.950			0.950			0.950				0.965	
Satd. Flow (perm)	3433	6408	1583	3433	6408	1583	3433	1645	0	0	1798	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			597			127		39				300
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1100			900			847			420	
Travel Time (s)		25.0			20.5			19.3			9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1329	2350	783	289	1991	160	61	11	39	118	46	300
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1329	2350	783	289	1991	160	61	50	0	0	164	300
v/c Ratio	1.33	0.73	0.72	0.64	0.92	0.26	0.14	0.21			0.74	0.50
Control Delay	190.5	27.4	9.5	60.9	49.1	9.3	51.9	22.8			70.1	14.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	190.5	27.4	9.5	60.9	49.1	9.3	51.9	22.8			70.1	14.7
Queue Length 50th (ft)	~746	442	102	121	466	19	24	8			143	56
Queue Length 95th (ft)	#883	486	262	169	518	69	46	48			#247	102
Internal Link Dist (ft)		1020			820			767			340	
Turn Bay Length (ft)	600			250								
Base Capacity (vph)	1003	3204	1090	449	2169	620	423	237			221	606
Starvation Cap Reductn	0	0	0	0	0	0	0	0			0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0			0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0			0	0
Reduced v/c Ratio	1.33	0.73	0.72	0.64	0.92	0.26	0.14	0.21			0.74	0.50

Intersection Summary

Area Type: Other

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1223	2162	720	266	1832	147	56	10	36	109	42	276
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	600		0	250		0	0		0	0		0
Storage Lanes	2		1	2		1	2		0	1		2
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.97	0.86	1.00	0.97	0.86	1.00	0.97	1.00	1.00	0.95	0.95	0.88
Frt			0.850			0.850		0.883				0.850
Flt Protected	0.950			0.950			0.950			0.950	0.978	
Satd. Flow (prot)	3433	6408	1583	3433	6408	1583	3433	1645	0	1681	1731	2787
Flt Permitted	0.950			0.950			0.950			0.950	0.978	
Satd. Flow (perm)	3433	6408	1583	3433	6408	1583	3433	1645	0	1681	1731	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			597			127		39				300
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1100			900			847			420	
Travel Time (s)		25.0			20.5			19.3			9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1329	2350	783	289	1991	160	61	11	39	118	46	300
Shared Lane Traffic (%)										31%		
Lane Group Flow (vph)	1329	2350	783	289	1991	160	61	50	0	81	83	300
v/c Ratio	1.33	0.73	0.72	0.64	0.92	0.26	0.14	0.21		0.39	0.39	0.50
Control Delay	190.5	27.4	9.5	60.9	49.1	9.3	51.9	22.8		52.7	52.4	14.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	190.5	27.4	9.5	60.9	49.1	9.3	51.9	22.8		52.7	52.4	14.7
Queue Length 50th (ft)	~746	442	102	121	466	19	24	8		73	75	56
Queue Length 95th (ft)	#883	486	262	169	518	69	46	48		132	135	102
Internal Link Dist (ft)		1020			820			767			340	
Turn Bay Length (ft)	600			250								
Base Capacity (vph)	1003	3204	1090	449	2169	620	423	237		207	213	606
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	1.33	0.73	0.72	0.64	0.92	0.26	0.14	0.21		0.39	0.39	0.50

Intersection Summary

Area Type: Other

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	866	1040	481	99	2125	105	36	29	9	60	116	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500		400	225		225	445		0	0		0
Storage Lanes	2		1	2		1	2		1	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.97	0.86	1.00	0.97	0.86	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	6408	1583	3433	6408	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	6408	1583	3433	6408	1583	3433	1863	1583	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			472			102			10			77
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		900			600			867			400	
Travel Time (s)		20.5			13.6			19.7			9.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	941	1130	523	108	2310	114	39	32	10	65	126	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	941	1130	523	108	2310	114	39	32	10	65	126	77
v/c Ratio	1.03	0.33	0.49	0.47	1.08	0.19	0.25	0.10	0.03	0.82	0.38	0.22
Control Delay	71.1	12.2	3.5	47.7	75.8	6.6	45.8	31.9	17.0	106.4	36.5	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.1	12.2	3.5	47.7	75.8	6.6	45.8	31.9	17.0	106.4	36.5	9.7
Queue Length 50th (ft)	~297	99	13	30	~431	5	11	15	0	38	64	0
Queue Length 95th (ft)	#416	122	62	57	#507	40	27	41	14	#113	117	37
Internal Link Dist (ft)		820			520			787			320	
Turn Bay Length (ft)	500		400	225		225	445					
Base Capacity (vph)	915	3418	1065	229	2136	596	153	331	290	79	331	345
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.33	0.49	0.47	1.08	0.19	0.25	0.10	0.03	0.82	0.38	0.22

Intersection Summary

Area Type: Other

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	951	160	157	2194	320	25	0	22	103	0	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	150		0	325		0	0		0
Storage Lanes	2		0	2		0	1		0	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.97	0.86	0.86	0.97	0.86	0.86	1.00	1.00	1.00	0.97	1.00	1.00
Frt		0.978			0.981			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	6267	0	3433	6286	0	1770	1583	0	3433	1583	0
Flt Permitted	0.211			0.950			0.730			0.742		
Satd. Flow (perm)	762	6267	0	3433	6286	0	1360	1583	0	2681	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		84			101			276			2	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		600			330			919			700	
Travel Time (s)		13.6			7.5			20.9			15.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	1034	174	171	2385	348	27	0	24	112	0	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	1208	0	171	2733	0	27	24	0	112	42	0
v/c Ratio	0.05	0.54		0.46	0.81		0.06	0.03		0.13	0.08	
Control Delay	12.7	14.5		27.3	12.8		13.3	0.1		13.5	12.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	12.7	14.5		27.3	12.8		13.3	0.1		13.5	12.9	
Queue Length 50th (ft)	1	83		27	186		6	0		12	9	
Queue Length 95th (ft)	6	111		52	234		20	0		27	26	
Internal Link Dist (ft)		520			250			839			620	
Turn Bay Length (ft)	200			150			325					
Base Capacity (vph)	263	2220		375	3362		445	704		877	519	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.05	0.54		0.46	0.81		0.06	0.03		0.13	0.08	

Intersection Summary

Area Type: Other

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	52	6	152	33	1	7	324	773	58	13	242	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	80		0
Storage Lanes	0		1	1		0	2		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.91	0.91	1.00	0.95	0.95
Frt			0.850		0.867			0.990			0.986	
Flt Protected		0.957		0.950			0.950			0.950		
Satd. Flow (prot)	0	1783	1583	1770	1615	0	3433	5034	0	1770	3490	0
Flt Permitted		0.743		0.715			0.950			0.950		
Satd. Flow (perm)	0	1384	1583	1332	1615	0	3433	5034	0	1770	3490	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			165		8			25			18	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		460			900			420			280	
Travel Time (s)		10.5			20.5			9.5			6.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	57	7	165	36	1	8	352	840	63	14	263	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	64	165	36	9	0	352	903	0	14	290	0
v/c Ratio		0.36	0.47	0.21	0.04		0.59	0.25		0.13	0.16	
Control Delay		30.4	9.5	26.9	15.0		38.7	4.4		37.4	15.7	
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		30.4	9.5	26.9	15.0		38.7	4.4		37.4	15.7	
Queue Length 50th (ft)		24	0	13	0		152	77		8	108	
Queue Length 95th (ft)		53	45	35	11		m122	m96		m20	162	
Internal Link Dist (ft)		380			820			340			200	
Turn Bay Length (ft)							150			80		
Base Capacity (vph)		383	558	369	453		687	3642		109	1789	
Starvation Cap Reductn		0	0	0	0		0	0		0	0	
Spillback Cap Reductn		0	0	0	0		0	32		0	0	
Storage Cap Reductn		0	0	0	0		0	0		0	0	
Reduced v/c Ratio		0.17	0.30	0.10	0.02		0.51	0.25		0.13	0.16	

Intersection Summary

Area Type: Other

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱		↰↰	↑↱		↰	↑↱	↱		↰↑↱	
Volume (vph)	27	89	98	163	77	12	322	422	88	12	15	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	280		0	0		0
Storage Lanes	1		0	2		0	1		1	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95
Frt		0.921			0.980			0.997	0.850		0.934	
Flt Protected	0.950			0.950			0.950				0.988	
Satd. Flow (prot)	1770	1716	0	3433	1825	0	1770	1764	1504	0	3266	0
Flt Permitted	0.950			0.950			0.950				0.988	
Satd. Flow (perm)	1770	1716	0	3433	1825	0	1770	1764	1504	0	3266	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		38			6			1	86		23	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		755			780			280			135	
Travel Time (s)		17.2			17.7			6.4			3.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	97	107	177	84	13	350	459	96	13	16	23
Shared Lane Traffic (%)									10%			
Lane Group Flow (vph)	29	204	0	177	97	0	350	469	86	0	52	0
v/c Ratio	0.28	0.75		0.56	0.26		0.33	0.44	0.09		0.27	
Control Delay	64.5	60.1		62.9	42.3		3.8	6.8	0.2		40.6	
Queue Delay	0.0	0.0		0.0	0.0		1.0	1.2	0.0		0.0	
Total Delay	64.5	60.1		62.9	42.3		4.8	8.0	0.2		40.6	
Queue Length 50th (ft)	24	137		74	67		17	61	0		12	
Queue Length 95th (ft)	56	211		110	112		44	537	1		34	
Internal Link Dist (ft)		675			700			200			55	
Turn Bay Length (ft)							280					
Base Capacity (vph)	106	362		607	594		1076	1073	948		422	
Starvation Cap Reductn	0	0		0	0		476	376	0		0	
Spillback Cap Reductn	0	0		0	0		0	0	0		0	
Storage Cap Reductn	0	0		0	0		0	0	0		0	
Reduced v/c Ratio	0.27	0.56		0.29	0.16		0.58	0.67	0.09		0.12	

Intersection Summary	
Area Type:	Other

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	193	71	162	283	140	214	0	536	141	429	357	604
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		0	200		0	0		0	0		0
Storage Lanes	1		1	1		1	0		0	2		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.97	1.00	1.00
Frt			0.850			0.850		0.969				0.850
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	0	3430	0	3433	1863	1583
Flt Permitted	0.678			0.707						0.320		
Satd. Flow (perm)	1263	1863	1583	1317	1863	1583	0	3430	0	1156	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			176			188		74				657
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		780			600			300			1000	
Travel Time (s)		17.7			13.6			6.8			22.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	210	77	176	308	152	233	0	583	153	466	388	657
Shared Lane Traffic (%)												
Lane Group Flow (vph)	210	77	176	308	152	233	0	736	0	466	388	657
v/c Ratio	0.61	0.25	0.43	0.63	0.38	0.48		0.47		0.91	0.47	0.62
Control Delay	18.5	17.6	7.1	16.9	17.4	8.1		9.6		41.9	12.0	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	18.5	17.6	7.1	16.9	17.4	8.1		9.6		41.9	12.0	4.1
Queue Length 50th (ft)	33	16	0	52	32	9		55		52	64	0
Queue Length 95th (ft)	67	44	37	98	69	50		110		#147	144	51
Internal Link Dist (ft)		700			520			220			920	
Turn Bay Length (ft)	180			200								
Base Capacity (vph)	344	574	609	491	619	651		1561		512	825	1067
Starvation Cap Reductn	0	0	0	0	0	0		71		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0		0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0		0		0	0	0
Reduced v/c Ratio	0.61	0.13	0.29	0.63	0.25	0.36		0.49		0.91	0.47	0.62

Intersection Summary

Area Type: Other

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	678	2463	53	35	2176	310	495	38	108	205	14	1358
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	600		0	250		0	0		0	0		0
Storage Lanes	2		1	2		1	2		0	0		2
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.97	0.86	1.00	0.97	0.86	1.00	0.97	1.00	1.00	1.00	1.00	0.88
Frt			0.850			0.850		0.889				0.850
Flt Protected	0.950			0.950			0.950				0.955	
Satd. Flow (prot)	3433	6408	1583	3433	6408	1583	3433	1656	0	0	1779	2787
Flt Permitted	0.950			0.950			0.950				0.955	
Satd. Flow (perm)	3433	6408	1583	3433	6408	1583	3433	1656	0	0	1779	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			36			196		87				431
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1100			900			847			420	
Travel Time (s)		25.0			20.5			19.3			9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	737	2677	58	38	2365	337	538	41	117	223	15	1476
Shared Lane Traffic (%)												
Lane Group Flow (vph)	737	2677	58	38	2365	337	538	158	0	0	238	1476
v/c Ratio	1.37	0.99	0.08	0.39	1.26	0.56	1.00	0.47			0.48	1.36
Control Delay	220.2	55.5	11.8	78.3	162.5	20.7	96.7	29.5			33.3	186.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			1.3	22.0
Total Delay	220.2	55.5	11.8	78.3	162.5	20.7	96.7	29.5			34.6	208.3
Queue Length 50th (ft)	~455	696	12	18	~783	106	255	58			123	~811
Queue Length 95th (ft)	#581	#795	40	38	#854	208	#378	132			218	#971
Internal Link Dist (ft)		1020			820			767			340	
Turn Bay Length (ft)	600			250								
Base Capacity (vph)	539	2701	688	98	1877	602	539	334			496	1087
Starvation Cap Reductn	0	0	0	0	0	0	0	0			113	38
Spillback Cap Reductn	0	0	0	0	0	0	0	0			0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0			0	0
Reduced v/c Ratio	1.37	0.99	0.08	0.39	1.26	0.56	1.00	0.47			0.62	1.41

Intersection Summary

Area Type: Other

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

12: Bollinger Canyon & Sunset Drive

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	678	2463	53	35	2176	310	495	38	108	205	14	1358
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	600		0	250		0	0		0	0		0
Storage Lanes	2		1	2		1	2		0	1		2
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.97	0.86	1.00	0.97	0.86	1.00	0.97	1.00	1.00	0.95	0.95	0.88
Frt			0.850			0.850		0.889				0.850
Flt Protected	0.950			0.950			0.950			0.950	0.958	
Satd. Flow (prot)	3433	6408	1583	3433	6408	1583	3433	1656	0	1681	1695	2787
Flt Permitted	0.950			0.950			0.950			0.950	0.958	
Satd. Flow (perm)	3433	6408	1583	3433	6408	1583	3433	1656	0	1681	1695	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			36			196		87				431
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1100			900			847			420	
Travel Time (s)		25.0			20.5			19.3			9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	737	2677	58	38	2365	337	538	41	117	223	15	1476
Shared Lane Traffic (%)										47%		
Lane Group Flow (vph)	737	2677	58	38	2365	337	538	158	0	118	120	1476
v/c Ratio	1.37	0.99	0.08	0.39	1.26	0.56	1.00	0.47		0.25	0.25	1.36
Control Delay	220.2	55.5	11.8	78.3	162.5	20.7	96.7	29.5		30.7	30.6	186.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	22.0
Total Delay	220.2	55.5	11.8	78.3	162.5	20.7	96.7	29.5		30.7	30.6	208.3
Queue Length 50th (ft)	~455	696	12	18	~783	106	255	58		63	63	~811
Queue Length 95th (ft)	#581	#795	40	38	#854	208	#378	132		m117	m120	#971
Internal Link Dist (ft)		1020			820			767			340	
Turn Bay Length (ft)	600			250								
Base Capacity (vph)	539	2701	688	98	1877	602	539	334		468	472	1087
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	38
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	1.37	0.99	0.08	0.39	1.26	0.56	1.00	0.47		0.25	0.25	1.41

Intersection Summary

Area Type: Other

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	511	2196	81	39	1451	79	552	107	107	338	43	334
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500		400	225		225	445		0	0		0
Storage Lanes	2		1	2		1	2		1	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.97	0.86	1.00	0.97	0.86	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	6408	1583	3433	6408	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	6408	1583	3433	6408	1583	3433	1863	1583	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			88			86			116			330
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		900			600			867			400	
Travel Time (s)		20.5			13.6			19.7			9.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	555	2387	88	42	1577	86	600	116	116	367	47	363
Shared Lane Traffic (%)												
Lane Group Flow (vph)	555	2387	88	42	1577	86	600	116	116	367	47	363
v/c Ratio	1.04	1.12	0.15	0.27	1.11	0.21	0.68	0.33	0.30	0.81	0.13	0.64
Control Delay	88.2	89.8	5.6	46.3	93.1	8.1	34.9	34.6	8.5	47.5	31.6	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	88.2	89.8	5.6	46.3	93.1	8.1	34.9	34.6	8.5	47.5	31.6	11.3
Queue Length 50th (ft)	~177	~458	0	12	~300	0	158	58	0	196	22	16
Queue Length 95th (ft)	#278	#534	31	28	#375	37	217	107	44	#338	52	99
Internal Link Dist (ft)		820			520			787			320	
Turn Bay Length (ft)	500		400	225		225	445					
Base Capacity (vph)	534	2136	586	153	1424	419	877	352	393	452	352	567
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.04	1.12	0.15	0.27	1.11	0.21	0.68	0.33	0.30	0.81	0.13	0.64

Intersection Summary

Area Type: Other

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	2651	26	90	1426	380	270	0	155	592	0	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	150		0	325		0	0		0
Storage Lanes	2		0	2		0	1		0	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.97	0.86	0.86	0.97	0.86	0.86	1.00	1.00	1.00	0.97	1.00	1.00
Frt		0.999			0.968			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	6401	0	3433	6203	0	1770	1583	0	3433	1583	0
Flt Permitted	0.200			0.950			0.713			0.651		
Satd. Flow (perm)	723	6401	0	3433	6203	0	1328	1583	0	2353	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			178			182			17	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		600			330			919			700	
Travel Time (s)		13.6			7.5			20.9			15.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	2882	28	98	1550	413	293	0	168	643	0	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	49	2910	0	98	1963	0	293	168	0	643	68	0
v/c Ratio	0.19	1.25		0.39	0.60		0.64	0.25		0.79	0.12	
Control Delay	14.3	136.5		29.2	9.6		23.0	3.3		25.5	10.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	14.3	136.5		29.2	9.6		23.0	3.3		25.5	10.6	
Queue Length 50th (ft)	5	~363		15	107		78	0		95	11	
Queue Length 95th (ft)	15	#440		35	139		#156	28		#173	33	
Internal Link Dist (ft)		520			250			839			620	
Turn Bay Length (ft)	200			150			325					
Base Capacity (vph)	263	2330		250	3245		459	666		813	558	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.19	1.25		0.39	0.60		0.64	0.25		0.79	0.12	

Intersection Summary

Area Type: Other

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱	↰	↑↱		↰↰	↑↑↑↱		↰	↑↑↱	
Volume (vph)	54	16	190	114	27	28	272	349	318	40	1142	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	80		0
Storage Lanes	0		1	1		0	2		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.91	0.91	1.00	0.95	0.95
Frt			0.850		0.924			0.928			0.990	
Flt Protected		0.963		0.950			0.950			0.950		
Satd. Flow (prot)	0	1794	1583	1770	1721	0	3433	4719	0	1770	3504	0
Flt Permitted		0.747		0.708			0.950			0.950		
Satd. Flow (perm)	0	1391	1583	1319	1721	0	3433	4719	0	1770	3504	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			207		30			346			14	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		460			900			420			280	
Travel Time (s)		10.5			20.5			9.5			6.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	59	17	207	124	29	30	296	379	346	43	1241	89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	76	207	124	59	0	296	725	0	43	1330	0
v/c Ratio		0.33	0.48	0.57	0.19		0.67	0.24		0.26	0.71	
Control Delay		28.3	7.9	36.4	15.3		30.6	1.5		41.5	10.8	
Queue Delay		0.0	0.1	0.3	0.0		0.0	0.0		0.0	0.4	
Total Delay		28.3	8.0	36.7	15.3		30.6	1.6		41.5	11.2	
Queue Length 50th (ft)		29	0	50	11		95	10		19	261	
Queue Length 95th (ft)		61	48	93	37		m92	m15		m30	m409	
Internal Link Dist (ft)		380			820			340			200	
Turn Bay Length (ft)							150			80		
Base Capacity (vph)		318	522	301	417		441	3082		168	1880	
Starvation Cap Reductn		0	0	0	0		0	0		0	167	
Spillback Cap Reductn		0	30	22	2		0	209		0	54	
Storage Cap Reductn		0	0	0	0		0	0		0	0	
Reduced v/c Ratio		0.24	0.42	0.44	0.14		0.67	0.25		0.26	0.78	

Intersection Summary

Area Type: Other

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱		↰↰	↑↱		↰	↑↱	↱		↰↑↱	
Volume (vph)	16	114	276	634	59	22	156	54	222	22	354	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	280		0	0		0
Storage Lanes	1		0	2		0	1		1	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95
Frt		0.894			0.959			0.907	0.850		0.990	
Flt Protected	0.950			0.950			0.950				0.997	
Satd. Flow (prot)	1770	1665	0	3433	1786	0	1770	1605	1504	0	3493	0
Flt Permitted	0.950			0.950			0.950				0.997	
Satd. Flow (perm)	1770	1665	0	3433	1786	0	1770	1605	1504	0	3493	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		79			24			48	145		4	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		755			780			280			135	
Travel Time (s)		17.2			17.7			6.4			3.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	124	300	689	64	24	170	59	241	24	385	29
Shared Lane Traffic (%)									40%			
Lane Group Flow (vph)	17	424	0	689	88	0	170	155	145	0	438	0
v/c Ratio	0.27	1.01		0.80	0.10		0.32	0.30	0.26		1.02	
Control Delay	76.5	90.9		56.1	15.0		57.7	45.4	26.4		108.5	
Queue Delay	0.0	2.8		0.2	0.0		2.3	1.4	0.8		0.0	
Total Delay	76.5	93.7		56.3	15.0		60.0	46.8	27.2		108.5	
Queue Length 50th (ft)	15	~337		304	30		140	103	57		~221	
Queue Length 95th (ft)	42	#560		348	62		212	173	114		#336	
Internal Link Dist (ft)		675			700			200			55	
Turn Bay Length (ft)							280					
Base Capacity (vph)	63	419		1422	1069		528	513	551		428	
Starvation Cap Reductn	0	0		0	0		244	210	207		0	
Spillback Cap Reductn	0	4		194	0		0	0	0		0	
Storage Cap Reductn	0	0		0	0		0	0	0		0	
Reduced v/c Ratio	0.27	1.02		0.56	0.08		0.60	0.51	0.42		1.02	

Intersection Summary

Area Type: Other

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

APPENDIX I

HCS FREEWAY ANALYSIS

I-680 BASIC FREEWAY SEGMENTS

Existing
Existing + Project
2020
2020 + Project

I-680/BOLLINGER CANYON ROAD INTERCHANGE

Existing
Existing + Project
2020
2020 + Project

I-680 BASIC FREEWAY SEGMENTS

Existing

HCS2000: Basic Freeway Segments Release 4.1f

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DLL
Agency or Company:	DMJM Harris
Date Performed:	5/30/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-680 Northbound
From/To:	Alcosta Blvd/Bollinger Canyon
Jurisdiction:	
Analysis Year:	Existing
Description:	Bishop Ranch 2

Flow Inputs and Adjustments

Volume, V	6329	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1758	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	2344	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2344	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	52.4	mi/h
Number of lanes, N	3	
Density, D	44.7	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DLL
Agency or Company:	DMJM Harris
Date Performed:	5/30/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-680 Northbound
From/To:	Bollinger Canyon/Norris Canyon
Jurisdiction:	
Analysis Year:	Existing
Description:	Bishop Ranch 2

Flow Inputs and Adjustments

Volume, V	5403	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1501	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1501	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1501	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	4	
Density, D	23.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DLL
Agency or Company:	DMJM Harris
Date Performed:	5/30/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-680 Southbound
From/To:	Norris Canyon/Bollinger Canyon
Jurisdiction:	
Analysis Year:	Existing
Description:	Bishop Ranch 2

Flow Inputs and Adjustments

Volume, V	6885	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1913	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1913	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1913	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	62.7	mi/h
Number of lanes, N	4	
Density, D	30.5	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Phone: Fax:
E-mail:

Operational Analysis

Analyst: DLL
Agency or Company: DMJM Harris
Date Performed: 5/30/2007
Analysis Time Period: AM Peak
Freeway/Direction: I-680 Southbound
From/To: Bollinger Canyon/Alcosta Blvd
Jurisdiction:
Analysis Year: Existing
Description: Bishop Ranch 2

Flow Inputs and Adjustments

Volume, V	7176	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1993	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	2658	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2658	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

Bollinger I680 NB Freeway Seg.txt

HCS2000: Basic Freeway Segments Release 4.1f

Phone:
E-mail:
Fax:

Operational Analysis

Analyst:	DLL
Agency or Company:	DMJM Harris
Date Performed:	5/30/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-680 Northbound
From/To:	Alcosta Blvd/Bollinger Canyon
Jurisdiction:	
Analysis Year:	Existing
Description: Bishop Ranch 2	

Flow Inputs and Adjustments

Volume, V	5734	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1593	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	2124	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2124	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	59.0	mi/h
Number of lanes, N	3	
Density, D	36.0	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Phone:
E-mail:
Fax:

Operational Analysis

Analyst:	DLL
Agency or Company:	DMJM Harris
Date Performed:	5/30/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-680 Northbound
From/To:	Bollinger Canyon/Norris Canyon
Jurisdiction:	
Analysis Year:	Existing

Description: Bishop Ranch 2

Flow Inputs and Adjustments

Volume, V	5534	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1537	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1537	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1537	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	4	
Density, D	23.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DLL
Agency or Company:	DMJM Harris
Date Performed:	5/30/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-680 Southbound
From/To:	Crow Canyon / Bollinger Canyon
Jurisdiction:	
Analysis Year:	Existing
Description:	Bishop Ranch 2

Flow Inputs and Adjustments

Volume, V	7416	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	2060	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	2060	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2060	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	4	
Density, D	34.1	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DLL
Agency or Company:	DMJM Harris
Date Performed:	5/30/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-680 Southbound
From/To:	Bollinger Canyon/Alcosta Blvd
Jurisdiction:	
Analysis Year:	Existing
Description:	Bishop Ranch 2

Flow Inputs and Adjustments

Volume, V	8106	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	2252	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	3002	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	3002	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

I-680 BASIC FREEWAY SEGMENTS

Existing + Project

Bollinger I680 NB Freeway Seg.txt

HCS2000: Basic Freeway Segments Release 4.1f

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DLL
Agency or Company:	DMJM Harris
Date Performed:	5/30/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-680 Northbound
From/To:	Alcosta Blvd/Bollinger Canyon
Jurisdiction:	
Analysis Year:	Existing + Flex Retail Project
Description:	Bishop Ranch 2

Flow Inputs and Adjustments

Volume, V	6576	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1827	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	2436	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2436	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DLL
Agency or Company:	DMJM Harris
Date Performed:	5/30/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-680 Northbound
From/To:	Bollinger Canyon/Norris Canyon
Jurisdiction:	
Analysis Year:	Existing + Flex Retail Project
Description:	Bishop Ranch 2

Flow Inputs and Adjustments

Volume, V	5454	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1515	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1515	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1515	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	4	
Density, D	23.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DLL
Agency or Company:	DMJM Harris
Date Performed:	5/30/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-680 Southbound
From/To:	Norris Canyon/Bollinger Canyon
Jurisdiction:	
Analysis Year:	Existing + Flex Retail Project

Description: Bishop Ranch 2

Flow Inputs and Adjustments

Volume, V	7002	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1945	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1945	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1945	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	62.3	mi/h
Number of lanes, N	4	
Density, D	31.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DLL
Agency or Company:	DMJM Harris
Date Performed:	5/30/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-680 Southbound
From/To:	Bollinger Canyon/Alcosta Blvd
Jurisdiction:	
Analysis Year:	Existing + Flex Retail Project
Description:	Bishop Ranch 2

Flow Inputs and Adjustments

Volume, V	7278	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	2022	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	2696	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2696	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DLL
Agency or Company:	DMJM Harris
Date Performed:	5/30/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-680 Northbound
From/To:	Alcosta Blvd/Bollinger Canyon
Jurisdiction:	
Analysis Year:	Existing + Flex Retail Project
Description:	Bishop Ranch 2

Flow Inputs and Adjustments

Volume, V	5964	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1657	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	2209	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2209	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	56.8	mi/h
Number of lanes, N	3	
Density, D	38.9	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

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E-mail:

Operational Analysis

Analyst:	DLL
Agency or Company:	DMJM Harris
Date Performed:	5/30/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-680 Northbound
From/To:	Bollinger Canyon/Norris Canyon
Jurisdiction:	
Analysis Year:	Existing + Flex Retail Project
Description: Bishop Ranch 2	

Flow Inputs and Adjustments

Volume, V	5693	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1581	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1581	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1581	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.9	mi/h
Number of lanes, N	4	
Density, D	24.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

Bollinger I680 SB Off Ramp.txt

HCS2000: Basic Freeway Segments Release 4.1f

Phone: Fax:
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Operational Analysis

Analyst:	DLL
Agency or Company:	DMJM Harris
Date Performed:	5/30/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-680 Southbound
From/To:	Crow Canyon / Bollinger Canyon
Jurisdiction:	
Analysis Year:	Existing + Flex Retail Project

Description: Bishop Ranch 2

Flow Inputs and Adjustments

Volume, V	7527	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	2091	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	2091	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2091	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	59.7	mi/h
Number of lanes, N	4	
Density, D	35.0+	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DLL
Agency or Company:	DMJM Harris
Date Performed:	5/30/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-680 Southbound
From/To:	Bollinger Canyon/Alcosta Blvd
Jurisdiction:	
Analysis Year:	Existing + Flex Retail Project
Description:	Bishop Ranch 2

Flow Inputs and Adjustments

Volume, V	8444	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	2346	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	3127	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	3127	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

I-680 BASIC FREEWAY SEGMENTS

2020

HCS2000: Basic Freeway Segments Release 4.1f

Phone: Fax:
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Operational Analysis

Analyst:	DLL
Agency or Company:	DMJM Harris
Date Performed:	5/30/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-680 Northbound
From/To:	Alcosta Blvd/Bollinger Canyon
Jurisdiction:	
~~Analysis Year:~~	~~Background 2020~~

Description: Bishop Ranch 2

Flow Inputs and Adjustments

Volume, V	7702	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	2139	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	2853	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2853	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DLL
Agency or Company:	DMJM Harris
Date Performed:	5/30/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-680 Northbound
From/To:	Bollinger Canyon/Norris Canyon
Jurisdiction:	
Analysis Year:	Background 2020

Description: Bishop Ranch 2

Flow Inputs and Adjustments

Volume, V	6648	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1847	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1847	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1847	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	63.5	mi/h
Number of lanes, N	4	
Density, D	29.1	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DLL
Agency or Company:	DMJM Harris
Date Performed:	5/30/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-680 Southbound
From/To:	Norris Canyon/Bollinger Canyon
Jurisdiction:	
Analysis Year:	Background 2020
Description: Bishop Ranch 2	

Flow Inputs and Adjustments

Volume, V	8845	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	2457	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	2457	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2457	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

Bollinger I680 SB Freeway Seg.txt

HCS2000: Basic Freeway Segments Release 4.1f

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DLL
Agency or Company:	DMJM Harris
Date Performed:	5/30/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-680 Southbound
From/To:	Bollinger Canyon/Alcosta Blvd
Jurisdiction:	
~~Analysis Year:~~	~~Background 2020~~

Description: Bishop Ranch 2

Flow Inputs and Adjustments

Volume, V	9164	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	2546	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	3394	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	3394	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DLL
Agency or Company:	DMJM Harris
Date Performed:	5/30/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-680 Northbound
From/To:	Alcosta Blvd/Bollinger Canyon
Jurisdiction:	
Analysis Year:	Background 2020
Description:	Bishop Ranch 2

Flow Inputs and Adjustments

Volume, V	6915	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1921	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	2561	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2561	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Phone:
E-mail:
Fax:

Operational Analysis

Analyst:	DLL
Agency or Company:	DMJM Harris
Date Performed:	5/30/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-680 Northbound
From/To:	Bollinger Canyon/Norris Canyon
Jurisdiction:	
Analysis Year:	Background 2020
Description:	Bishop Ranch 2

Flow Inputs and Adjustments

Volume, V	6807	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1891	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1891	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1891	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	4	
Density, D	30.0	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DLL
Agency or Company:	DMJM Harris
Date Performed:	5/30/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-680 Southbound
From/To:	Crow Canyon / Bollinger Canyon
Jurisdiction:	
Analysis Year:	Background 2020

Description: Bishop Ranch 2

Flow Inputs and Adjustments

Volume, V	9158	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	2544	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	2544	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2544	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DLL
Agency or Company:	DMJM Harris
Date Performed:	5/30/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-680 Southbound
From/To:	Bollinger Canyon/Alcosta Blvd
Jurisdiction:	
Analysis Year:	Background 2020
Description: Bishop Ranch 2	

Flow Inputs and Adjustments

Volume, V	10060	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	2794	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	3726	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	3726	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

I-680 BASIC FREEWAY SEGMENTS

2020 + Project

HCS2000: Basic Freeway Segments Release 4.1f

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DLL
Agency or Company:	DMJM Harris
Date Performed:	5/30/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-680 Northbound
From/To:	Alcosta Blvd/Bollinger Canyon
Jurisdiction:	
~~Analysis Year:~~	~~Background 2020 + Flex Retail~~

Description: Bishop Ranch 2

Flow Inputs and Adjustments

Volume, V	7833	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	2176	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	2901	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2901	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Phone:
E-mail:
Fax:

Operational Analysis

Analyst:	DLL
Agency or Company:	DMJM Harris
Date Performed:	5/30/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-680 Northbound
From/To:	Bollinger Canyon/Norris Canyon
Jurisdiction:	
Analysis Year:	Background 2020 + Flex Retail
Description: Bishop Ranch 2	

Flow Inputs and Adjustments

Volume, V	6782	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1884	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1884	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1884	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	63.1	mi/h
Number of lanes, N	4	
Density, D	29.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DLL
Agency or Company:	DMJM Harris
Date Performed:	5/30/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-680 Southbound
From/To:	Norris Canyon/Bollinger Canyon
Jurisdiction:	
Analysis Year:	Background 2020 + Flex Retail
Description: Bishop Ranch 2	

Flow Inputs and Adjustments

Volume, V	9897	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	2749	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	2749	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2749	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DLL
Agency or Company:	DMJM Harris
Date Performed:	5/30/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-680 Southbound
From/To:	Bollinger Canyon/Alcosta Blvd
Jurisdiction:	
~~Analysis Year:~~	~~Background 2020 + Flex Retail~~

Description: Bishop Ranch 2

Flow Inputs and Adjustments

Volume, V	9252	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	2570	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	3427	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	3427	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DLL
Agency or Company:	DMJM Harris
Date Performed:	5/30/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-680 Northbound
From/To:	Alcosta Blvd/Bollinger Canyon
Jurisdiction:	
Analysis Year:	Background 2020 + Flex Retail
Description: Bishop Ranch 2	

Flow Inputs and Adjustments

Volume, V	7130	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1981	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	2641	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2641	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

Bollinger I680 NB On Ramp.txt

HCS2000: Basic Freeway Segments Release 4.1f

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DLL
Agency or Company:	DMJM Harris
Date Performed:	5/30/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-680 Northbound
From/To:	Bollinger Canyon/Norris Canyon
Jurisdiction:	
Analysis Year:	Background 2020 + Flex Retail
Description: Bishop Ranch 2	

Flow Inputs and Adjustments

Volume, V	6931	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1925	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	1925	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1925	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	62.6	mi/h
Number of lanes, N	4	
Density, D	30.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Phone:
E-mail:
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Operational Analysis

Analyst:	DLL
Agency or Company:	DMJM Harris
Date Performed:	5/30/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-680 Southbound
From/To:	Crow Canyon / Bollinger Canyon
Jurisdiction:	
~~Analysis Year:~~	~~Background 2020 + Flex Retail~~
Description:	Bishop Ranch 2

Flow Inputs and Adjustments

Volume, V	9264	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	2573	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	2573	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2573	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DLL
Agency or Company:	DMJM Harris
Date Performed:	5/30/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-680 Southbound
From/To:	Bollinger Canyon/Alcosta Blvd
Jurisdiction:	
~~Analysis Year:~~	~~Background 2020 + Flex Retail~~

Description: Bishop Ranch 2

Flow Inputs and Adjustments

Volume, V	10323	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	2868	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	1.00	
Flow rate, vp	3823	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	3823	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

I-680/BOLLINGER CANYON ROAD INTERCHANGE

Existing

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

_____Diverge Analysis_____

Analyst:	DLL
Agency/Co.:	DMJM Harris
Date performed:	5/10/2007
Analysis time period:	AM Peak
Freeway/Dir of Travel:	Northbound Off-Ramp
Junction:	I-680 @ Bollinger Canyon
Jurisdiction:	
Analysis Year:	Existing
Description:	Bishop Ranch 2

_____Freeway Data_____

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	6521	vph

_____Off Ramp Data_____

Side of freeway	Right	
Number of lanes in ramp	2	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	1926	vph
Length of first accel/decel lane	900	ft
Length of second accel/decel lane	0	ft

_____Adjacent Ramp Data (if one exists)_____

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

_____Conversion to pc/h Under Base Conditions_____

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	6521		1926			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1811		535			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Grade		Level			
Grade	0.00	%	0.00	%	%	
Length	0.00	mi	0.00	mi	mi	
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	7246		2140			pcph

_____Estimation of V12 Diverge Areas_____

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.450 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD} = 4438$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	7246	7050	Yes
v_{12}	4438	4400	Yes
$v_{FO} = v_F - v_R$	5106	7050	No
v_R	2140	3800	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D = 26.2$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	D_S	= 0.621	
Space mean speed in ramp influence area,	S_R	= 50.7	mph
Space mean speed in outer lanes,	S_O	= 64.3	mph
Space mean speed for all vehicles,	S	= 55.2	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst: DLL
Agency/Co.: DMJM Harris
Date performed: 5/10/2007
Analysis time period: AM Peak
Freeway/Dir of Travel: I-680 Northbound
Junction: I-680 @ Bollinger Canyon(Hook)
Jurisdiction:
Analysis Year: Existing
Description: Bishop Ranch 2

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4595	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	386	vph
Length of first accel/decel lane	720	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	4595		386			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1276		107			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%	%	
Length		mi		mi	mi	
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	5106		429			pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.598 Using Equation 1

$v_{12} = v_F \, (P_{FM}) =$ 3052 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5535	7050	No
v_{R12}	3481	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A =$ 27.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.397	
Space mean speed in ramp influence area,	S_R = 55.9	mph
Space mean speed in outer lanes,	S_O = 59.4	mph
Space mean speed for all vehicles,	S = 57.1	mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Diverge Analysis

Analyst: DLL
Agency/Co.: DMJM Harris
Date performed: 5/10/2007
Analysis time period: AM Peak
Freeway/Dir of Travel: Southbound Off-Ramp
Junction: I-680 @ Bollinger Canyon
Jurisdiction:
Analysis Year: Existing
Description: Bishop Ranch 2

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	6984	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	2	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	993	vph
Length of first accel/decel lane	1750	ft
Length of second accel/decel lane	0	ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	6984		993			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1940		276			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Grade		Level			
Grade	0.00	%	0.00	%	%	
Length	0.00	mi	0.00	mi	mi	
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	7760		1103			pcph

Estimation of V12 Diverge Areas

$L_{EQ} =$ (Equation 25-8 or 25-9)

$P_{FD} =$ 0.450 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD} = 4099$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	7760	7050	Yes
v_{12}	4099	4400	No
$v_{FO} = v_F - v_R$	6657	7050	No
v_R	1103	3800	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D = 8.0$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, $D_S = 0.527$

Space mean speed in ramp influence area, $S_R = 52.9$ mph

Space mean speed in outer lanes, $S_O = 60.9$ mph

Space mean speed for all vehicles, $S = 56.4$ mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

______Merge Analysis______

Analyst: DLL
Agency/Co.: DMJM Harris
Date performed: 5/10/2007
Analysis time period: AM Peak
Freeway/Dir of Travel: I-680 Southbound On-Ramp
Junction: I-680 @ Bollinger Canyon
Jurisdiction:
Analysis Year: Existing
Description: Bishop Ranch 2

______Freeway Data______

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	5991	vph

______On Ramp Data______

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	834	vph
Length of first accel/decel lane	720	ft
Length of second accel/decel lane		ft

______Adjacent Ramp Data (if one exists)______

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

______Conversion to pc/h Under Base Conditions______

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	5991		834			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1664		232			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%	%	
Length		mi		mi	mi	
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	6657		927			pcph

______Estimation of V12 Merge Areas______

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.598 Using Equation 1

$v_{12} = v_F (P_{FM}) =$ 3979 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	7584	7050	Yes
v_{R12}	4906	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A =$ 38.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	$M_S = 0.797$	
Space mean speed in ramp influence area,	$S_R = 46.7$	mph
Space mean speed in outer lanes,	$S_O = 56.2$	mph
Space mean speed for all vehicles,	$S = 49.6$	mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	DLL
Agency/Co.:	DMJM Harris
Date performed:	5/10/2007
Analysis time period:	AM Peak
Freeway/Dir of Travel:	Southbound On-Ramp
Junction:	I-680 @ Bollinger Canyon
Jurisdiction:	
Analysis Year:	Existing
Description:	Bishop Ranch 2

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	6742	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	482	vph
Length of first accel/decel lane	675	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	6742		482			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1873		134			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%	%	
Length		mi		mi	mi	
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	7491		536			pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.596 Using Equation 1

$v_{12} = v_F \, (P_{FM}) = 4468$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	8027	7050	Yes
v_{R12}	5004	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 40.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 0.855	
Space mean speed in ramp influence area,	S_R = 45.3	mph
Space mean speed in outer lanes,	S_O = 54.1	mph
Space mean speed for all vehicles,	S = 48.3	mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	DLL
Agency/Co.:	DMJM Harris
Date performed:	5/10/2007
Analysis time period:	PM Peak
Freeway/Dir of Travel:	Northbound Off-Ramp
Junction:	I-680 @ Bollinger Canyon
Jurisdiction:	
Analysis Year:	Existing
Description:	Bishop Ranch 2

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	5870	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	2	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	1362	vph
Length of first accel/decel lane	900	ft
Length of second accel/decel lane	0	ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	5870		1362			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1631		378			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Grade		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	6522		1513			pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.450 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD} = 3767$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6522	7050	No
v_{12}	3767	4400	No
$v_{FO} = v_F - v_R$	5009	7050	No
v_R	1513	3800	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D = 20.4$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, $D_S = 0.564$

Space mean speed in ramp influence area, $S_R = 52.0$ mph

Space mean speed in outer lanes, $S_O = 64.5$ mph

Space mean speed for all vehicles, $S = 56.6$ mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	DLL
Agency/Co.:	DMJM Harris
Date performed:	5/10/2007
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-680 Northbound
Junction:	I-680 @ Bollinger Canyon (Hook
Jurisdiction:	
Analysis Year:	Existing
Description:	Bishop Ranch 2

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4508	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	248	vph
Length of first accel/decel lane	720	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4508	248		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1252	69		v
Trucks and buses	0	0		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		
Heavy vehicle adjustment, fHV	1.000	1.000		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	5009	276		pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.598 Using Equation 1

$v_{12} = v_F (P_{FM}) =$ 2994 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5285	7050	No
v_{R12}	3270	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A =$ 26.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	$M_S = 0.373$	
Space mean speed in ramp influence area,	$S_R = 56.4$	mph
Space mean speed in outer lanes,	$S_O = 59.5$	mph
Space mean speed for all vehicles,	$S = 57.6$	mph

Existing PM Bollinger-I680 SB Off Ramp Analysis.txt

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Diverge Analysis

Analyst: DLL
Agency/Co.: DMJM Harris
Date performed: 5/10/2007
Analysis time period: PM Peak
Freeway/Dir of Travel: Southbound Off-Ramp
Junction: I-680 @ Bollinger Canyon
Jurisdiction:
Analysis Year: Existing
Description: Bishop Ranch 2

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	7534	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	2	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	1182	vph
Length of first accel/decel lane	1750	ft
Length of second accel/decel lane	0	ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	7534		1182			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	2093		328			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Grade		Level			
Grade	0.00	%	0.00	%	%	
Length	0.00	mi	0.00	mi	mi	
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	8371		1313			pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.450 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD} = 4489$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	8371	7050	Yes
v_{12}	4489	4400	Yes
$v_{FO} = v_F - v_R$	7058	7050	Yes
v_R	1313	3800	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D = 11.4$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, $D_S = 0.546$

Space mean speed in ramp influence area, $S_R = 52.4$ mph

Space mean speed in outer lanes, $S_O = 60.1$ mph

Space mean speed for all vehicles, $S = 55.7$ mph

Bollinger I680 SB On Ramp (Clover).txt

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Merge Analysis

Analyst: DLL
Agency/Co.: DMJM Harris
Date performed: 5/10/2007
Analysis time period: PM Peak
Freeway/Dir of Travel: I-680 Southbound On-Ramp
Junction: I-680 @ Bollinger Canyon (Hook
Jurisdiction:
Analysis Year: Existing
Description: Bishop Ranch 2

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	6352	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	1445	vph
Length of first accel/decel lane	720	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	6352		1445			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1764		401			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%		%
Length		mi		mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	7058		1606			pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.598 Using Equation 1

$v_{12} = v_F (P_{FM}) =$ 4218 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	8664	7050	Yes
v_{R12}	5824	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 45.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S	= 1.590	
Space mean speed in ramp influence area,	S_R	= 28.4	mph
Space mean speed in outer lanes,	S_O	= 55.2	mph
Space mean speed for all vehicles,	S	= 33.8	mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	DLL
Agency/Co.:	DMJM Harris
Date performed:	5/10/2007
Analysis time period:	PM Peak
Freeway/Dir of Travel:	Southbound On-Ramp
Junction:	I-680 @ Bollinger Canyon
Jurisdiction:	
Analysis Year:	Existing
Description:	Bishop Ranch 2

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	7653	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	504	vph
Length of first accel/decel lane	675	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	7653		504			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	2126		140			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%		%
Length		mi		mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	8503		560			pcph

Estimation of V12 Merge Areas

L_{EQ} =   (Equation 25-2 or 25-3)

P_{FM} =   0.596   Using Equation 1

$v_{12} = v_F\ (P_{FM}) =$ 5071 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	9063	7050	Yes
v_{R12}	5631	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A =$ 44.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S	= 1.362	
Space mean speed in ramp influence area,	S_R	= 33.7	mph
Space mean speed in outer lanes,	S_O	= 51.7	mph
Space mean speed for all vehicles,	S	= 38.8	mph

I-680/BOLLINGER CANYON ROAD INTERCHANGE

Existing + Project

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Diverge Analysis

Analyst: DLL
Agency/Co.: DMJM Harris
Date performed: 5/10/2007
Analysis time period: AM Peak
Freeway/Dir of Travel: Northbound Off-Ramp
Junction: I-680 @ Bollinger Canyon
Jurisdiction:
Analysis Year: Existing + Flex Retail Project
Description: Bishop Ranch 2

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	6796	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	2	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	2201	vph
Length of first accel/decel lane	900	ft
Length of second accel/decel lane	0	ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	6796		2201			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1888		611			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Grade		Level			
Grade	0.00	%	0.00	%	%	
Length	0.00	mi	0.00	mi	mi	
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	7551		2446			pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.450 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD} = 4743$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	7551	7050	Yes
v_{12}	4743	4400	Yes
$v_{FO} = v_F - v_R$	5105	7050	No
v_R	2446	3800	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D = 28.8$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, $D_S = 0.648$

Space mean speed in ramp influence area, $S_R = 50.1$ mph

Space mean speed in outer lanes, $S_0 = 64.3$ mph

Space mean speed for all vehicles, $S = 54.6$ mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	DLL
Agency/Co.:	DMJM Harris
Date performed:	5/10/2007
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-680 Northbound
Junction:	I-680 @ Bollinger Canyon(Hook)
Jurisdiction:	
Analysis Year:	Existing + Flex Retail Project
Description:	Bishop Ranch 2

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4595	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	386	vph
Length of first accel/decel lane	720	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	4595		386			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1276		107			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%	%	
Length		mi		mi	mi	
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	5106		429			pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.598 Using Equation 1

$v_{12} = v_F (P_{FM}) = 3052$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5535	7050	No
v_{R12}	3481	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A = 27.9$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S	= 0.397	
Space mean speed in ramp influence area,	S_R	= 55.9	mph
Space mean speed in outer lanes,	S_O	= 59.4	mph
Space mean speed for all vehicles,	S	= 57.1	mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	DLL
Agency/Co.:	DMJM Harris
Date performed:	5/10/2007
Analysis time period:	AM Peak
Freeway/Dir of Travel:	Southbound Off-Ramp
Junction:	I-680 @ Bollinger Canyon
Jurisdiction:	
Analysis Year:	Existing + Flex Retail Project
Description:	Bishop Ranch 2

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	7114	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	2	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	1123	vph
Length of first accel/decel lane	1750	ft
Length of second accel/decel lane	0	ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	7114		1123			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1976		312			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Grade		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	7904		1248			pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.450 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD} = 4243$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	7904	7050	Yes
v_{12}	4243	4400	No
$v_{FO} = v_F - v_R$	6656	7050	No
v_R	1248	3800	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D = 9.2$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, $D_S = 0.540$

Space mean speed in ramp influence area, $S_R = 52.6$ mph

Space mean speed in outer lanes, $S_O = 60.9$ mph

Space mean speed for all vehicles, $S = 56.1$ mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	DLL
Agency/Co.:	DMJM Harris
Date performed:	5/10/2007
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-680 Southbound On-Ramp
Junction:	I-680 @ Bollinger Canyon(Hook)
Jurisdiction:	
Analysis Year:	Existing + Flex Retail Project
Description:	Bishop Ranch 2

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	5991	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	948	vph
Length of first accel/decel lane	720	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	5991		948			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1664		263			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%	%	
Length		mi		mi	mi	
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	6657		1053			pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.598 Using Equation 1

$v_{12} = v_F (P_{FM}) =$ 3979 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	7710	7050	Yes
v_{R12}	5032	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 39.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 0.868	
Space mean speed in ramp influence area,	S_R = 45.0	mph
Space mean speed in outer lanes,	S_O = 56.2	mph
Space mean speed for all vehicles,	S = 48.4	mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	DLL
Agency/Co.:	DMJM Harris
Date performed:	5/10/2007
Analysis time period:	AM Peak
Freeway/Dir of Travel:	Southbound On-Ramp
Junction:	I-680 @ Bollinger Canyon
Jurisdiction:	
Analysis Year:	Existing + Flex Retail Project
Description:	Bishop Ranch 2

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	6845	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	482	vph
Length of first accel/decel lane	675	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	6845		482			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1901		134			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%		%
Length		mi		mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	7606		536			pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.596 Using Equation 1

$v_{12} = v_F (P_{FM}) = 4536$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	8142	7050	Yes
v_{R12}	5072	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A = 40.6$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 0.896		
Space mean speed in ramp influence area,	S_R = 44.4	mph	
Space mean speed in outer lanes,	S_O = 53.8	mph	
Space mean speed for all vehicles,	S = 47.5	mph	

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	DLL
Agency/Co.:	DMJM Harris
Date performed:	5/10/2007
Analysis time period:	PM Peak
Freeway/Dir of Travel:	Northbound Off-Ramp
Junction:	I-680 @ Bollinger Canyon
Jurisdiction:	
Analysis Year:	Existing + Flex Retail Project

Description: Bishop Ranch 2

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	6126	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	2	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	1618	vph
Length of first accel/decel lane	900	ft
Length of second accel/decel lane	0	ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	6126		1618			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1702		449			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Grade		Level			
Grade	0.00	%	0.00	%	%	
Length	0.00	mi	0.00	mi	mi	
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	6807		1798			pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.450 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD} = 4052$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6807	7050	No
v_{12}	4052	4400	No
$v_{FO} = v_F - v_R$	5009	7050	No
v_R	1798	3800	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D = 22.9$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	$D_S = 0.590$	
Space mean speed in ramp influence area,	$S_R = 51.4$	mph
Space mean speed in outer lanes,	$S_0 = 64.5$	mph
Space mean speed for all vehicles,	$S = 56.0$	mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	DLL
Agency/Co.:	DMJM Harris
Date performed:	5/10/2007
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-680 Northbound
Junction:	I-680 @ Bollinger Canyon(Hook)
Jurisdiction:	
Analysis Year:	Existing + Flex Retail Project
Description:	Bishop Ranch 2

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4508	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	248	vph
Length of first accel/decel lane	720	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	4508		248			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1252		69			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%	%	
Length		mi		mi	mi	
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	5009		276			pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.598 Using Equation 1

$v_{12} = v_F (P_{FM}) =$ 2994 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5285	7050	No
v_{R12}	3270	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A =$ 26.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S	= 0.373	
Space mean speed in ramp influence area,	S_R	= 56.4	mph
Space mean speed in outer lanes,	S_O	= 59.5	mph
Space mean speed for all vehicles,	S	= 57.6	mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	DLL
Agency/Co.:	DMJM Harris
Date performed:	5/10/2007
Analysis time period:	PM Peak
Freeway/Dir of Travel:	Southbound Off-Ramp
Junction:	I-680 @ Bollinger Canyon
Jurisdiction:	
Analysis Year:	Existing + Flex Retail Project
Description:	Bishop Ranch 2

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	7657	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	2	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	1305	vph
Length of first accel/decel lane	1750	ft
Length of second accel/decel lane	0	ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	7657		1305			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	2127		363			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Grade		Level			
Grade	0.00	%	0.00	%	%	
Length	0.00	mi	0.00	mi	mi	
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	8508		1450			pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.450 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD} = 4626$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	8508	7050	Yes
v_{12}	4626	4400	Yes
$v_{FO} = v_F - v_R$	7058	7050	Yes
v_R	1450	3800	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D = 12.5$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, $D_S = 0.558$

Space mean speed in ramp influence area, $S_R = 52.2$ mph

Space mean speed in outer lanes, $S_O = 60.1$ mph

Space mean speed for all vehicles, $S = 55.5$ mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Merge Analysis

Analyst: DLL
Agency/Co.: DMJM Harris
Date performed: 5/10/2007
Analysis time period: PM Peak
Freeway/Dir of Travel: I-680 Southbound On-Ramp
Junction: I-680 @ Bollinger Canyon(Hook)
Jurisdiction:
Analysis Year: Existing + Flex Retail Project
Description: Bishop Ranch 2

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	6352	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	1820	vph
Length of first accel/decel lane	720	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	6352		1820			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1764		506			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%		%
Length		mi		mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	7058		2022			pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.598 Using Equation 1

$v_{12} = v_F (P_{FM}) = 4218$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	9080	7050	Yes
v_{R12}	6240	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A = 48.7$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S	= 2.271	
Space mean speed in ramp influence area,	S_R	= 12.8	mph
Space mean speed in outer lanes,	S_O	= 55.2	mph
Space mean speed for all vehicles,	S	= 16.8	mph

Bollinger I680 SB On Ramp.txt

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	DLL
Agency/Co.:	DMJM Harris
Date performed:	5/10/2007
Analysis time period:	PM Peak
Freeway/Dir of Travel:	Southbound On-Ramp
Junction:	I-680 @ Bollinger Canyon
Jurisdiction:	
Analysis Year:	Existing + Flex Retail Project
Description:	Bishop Ranch 2

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	7990	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	504	vph
Length of first accel/decel lane	675	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	7990		504			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	2219		140			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%	%	
Length		mi		mi	mi	
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	8878		560			pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.596 Using Equation 1

$v_{12} = v_F (P_{FM}) =$ 5295 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	9438	7050	Yes
v_{R12}	5855	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A =$ 46.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, M_S = 1.635

Space mean speed in ramp influence area, S_R = 27.4 mph

Space mean speed in outer lanes, S_O = 50.8 mph

Space mean speed for all vehicles, S = 33.2 mph

I-680/BOLLINGER CANYON ROAD INTERCHANGE

2020

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	DLL
Agency/Co.:	DMJM Harris
Date performed:	5/10/2007
Analysis time period:	AM Peak
Freeway/Dir of Travel:	Northbound Off-Ramp
Junction:	I-680 @ Bollinger Canyon
Jurisdiction:	
Analysis Year:	Background 2020

Description: Bishop Ranch 2

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	7927	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	2	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	2248	vph
Length of first accel/decel lane	900	ft
Length of second accel/decel lane	0	ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	7927		2248			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	2202		624			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Grade		Level			
Grade	0.00	%	0.00	%	%	
Length	0.00	mi	0.00	mi	mi	
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	8808		2498			pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.450 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD} = 5337$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	8808	7050	Yes
v_{12}	5337	4400	Yes
$v_{FO} = v_F - v_R$	6310	7050	No
v_R	2498	3800	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D = 34.0$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, $D_S = 0.653$

Space mean speed in ramp influence area, $S_R = 50.0$ mph

Space mean speed in outer lanes, $S_O = 61.7$ mph

Space mean speed for all vehicles, $S = 54.0$ mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	DLL
Agency/Co.:	DMJM Harris
Date performed:	5/10/2007
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-680 Northbound
Junction:	I-680 @ Bollinger Canyon(Hook)
Jurisdiction:	
Analysis Year:	Background 2020
Description:	Bishop Ranch 2

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	5517	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	577	vph
Length of first accel/decel lane	720	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	5517		577			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1533		160			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%		%
Length		mi		mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	6130		641			pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.598 Using Equation 1

$v_{12} = v_F (P_{FM}) =$ 3664 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	6771	7050	No
v_{R12}	4305	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A =$ 34.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S	= 0.559	
Space mean speed in ramp influence area,	S_R	= 52.1	mph
Space mean speed in outer lanes,	S_O	= 57.5	mph
Space mean speed for all vehicles,	S	= 54.0	mph

2020 AM Bollinger-I680 SB Off Ramp Analysis.txt

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Diverge Analysis

Analyst: DLL
Agency/Co.: DMJM Harris
Date performed: 5/10/2007
Analysis time period: AM Peak
Freeway/Dir of Travel: Southbound Off-Ramp
Junction: I-680 @ Bollinger Canyon
Jurisdiction:
Analysis Year: Background 2020
Description: Bishop Ranch 2

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	8961	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	2	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	1158	vph
Length of first accel/decel lane	1750	ft
Length of second accel/decel lane	0	ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	8961		1158			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	2489		322			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Grade		Level			
Grade	0.00	%	0.00	%	%	
Length	0.00	mi	0.00	mi	mi	
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	9957		1287			pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.450 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD} =$ 5188 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	9957	7050	Yes
v_{12}	5188	4400	Yes
$v_{FO} = v_F - v_R$	8670	7050	Yes
v_R	1287	3800	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 17.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.544

Space mean speed in ramp influence area, S_R = 52.5 mph

Space mean speed in outer lanes, S_O = 56.6 mph

Space mean speed for all vehicles, S = 54.4 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	DLL
Agency/Co.:	DMJM Harris
Date performed:	5/10/2007
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-680 Southbound On-Ramp
Junction:	I-680 @ Bollinger Canyon(Hook)
Jurisdiction:	
Analysis Year:	Background 2020
Description:	Bishop Ranch 2

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	7803	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	950	vph
Length of first accel/decel lane	720	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	7803		950			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	2168		264			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%	%	
Length		mi		mi	mi	
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	8670		1056			pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.598 Using Equation 1

$v_{12} = v_F (P_{FM}) = 5182$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	9726	7050	Yes
v_{R12}	6238	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734 v_R + 0.0078 v_{12} - 0.00627 L_A = 49.1$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S	= 2.267	
Space mean speed in ramp influence area,	S_R	= 12.9	mph
Space mean speed in outer lanes,	S_O	= 51.3	mph
Space mean speed for all vehicles,	S	= 17.6	mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Merge Analysis

Analyst: DLL
Agency/Co.: DMJM Harris
Date performed: 5/10/2007
Analysis time period: AM Peak
Freeway/Dir of Travel: Southbound On-Ramp
Junction: I-680 @ Bollinger Canyon
Jurisdiction:
Analysis Year: Background 2020
Description: Bishop Ranch 2

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	8658	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	562	vph
Length of first accel/decel lane	675	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	8658		562			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	2405		156			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%		%
Length		mi		mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	9620		624			pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.596 Using Equation 1

$v_{12} = v_F (P_{FM}) =$ 5737 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	10244	7050	Yes
v_{R12}	6361	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 50.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 2.531		
Space mean speed in ramp influence area,	S_R = 6.8	mph	
Space mean speed in outer lanes,	S_O = 49.0	mph	
Space mean speed for all vehicles,	S = 10.1	mph	

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	DLL
Agency/Co.:	DMJM Harris
Date performed:	5/10/2007
Analysis time period:	PM Peak
Freeway/Dir of Travel:	Northbound Off-Ramp
Junction:	I-680 @ Bollinger Canyon
Jurisdiction:	
~~Analysis Year:~~	~~Background 2020~~
Description:	Bishop Ranch 2

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	7074	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	2	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	1588	vph
Length of first accel/decel lane	900	ft
Length of second accel/decel lane	0	ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	7074		1588			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1965		441			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Grade		Level			
Grade	0.00	%	0.00	%	%	
Length	0.00	mi	0.00	mi	mi	
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	7860		1764			pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.450 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD} = 4507$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	7860	7050	Yes
v_{12}	4507	4400	Yes
$v_{FO} = v_F - v_R$	6096	7050	No
v_R	1764	3800	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D = 26.8$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, $D_S = 0.587$

Space mean speed in ramp influence area, $S_R = 51.5$ mph

Space mean speed in outer lanes, $S_0 = 62.1$ mph

Space mean speed for all vehicles, $S = 55.6$ mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	DLL
Agency/Co.:	DMJM Harris
Date performed:	5/10/2007
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-680 Northbound
Junction:	I-680 @ Bollinger Canyon(Hook)
Jurisdiction:	
Analysis Year:	Background 2020
Description:	Bishop Ranch 2

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	5486	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	380	vph
Length of first accel/decel lane	720	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	5486		380			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1524		106			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%	%	
Length		mi		mi	mi	
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	6096		422			pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.598 Using Equation 1

$v_{12} = v_F (P_{FM}) =$ 3643 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	6518	7050	No
v_{R12}	4065	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 32.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S	= 0.498	
Space mean speed in ramp influence area,	S_R	= 53.5	mph
Space mean speed in outer lanes,	S_O	= 57.6	mph
Space mean speed for all vehicles,	S	= 55.0	mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	DLL
Agency/Co.:	DMJM Harris
Date performed:	5/10/2007
Analysis time period:	PM Peak
Freeway/Dir of Travel:	Southbound Off-Ramp
Junction:	I-680 @ Bollinger Canyon
Jurisdiction:	
Analysis Year:	Background 2020
Description: Bishop Ranch 2	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	9283	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	2	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	1250	vph
Length of first accel/decel lane	1750	ft
Length of second accel/decel lane	0	ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	9283		1250			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	2579		347			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Grade		Level			
Grade	0.00	%	0.00	%	%	
Length	0.00	mi	0.00	mi	mi	
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	10314		1389			pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.450 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD} = 5405$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	10314	7050	Yes
v_{12}	5405	4400	Yes
$v_{FO} = v_F - v_R$	8925	7050	Yes
v_R	1389	3800	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D = 19.2$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, $D_S = 0.553$

Space mean speed in ramp influence area, $S_R = 52.3$ mph

Space mean speed in outer lanes, $S_O = 56.1$ mph

Space mean speed for all vehicles, $S = 54.0$ mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Merge Analysis

Analyst: DLL
Agency/Co.: DMJM Harris
Date performed: 5/10/2007
Analysis time period: PM Peak
Freeway/Dir of Travel: I-680 Southbound On-Ramp
Junction: I-680 @ Bollinger Canyon(Hook)
Jurisdiction:
Analysis Year: Background 2020
Description: Bishop Ranch 2

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	8033	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	1665	vph
Length of first accel/decel lane	720	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	8033		1665			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	2231		463			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%	%	
Length		mi		mi	mi	
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	8926		1850			pcph

Estimation of V12 Merge Areas

$L_{EQ} =$ (Equation 25-2 or 25-3)

$P_{FM} =$ 0.598 Using Equation 1

$v_{12} = v_F (P_{FM}) =$ 5335 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	10776	7050	Yes
v_{R12}	7185	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A =$ 56.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, M_S = 5.417

Space mean speed in ramp influence area, S_R = -59.6 mph

Space mean speed in outer lanes, S_O = 50.7 mph

Space mean speed for all vehicles, S = mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	DLL
Agency/Co.:	DMJM Harris
Date performed:	5/10/2007
Analysis time period:	PM Peak
Freeway/Dir of Travel:	Southbound On-Ramp
Junction:	I-680 @ Bollinger Canyon
Jurisdiction:	
Analysis Year:	Background 2020
Description:	Bishop Ranch 2

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	9531	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	588	vph
Length of first accel/decel lane	675	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	9531		588			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	2648		163			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%	%	
Length		mi		mi	mi	
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	10590		653			pcph

Estimation of V12 Merge Areas

$L_{EQ} =$ (Equation 25-2 or 25-3)

$P_{FM} =$ 0.596 Using Equation 1

$v_{12} = v_F (P_{FM}) =$ 6316 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	11243	7050	Yes
v_{R12}	6969	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A =$ 55.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, M_S = 4.420

Space mean speed in ramp influence area, S_R = -36.7 mph

Space mean speed in outer lanes, S_O = 46.6 mph

Space mean speed for all vehicles, S = mph

I-680/BOLLINGER CANYON ROAD INTERCHANGE

2020 + Project

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	DLL
Agency/Co.:	DMJM Harris
Date performed:	5/10/2007
Analysis time period:	AM Peak
Freeway/Dir of Travel:	Northbound Off-Ramp
Junction:	I-680 @ Bollinger Canyon
Jurisdiction:	
Analysis Year:	Background 2020 + Flex Retail
Description:	Bishop Ranch 2

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	8072	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	2	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	2393	vph
Length of first accel/decel lane	900	ft
Length of second accel/decel lane	0	ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	8072		2393			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	2242		665			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Grade		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	8969		2659			pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.450 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD} = 5498$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	8969	7050	Yes
v_{12}	5498	4400	Yes
$v_{FO} = v_F - v_R$	6310	7050	No
v_R	2659	3800	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D = 35.3$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, $D_S = 0.667$

Space mean speed in ramp influence area, $S_R = 49.7$ mph

Space mean speed in outer lanes, $S_O = 61.7$ mph

Space mean speed for all vehicles, $S = 53.7$ mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	DLL
Agency/Co.:	DMJM Harris
Date performed:	5/10/2007
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-680 Northbound
Junction:	I-680 @ Bollinger Canyon(Hook)
Jurisdiction:	
Analysis Year:	Background 2020 + Flex Retail
Description:	Bishop Ranch 2

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	5517	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	577	vph
Length of first accel/decel lane	720	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	5517		577			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1533		160			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%	%	
Length		mi		mi	mi	
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	6130		641			pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.598 Using Equation 1

$v_{12} = v_F (P_{FM}) =$ 3664 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	6771	7050	No
v_{R12}	4305	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 34.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.559

Space mean speed in ramp influence area, S_R = 52.1 mph

Space mean speed in outer lanes, S_O = 57.5 mph

Space mean speed for all vehicles, S = 54.0 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Diverge Analysis

Analyst: DLL
Agency/Co.: DMJM Harris
Date performed: 5/10/2007
Analysis time period: AM Peak
Freeway/Dir of Travel: Southbound Off-Ramp
Junction: I-680 @ Bollinger Canyon
Jurisdiction:
Analysis Year: Background 2020 + Flex Retail
Description: Bishop Ranch 2

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	9030	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	2	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	1227	vph
Length of first accel/decel lane	1750	ft
Length of second accel/decel lane	0	ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	9030		1227			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	2508		341			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Grade		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	10033		1363			pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.450 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD} = 5264$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	10033	7050	Yes
v_{12}	5264	4400	Yes
$v_{FO} = v_F - v_R$	8670	7050	Yes
v_R	1363	3800	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D = 18.0$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, $D_S = 0.551$

Space mean speed in ramp influence area, $S_R = 52.3$ mph

Space mean speed in outer lanes, $S_O = 56.6$ mph

Space mean speed for all vehicles, $S = 54.3$ mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	DLL
Agency/Co.:	DMJM Harris
Date performed:	5/10/2007
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-680 Southbound On-Ramp
Junction:	I-680 @ Bollinger Canyon(Hook)
Jurisdiction:	
~~Analysis Year:~~	~~Background 2020~~ + Flex Retail

Description: Bishop Ranch 2

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	7803	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	1048	vph
Length of first accel/decel lane	720	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	7803		1048			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	2168		291			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%		%
Length		mi		mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	8670		1164			pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.598 Using Equation 1

$v_{12} = v_F (P_{FM}) =$ 5182 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	9834	7050	Yes
v_{R12}	6346	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A =$ 49.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 2.494		
Space mean speed in ramp influence area,	S_R = 7.6	mph	
Space mean speed in outer lanes,	S_O = 51.3	mph	
Space mean speed for all vehicles,	S = 10.9	mph	

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail: .

Merge Analysis

Analyst:	DLL
Agency/Co.:	DMJM Harris
Date performed:	5/10/2007
Analysis time period:	AM Peak
Freeway/Dir of Travel:	Southbound On-Ramp
Junction:	I-680 @ Bollinger Canyon
Jurisdiction:	
Analysis Year:	Background 2020 + Flex Retail
Description:	Bishop Ranch 2

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	8746	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	562	vph
Length of first accel/decel lane	675	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	8746		562			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	2429		156			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%	%	
Length		mi		mi	mi	
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	9718		624			pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.596 Using Equation 1

$v_{12} = v_F (P_{FM}) =$ 5796 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	10342	7050	Yes
v_{R12}	6420	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 51.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 2.668		
Space mean speed in ramp influence area,	S_R = 3.6	mph	
Space mean speed in outer lanes,	S_O = 48.7	mph	
Space mean speed for all vehicles,	S = 5.6	mph	

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Diverge Analysis

Analyst: DLL
Agency/Co.: DMJM Harris
Date performed: 5/10/2007
Analysis time period: PM Peak
Freeway/Dir of Travel: Northbound Off-Ramp
Junction: I-680 @ Bollinger Canyon
Jurisdiction:
~~Analysis Year: Background 2020 + Flex Retail~~
Description: Bishop Ranch 2

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	7313	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	2	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	1827	vph
Length of first accel/decel lane	900	ft
Length of second accel/decel lane	0	ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	7313		1827			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	2031		508			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Grade		Level			
Grade	0.00	%	0.00	%	%	
Length	0.00	mi	0.00	mi	mi	
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	8126		2030			pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.450 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD} = 4773$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	8126	7050	Yes
v_{12}	4773	4400	Yes
$v_{FO} = v_F - v_R$	6096	7050	No
v_R	2030	3800	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D = 29.1$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, $D_S = 0.611$

Space mean speed in ramp influence area, $S_R = 51.0$ mph

Space mean speed in outer lanes, $S_O = 62.1$ mph

Space mean speed for all vehicles, $S = 55.0$ mph

Bollinger I680 NB On Ramp (Clover).txt

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Merge Analysis

Analyst: DLL
Agency/Co.: DMJM Harris
Date performed: 5/10/2007
Analysis time period: PM Peak
Freeway/Dir of Travel: I-680 Northbound
Junction: I-680 @ Bollinger Canyon(Hook)
Jurisdiction:
Analysis Year: Background 2020 + Flex Retail
Description: Bishop Ranch 2

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	5486	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	380	vph
Length of first accel/decel lane	720	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	5486		380			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1524		106			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%	%	
Length		mi		mi	mi	
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	6096		422			pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.598 Using Equation 1

$v_{12} = v_F (P_{FM}) = 3643$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	6518	7050	No
v_{R12}	4065	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A = 32.5$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S	= 0.498	
Space mean speed in ramp influence area,	S_R	= 53.5	mph
Space mean speed in outer lanes,	S_O	= 57.6	mph
Space mean speed for all vehicles,	S	= 55.0	mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	DLL
Agency/Co.:	DMJM Harris
Date performed:	5/10/2007
Analysis time period:	PM Peak
Freeway/Dir of Travel:	Southbound Off-Ramp
Junction:	I-680 @ Bollinger Canyon
Jurisdiction:	
Analysis Year:	Background 2020 + Flex Retail
Description: Bishop Ranch 2	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	9401	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	2	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	1368	vph
Length of first accel/decel lane	1750	ft
Length of second accel/decel lane	0	ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	9401		1368			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	2611		380			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Grade		Level			
Grade	0.00	%	0.00	%	%	
Length	0.00	mi	0.00	mi	mi	
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	10446		1520			pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.450 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD} = 5537$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	10446	7050	Yes
v_{12}	5537	4400	Yes
$v_{FO} = v_F - v_R$	8926	7050	Yes
v_R	1520	3800	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D = 20.4$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, $D_S = 0.565$

Space mean speed in ramp influence area, $S_R = 52.0$ mph

Space mean speed in outer lanes, $S_O = 56.1$ mph

Space mean speed for all vehicles, $S = 53.8$ mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone: Fax:
E-mail:

Merge Analysis

Analyst: DLL
Agency/Co.: DMJM Harris
Date performed: 5/10/2007
Analysis time period: PM Peak
Freeway/Dir of Travel: I-680 Southbound On-Ramp
Junction: I-680 @ Bollinger Canyon(Hook)
Jurisdiction:
Analysis Year: Background 2020 + Flex Retail
Description: Bishop Ranch 2

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	8033	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	1932	vph
Length of first accel/decel lane	720	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	8033		1932			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	2231		537			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%		%
Length		mi		mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	8926		2147			pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.598 Using Equation 1

$v_{12} = v_F (P_{FM}) =$ 5335 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	11073	7050	Yes
v_{R12}	7482	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 58.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S =	7.196	
Space mean speed in ramp influence area,	S_R =	-100.5	mph
Space mean speed in outer lanes,	S_0 =	50.7	mph
Space mean speed for all vehicles,	S =		mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

Phone:
E-mail:
Fax:

Merge Analysis

Analyst:	DLL
Agency/Co.:	DMJM Harris
Date performed:	5/10/2007
Analysis time period:	PM Peak
Freeway/Dir of Travel:	Southbound On-Ramp
Junction:	I-680 @ Bollinger Canyon
Jurisdiction:	
Analysis Year:	Background 2020 + Flex Retail
Description:	Bishop Ranch 2

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	9794	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	588	vph
Length of first accel/decel lane	675	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	9794		588			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	2721		163			v
Trucks and buses	0		0			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%		%
Length		mi		mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	1.000		1.000			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	10882		653			pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.596 Using Equation 1

$v_{12} = v_F (P_{FM}) =$ 6490 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	11535	7050	Yes
v_{R12}	7143	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A =$ 56.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 5.208	
Space mean speed in ramp influence area,	S_R = -54.8	mph
Space mean speed in outer lanes,	S_O = 45.9	mph
Space mean speed for all vehicles,	S =	mph

DMJM HARRIS | AECOM

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Memorandum

To:	Peter Oswald
From:	Dennis A. Struecker
Date:	July 31, 2007
Subject:	Supplemental Traffic Analysis Conversion of Center Street from Automobile Access to Pedestrian Access Only
Project No.	60021115

P:\2004\60021115 Bishop Ranch 2 404018x0\Close Center Street Option\Supplemental TA Memo.doc

INTRODUCTION

The City of San Ramon Architectural Review Board has requested an alternative to the original project design. The design alternative eliminates automobile access along Center Street through the heart of the project. Instead, Center Street would be a pedestrian corridor only. The two internal streets crossing Center Street, East Street and West Street, would remain open to automobile traffic to provide access to parking structures, loading docks, and in particular the hotel parcel. Removal of automobile access on West Street would make access to the hotel difficult. The proposed pedestrian treatments originally proposed at West Street's crossing of Center Street, Center Street's crossing of Camino Ramon, and East Street's crossing of Center Street would be maintained with the closure of Center Street to automobile traffic.

TRAFFIC OPERATIONAL CHANGES

The removal of automobile traffic from Center Street would modify the traffic operations on intersections immediately adjacent to the project. These modifications would include intersection level of service and intersection queuing. There would be no change to intersection level of service and intersection queuing for intersections located away from the immediate project area as a result of the closure of Center Street.

Table 1 shows the level of service for the six intersections surrounding the project site with Center Street open to automobile traffic and with it closed. The level of service between the two options changes at two locations, Bollinger Canyon Road/Sunset Drive and Bollinger Canyon Road/Bishop Ranch 1 East. During the AM peak hour the level of service at Bollinger Canyon Road/Sunset Drive improves from level D to level C with the elimination of automobile access on Center Street. The rounded volume to capacity ratio however remains at 0.80. During the PM peak hour the level of service at Bollinger Canyon Road/Bishop Ranch 1 East changes from

Table 1 2020 Level of Service Plus Flex Retail Pedestrian Option

Intersection	2020 + Flex Retail Project Condition (CIP Geo + Project Mitigation)				2020 + Flex Retail Project Condition Pedestrian Option (CIP Geo + Project Mitigation)				V/C Ratio Difference	
	AM Peak Hour		AM Peak Hour		AM Peak Hour		AM Peak Hour			
	V/C Ratio	V/C Ratio	V/C Ratio	V/C Ratio	V/C Ratio	LOS	V/C Ratio	LOS	AM	PM
8. Camino Ramon/Bishop Drive	0.53	A	0.62	B	0.54	A	0.68	B	0.01	0.06
12. Bollinger Canyon Rd/Sunset/Chevron Park W.	0.80 (0.80)[1]	D (D)[1]	1.05 (0.87)[1]	F (D)[1]	0.80 (0.80)[1]	C (C)[1]	1.04 (0.86)[1]	F (D)[1]	(0.00) (0.00)	(0.01) (0.01)
13. Bollinger Canyon Rd./Camino Ramon	0.69	B	0.66	B	0.69	B	0.66	B	0.00	0.00
14. Bollinger Canyon Rd./Bishop Ranch 1 E	0.39	A	0.80	C	0.39	A	0.81	D	0.00	0.01
26. Sunset Drive/Shops at Bishop Ranch	0.23	A	0.55	A	0.21	A	0.48	A	(0.02)	(0.07)
27. Bishop Drive/Sunset Drive	0.44	A	0.66	B	0.44	A	0.67	B	0.00	0.01

[1] Values with one free southbound right turn lane.

C to D with the closure of Center Street to automobile traffic. While the level of service does not change at Bollinger Canyon Road/Sunset Drive during the PM peak hour and at Sunset Drive/Shops at Bishop Ranch during both peak hours, the volume to capacity ratios decreases (improves) slightly with the elimination of automobile access at Center Street. None of the level of service changes eliminates any of the previously identified significant impacts or creates any new significant impacts. The intersection of Bollinger Canyon Road and Sunset Drive will be significantly impacted in the PM peak hour by the project with or without Center Street open to automobile traffic. The mitigation of a free southbound right turn lane on Sunset Drive to northbound I-680 remains necessary with this design option.

Table 2 shows the intersection queuing for six intersections surrounding the project site with Center Street open to automobile traffic and with it closed. Queuing lengths change slightly at various locations. The southbound left turn queue on Sunset Drive at Bollinger Canyon Road decreases from the queue lengths projected with Center Street open to automobile traffic. However, the queue exceeds the available storage length and a second left turn would be necessary to accommodate the projected queue. The eastbound left turn queue on Bollinger Canyon Road at Sunset Drive would not be affected by the changes to Center Street and the left turn pocket at this intersection will need to be extended to accommodate the queue. Also, the westbound queue at Bishop Drive/Sunset Drive would increase slightly with the closure of Center Street to automobiles. However, the queue could still be accommodated in the storage area between Bishop Drive and West Street. None of the intersection queuing changes eliminates any of the previously identified significant impacts or creates any new significant impacts. All mitigation necessary for the original project design will be required with the removal of automobile traffic from Center Street.

Table 2 2020 Intersection Queuing Pedestrian Option

#	Intersection	Movement	2020 + Project 95th Percentile (ft)			2020 + Project (Pedestrian Option) 95th Percentile (ft)		
			AM	PM	Available (ft)	AM	PM	Available (ft)
8	Bishop Drive @ Camino Ramon	Southbound Left	30	#147	180	30	#164	180
		Westbound Left	25	98	200	26	#142	200
		Eastbound Left	33	67	180	34	68	180
12	Bollinger Canyon Road @ Sunset Drive	Southbound Through-Left	#247 (132) [1]	218 *(117) [1]	170	#196 (118) [1]	*117 *(64) [1]	170
		Eastbound Left	#883	#581	600	#883	#581	600
		Westbound Left	169	38	250	169	38	250
13	Bollinger Canyon Road @ Camino Ramon	Southbound Left	#113	#338	490	#113	#338	490
		Northbound Left	27	217	445	27	217	445
		Westbound Left	57	28	225	57	28	225
		Eastbound Left	#416	#278	500	#416	#278	500
14	Bollinger Canyon Road @ Bishop Drive	Southbound Left	27	#173	345	31	#208	345
		Northbound Left	20	#156	325	20	149	325
		Westbound Left	52	35	150	52	35	150
		Eastbound Left	6	15	200	6	15	200
26	Sunset Drive @ Center Street	Southbound Left	*20	*30	80	N/A	N/A	N/A
		Northbound Left	*122	*92	150	*122	*88	150
		Westbound Left-	35	93	100	N/A	N/A	N/A
27	Sunset Drive @ Bishop Drive	Northbound Left	44	212	280	39	214	280
		Westbound Left	110	348	365	110	354	365

\# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
* Volume for 95th percentile queue is metered by upstream signal.
1 Assumes the addition of a southbound left turn lane.

Appendix J: Urban Decay Analysis

Economic & Planning Systems

Public Finance
Real Estate Economics
Regional Economics
Land Use Policy

FINAL DRAFT REPORT

SAN RAMON URBAN DECAY ANALYSIS

Prepared for:

City of San Ramon

Prepared by:

Economic & Planning Systems, Inc.

June 2007

EPS #16090

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I. INTRODUCTION AND SUMMARY OF FINDINGS

INTRODUCTION

Economic & Planning Systems, Inc. (EPS) has been retained by the Sunset Development Company as a subconsultant to Brandman & Associates to evaluate whether the economic impact of the proposed City Center Project located at the crossroads of Camino Ramon and Bollinger Canyon Road may lead to a physical change in the environment through urban decay. Brandman & Associates is preparing the Draft EIR for the project. The project site would be comprised of approximately 635,000 square feet of retail space, which includes a six-screen cinema. In addition to retail, the project will include a 169-room hotel, residential development totaling 551,000 square feet, 682,000 (159,000 net new) square feet of Class A office space, a city hall for San Ramon and a new library. At least nine parking structures totaling 6,657 spaces and a future shared reserve parking structure totaling 539 spaces are proposed for the Project.

A project of this size and scope has a variety of economic effects, both positive and negative. Because of that, this analysis is included in the Draft EIR. The key issues addressed in this Report include the following:

- How will the proposed City Center project affect the retail sector in San Ramon and related markets over both the short and long term?

- How will the potential economic impacts estimated above manifest themselves in the physical environment within San Ramon and related markets? Specifically, does the City Center Project have the potential to start an economic chain reaction that could lead to physical deterioration and urban decay?

REPORT ORGANIZATION

This report consists of four chapters and a detailed technical appendix. Following this introductory chapter, **Chapter II** provides additional background on the City Center Project and provides a general overview of the economic and demographic trends within the market area. **Chapter III** evaluates the existing market conditions within the retail sector relevant to the City Center Project. **Chapter IV** evaluates the economic impacts of the City Center Project and the prospect for urban decay.

PRIMARY DATA SOURCES

This report relies on a variety of data sources, cited as appropriate, throughout the text. In addition to the primary sources of information listed below, the findings are also based on completed EPS research and in-house data from other retail studies. The primary information sources include, but are not limited to, the following:

- Demographic and economic data from the Association of Bay Area Governments (ABAG), the U.S. Census Bureau, the California State Board of Equalization (SBE), the U.S. Bureau of Labor Statistics, and other publicly available sources;
- Land use and planning data from the City of San Ramon;
- Interviews with local real estate professionals and City staff;[1]
- Operational and project description information from the developer, Sunset Development Company; and
- Online, Internet-based information.

SUMMARY OF FINDINGS

The key findings from this analysis are summarized below.

- **Current retail market conditions in the Trade Area relevant to this analysis are highly favorable with population and income growth expected to continue to provide a healthy source of new retail demand.** Demographic projections indicate a steady annual increase in population (3.3 percent), employment (2.0 percent), and incomes (0.6 percent) in the City Center Trade Area (defined as San Ramon, Dublin, and Danville) over the next ten years. In addition, existing retail vacancy rates across the Trade Area are about three (3) percent, indicating extremely tight market conditions (the vacancy rate in San Ramon alone is about 3.75 percent). Projected retail demand is based on growth in households instead of growth in the workforce, generating a more conservative outlook for the retail sector in the Trade Area.
- **The City of San Ramon currently captures about 80 percent of the retail expenditures of its local residents, with significant leakage in areas of apparel, home furnishings and electronics, and service stations, suggesting an un-filled market niche.** Most of the existing retail is traditional grocery-anchored centers. The potential effect of a "lifestyle" center would be to reverse this leakage trend. The market orientation of the City Center Project is designed to capture this market niche rather than compete against existing retailers in the City or Trade Area.

[1] Interviews included Sandra Weck of Colliers International, Patric Davis of Lee & Associates, Mike Bassett of Terranomics, Leigh Boyd of Boyd & Associates, Nancy Casale with Asset Management Group, Christopher Foss with the City of Dublin, Steve Lake with the City of Danville, and Mark Fontes with the City of San Ramon.

- **Although overall market conditions in the Trade Area are healthy, a significant amount of new retail space is expected to come on line within the 2010 to 2012 time frame, providing increased competition for existing retailers.** In addition to the completion of the City Center Project in 2010, Dublin will see several large retail developments completed during the same time. The City Center Project will expand total retail inventory in San Ramon by nearly 50 percent and total proposed development in Dublin exceeds 1 million square feet over the next several years. Overall, about 1.8 million square feet of new retail space is expected to be introduced into the Trade Area within the next five years.

- **As new retail space is added to the Trade Area supply inventory, there will be a temporary imbalance in the retail demand and supply conditions relative to the "status quo", but this imbalance is expected to reverse itself within about two years, and is consistent with normal business cycle fluctuations.** In the short term, the growth in retail supply is expected to exceed the growth in retail demand within the Trade Area, creating a temporary market imbalance relative to existing conditions. In order to accommodate this increased supply, existing retail establishments would need to experience a decrease in their annual sales by an average of seven (7) percent over four years, assuming no additional market capture from adjacent Trade Areas (e.g. Pleasanton, Livermore, and Walnut Creek). This is a conservative assumption because the City Center Project may actually attract customers from beyond the San Ramon, Danville, and Dublin markets. But even under this conservative approach, continued growth in retail demand associated with increased Trade Area population and income will minimize the impact of any sales shift from existing businesses that might result from new development in a relatively short timeframe. Specifically, by 2014, four years after the opening of the City Center Project, the decline in retail sales of existing establishments needed to accommodate new development would be eliminated because of expanding population and income.

- **Given strong market conditions and continued growth in population and income within the Trade Area, the City Center Project has a low probability of creating conditions conducive to urban decay.** Because of strong and growing retail market conditions in the Trade Area, properties that are adversely affected by increased competition from the City Center Project are likely to successfully reposition themselves in a relatively short time, thus avoiding conditions conducive to urban decay. Specifically, the potential sales shift of between 6 and 7 percent, lasting about four years, is neither deep nor prolonged enough to lead property owners to neglect their properties. The potential decrease in sales over this period is no more severe than the normal fluctuations of a typical business cycle. Thus, property owners will have a financial incentive to maintain their properties with the realistic expectation of benefiting from a generally healthy and growing market. Moreover, the potential sales shift represents a "worse-case" outcome because it assumes the City Center project does not stem the existing retail sales leakage to cities outside the Trade Area (e.g., Pleasanton, Livermore, or Walnut Creek) or capture residents spending from these areas. In fact, the expected orientation of the City Center project is designed to fill a market niche not currently available in the Trade Area.

II. PROJECT AND MARKET AREA OVERVIEW

This chapter provides a detailed overview of the City Center Project and its local and regional context based on information from the developer and pertinent demographic data and trends.

PROJECT BACKGROUND

PROJECT DESCRIPTION

San Ramon City Center is envisioned as a mixed-use development in the City of San Ramon within the Bishop Ranch Business Park, as shown in **Figure 1**. Located at the crossroads of Camino Ramon and Bollinger Canyon Road, San Ramon City Center sits at the entrance to Bishop Ranch Business Park and is centrally located in the City, adjacent to Central Park and its Community Center. The major components are: residential, a lifestyle retail center including an arts cinema, restaurants, a premium "boutique" hotel, three Bishop Ranch class A office buildings, a new City Hall with Council Chamber and Library for San Ramon, and a "transit hub". The four Project parcels total 39.09 acres, for a total square footage of 1,702,760.

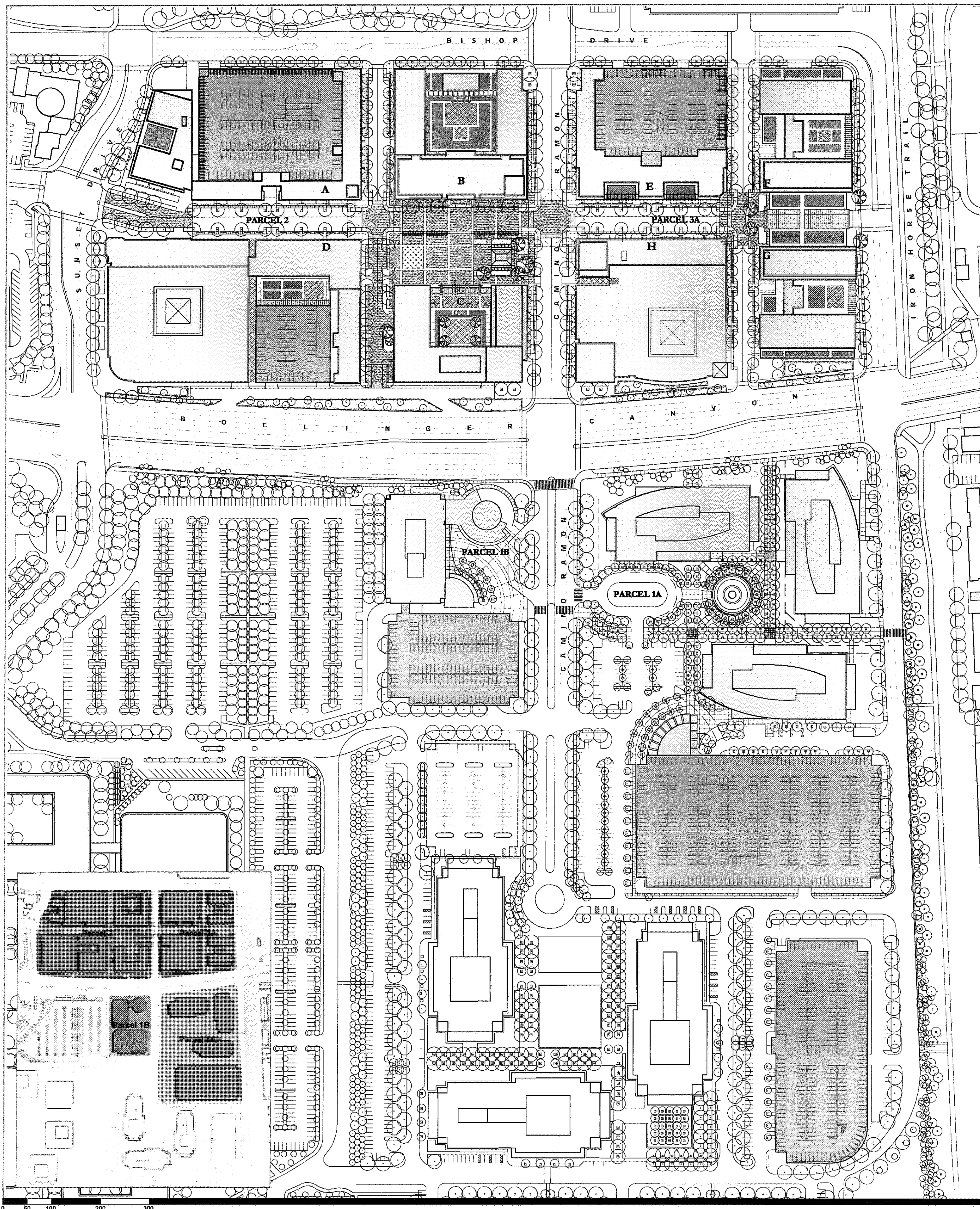
The Project will have the following development:

▪ Retail	613,000	square feet
▪ Six-screen Cinema	22,000	square feet
▪ Hotel	169	rooms
▪ Retail Flex	50,142	square feet
▪ Residential	488	dwelling units
▪ Class A Office	681,769	(net new 158,897) square feet
▪ City Hall/Library	110,490	square feet
▪ Total	2,167,979	square feet

In addition to the above, nine parking structures totaling 6,657 spaces and a future shared reserve parking structure net of 539 spaces are proposed for the Project. As currently envisioned, the residential portion of the project is expected to be a multifamily condominium or apartment complex.

San Ramon City Center is a joint project between Sunset Development Company, developers of Bishop Ranch Business Park, and the City of San Ramon. The Class A Office will replace 194,652 square feet of the existing Bishop Ranch 2 to be torn down. The expected year of completion for the Project is 2010, assuming planning and construction schedules are kept. The precise tenanting for all portions of the Project is currently unknown; however, apparel will comprise one of the major retail categories.

Figure 1



			PROGRAM SUMMARY						
	Lot Size (ac)	Lot Size (sf)	Civic (net)	Retail	Office	Hotel	Residential	D.U. (approximate)	**Total Net**
Parcel 1A	14.27	621,601	0	0	681,769	0	0	0	**681,769**
Parcel 1B	3.52	153,331	110,490	0	0	0	0	0	**110,490**
Parcel 2	13.30	579,348	0	364,031	0	139,867	284,808	260	**788,966**
Parcel 3A	9.23	402,059	0	271,011	50,142	0	265,861	227	**587,241**
Total	**40.32**	**1,756,339**	**110,490**	**635,042**	**731,911**	**139,867**	**550,669**	**487**	**2,168,466**

	PARKING SUMMARY					
	Retail/Office Parking Demand	Retail/Office Parking Provided	Residential/ Hotel Parking Demand	Residential/ Hotel Parking Provided	**Total Parking Demand**	**Total Parking Provided**
Parcel 1A	2,371	2,390	0	0	**2,371**	**2,390**
Parcel 1B	387	422	0	0	**387**	**422**
Parcel 2	1,720	1,753	638	675	**2,358**	**2,428**
Parcel 3A	1,276	1,328	409	424	**1,685**	**1,752**
Total	**5,754**	**5,893**	**1,047**	**1,099**	**6,801**	**6,992**

PARKING RATIOS
Retail: 4 spaces / 1,000 sf
Restaurant: 8 spaces / 1,000 sf
Cinema: 10 spaces / 1000 sf
Hotel: 1 space / room
Residential: 1.8 spaces / unit
Office Not Shared (Parcels 1A, 1B): 3.5 spaces / 1,000 sf
Office Not Shared (Parcel 3A): 1.5 spaces / 1,000 sf
Office Shared (Parcel 3A): 2 spaces / 1,000 sf

Sunset

SAN RAMON CITY CENTER | San Ramon, California

Master Plan

Cooper, Robertson & Partners *Architecture, Urban Design*

Hoover Associates / Royston Hanamoto Alley & Abey / Korve Engineering, Inc. / Parkitects / RBF Consulting

February 2007 / X.21

LOCAL CONTEXT

The area immediately surrounding the City Center Project is comprised of commercial and retail uses. The primary access to the site is provided through Interstate 680 (I-680), which runs north to south through the center of the commercial district of the City. The Project is situated in the heart of the Bishop Ranch Business Park. Bishop Ranch includes in excess of 475 businesses spread across 30 buildings and 9 million square feet of office space[2]. A relatively new shopping center ("The Shops at Bishop Ranch") is located about a block west of the site while a new office complex (Lennar Homes and Chevron) is across the street. Downtown San Ramon is relatively concentrated with office park developments and retail shopping centers. The land use outside the Bishop Ranch area is predominantly residential, comprising nearly 75 percent single-family homes and 25 percent apartment dwellings.[3]

TRADE AREA DESCRIPTION

A Retail Trade Area is defined as a geographic area that contains the elements of demand and supply that will determine the performance of a particular retail store or project. A Retail Trade Area is influenced by a variety of factors, including the location and density of the targeted residential population, the location of key competitors, the relative distance or travel time for each of the above, geographic and psychological barriers, and existing commute and shopping patterns. Retail establishments outside of a given Trade Area are not considered to be at risk of urban decay from development within the Trade Area.

Figure 2 depicts the Trade Area as assumed for this study. As shown, the Trade Area includes the cities of Danville, San Ramon, and Dublin. Despite the relative proximity of such retail centers such as Walnut Creek and Pleasanton, this study assumes the City Center project will not be expected to capture significant demand from the residents of these cities. This assumption is based on the fact that shoppers in these neighboring markets will be less likely to travel to San Ramon from Walnut Creek or Pleasanton as their local retail options are of much greater scale and scope. However, residents of Danville, San Ramon, and Dublin, many of whom currently commute to Pleasanton and Walnut Creek for shopping, are likely to be attracted by the relative proximity of the City Center project.

It is important to note that a Trade Area is also influenced by the type of tenant. Although future tenants for the City Center Project have yet to be determined, there are a few project characteristics of note. Although the precise tenanting of the City Center Project is not known, the concept is "lifestyle"-oriented, catering to smaller retailers and local and regional shoppers. This type of product is not currently available in the Trade

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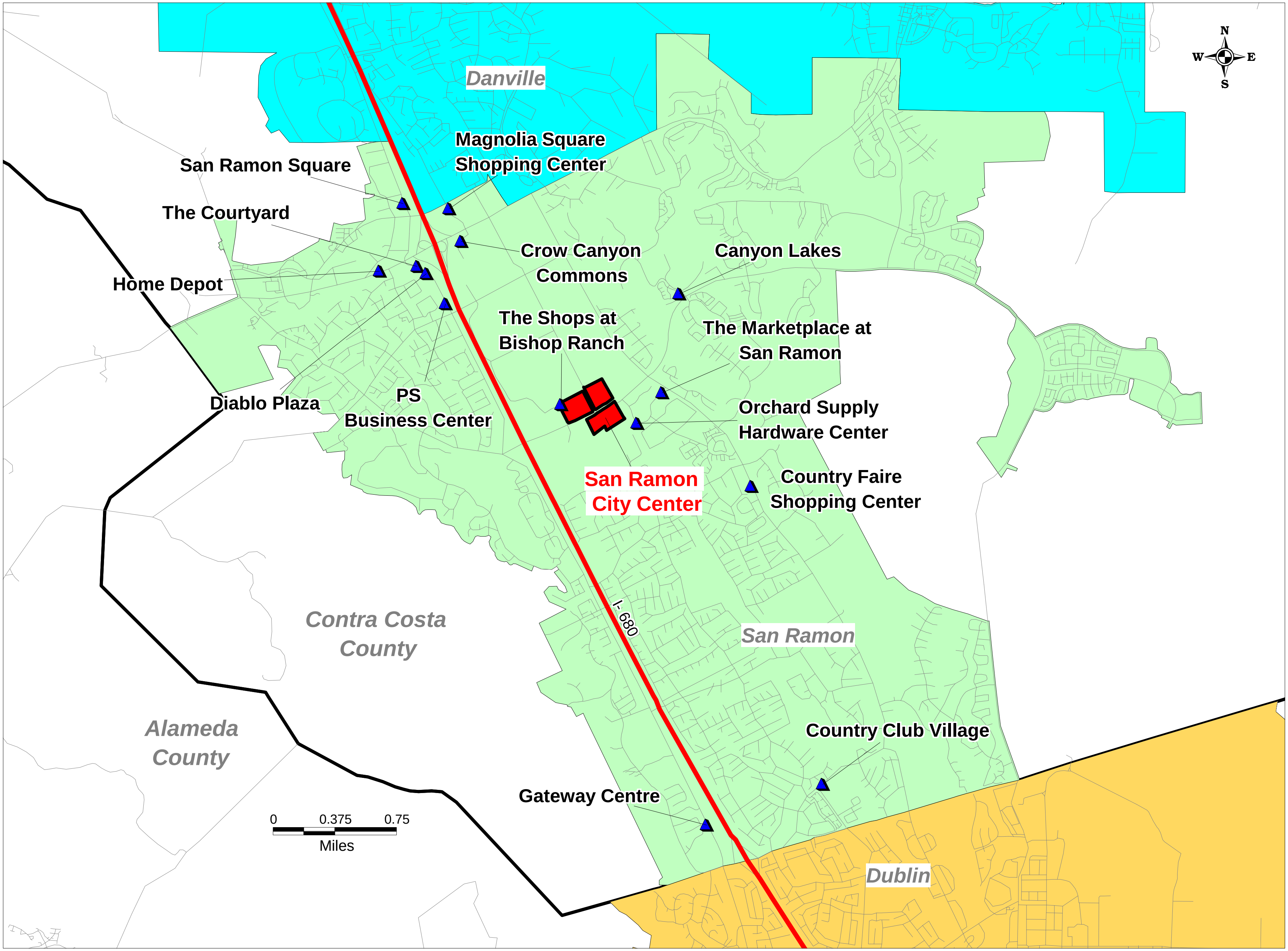
[2] Based on data from Bishop Ranch website, http://www.bishopranch.com.

[3] US Census Bureau.

Figure 2:
San Ramon Neighborhood Shopping Centers



Economic & Planning Systems, Inc.

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Area, but does exist in the neighboring markets of Pleasanton and Walnut Creek. This further reinforces Danville, San Ramon, and Dublin as the appropriate Trade Area for this study.

The exclusion of Pleasanton and/or Walnut Creek from the market area is a conservative approach and justified based on several factors. First, the larger an assumed trade area, the less significant the impact of a single project is likely to be since it will represent a smaller proportion of the total larger market and thus be overshadowed by larger economic and demographic trends. The retail markets in Walnut Creek and Pleasanton are considerably large, with the Stoneridge Shopping Center in Pleasanton totaling 1.3 million square feet of retail space[4] and Walnut Creek's Broadway Plaza covering nearly 700,000 square feet. With the inclusion of these two cities in the Trade Area, the impact of the City Center Project would appear to be quite small on a relative scale, thus overshadowing the potential impact of the project on the retail markets immediately surrounding San Ramon.

Second, the retail markets in both Pleasanton and Walnut Creek are currently very strong and thus unlikely to be vulnerable to urban decay from supply changes in a peripheral location. By way of example, annual sales of retail space at Broadway Plaza in Walnut Creek are approximately $800 per square foot and the center draws customers from throughout the Bay Area, including San Francisco and even remote areas of Solano and Alameda counties.[5]. The Stoneridge Shopping Center in Pleasanton, in turn, generates nearly $500 per square foot in sales revenue per year, indicating a very healthy demand. Both centers have announced plans for expansion.[6]

SOCIO-ECONOMIC CONTEXT

Located in central Contra Costa County along the I-680 corridor midway between Walnut Creek and Pleasanton, San Ramon has been significantly affected by growth trends throughout the larger San Francisco Bay Area. Overall San Ramon is located in a relatively affluent market with strong population and employment growth.

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[4] Ben Semmes, Oakland Tribune, 2006.

[5] According to a spokesperson from the Macerich Company, owner and manager of Broadway Plaza, approximately 20 percent of the retail demand is derived from customers outside of the San Francisco Bay Area.

[6] Amendment to Walnut Creek General Plan to increase Broadway Plaza. Mills Corporation announced plans to expand shopping center with new department and specialty retail.

In addition to serving as a bedroom community for commuters working in larger employment hubs such as Oakland and San Francisco, San Ramon continues to be a significant job center. Some major private employers in the City include AT&T, Chevron, IBM, Lennar Homes, and Target.[7] Bishop Ranch alone has a workforce of 30,000 people.

The significant growth pressures in Contra Costa County and the metropolitan regions of San Francisco have created new opportunities for retail development serving both the local population and workforce. As households and incomes increase, demand for new retail development is likely to continue to be strong over the coming decade. A further description of population, employment, and income trends in the Trade Area is provided below.

POPULATION AND HOUSEHOLD TRENDS

Population and household characteristics are a key determinant in the type and amount of retail demand in a particular area. Assuming average household incomes remain constant or improve over time, a growing population base will generally result in increased retail demand, providing additional market support for new and existing establishments.

Historic and projected population and household trends are shown in **Table 1** using ABAG *Projections 2005* data and the San Ramon General Plan 2020. Despite the economic downturn of the early 1990s, Contra Costa County as a whole has continued to grow. Significant residential growth has occurred in the Trade Area and Contra Costa County as a whole over the last ten years, and this trend is expected to continue. As shown, the population in the Trade Area (Danville, San Ramon, and Dublin) grew by about 17 percent over the last five years and is expected to add an additional 41,900 residents between 2005 and 2020, a 30 percent increase. The trend in household growth is similar, with an expected increase of 34 percent over the same time frame.

The ABAG and the City of San Ramon use different assumptions about the growth in population and employment over the projected time period. The San Ramon General Plan projects population to grow at an average annual rate of 3.3 percent between 2007 and 2020. ABAG, on the other hand, has projected an average population growth of 2.0 percent over the same period for San Ramon. This report provides an assessment of retail market supply and demand projections based on two different population assumptions.

---

[7] Based on information from the City of San Ramon.

Table 1
Household and Population Growth
San Ramon Urban Decay Analysis, EPS #16090

Item	2000	2005	2007	2009	2010	2011	2012	2015	2020	Avg. Annual Growth Rate (2007 - 20)
San Ramon General Plan Projections [1]										
Households										
San Ramon	17,991	21,121	22,520	24,012	24,795	25,603	26,437	29,108	34,171	3.3%
RTA [2]	42,592	48,608	51,246	54,027	55,474	56,959	58,484	63,309	72,251	2.7%
Population										
San Ramon	50,555	59,349	63,281	67,473	69,673	71,944	74,289	81,792	96,020	3.3%
RTA [2]	123,520	145,249	154,872	165,133	164,873	170,247	175,796	184,292	204,920	2.2%
ABAG Projections										
Households										
San Ramon	16,981	19,590	20,647	21,761	22,340	22,852	23,376	25,020	27,430	2.2%
RTA [2]	41,582	48,850	51,268	53,805	55,120	56,169	57,239	60,570	65,510	1.9%
Population										
San Ramon	44,834	52,000	54,583	57,294	58,700	59,909	61,143	65,000	70,900	2.0%
RTA [2]	117,799	137,900	144,090	150,558	153,900	156,529	159,202	167,500	179,800	1.7%

[1] Household and population projections from San Ramon General Plan 2020.
[2] Retail Trade Area includes Dublin, San Ramon, and Danville.

Source: Economic & Planning Systems, Inc.

INCOME AND EMPLOYMENT TRENDS

Income and employment play an important role in consumer demand for retail goods. For example, higher-income households typically demand more and a different type of retail goods than lower-income households. In addition, employment growth can have an independent effect on the type and amount of retail goods demanded through increased employee and business-related purchases.

Income

As shown in **Table 2**, the 2005 mean household income in the Trade Area of $140,434 is projected to grow to $153,008 by 2020 in real terms (i.e., adjusted for inflation), increasing by 9 percent, or more than $12,000 per household, according to ABAG. Overall, this represents a relatively healthy growth rate, which could significantly boost demand for retail goods. Specifically, as household incomes continue to increase, buying power and expenditures of local households will increase as well, supporting future growth in the retail sector. In subsequent chapters, these income growth projections are combined with household growth projections to estimate growth in retail sales.

Employment Growth

As shown in **Table 2**, employment in San Ramon is projected to grow 24 percent by 2020 and the Trade Area is expected to grow 29 percent over the same period[8]. The total market area is expected to gain 22,646 jobs over the next 13 years. If realized, this employment growth will have positive implications for the retail sector, especially if it increases in-commute from other regions.

Although important, we do not use employment to derive future retail demand. Instead, this analysis relies on growth in households to project retail demand, in part to avoid double counting demand locally employed residents. To the extent that strong employment growth attracts residents from outside the Trade Area our estimates are conservative. Based on the 2000 Census, about 25 percent of jobs in San Ramon are filled with people who live outside the Trade Area.[9] Using employment growth to derive retail demand would include spending that is not actually taking place in San Ramon or the Trade Area. Using household growth measures the retail expenditures of the residents of the Trade Area instead of commuters.

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8 ABAG, measured from 2007.

9 U.S. Census Bureau, Journey-To-Work & Migration Statistics.

Table 2
Income and Employment Projections [1]
San Ramon Urban Decay Analysis, EPS #16090

Item	2005	2007	2008	2009	2010	2013	2015	2018	2020	Avg. Annual Growth Rate (2007 - 2020)
	Year									
Income										
San Ramon	$137,700	$ 139,011	$ 139,671	$ 140,334	$ 141,000	$ 143,446	$ 145,100	$ 148,435	$ 150,700	0.6%
RTA [2]	$140,434	$ 141,490	$ 142,021	$ 142,554	$ 143,088	$ 145,744	$ 147,542	$ 150,798	$ 153,008	0.6%
Employment										
San Ramon	40,110	41,577	42,331	43,099	43,880	46,099	47,640	50,007	51,650	1.7%
RTA [2]	74,720	77,864	79,485	81,140	82,830	87,587	90,910	96,554	100,510	2.0%

[1] Projections provided by ABAG.
[2] Mean household income in real 2005 dollars, RTA income weighted by households.

Source: Economic & Planning Systems, Inc.

III. RETAIL MARKET ANALYSIS

This chapter reviews retail market demand and supply conditions in San Ramon and related markets. Based on population and household forecasts, the potential growth in retail demand is estimated for the 2005 to 2020 time period and compared with market supply. The market factors and conditions affecting regional retail development and sales patterns provide the basis for evaluating economic impacts in subsequent chapters.

MARKET AREA SUPPLY TRENDS

This section evaluates retail supply trends for the Trade Area, as defined in **Chapter II**. It is the understanding of EPS that apparel and home furnishings will be some of the primary retail categories in the Project. However, given that the precise tenant mix in the proposed City Center Project is unknown, for the most part this report does not differentiate between types of retail. Instead, an overall retail supply is calculated and compared to expected demand for retail services.

EXISTING TRADE AREA SUPPLY

The overall market conditions for retail in the Trade Area are very strong. According to brokers active in the market, vacancy rates across San Ramon, Dublin, and Danville are under 3 percent, reflecting relatively tight market supply conditions[10]. A summary of existing supply conditions and centers is provided in **Table 3** and further described below by city. In general, the presence of numerous shopping centers in the Trade Area is indicative of a relatively mature retail sector. It should be noted that each city also contains a substantial amount of additional retail not located in large shopping centers.

San Ramon

San Ramon has a relatively large retail sector consisting of a number of shopping centers clustered along I-680. Most shopping centers in San Ramon are grocery store anchored centers supported by smaller and often local "in-line" retailers and merchants. In addition, there are several larger shopping centers with major national merchandisers including Home Depot, Target, Whole Foods, Office Depot, among others. The current inventory of shopping centers in San Ramon is approximately 1,288,000 square feet.

In addition to the listed shopping centers in the Trade Area, there is some amount of smaller retail centers and strip malls with local retailers and small shops. Individually, these shopping centers do not contribute a significant portion of retail square footage or

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[10] Based on discussions with Sandra Weck of Colliers International, Patric Davis of Lee & Associates, and Leigh Boyd of Boyd & Associates.

Table 3
Trade Area Retail Centers [1]
San Ramon Urban Decay Analysis, EPS #16090

Shopping Center	Select Tenants	Estimated Sq. Ft.
San Ramon		
Country Club Village	Ralph's Grocery, Longs Drugs	111,250
The Courtyard Center / Crow Canyon	Bighorn Grill, AutoMart, Nations, 7-11	70,000
Crow Canyon Commons	Albertsons Supermarket, Rite Aid Pharmacy,	211,500
Diablo Plaza	Jo-Ann Fabrics, Longs Drugs, Safeway, Crow Canyon Cinemas	142,000
Gateway Centre	Albertsons, Walgreens	110,500
Magnolia Square Shopping Center	Office Depot, Petco	67,000
The Marketplace Shopping Center	Longs Drugs	182,500
The Shops at Bishop Ranch	Target, Whole Foods, Borders, 24 Hour Fitness	96,000
San Ramon Square [2]	Curves, City of D'Lights, European Deli	33,000
Home Depot Center [3]	Home Depot	105,000
Orchard Supply Hardware Center [3]	Orchard Supply	40,000
Country Faire Shopping Center	Local area retail	94,510
PS Business Center	Erik's Deli, Park Avenue Cleaners	24,600
Canyon Lakes [2]	Sergio's Trattoria, Yang's, Country Club Cleaners	33,325
Subtotal		**1,321,185**
Dublin		
Hacienda Crossings	Best Buy, Barnes & Noble, Babies R Us, Old Navy,	470,000
Waterford Place Shopping Center	Safeway	134,000
Dublin Place Shopping Center	Target, Expo Design Center, Burlington Coat Factory	206,425
Safeway Center	Safeway	55,000
Dublin Crossroads Center	Carl's Jr, Post Tools	32,527
Dublin Retail Center	Marshalls, Michaels, Orchard Supply, Ross	154,728
San Ramon Village	Albertson's Furniture	49,683
Shamrock Village	Dollar Tree, World of Shoes, Gallagher's Pub	85,000
Strouds Plaza	Strouds Linen Warehouse	56,000
Lamps Plus Center	Lamps Plus, Hana Japan, Country Waffle	54,000
Dublin Corners	Sheldan's Bakery Café, Washington Mutual, Papa	46,200
Other non-anchored retail		1,334,737
Subtotal		**2,678,300**
Danville		
Danville Livery	Piatte Restaurant, Women CL Fashion, Sweet Potato	95,429
Sycamore Square	Albertsons, Longs	78,379
The Village [2]	Walgreens, ACE, Wells Fargo	25,350
Crossroads	Radio Shack, Sushi	25,000
Danville Square	Trader Joe's	30,000
Iron Horse Plaza	Lanardi Market, Pete's Coffee, Supercuts, Blockbuster Video	14,206
Danville Garden Shopping Center	Safeway	35,000
Danville Town & Country	McCaulou's Department Store, Safeway	55,200
Tassajara Crossing	Long's Drugs, Safeway	146,188
Railroad Centre	Lyons Restaurant	25,000
Castle Square [3]	Costco, Marshalls	152,000
The Village at Tassajara	Subway, Baskin Robbins, UPS Store	30,835
Subtotal		**712,587**

[1] Based on existing retail in 2005.
[2] Visual estimate of square feet.
[3] Square feet based on average size of national retail outlet.
[4] Total retail based on information from Christopher Foss, Economic Development Director for the City of Dublin.

Source: City of Danville; City of San Ramon; City of Dublin; Economic & Planning Systems, Inc.

retail sales to the larger Trade Area, but taken as a whole they can play a modest role in the market. Given vacancy rates across the Trade Area, even relatively small retail building space is in high demand.

Overall, the retail market in San Ramon is comprised of local, neighborhood, and community shopping centers, primarily attracting customers from the local Trade Area and not from the region as a whole. The City does not currently possess a "lifestyle" center or other regional destination establishment capable of attracting customers from the broader region. Nor does San Ramon offer an expanded retail center catering to entertainment and the higher-end consumption tastes of local residents. This existing composition was the basis of a conclusion by a recent report by Bay Area Economics (BAE) citing a need for this type of product. As stated in that Report:

> "…a growing retail product type that may have potential for development in San Ramon is the 'lifestyle center,' which offers high-quality merchandise, services, and restaurant/entertainment venues in a contemporary setting."[11]

Dublin

With approximately 2.7 million square feet of retail space,[12] Dublin is the largest retail center within the Trade Area. Most of this development is clustered within and around the three major shopping centers in Dublin: Hacienda Crossing, Waterford Place, and Dublin Place Shopping Center (see **Table 3**). Also, there is a large collection of automobile malls and plazas, making Dublin a Trade Area draw for automotive-related expenditures. Where noted, EPS has excluded automobile related expenditures from our analysis to create a more accurate comparison of the retail markets within the Trade Area and the type of retail categories most relevant to the City Center Project.

Danville

The retail market in the City of Danville is mostly comprised of small shops and restaurants clustered in the downtown area and along San Ramon Boulevard. There are several larger retail outlets, such as Castle Square shopping center, which includes Costco and Marshalls, and the Tassajara Crossing shopping center near Blackhawk. The Downtown also includes a mix of "Mom & Pop" establishments as well as a number of niche retail chains (e.g., Trader Joe's and Lenardi Market). Nonetheless, the retail inventory in Danville is considerably smaller than its Trade Area competitors, comprising only 712,000 square feet of space.

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[11] "San Ramon Economic Development Strategic Plan: Economic Trends and Opportunities," Bay Area Economics, 2005.
[12] City of Dublin.

FUTURE TRADE AREA SUPPLY

As part of this analysis, EPS gathered information on projected future retail projects in the Trade Area. **Table 4** provides summary information on major development projects in the pipeline in the Trade Area based on information from the cities of Danville, San Ramon, and Dublin, as well as other sources. Projected supply includes all projects built since 2005 since this is the most recent year for which baseline demand and supply data are available.

As shown, a total of approximately 1,868,000 square feet of competitive commercial space is in the pipeline in the Retail Trade Area, which represents a significant increase over current levels. By way of example, the addition of the City Center Project raises the amount of retail space in the City by nearly 50 percent. In addition, the proposed retail developments in Dublin over the next several years approach nearly 1 millions square feet of space.

In addition to the City Center Project, the Plaza at Gale Ranch shopping center is expected to open later this year (in 2007). The majority of projected new retail development will be in Dublin over the next five years, particularly in 2010 - 2012. After the City Center Project comes on-line in San Ramon, Dublin will see nearly 800,000 square feet of new retail between 2010 and 2012. The City of Danville, with a development approach that discourages large shopping centers and national retail outlets, will not see any large new construction within the projection horizon. The one current exception is the Rose Garden, a "mixed-use lifestyle center" of nearly 45,000 square feet just off I-680 on Sycamore Valley Road[13].

In order to project the value of retail supply in San Ramon and the Retail Trade Area, EPS used taxable sales data from the California State Board of Equalization (SBE).[14] As new developments come on-line in the years ahead, the total level of retail in these areas will increase accordingly. Based on EPS research of similar retail establishments, the average revenue of new retail is projected to be $375 per square foot. EPS calculated the estimated sales per square foot in the Trade Area and estimated that existing establishments sell about $365 per square foot.[15] However, given that new retail establishments historically outperform existing retail, we have increased the estimate to $375 in order to evaluate the impact of future development under more conservative assumptions. Beginning with 2005 data, **Table 5** shows the timeline of new retail

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[13] Main Street Property Services, Inc.

[14] Because of the exclusion of non-taxable "food at home" sales in SBE data, the taxable sales figures have been increased to reflect the average percent spent on food at home, based on BLS data. Business-to-business sales have also been excluded from SBE taxable sales data.

[15] Based on total estimated sales in the market area in 2005 (excluding auto sales) divided by total estimated square feet of retail in the market area 4.7 million (see Table 3).

Table 4
Retail Trade Area Future Supply
San Ramon Urban Decay Analysis, EPS #16090

Project Name / Location	Square Feet	Expected Completion	Type
San Ramon			
San Ramon City Center	613,042	2010	Lifestyle center
The Plaza at Gale Ranch	126,000	2007	Community center
Dublin			
Dublin Corners	46,200	2006	Shopping center
Ulferts Center	50,500	2007	Shopping center
Grafton Station & Lowe's	318,000	2010	Shopping center & home improvement
Hacienda Drive	300,000	2011	Lifestyle center
Emerald Place	140,155	2008	Lifestyle center
Promenade at Dublin Ranch	230,000	2011-2012	Lifestyle center
Danville			
The Rose Garden	44,500	2008	Lifestyle center
Total:	1,868,397		

Source: City of San Ramon; City of Danville; City of Dublin; Economic & Planning Systems, Inc.

Table 5
Projected Retail Supply
San Ramon Urban Decay Analysis, EPS #16090

Item	Year 2005	2006	2007	2008	2009	2010	2011	2012	2018	2020
New Retail Square Feet [1]										
San Ramon	0	0	126,000	0	0	613,042	0	0	0	0
Dublin	0	46,200	50,500	140,155	0	318,000	415,000	115,000	0	0
Danville	0	0	0	44,500	0	0	0	0	0	0
Total:			176,500	184,655	0	931,042	415,000	115,000	0	0
Projected Retail Supply										
San Ramon	$554,090,000	$554,000,000	$601,000,000	$601,000,000	$601,000,000	$831,000,000	$831,000,000	$831,000,000	$831,000,000	$831,000,000
RTA	$1,705,000,000	$1,722,000,000	$1,788,000,000	$1,857,000,000	$1,857,000,000	$2,207,000,000	$2,362,000,000	$2,405,000,000	$2,405,000,000	$2,405,000,000

(1) Based on an average sales estimate of $375 per square foot for new retail.

Source: Economic & Planning Systems, Inc.

development and its effect on supply in San Ramon and the Trade Area. Between 2010 and 2012, the retail supply in San Ramon increases nearly 50 percent from 2006 and the Trade Area retail supply increases over 30 percent.

TRADE AREA RETAIL DEMAND

As part of this analysis, EPS has estimated current and projected household retail expenditures in San Ramon and the broader Trade Area. The estimates of total demand are compared to estimates of existing retail sales to characterize the current level of retail capture or leakage in San Ramon and the Trade Area. Estimates of retail expenditures are based on projected households, mean household income, and the percent of household income spent on retail goods.

Table 6 shows the estimated expenditures on retail goods per year, based on household growth assumptions and income growth. As the number of households and household income grows in San Ramon and the Retail Trade Area, so does the amount of expenditures on retail goods[16]. Currently, the only source of increased demand for retail expenditures is the growth in the number of households and the increased real income of those households. EPS does not assume any change in the percentage amount spent on retail goods and services, currently 27.0 percent[17]. Also, to be conservative, EPS assumes no change in demand from growth in households and income outside the Trade Area.

Using projections from ABAG, **Table 6** shows that households in San Ramon are estimated to spend approximately $620 million on retail goods in 2007. Retail expenditures are projected to grow to approximately $1.167 billion in San Ramon by 2020, based on increased population and growing real incomes. Incorporating population projections from the City of San Ramon instead of ABAG changes these numbers to $635 million in 2007 and $1.420 billion in 2020.

TRADE AREA MARKET CAPTURE

The market capture of a trade area is a good indicator of its relative strength and ability to capture sales from its own residents as well as sales from residents of in related markets. A Trade Area capture rate is defined as total actual retail sales (from SBE data) divided by the total estimated retail expenditures of local residents. It essentially compares market demand with market supply.

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16 Excluding automobile expenditures.

17 Bureau of Labor Statistics, Consumer Expenditure Survey 2005, excludes automobile expenditures.

Table 6
Projected Retail Demand
San Ramon Urban Decay Analysis, EPS #16090

Item	Year 2005	2006	2007	2008	2009	2010	2012	2015	2018	2020
San Ramon General Plan Projections[3]										
Households										
San Ramon	21,121	21,809	22,520	23,254	24,012	24,795	26,437	29,108	32,048	34,171
RTA[2]	48,608	49,909	51,246	52,618	54,027	55,474	58,484	63,309	68,532	72,251
Income										
San Ramon	$137,700	$138,354	$139,011	$139,671	$140,334	$141,000	$142,626	$145,100	$148,435	$150,700
RTA[2]	$140,434	$140,961	$141,490	$142,021	$142,554	$143,088	$144,854	$147,542	$150,798	$153,008
Projected Local Demand[3]										
San Ramon	$554,090,000	$593,614,193	$634,620,430	$677,164,285	$721,303,412	$767,097,632	$871,150,500	$1,042,752,944	$1,259,987,923	$1,419,849,432
RTA[2]	$1,705,000,000	$1,780,149,853	$1,857,601,456	$1,937,425,311	$2,019,694,074	$2,104,482,633	$2,321,106,487	$2,673,671,113	$3,096,500,760	$3,403,091,550
ABAG Projections										
Households										
San Ramon	19,590	20,111	20,647	21,196	21,761	22,340	23,376	25,020	26,439	27,430
RTA[2]	48,850	50,044	51,268	52,521	53,805	55,120	57,239	60,570	63,487	65,510
Income										
San Ramon	$137,700	$138,354	$139,011	$139,671	$140,334	$141,000	$142,626	$145,100	$148,435	$150,700
RTA[2]	$140,434	$140,961	$141,490	$142,021	$142,554	$143,088	$144,854	$147,542	$150,798	$153,008
Projected Local Demand[3]										
San Ramon	$554,090,000	$586,377,627	$619,682,126	$654,035,523	$689,470,851	$726,022,187	$802,533,940	$925,764,539	$1,067,220,395	$1,167,834,959
RTA[2]	$1,705,000,000	$1,776,191,578	$1,849,397,150	$1,924,673,693	$2,002,079,793	$2,081,675,695	$2,262,509,285	$2,551,282,659	$2,869,543,266	$3,094,224,821

[1] Household projections from San Ramon General Plan 2020.
[2] Retail Trade Area includes Dublin, San Ramon, and Danville.
[3] For 2005 demand estimated from State Board of Equalization sales tax data, excluding business-to-business sales. Subsequent years based on percentage of income spent on retail, estimated at 27.0% (BLS Consumer Expenditure Survey 2005).

Source: Economic & Planning Systems

As shown in **Table 7**, the Trade Area as a whole captures about 98 percent of the retail expenditures of its local residents. The highest capture rate is in Dublin because of the large number of retail establishments. The capture rate would be higher still if automobile sales were included, as Dublin is a major draw for automobile related expenditures. Capture rates in San Ramon and Danville are relatively lower as many residents travel outside these cities for retail purchases at 80 percent and 73 percent, respectively.

To better illustrate the types of retail offered in San Ramon relative to the purchase of local residents, **Table 8** lists the major retail categories and the amounts supplied based on sales data from the SBE. These calculations illustrate the concept of retail leakage by showing how much of a particular category is demanded based on certain income and demographic characteristics and whether the local market is meeting this demand. As shown, there are several categories of retail in San Ramon where local market supply does not adequately meet local demand. In particular, most automobile related expenditures take place outside the City, and a significant amount of spending on apparel and home furnishing are done at retailers outside San Ramon. As noted above, this leakage suggests a market opportunity for retail space offering apparel and home furnishings.

Future gains in Trade Area sales will be derived from (1) growth in Trade Area population, (2) growth in Trade Area real income, and (3) increased capture from neighboring jurisdictions. To be conservative, this analysis assumes future demand is derived only from growth in population and income and not from an increased capture rate. This assumption is supported by the fact that the Trade Area as a whole is already performing at a relatively balanced level with 98 percent capture rate. However, given the "lifestyle" orientation of the City Center project, it may in fact capture sales currently leaking to neighboring jurisdictions.

Table 7
RTA Capture Rates
San Ramon Urban Decay Analysis, EPS #16090

City	Actual Retail Sales [1]	Estimated Local Retail Expenditures [2]	Capture Rate
San Ramon	$554,090,000	$696,762,428	79.5%
Dublin	$739,366,857	$478,023,840	154.7%
Danville	$411,393,571	$562,673,895	73.1%
Trade Area Total	$1,704,850,429	$1,737,460,163	98.1%

[1] Based on SBE data, adjusted for expenditures on food based on BLS estimates, excluding automobile expenditures.
[2] Based on BLS, Consumer Expenditure Survey 2005, excluding automobile expenditures.

Source: Economic & Planning Systems

Table 8
San Ramon Retail Capture
San Ramon Urban Decay Analysis, EPS #16090

Retail Category	Actual Retail Sales (Supply)[1]	Estimated Retail Expenditures (Demand)[2]	Capture (Dollars)	Capture (Percent)
Apparel stores	$6,817,000	$69,995,070	($63,178,070)	10%
General merchandise	$77,197,000	$52,716,690	$24,480,310	146%
Food stores[3]	$115,440,000	$100,927,680	$14,512,320	114%
Eating & drinking places	$78,234,000	$112,407,420	($34,173,420)	70%
Home furnishings & appliances	$22,665,000	$56,242,890	($33,577,890)	40%
Building materials & farm implements	$89,205,000	$17,498,768	$71,706,233	510%
Services stations	$57,449,000	$150,000,630	($92,551,630)	38%
Other retail stores	$107,083,000	$136,973,280	($29,890,280)	78%
Total[4]	$554,090,000	$696,762,428	-$142,672,428	80%

[1] State Board of Equalization, Taxable Sales, 2005 data.
[2] Bureau of Labor Statistics, 2005 data.
[3] Adjusted to reflect both taxable and non-taxable food expenditures
[4] Automobile expenditures excluded from both supply and demand calculations.

Source: Economic & Planning Systems, Inc.

IV. ECONOMIC IMPACT ANALYSIS

This chapter analyzes the potential effect of the retail portion of the City Center Project on the retail sector in San Ramon. The results of this analysis are used to evaluate the project's potential to result in urban decay.

METHODOLOGY AND ASSUMPTIONS

The proposed City Center Project will potentially capture retail sales from three major sources:

1. Demand historically captured by existing establishments in the Trade Area;
2. Newly created demand (e.g., from increased purchasing power); and
3. Demand that has been "leaked" to establishments outside the Trade Area.

The proposed Project is planned to open for operations in 2010. By this time, local population and income growth will increase market demand beyond current levels, providing additional market support for the retail portion of the proposed Project. However, it is also likely that by this time, additional retail projects will be developed in the Trade Area, providing increased competition to local businesses.

BASELINE MARKET ASSUMPTIONS

EPS estimates the impact of the proposed City Center Project based on the baseline or "status quo" market conditions described in **Chapter III**. Not only do existing market conditions provide the context for understanding potential impacts, they also serve as the basis for several key assumptions used in this analysis, as described below.

A. **Trade Area Vacancy Rate.** The previous chapter found that current conditions in the Trade Area retail market are extremely favorable with an overall vacancy rate equal to or less than three (3) percent. The vacancy rate in San Ramon is estimated at about 3.75 percent. A vacancy rate of this level suggests that available retail space is a result of frictional changes in the retail market, typically caused by normal tenant turn-over rather than structural over-supply. It is not unusual for retail businesses to expand or contract in response to changing market conditions and thus seek out retail space that better accommodates customer demands. A high vacancy rate, in contrast, would suggest a market more vulnerable to conditions that lead to urban decay (e.g., physical deterioration of property because of deferred maintenance and abandonment).

B. **Trade Area Capture Rate.** As described in the previous chapter, the Trade Area is currently exhibiting a relatively balanced market capture rate. Specifically, Trade Area retail establishments are capturing about 98 percent of taxable retail sales potential of its local residents, excluding auto purchases. The market impact calculations provided in this analysis assume that the Trade Area retail capture from other jurisdictions will remain constant. The capture rate in San Ramon is approximately 80 percent.

C. **Average Trade Area Sales per Square Foot.** This analysis relies on a single average annual sales per square foot assumption, based on retail sales in the Trade Area and the total square feet of retail inventory. As of 2005, the most recent year for which adequate data is available, the overall sales per square foot in the Trade Area is about $365. In order to better measure the impact of new retail development in the Trade Area, EPS assumes that new retail will yield $375 per square foot. This assumption is based on the notion that new retail will slightly outperform the existing inventory.

D. **Future Trade Area Retail Development.** The City Center Project evaluates the impact of new retail assuming this project and other already approved and/or under construction retail projects represent the only new retail added to the Trade Area inventory through 2020. Based on EPS research and information provided by Trade Area cities, there will be about 1.9 million new square feet of retail in the Trade Area over the next 10 years, including the 635,000 square feet of retail in the San Ramon City Center project.

MARKET IMPACT OF CITY CENTER PROJECT

The impact of the City Center Project is evaluated based on comparison of long-term market demand and supply projections using the assumptions described above. EPS has calculated future Trade Area demand and supply balances for retail sales as a whole rather than by retail category given the lack of information on the precise tenant mix in the City Center Project.

Table 9 summarizes the potential effects of the proposed City Center Project on the Trade Area retail market by adding its additional sales and square feet to the status quo demand and supply balance for select years between 2005 and 2020. The "status quo" 2005 demand level is based on actual sales data adjusted to real 2005 dollars, as reported by the SBE for 2005. Incremental growth in demand beyond 2005 is assumed to come from population growth and income in the Trade Area only and not additional capture from other jurisdictions, as noted above. As population and income increase, the total amount of disposable income in the Trade Area generates increased taxable sales for all retail categories. Additional demand is calculated by multiplying the Trade Area population and income growth by the estimated expenditures per household.

Table 9
Supply and Demand Comparison
San Ramon Urban Decay Analysis, EPS #16090

Item	Amount by Year (in real 2005$)								
	2005	2008	2009	2010	2011	2012	2013	2015	2020
<u>**City of San Ramon Projections**</u>									
Projected Retail Supply									
San Ramon	$554,090,000	$601,000,000	$601,000,000	$831,000,000	$831,000,000	$831,000,000	$831,000,000	$831,000,000	$831,000,000
RTA [1]	$1,705,000,000	$1,857,000,000	$1,857,000,000	$2,207,000,000	$2,362,000,000	$2,405,000,000	$2,405,000,000	$2,405,000,000	$2,405,000,000
Projected Retail Demand [2]									
San Ramon	$554,090,000	$677,164,285	$721,303,412	$767,097,632	$818,140,691	$871,150,500	$926,202,838	$1,042,752,944	$1,419,849,432
RTA [1]	$1,705,000,000	$1,937,425,311	$2,019,694,074	$2,104,482,633	$2,211,031,709	$2,321,106,487	$2,434,823,632	$2,673,671,113	$3,403,091,550
Supply & Demand Balance									
San Ramon	$0	$76,164,285	$120,303,412	-$63,902,368	-$12,859,309	$40,150,500	$95,202,838	$211,752,944	$588,849,432
RTA [1]	$0	$80,425,311	$162,694,074	-$102,517,367	-$150,968,291	-$83,893,513	$29,823,632	$268,671,113	$998,091,550
Required Sales Reduction of Existing Establishments									
San Ramon		13.75%	21.71%	-11.53%	-2.32%	7.25%	17.18%	38.22%	106.27%
RTA [1]		4.72%	9.54%	-6.01%	-8.85%	-4.92%	1.75%	15.76%	58.54%
<u>**ABAG Projections**</u>									
Projected Retail Supply									
San Ramon	$554,090,000	$601,000,000	$601,000,000	$831,000,000	$831,000,000	$831,000,000	$831,000,000	$831,000,000	$831,000,000
RTA [1]	$1,705,000,000	$1,857,000,000	$1,857,000,000	$2,207,000,000	$2,362,000,000	$2,405,000,000	$2,405,000,000	$2,405,000,000	$2,405,000,000
Projected Retail Demand [2]									
San Ramon	$554,090,000	$654,035,523	$689,470,851	$726,022,187	$763,735,019	$802,533,940	$842,450,226	$925,764,539	$1,167,834,959
RTA [1]	$1,705,000,000	$1,924,673,693	$2,002,079,793	$2,081,675,695	$2,170,962,885	$2,262,509,285	$2,356,372,060	$2,551,282,659	$3,094,224,821
Supply & Demand Balance									
San Ramon	$0	$53,035,523	$88,470,851	-$104,977,813	-$67,264,981	-$28,466,060	$11,450,226	$94,764,539	$336,834,959
RTA [1]	$0	$67,673,693	$145,079,793	-$125,324,305	-$191,037,115	-$142,490,715	-$48,627,940	$146,282,659	$689,224,821
Required Sales Reduction of Existing Establishments									
San Ramon		9.57%	15.97%	-18.95%	-12.14%	-5.14%	2.07%	17.10%	60.79%
RTA [1]		3.97%	8.51%	-7.35%	-11.20%	-8.36%	-2.85%	8.58%	40.42%

[1] The Retail Trade Area (RTA) includes the Cities of San Ramon, Danville, and Dublin.

[2] Demand in 2005 based on actual retail sales. Demand in subsequent years equals 2005 demand plus new retail expenditures by local residents because of population and income growth.

Source: California State Board of Equalization; BLS; State Department of Finance; Economic & Planning Systems, Inc.

The calculations shown in **Table 9** assume 2005 is the "status quo" or base year against which future impacts to the market are compared. As noted earlier, the Trade Area is capturing approximately 98 percent of the sales potential in this year (excluding autos), although San Ramon's capture rates is significantly lower than this. When the City Center Project enters the market in 2010 and further retail developments in Dublin come on the market, the supply and demand balance changes. In 2009, households in the Trade Area will demand $2.0 billion in retail goods, while the supply of retail goods in the Trade is only $1.857 billion, implying a small supply deficit, or about $145 million in unmet demand. As more retail establishments come on the market through 2012, the amount of retail supplied will exceed the amount demanded, assuming no additional capture from outside the Trade Area, such as Pleasanton, Livermore, or Walnut Creek. (As noted, this is a conservative assumption since in reality the City Center Project may attract customers from neighboring markets).

One year after the City Center Project is completed the Trade Area will have $191 million of excess supply. This means certain stores may lose business until there are more people (and income) in the Trade Area. Based on our analysis of retail demand, retail establishments in the Trade Area may have an average decrease in sales of 6.6 percent over three years (General Plan) or 7.4 percent over four years (ABAG) beginning in 2010 in order to absorb new retail in the City. However, this possible short-term imbalance in the retail market will be mitigated in a relatively short time, about three to four years following the construction of the City Center Project, at which time demand far exceeds supply. Also, our analysis calculates retail demand based on the growth in households in San Ramon. Projecting retail demand based on employment growth would result in a rosier picture for retail demand in San Ramon.

PROSPECTS FOR URBAN DECAY

This section evaluates the degree to which the potential economic impacts estimated in the previous section might manifest themselves in the physical environment of the Trade Area. Specifically, it examines whether the City Center Project has the potential to start an economic chain reaction that leads to physical deterioration and urban decay. It is designed to comply with the requirement under the California Environmental Quality Act (CEQA) that economic impacts that may cause a physical change in the environment, such as urban decay, be fully analyzed.[18]

[18] A legal precedent for an "urban decay" analysis pursuant to CEQA was set in Bakersfield Citizens for Local Control vs. City of Bakersfield, et. al. in 2004.

URBAN DECAY DESCRIPTION AND ASSUMPTIONS

Urban decay is a compounding effect that can result from extended vacancy, deferred maintenance, and abandonment. The Bay Area Economic Forum in its study entitled *Supercenters and the Transformation of the Bay Area Grocery Industry: Issues, Trends, and Impacts* describes the process as follows:

> "Vacant buildings, along with their large parking lots, can attract litter, graffiti, and vandalism, as well as loiterers and homeless populations. A decaying building both worsens its own prospects for refurbishment and weakens the vitality of the buildings around it. And big box stores, which are built quickly and cheaply, often have a lower quality construction than other buildings, meaning they tend to deteriorate faster."[19]

The initial impetus for urban decay often originates from financial conditions faced by individual property owners; if a landlord is no longer collecting rent on a vacant property and does not believe that it can be re-leased, s/he may lose the incentive to maintain it. The effect can spread to adjacent properties and become a self-fulfilling prophecy as customers start to avoid an area and other property owners or tenants perceive an area as no longer vital. Urban decay can be reinforced by a reduction in the fiscal resources of local governing entities because of declining sales and property revenue.

The urban decay process generally takes a number of years to fully materialize and is reinforced by declining economic conditions in a broader market area. It is generally not the result of a single property standing vacant for one or two years in an otherwise vibrant market.

It is worth noting that the freestanding big box retail building that has been abandoned, also known as a "ghost box," or declining regional mall, known as a "grayfield," can pose a particularly strong risk for urban decay if not re-leased quickly. Not only are these facilities bigger and thus generally more difficult to quickly re-lease or reuse compared to small "infill" sites, they are also more visually significant and thus provide a more widespread signal of decay and negative business climate. In contrast, a number of smaller parcels with varied building types often have a better chance of being adapted and reused simply because they can host a greater number of potential tenants.

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[19] See "Supercenters and the Transformation of the Bay Area Grocery Industry," by Bay Area Economic Forum, January 2004, p. 70 (http://www.bayeconfor.org/pdf/PPRSCscreen11.2.pdf).

URBAN DECAY ASSUMPTIONS

Given the multi-dimensional nature of urban decay, its likelihood can be difficult to predict or quantify with precision. This analysis focuses on three indicators to assess its probability:

- **Existing Condition of Retail Sector:** All other things being equal, a weak or faltering retail sector will be more susceptible to urban decay. Conversely, a new competitive retail project is less likely to precipitate urban decay if existing market conditions are relatively strong. In the existing Trade Area, most of the districts exhibit very healthy market conditions.

- **Duration and Size of Sales Shift:** Urban decay is more likely if a new competitive project results in a relatively large and prolonged shift in retail sales away from existing establishments. For example, a shift in retail sales away from existing establishments of greater than ten (10) percent and lasting longer than four (4) years may be large enough to lead to the physical abandonment of buildings. Most establishments can usually withstand a temporary sales shift of 5 to 7 percent as this is equivalent to a typical business cycle downturn. This is especially true in an otherwise healthy and strong retail sector such as the San Ramon Trade Area.

- **Attributes and Reuse Options of Affected Properties:** The type, location, and parcel configuration of affected properties as well as the range of potential reuse options will also play a role in their susceptibility to urban decay. As noted above, an abandoned "ghost box" poses a particularly strong risk for urban decay because of the difficulty in finding an appropriate replacement tenant. Given the size and configuration of the big box center, finding viable replacement uses can be difficult and prolonged.

ESTIMATED IMPACT OF CITY CENTER PROJECT

The proposed City Center Project will add additional supply to the retail market in San Ramon and the Trade Area. The more net square feet that are added to the Trade Area above baseline conditions, the greater the sales shift from existing retailers, and the greater the potential for retail stores to close. Consequently, a number of existing retail tenants, especially those that compete directly with the as yet unknown tenants in City Center Project, will face competitive pressures. However, these pressures are mitigated in a relatively short period of time, with retail demand and supply balancing within one to two years. Based on the analysis of the previous chapters and the urban decay assumptions described above, the City Center Project is unlikely to precipitate urban decay in San Ramon or the Trade Area. This conclusion is supported by the following considerations:

(1) **Strong Retail Market Conditions in the Trade Area:** Retail market conditions in the Trade Area are very strong, as discussed in previous chapters. Total annual retail demand in the Trade Area is expected to reach about $2.62 billion by 2012, two years after retail opens at the City Center Project, an increase of about 22 percent from 2007 levels.

(2) **Supportable Sales Shift Impact:** The analysis in **Chapter IV** suggests that the net impact of the shift of sales required to support the City Center Project would be nearly eliminated by 2013, or within about three years after the opening of the project, because of steadily rising population and income in the Trade Area (see **Table 7**). The overall strength in the retail market suggests that any short-term vacancies that result should be absorbed by other tenants in a relatively short time. Thus, property owners will have a financial incentive to maintain their properties and avoid conditions conducive to urban decay.

(3) **Increased Capture from Adjacent Markets**: The above analysis assumes that the Trade Area capture rate from adjacent markets remains constant over the study period. This assumption is conservative because the Trade Area currently captures about 98 percent of local demand and San Ramon captures nearly 80 percent of retail sales. To the extent that particular retail tenants can attract a significant proportion of their customers from adjacent markets, the impact on existing Trade Area businesses might be reduced.

(4) **Repositioning of Properties to Non-retail Uses**: The analysis presented herein relates to the demand for property currently used and zoned for retail uses only. However, individual landowners may be able to avoid conditions conducive to urban decay (e.g., long-term vacancies) if they can readily convert their property to other more marketable or lucrative uses (e.g., residential, industrial, or office). Currently, the zoning of retail property in San Ramon is mixed-use, meaning it can be used for non-retail purposes. In other words, these properties would be relatively easy to convert to alternative uses in the unlikely event that the local retail market experiences prolonged decline.

(5) **Entrepreneurialism and Market Adaptation**: Retail is a highly competitive and adaptable sector that is affected by a variety of evolving trends, including consumer preferences, demographics, travel patterns, technology and innovation (e.g., on-line shopping), as well as commodity production and distribution markets. Individual tenants or property owners will respond to these trends with varying degrees of success, depending upon their entrepreneurial skills, local planning and business development efforts, and other factors. These factors, although intangible and difficult to predict, can improve the performance of the retail sector beyond what might be expected based on population and income growth projections alone.

To conclude, the above findings suggest that the risk of urban decay from the City Center Project is minimal. Even if the potential impacts described above manifest themselves, the effect is short-lived and relatively modest (average of 7.4 percent over 4 years), under the "worse-case" scenario. Urban decay becomes a possibility when sales declines are deep and last for a prolonged period of time, typically five years or more. This is not the case with the City Center Project as the excess retail supply will be overcome by increased demand from population and income growth in a very short period of time, in this case about four years.

Economic & Planning Systems

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APPENDIX

DETAILED CALCULATION AND ASSUMPTIONS

Appendix A - Table 1
Annual Household and Population Projections
San Ramon Urban Decay Analysis, EPS #16090

Item	2000	2001	2002	2003	2004	2005
San Ramon General Plan Projections[1]						
Households						
San Ramon	17,991	18,578	19,183	19,808	20,454	21,121
RTA[2]	42,592	43,733	44,904	46,106	47,340	48,608
Population						
San Ramon	50,555	52,203	53,904	55,661	57,476	59,349
RTA[2]	123,520	127,546	131,703	135,996	140,429	145,249
ABAG Projections						
Households						
San Ramon	16,981	17,473	17,980	18,501	19,038	19,590
RTA[2]	41,582	42,943	44,350	45,802	47,301	48,850
Population						
San Ramon	44,834	46,183	47,574	49,006	50,481	52,000
RTA[2]	117,799	121,570	125,462	129,478	133,623	137,900

[1]Household and population projections from San Ramon General Plan 2020.
[2]Retail Trade Area includes Dublin, San Ramon, and Danville.

Source: Economic & Planning Systems, Inc.

Appendix A - Table 1
Annual Household and Population Projections
San Ramon Urban Decay Analysis, EPS #16090

Item	Year 2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
San Ramon General Plan Projections[1]										
Households										
San Ramon	21,809	22,520	23,254	24,012	24,795	25,603	26,437	27,299	28,189	29,108
RTA[2]	49,909	51,246	52,618	54,027	55,474	56,959	58,484	60,050	61,658	63,309
Population										
San Ramon	61,283	63,281	65,344	67,473	69,673	71,944	74,289	76,710	79,210	81,792
RTA[2]	149,983	154,872	159,920	165,133	164,873	170,247	175,796	181,526	187,443	184,292
ABAG Projections										
Households										
San Ramon	20,111	20,647	21,196	21,761	22,340	22,852	23,376	23,911	24,459	25,020
RTA[2]	50,044	51,268	52,521	53,805	55,120	56,169	57,239	58,328	59,439	60,570
Population										
San Ramon	53,276	54,583	55,922	57,294	58,700	59,909	61,143	62,403	63,688	65,000
RTA[2]	140,961	144,090	147,289	150,558	153,900	156,529	159,202	161,921	164,687	167,500

[1]Household and population projections from San Ramon General Plan 2020.
[2]Retail Trade Area includes Dublin, San Ramon, and Danville.

Source: Economic & Planning Systems, Inc.

Appendix A - Table 1
Annual Household and Population Projections
San Ramon Urban Decay Analysis, EPS #16090

Item	2016	2017	2018	2019	2020	Avg. Annual Growth Rate (2007 - 2020)
San Ramon General Plan Projections[1]						
Households						
San Ramon	30,056	31,036	32,048	33,092	34,171	3.3%
RTA[2]	65,004	66,745	68,532	70,367	72,251	2.7%
Population						
San Ramon	84,458	87,211	90,054	92,989	96,020	3.3%
RTA[2]	190,299	196,502	202,907	209,521	204,920	2.2%
ABAG Projections						
Households						
San Ramon	25,484	25,957	26,439	26,930	27,430	2.2%
RTA[2]	61,527	62,500	63,487	64,491	65,510	1.9%
Population						
San Ramon	66,139	67,299	68,478	69,679	70,900	2.0%
RTA[2]	169,891	172,316	174,775	177,270	179,800	1.7%

[1]Household and population projections from San Ramon General Plan 2020.
[2]Retail Trade Area includes Dublin, San Ramon, and Danville.

Source: Economic & Planning Systems, Inc.

Appendix A -Table 2
Annual Income and Employment Projections[1]
San Ramon Urban Decay Analysis, EPS #16090

Item	2005	2006	2007	2008
Income				
San Ramon	$137,700	$ 138,354	$ 139,011	$ 139,671
RTA[2]	$140,434	$ 140,961	$ 141,490	$ 142,021
Employment				
San Ramon	40,110	40,837	41,577	42,331
RTA[2]	74,720	76,276	77,864	79,485

[1]Projections provided by ABAG.
[2]Mean household income in real 2005 dollars, RTA income weighted by households.

Source: Economic & Planning Systems, Inc.

Appendix A -Table 2
Annual Income and Employment Projections[1]
San Ramon Urban Decay Analysis, EPS #16090

Item	2009	2010	2011	2012	2013
Income					
San Ramon	$ 140,334	$ 141,000	$ 141,811	$ 142,626	$ 143,446
RTA[2]	$ 142,554	$ 143,088	$ 143,968	$ 144,854	$ 145,744
Employment					
San Ramon	43,099	43,880	44,607	45,347	46,099
RTA[2]	81,140	82,830	84,386	85,972	87,587

[1]Projections provided by ABAG.
[2]Mean household income in real 2005 dollars, RTA income weighted by households.

Source: Economic & Planning Systems, Inc.

Appendix A -Table 2
Annual Income and Employment Projections[1]
San Ramon Urban Decay Analysis, EPS #16090

Item	2014	2015	2016	2017
Income				
San Ramon	$ 144,271	$ 145,100	$ 146,203	$ 147,315
RTA[2]	$ 146,641	$ 147,542	$ 148,620	$ 149,705
Employment				
San Ramon	46,863	47,640	48,416	49,205
RTA[2]	89,233	90,910	92,754	94,635

[1]Projections provided by ABAG.
[2]Mean household income in real 2005 dollars, RTA income weighted by households.

Source: Economic & Planning Systems, Inc.

Appendix A -Table 2
Annual Income and Employment Projections[1]
San Ramon Urban Decay Analysis, EPS #16090

Item	2018	2019	2020	Avg. Annual Growth Rate (2007 - 2020)
Income				
San Ramon	$ 148,435	$ 149,563	$ 150,700	0.6%
RTA[2]	$ 150,798	$ 151,899	$ 153,008	0.6%
Employment				
San Ramon	50,007	50,822	51,650	1.7%
RTA[2]	96,554	98,512	100,510	2.0%

[1]Projections provided by ABAG.
[2]Mean household income in real 2005 dollars, RTA income weighted by households.

Source: Economic & Planning Systems, Inc.

Appendix A - Table 3
Annual Retail Supply Projections
San Ramon Urban Decay Analysis, EPS #16090

Item	2005	2006	2007	2008	2009
New Retail Square Feet[1]					
San Ramon	0	0	126,000	0	0
Dublin	0	46,200	50,500	140,155	0
Danville	0	0	0	44,500	0
Total:			176,500	184,655	0
Projected Retail Supply					
San Ramon	$583,000,000	$583,000,000	$633,000,000	$633,000,000	$633,000,000
RTA	$2,268,000,000	$2,286,000,000	$2,357,000,000	$2,430,000,000	$2,430,000,000

(1) Based on an average sales estimate of $400 per square foot for new retail.

Source: Economic & Planning Systems, Inc.

Appendix A - Table 3
Annual Retail Supply Projections
San Ramon Urban Decay Analysis, EPS #16090

Item	Year 2010	2011	2012	2013	2014
New Retail Square Feet[1]					
San Ramon	613,042	0	0	0	0
Dublin	318,000	415,000	115,000	0	0
Danville	0	0	0	0	0
Total:	931,042	415,000	115,000	0	0
Projected Retail Supply					
San Ramon	$878,000,000	$878,000,000	$878,000,000	$878,000,000	$878,000,000
RTA	$2,803,000,000	$2,969,000,000	$3,015,000,000	$3,015,000,000	$3,015,000,000

(1) Based on an average sales estimate of $400 per square foot for new retail.

Source: Economic & Planning Systems, Inc.

Appendix A - Table 3
Annual Retail Supply Projections
San Ramon Urban Decay Analysis, EPS #16090

Item	2015	2016	2017	2018	2019	2020
New Retail Square Feet[1]						
San Ramon	0	0	0	0	0	0
Dublin	0	0	0	0	0	0
Danville	0	0	0	0	0	0
Total:	0	0	0	0	0	0
Projected Retail Supply						
San Ramon	$878,000,000	$878,000,000	$878,000,000	$878,000,000	$878,000,000	$878,000,000
RTA	$3,015,000,000	$3,015,000,000	$3,015,000,000	$3,015,000,000	$3,015,000,000	$3,015,000,000

(1) Based on an average sales estimate of $400 per square foot for new retail.

Source: Economic & Planning Systems, Inc.

Appendix A - Table 4
Annual Retail Demand Projections
San Ramon Urban Decay Analysis, EPS #16090

Item	2005	2007	2008	2009
San Ramon General Plan Projections				
Households				
San Ramon	21,121	22,520	23,254	24,012
RTA[2]	48,608	51,246	52,618	54,027
Income				
San Ramon	$137,700	$139,011	$139,671	$140,334
RTA[2]	$140,434	$141,490	$142,021	$142,554
Projected Local Demand[3]				
San Ramon	$583,000,000	$674,000,000	$722,000,000	$772,000,000
RTA[2]	$2,268,000,000	$2,440,000,000	$2,530,000,000	$2,623,000,000
ABAG Projections				
Households				
San Ramon	19,590	20,647	21,196	21,761
RTA[2]	48,850	51,268	52,521	53,805
Income				
San Ramon	$137,700	$139,011	$139,671	$140,334
RTA[2]	$140,434	$141,490	$142,021	$142,554
Projected Local Demand[3]				
San Ramon	$583,000,000	$656,000,000	$694,000,000	$734,000,000
RTA[2]	$2,268,000,000	$2,430,000,000	$2,515,000,000	$2,602,000,000

[1]Household projections from San Ramon General Plan 2020.
[2]Retail Trade Area includes Dublin, San Ramon, and Danville.
[3]For 2005 demand estimated from State Board of Equalization sales tax data. Subsequent years based on percentage of income spent on retail, estimated at 32.2% (BLS Consumer Expenditure Survey 2005).

Source: Economic & Planning Systems

Appendix A - Table 4
Annual Retail Demand Projections
San Ramon Urban Decay Analysis, EPS #16090

Item	Year 2010	2011	2012	2013	2014	2015
San Ramon General Plan Projections						
Households						
San Ramon	24,795	25,603	26,437	27,299	28,189	29,108
RTA[2]	55,474	56,959	58,484	60,050	61,658	63,309
Income						
San Ramon	$141,000	$141,811	$142,626	$143,446	$144,271	$145,100
RTA[2]	$143,088	$143,968	$144,854	$145,744	$146,641	$147,542
Projected Local Demand[3]						
San Ramon	$824,000,000	$881,000,000	$940,000,000	$1,001,000,000	$1,065,000,000	$1,131,000,000
RTA[2]	$2,719,000,000	$2,837,000,000	$2,959,000,000	$3,085,000,000	$3,215,000,000	$3,349,000,000
ABAG Projections						
Households						
San Ramon	22,340	22,852	23,376	23,911	24,459	25,020
RTA[2]	55,120	56,169	57,239	58,328	59,439	60,570
Income						
San Ramon	$141,000	$141,811	$142,626	$143,446	$144,271	$145,100
RTA[2]	$143,088	$143,968	$144,854	$145,744	$146,641	$147,542
Projected Local Demand[3]						
San Ramon	$775,000,000	$816,000,000	$859,000,000	$903,000,000	$948,000,000	$994,000,000
RTA[2]	$2,691,000,000	$2,788,000,000	$2,888,000,000	$2,990,000,000	$3,095,000,000	$3,202,000,000

[1]Household projections from San Ramon General Plan 2020.
[2]Retail Trade Area includes Dublin, San Ramon, and Danville.
[3]For 2005 demand estimated from State Board of Equalization sales tax data. Subsequent years based on percentage of income spent on retail, estimated at 32.2% (BLS Consumer Expenditure Survey 2005).

Source: Economic & Planning Systems

Appendix A - Table 4
Annual Retail Demand Projections
San Ramon Urban Decay Analysis, EPS #16090

Item	2016	2017	2018	2019	2020
San Ramon General Plan Projections					
Households					
San Ramon	30,056	31,036	32,048	33,092	34,171
RTA[2]	65,004	66,745	68,532	70,367	72,251
Income					
San Ramon	$146,203	$147,315	$148,435	$149,563	$150,700
RTA[2]	$148,620	$149,705	$150,798	$151,899	$153,008
Projected Local Demand[3]					
San Ramon	$1,208,000,000	$1,288,000,000	$1,371,000,000	$1,457,000,000	$1,547,000,000
RTA[2]	$3,498,000,000	$3,652,000,000	$3,812,000,000	$3,977,000,000	$4,148,000,000
ABAG Projections					
Households					
San Ramon	25,484	25,957	26,439	26,930	27,430
RTA[2]	61,527	62,500	63,487	64,491	65,510
Income					
San Ramon	$146,203	$147,315	$148,435	$149,563	$150,700
RTA[2]	$148,620	$149,705	$150,798	$151,899	$153,008
Projected Local Demand[3]					
San Ramon	$1,043,000,000	$1,094,000,000	$1,146,000,000	$1,199,000,000	$1,254,000,000
RTA[2]	$3,313,000,000	$3,427,000,000	$3,543,000,000	$3,662,000,000	$3,784,000,000

[1]Household projections from San Ramon General Plan 2020.
[2]Retail Trade Area includes Dublin, San Ramon, and Danville.
[3]For 2005 demand estimated from State Board of Equalization sales tax data. Subsequent years based on percentage of income spent on retail, estimated at 32.2% (BLS Consumer Expenditure Survey 2005).

Source: Economic & Planning Systems

Appendix - Table 5
Annual Supply and Demand Comparison
San Ramon Urban Decay Analysis, EPS #16090

Item	2005	2006	2007
City of San Ramon Projections			
Projected Retail Supply			
San Ramon	$554,090,000	$554,000,000	$601,000,000
RTA[1]	$1,705,000,000	$1,722,000,000	$1,788,000,000
Projected Retail Demand[2]			
San Ramon	$554,090,000	$593,614,193	$634,620,430
RTA[1]	$1,705,000,000	$1,780,149,853	$1,857,601,456
Supply & Demand Balance			
San Ramon	$0	$39,614,193	$33,620,430
RTA[1]	$0	$58,149,853	$69,601,456
Required Sales Reduction of Existing Establishments			
San Ramon		6.67%	5.30%
RTA[1]		3.27%	3.75%
ABAG Projections			
Projected Retail Supply			
San Ramon	$554,090,000	$554,000,000	$601,000,000
RTA[1]	$1,705,000,000	$1,722,000,000	$1,788,000,000
Projected Retail Demand[2]			
San Ramon	$554,090,000	$586,377,627	$619,682,126
RTA[1]	$1,705,000,000	$1,776,191,578	$1,849,397,150
Supply & Demand Balance			
San Ramon	$0	$32,377,627	$18,682,126
RTA[1]	$0	$54,191,578	$61,397,150
Required Sales Reduction of Existing Establishments			
San Ramon		5.52%	3.01%
RTA[1]		3.05%	3.32%

[1] The Retail Trade Area (RTA) includes the Cities of San Ramon, Danville, and Dublin.
[2] Demand in 2005 based on actual retail sales. Demand in subsequent years equals 2005 demand plus new retail expenditures by local residents because of population and income growth.

Source: California State Board of Equalization; BLS; State Department of Finance; Economic & Planning Systems, Inc.

Appendix - Table 5
Annual Supply and Demand Comparison
San Ramon Urban Decay Analysis, EPS #16090

Item	2008	2009	2010
City of San Ramon Projections			
Projected Retail Supply			
San Ramon	$601,000,000	$601,000,000	$831,000,000
RTA[1]	$1,857,000,000	$1,857,000,000	$2,207,000,000
Projected Retail Demand[2]			
San Ramon	$677,164,285	$721,303,412	$767,097,632
RTA[1]	$1,937,425,311	$2,019,694,074	$2,104,482,633
Supply & Demand Balance			
San Ramon	$76,164,285	$120,303,412	-$63,902,368
RTA[1]	$80,425,311	$162,694,074	-$102,517,367
Required Sales Reduction of Existing Establishments			
San Ramon	11.25%	16.68%	-8.33%
RTA[1]	4.15%	8.06%	-4.87%
ABAG Projections			
Projected Retail Supply			
San Ramon	$601,000,000	$601,000,000	$831,000,000
RTA[1]	$1,857,000,000	$1,857,000,000	$2,207,000,000
Projected Retail Demand[2]			
San Ramon	$654,035,523	$689,470,851	$726,022,187
RTA[1]	$1,924,673,693	$2,002,079,793	$2,081,675,695
Supply & Demand Balance			
San Ramon	$53,035,523	$88,470,851	-$104,977,813
RTA[1]	$67,673,693	$145,079,793	-$125,324,305
Required Sales Reduction of Existing Establishments			
San Ramon	8.11%	12.83%	-14.46%
RTA[1]	3.52%	7.25%	-6.02%

[1] The Retail Trade Area (RTA) includes the Cities of San Ramon, Danville, and Dublin.
[2] Demand in 2005 based on actual retail sales. Demand in subsequent years equals 2005 demand plus new retail expenditures by local residents because of population and income growth.

Source: California State Board of Equalization; BLS; State Department of Finance; Economic & Planning Systems, Inc.

Appendix - Table 5
Annual Supply and Demand Comparison
San Ramon Urban Decay Analysis, EPS #16090

Item	2011	2012	2013
	Amount by Year (in real 2005$)		
City of San Ramon Projections			
Projected Retail Supply			
San Ramon	$831,000,000	$831,000,000	$831,000,000
RTA[1]	$2,362,000,000	$2,405,000,000	$2,405,000,000
Projected Retail Demand[2]			
San Ramon	$818,140,691	$871,150,500	$926,202,838
RTA[1]	$2,211,031,709	$2,321,106,487	$2,434,823,632
Supply & Demand Balance			
San Ramon	-$12,859,309	$40,150,500	$95,202,838
RTA[1]	-$150,968,291	-$83,893,513	$29,823,632
Required Sales Reduction of Existing Establishments			
San Ramon	-1.57%	4.61%	10.28%
RTA[1]	-6.83%	-3.61%	1.22%
			-3.52%
ABAG Projections			
Projected Retail Supply			
San Ramon	$831,000,000	$831,000,000	$831,000,000
RTA[1]	$2,362,000,000	$2,405,000,000	$2,405,000,000
Projected Retail Demand[2]			
San Ramon	$763,735,019	$802,533,940	$842,450,226
RTA[1]	$2,170,962,885	$2,262,509,285	$2,356,372,060
Supply & Demand Balance			
San Ramon	-$67,264,981	-$28,466,060	$11,450,226
RTA[1]	-$191,037,115	-$142,490,715	-$48,627,940
Required Sales Reduction of Existing Establishments			
San Ramon	-8.81%	-3.55%	1.36%
RTA[1]	-8.80%	-6.30%	-2.06%

[1] The Retail Trade Area (RTA) includes the Cities of San Ramon, Danville, and Dublin. -5.795%
[2] Demand in 2005 based on actual retail sales. Demand in subsequent years equals 2005 demand plus new retail expenditures by local residents because of population and income growth.

Source: California State Board of Equalization; BLS; State Department of Finance; Economic & Planning Systems, Inc.

Appendix - Table 5
Annual Supply and Demand Comparison
San Ramon Urban Decay Analysis, EPS #16090

Item	2014	2015	2016	2017
City of San Ramon Projections				
Projected Retail Supply				
San Ramon	$831,000,000	$831,000,000	$831,000,000	$831,000,000
RTA[1]	$2,405,000,000	$2,405,000,000	$2,405,000,000	$2,405,000,000
Projected Retail Demand[2]				
San Ramon	$983,376,409	$1,042,752,944	$1,112,313,319	$1,184,687,050
RTA[1]	$2,552,303,669	$2,673,671,113	$2,809,892,322	$2,950,782,202
Supply & Demand Balance				
San Ramon	$152,376,409	$211,752,944	$281,313,319	$353,687,050
RTA[1]	$147,303,669	$268,671,113	$404,892,322	$545,782,202
Required Sales Reduction of Existing Establishments				
San Ramon	15.50%	20.31%	25.29%	29.85%
RTA[1]	5.77%	10.05%	14.41%	18.50%
ABAG Projections				
Projected Retail Supply				
San Ramon	$831,000,000	$831,000,000	$831,000,000	$831,000,000
RTA[1]	$2,405,000,000	$2,405,000,000	$2,405,000,000	$2,405,000,000
Projected Retail Demand[2]				
San Ramon	$883,516,057	$925,764,539	$971,697,581	$1,018,838,938
RTA[1]	$2,452,609,820	$2,551,282,659	$2,654,943,795	$2,761,012,033
Supply & Demand Balance				
San Ramon	$52,516,057	$94,764,539	$140,697,581	$187,838,938
RTA[1]	$47,609,820	$146,282,659	$249,943,795	$356,012,033
Required Sales Reduction of Existing Establishments				
San Ramon	5.94%	10.24%	14.48%	18.44%
RTA[1]	1.94%	5.73%	9.41%	12.89%

[1] The Retail Trade Area (RTA) includes the Cities of San Ramon, Danville, and Dublin.
[2] Demand in 2005 based on actual retail sales. Demand in subsequent years equals 2005 demand plus new retail expenditures by local residents because of population and income growth.

Source: California State Board of Equalization; BLS; State Department of Finance; Economic & Planning Systems, Inc.

Appendix - Table 5
Annual Supply and Demand Comparison
San Ramon Urban Decay Analysis, EPS #16090

Item	2018	2019	2020
City of San Ramon Projections			
Projected Retail Supply			
San Ramon	$831,000,000	$831,000,000	$831,000,000
RTA[1]	$2,405,000,000	$2,405,000,000	$2,405,000,000
Projected Retail Demand[2]			
San Ramon	$1,259,987,923	$1,338,334,325	$1,419,849,432
RTA[1]	$3,096,500,760	$3,247,213,488	$3,403,091,550
Supply & Demand Balance			
San Ramon	$428,987,923	$507,334,325	$588,849,432
RTA[1]	$691,500,760	$842,213,488	$998,091,550
Required Sales Reduction of Existing Establishments			
San Ramon	34.05%	37.91%	41.47%
RTA[1]	22.33%	25.94%	29.33%
ABAG Projections			
Projected Retail Supply			
San Ramon	$831,000,000	$831,000,000	$831,000,000
RTA[1]	$2,405,000,000	$2,405,000,000	$2,405,000,000
Projected Retail Demand[2]			
San Ramon	$1,067,220,395	$1,116,874,576	$1,167,834,959
RTA[1]	$2,869,543,266	$2,980,594,689	$3,094,224,821
Supply & Demand Balance			
San Ramon	$236,220,395	$285,874,576	$336,834,959
RTA[1]	$464,543,266	$575,594,689	$689,224,821
Required Sales Reduction of Existing Establishments			
San Ramon	22.13%	25.60%	28.84%
RTA[1]	16.19%	19.31%	22.27%

[1] The Retail Trade Area (RTA) includes the Cities of San Ramon, Danville, and Dublin.
[2] Demand in 2005 based on actual retail sales. Demand in subsequent years equals 2005 demand plus new retail expenditures by local residents because of population and income growth.

Source: California State Board of Equalization; BLS; State Department of Finance; Economic & Planning Systems, Inc.

Appendix K: Water Supply Assessment

EAST BAY
MUNICIPAL UTILITY DISTRICT

May 9, 2007

Phil Wong, Director
Planning/Community Development Department
City of San Ramon
2222 Camino Ramon
San Ramon, CA 94583

Re: Water Supply Assessment – San Ramon City Center Project, San Ramon

Dear Mr. Wong:

This letter responds to your request of March 6, 2007, for water agency consultation concerning the San Ramon City Center Project (Enclosure 1) located in the City of San Ramon (City). The East Bay Municipal Utility District (EBMUD) appreciates the opportunity to provide this response.

Pursuant to Sections 10910-10915 (SB-610) of the California Water Code, the project meets the threshold requirement for an assessment of water supply availability based on the amount of water this project would require, a mixed-use project that would demand an amount of water equivalent to or greater than, the amount of water required by a 500 dwelling unit project.

Please note that this assessment addresses the issue of water supply only and is not a guarantee of service, and future water service is subject to rates and regulations in effect at the time.

Project Demand

The water demands for the San Ramon City Center Project area are accounted for in EBMUD's water demand projections as published in EBMUD's 2005 Urban Water Management Plan (UWMP/Enclosure 2). EBMUD's water demand projections account for anticipated future water demands within EBMUD's service boundaries and for variations in demand-attributed changes in development patterns. The current land uses include general commercial, industrial, and vacant, and the existing water demand for the area is about 22,000 gallons per day (gpd). The estimated water demand for the proposed development that consists of commercial, city government, library and residential is estimated to be about 400,000 gpd and is consistent with EBMUD's demand projections that indicate both densification and land use class changes in some areas with these types of land uses.

EBMUD's demand projections indicate both densification and land use changes in all land use classifications, including commercial and industrial land uses, thus increasing EBMUD's overall demand. EBMUD's 2005 UWMP projects water demands over time, accounting for estimated variations in demand usage less conservation and recycled supply sources as noted in Table 4.1 of the UWMP. For planning purposes, the demands are estimated in five-year increments, but it is recognized that actual incremental amounts may occur stepwise. An increase in usage by one customer in a particular customer class does not require a strict gallon-for-gallon increase in conservation by other customers in that class, as in actuality the amount of potable demand, conservation and recycled water use EBMUD-wide will all vary somewhat. Periodically EBMUD updates the demand projections to reconcile these variations, and the UWMP is updated as appropriate at each five-year cycle.

Project Area

The San Ramon City Center Project area is bounded by Bishop Ranch on the south, Bishop Drive on the north, the Iron Horse Trail and Central Park on the east, and Sunset Drive and the Shops at Bishop Ranch on the west. The project area consists of approximately 39 acres. As described in the Notice of Preparation of the Draft Environmental Impact Report (EIR), the San Ramon City Center Project is proposed to add approximately 2.2 million square feet of constructed floor space consisting of a 110,500 square-foot City Hall/Library, 682,000 square feet of office space, 685,000 square feet of retail space, 488 new multi-family residences, and a 169-room hotel.

EBMUD Water Demand Projections

Water consumption within the EBMUD service area has remained relatively level in recent years in spite of population and account growth. Since the 1970s, water demand has ranged from 200 to 220 million gallons per day (mgd) in non-drought years. The 2030 water demand forecast of 281 mgd for the EBMUD service area can be reduced to 232 mgd with the successful implementation of water recycling and conservation programs, as outlined in the UWMP. The San Ramon City Center Project will not change the EBMUD 2030 demand projection.

EBMUD Water Supply and Water Rights

EBMUD has water rights that allow for delivery of up to a maximum 325 mgd from the Mokelumne River, subject to the availability of Mokelumne River runoff and the senior water rights of other users. EBMUD's position in the hierarchy of Mokelumne River water users is determined by a variety of agreements between Mokelumne River water right holders, the appropriative water rights permits and licenses, which have been issued by the State, pre-1914 rights and riparian rights. Conditions that restrict EBMUD's ability to use its full entitlement include:

- Upstream water use by prior right holders.
- Downstream water use by riparian and senior appropriators and other downstream obligations, including protection of public trust resources.
- Variability in rainfall and runoff.

During drought periods, the Mokelumne River can no longer meet EBMUD's projected customer demands. EBMUD studies indicate that by 2030, even with the additional dry-year water supply provided through the Freeport Regional Water Project (FRWP), deficiencies in supply of up to 37 percent could occur during multi-year drought periods.

EBMUD UWMP

The UWMP, adopted on November 22, 2005 by the EBMUD Board of Directors by Resolution No. 33508-05, is a long-range planning document that reports on EBMUD's current and projected water usage, water supply programs, and conservation and recycling programs. A summary of EBMUD's demand and supply projections, in five-year increments for a 25-year planning horizon is provided in a table (Enclosure 3) from the UWMP. The data reflects the latest actual and forecast values.

EBMUD's evaluation of water supply availability accounts for the diversions of both upstream and downstream water right holders and fishery releases on the Mokelumne River. Fishery releases are based on the requirements of a 1998 Joint Settlement Agreement (JSA) between EBMUD, U.S. Fish and Wildlife Service, and the California Department of Fish and Game. The JSA requires EBMUD to make minimum flow releases from its reservoirs to the lower Mokelumne River to protect and enhance the fishery resources and ecosystem of the river. As this water is released downriver, it is, therefore, not available for use by EBMUD's customers.

The available supply shown in the attached table (Enclosure 3) was derived from EBMUD's hydrologic model with the following assumptions:

- EBMUD Drought Planning Sequence is used for 1976, 1977 and 1978.
- Total system storage is depleted by the end of the third year of the drought.
- EBMUD will implement its Drought Management Program when necessary.
- The diversions by Amador and Calaveras Counties upstream of Pardee Reservoir increase over time.

- Releases are made to meet the requirements of senior downstream water right holders and fishery releases are made according to the JSA.
- Dry-year supply of Central Valley Project (CVP) water, through the FRWP, is available beginning in 2010.

As discussed under the Drought Management Program section in Chapter 3 of the UWMP, EBMUD's system storage generally allows it to continue serving its customers during dry-year events. EBMUD imposes rationing based on the projected storage available at the end of September. By imposing rationing in the first dry year of potential drought periods, EBMUD attempts to minimize rationing in subsequent years if a drought persists while continuing to meet its current and subsequent-year fishery flow release requirements and obligations to downstream agencies. Table 3-1 in the UWMP summarizes the Drought Management Program guidelines for consumer water reduction goals based on projected system storage.

In the table (Enclosure 3), "Single Dry Water Year" (or Year 1 of "Multiple Dry Water Years") is determined to be a year that EBMUD would implement Drought Management Program elements at the "moderate" stage with the goal of achieving a reduction between 0 to 15 percent in customer demand. Through the FRWP, the supplemental dry-year supply of CVP water will be used to reduce the rationing goal to 5 percent during the first year of a drought. Year 2 of Multiple Dry Years is determined to be a year that EBMUD would implement Drought Management Program elements at the "severe" stage with the goal of achieving between 15 to 25 percent reduction in customer demand. In Year 3 of the multiple-year drought, under current conditions (2005) and prior to the completion of the FRWP, EBMUD customers could experience deficiencies of up to 56 percent. After the completion of the FRWP, water supply deficiencies could range from about 26 percent in year 2010 to about 37 percent in year 2030. Therefore, a supplemental supply is needed, which is defined by EBMUD as the additional amount of water necessary to limit customer deficiency to 25 percent in a multiple-year drought while continuing to meet the requirements of senior downstream water right holders and the provisions of the 1998 JSA.

Supplemental Water Supply and Demand Management

The goals of meeting projected water needs and increased water reliability rely on three components: supplemental supply, water conservation and recycled water.

Chapter 2 of the UWMP describes EBMUD's supplemental water supply project alternatives to meet its long-term water demand. To address the need for a supplemental water supply during droughts, EBMUD signed a contract in 1970 with the Federal government for a supplemental supply from the CVP. In 2001, EBMUD certified the environmental documentation amending its CVP contract 14-06-200-5183A, reducing EBMUD's contract from 150,000 acre-feet (AF)/year to an entitlement not to exceed 133,000 AF in any one year or 165,000 AF over any three consecutive years. In 2001, EBMUD signed a Memorandum of Agreement with the City of Sacramento, the County of Sacramento and the U.S. Bureau of Reclamation to study a joint regional water project on the Sacramento River near Freeport.

The Draft EIR/Environmental Impact Statement (EIS) of the FRWP identifies several regulatory permits and approvals required for the implementation of the project alternatives. These are listed in Table 2-6 of the FRWP Draft EIR/EIS, July 2003, and incorporated in the Final EIR/EIS for the project, which was certified in April 2004. EBMUD will still face water supply shortages even with the additional dry-year supply provided by the FRWP; however, the frequency and severity of customer rationing during drought periods will be reduced.

Chapter 2 of the UWMP also describes other supplemental water projects, including the development of groundwater storage within EBMUD's service area. EBMUD is studying the environmental impacts of these proposed projects. Specific capital outlay and financing information for these projects are included in EBMUD's FY06-07 Capital Improvement Program and Five-Year Plan. The FRWP would also allow for a future groundwater conjunctive use component and, along with the proposed local groundwater projects, emergency interties and planned water recycling and conservation efforts, would ensure a reliable water supply to meet projected demands for current and future EBMUD customers within the current service area. Without a supplemental water supply source, beyond the FRWP, and despite continued conservation efforts and further use of recycled water, deficiencies in supply are projected as noted above.

The San Ramon City Center Project presents an opportunity to incorporate water conservation measures. Conditions of approval for the implementation of the San Ramon City Center Project should require that the project comply with Assembly Bill 325, Model Water Efficient Landscape Ordinance (Division 2, Title 23, California Code of Regulations, Chapter 2.7, Sections 490 through 495). EBMUD staff would appreciate the opportunity to meet with project sponsors to discuss water conservation programs and best management practices applicable to such projects. A key objective of these discussions will be to explore timely opportunities to expand water conservation via early consideration of EBMUD's conservation programs and best management practices applicable to the projects.

The San Ramon City Center Project is located within the service area boundary of EBMUD's San Ramon Valley Recycled Water Project and is within a City-designated Water Reuse Area. Subject to capacity and to any physical limitations that may prevent dual plumbing, the water demands associated with dual plumbing and landscape irrigation will be required to be met with recycled water from the existing 16-inch recycled water pipeline in Bollinger Canyon Road. The City has a dual plumbing ordinance that requires areas that will be served with recycled water to dual plumb in advance. The San Ramon City Center Project will require design and installation of separate piping systems for recycled water during construction of the San Ramon City Center Project. The City should coordinate closely with EBMUD regarding the layout and installation of dual-plumbing systems for appropriate uses of recycled water.

The project sponsor should contact David J. Rehnstrom, Senior Civil Engineer, at (510) 287-1365 for further information.

Sincerely,

William R. Kirkpatrick
Manager of Water Distribution Planning Division

WRK:TNS:sb
sb07_075a.doc

Enclosures: 1. Letter of Request for Water Supply Assessment dated March 6, 2007
2. EBMUD's 2005 Urban Water Management Plan
3. EBMUD's Demand and Supply Projections Table

cc: Board of Directors w/o Enclosure 2

Enclosure 1

San Ramon
CALIFORNIA
INCORPORATED 1983

CITY OF SAN RAMON

2222 CAMINO RAMON
SAN RAMON, CALIFORNIA 94583
PHONE: (925) 973-2500
WEB SITE: www.sanramon.ca.gov

March 6, 2007

East Bay Municipal Utility District
New Business Office
375 11th Street
Oakland, CA 94607

Subject: San Ramon City Center Project – Water Supply Assessment

The City of San Ramon, in collaboration with the Sunset Development Company, is in the process of planning the development of the San Ramon City Center Project (Project). The Project consists of the development and redevelopment of approximately 43.6 acres in the Bishop Ranch area of San Ramon. In total 2,168,466 square-feet of floor space will be constructed for the following land uses: civic, retail, office, hotel, and residential. A total of 487 new residences, 169 hotel rooms, and a new net non-residential floor space of 954,571 square-feet of civic, retail, and office space are planned.

The city, as lead agency for the project, determined that an Environmental Impact Report (EIR) is required for the Project, pursuant to Section 21080.1 of the Public Resources Code.

The City has identified that the water purveyor to the project will be the East Bay Municipal Utility District (EBMUD). Pursuant to the requirements of SB610, and Section 10910 of the State Water Code, the City is requesting the following from EBMUD:

1. A determination as to whether the Project has been included as part of EBMUD's most recently adopted Urban Water Management Plan; and

2. The preparation of a Water Supply Assessment (WSA), within 90 days of this request.

The City has contracted the firm of Michael Brandman Associates for the preparation of the Project EIR. Our schedule is to circulate the draft EIR on May 28, 2007. We would appreciate your assistance in coordinating with Mr. Jason Brandman, (925) 830-2733, with Mr. James Brezack of RBF Consulting, (925) 906-1460, and with the City as necessary to accomplish the above requests.

The City is prepared to enter into an agreement with EBMUD for this work, consistent with your Regulation 3C for _Miscellaneous Planning Work Requested in Advance of Request for Service._ We would appreciate your notification of the anticipated costs for the above and look forward to our coordination on this topic.

Sincerely,

Phil Wong, Director
Planning /Community Development Department

Cc: Alex Mehran – Sunset Development
Jason Brandman – MBA
Gerry Parco –RBF Consulting
Debbie Chamberlain – City of San Ramon

Enclosure 3

EAST BAY MUNICIPAL UTILITY DISTRICT DEMAND AND SUPPLY PROJECTIONS
(Ref: Table 4-2, UWMP 2005 – EBMUD)

	2005	2010	2015	2020	2025	2030
PROJECTED DEMAND (MGD)						
Customer Demand[1]	241	258	267	277	279	281
Adjusted for Conservation[2]	(13)	(21)	(27)	(35)	(35)	(35)
Adjusted for Recycled Water[2]	(6)	(12)	(14)	(14)	(14)	(14)
Planning Level of Demand	**222**	**225**	**226**	**228**	**230**	**232**
PROJECTED AVAILABLE SUPPLY & NEED FOR SUPPLEMENTAL SUPPLY[3] (MGD)						
Normal Water Year	>222	>224	>226	>228	>230	>232
Supplemental Supply Need	0	0	0	0	0	0
Single Dry Water Year (Multiple Dry Years – Year 1)						
Available Supply	211	213	215	217	219	220
Deficiency (Goal is 5% maximum[4])	5%[5]	5%	5%	5%	5%	5%
Supplemental Supply Need[6]	69	0	0	0	0	0
Multiple Dry Water Years – Year 2						
Available Supply	167	168	170	171	173	174
Deficiency (Goal is 25% maximum[7])	25%	25%	25%	25%	25%	25%
Supplemental Supply Need[6]	40	0	0	0	0	0
Multiple Dry Water Years – Year 3						
Available Supply	43	167	166	153	151	147
Deficiency (Goal is 25% maximum[7])	56%	26%	27%	33%	34%	37%
Supplemental Supply Need (To limit deficiency to 25%[6])	15	1	4	18	22	27
Three-Year Drought						
Total Supplemental Supply Need (To limit deficiency to 25%[6])	**124**[8]	**1**	**4**	**18**	**22**	**27**

(1) Projected Demand derived from the 2000 Demand Study, which projects water demand based on land use in EBMUD's service area.
(2) Conservation and recycled water program savings reported are based on the 1993 Updated Water Supply Management Plan (WSMP). WSMP set a conservation program savings goal of 33 MGD and a recycled water program savings goal of 14 MGD for the year 2020. Since the adoption of the WSMP the conservation savings goal has increased to 35 MGD to offset demand from anticipated annexations to EBMUD's service area. Conservation and recycled water savings goals are to be upheld through 2030. Reference Chapter 5 and Chapter 6 for details.
(3) Projected Supply data includes dry-year supply deliveries from the Freeport Regional Water Project (FRWP) beginning in 2010. Without the FRWP supply 2020 deficiencies could be as high as 67%, as discussed in the UWMP 2000.
(4) Per 2003 FRWP EIR, rationing goal is set to 5% during the first year of all droughts.
(5) In 2005 and prior to the completion of the FRWP, EBMUD's water supply system is inadequate to supply 95% of demand, and may impose customer rationing up to 15% during the first year of a drought, resulting in a need for additional water.
(6) The supplemental supply need is based on EBMUDSIM model results. It is the amount of water needed to limit customer rationing to 5% during the first year of a three-year drought and 25% during the second and third year of a three-year drought; to implement all provisions of the 1998 Joint Settlement Agreement, and to offset additional water supply system losses created by a supplemental supply. The actual need will be dependent on antecedent conditions, the severity of the actual drought, and on how much supplemental supply is obtained during the first two years of the drought and added to storage for use in subsequent years.
(7) Assumed drought conditions, per Table 3-1 (Chapter 3).
(8) An additional 15 MGD is needed in the third year if a supplemental supply is obtained in year 1 and year 2. If a supplemental supply is not available during years 1 and 2 of the drought, total system storage could be drawn down to meet 95% of demand in the first year and 75% in the second year, creating a greater storage deficit and a greater supplemental supply need in the third year.