APPENDICES

Draft Program Environmental Impact Report

State Clearinghouse No. 2011071005



APRIL 2012

2011 FACILITIES MASTER PLAN
Irvine Valley College

2011 FACILITIES MASTER PLAN
Saddleback College

Prepared by:

RGP

Prepared for:

South Orange County Community College District

28000 Marguerite Parkway
Mission Viejo, CA 92692

IVC

SC

Appendices

Appendix A Notice of Preparation (NOP) and EIR Scoping Documents

A1 – Notice of Preparation and Mailing List

A2 – Initial Study/Environmental Checklist

A3 – Comments on Notice of Preparation and Initial Study

Appendix B Traffic Study

Appendix C Air Quality Impact Analysis

Appendix D Greenhouse Gas Analysis

Appendix E Noise Impact Analysis

Appendix F Cultural Resources Assessment

Appendix A1

Notice of Preparation & Mailing List

Notice of Preparation (NOP)
of a
Program Environmental Impact Report (EIR)
for the
South Orange County Community College District
Saddleback College & Irvine Valley College
2011 Facilities Master Plans

PURPOSE OF THE NOP

This Notice of Preparation (NOP) is a request for responsible and trustee agencies, other interested agencies, organizations, and members of the general public to provide input on the draft Program Environmental Impact Report (Program EIR) for the South Orange County Community College District (SOCCCD or "district") 2011 Facilities Master Plans (FMPs) for the Saddleback College campus, the Irvine Valley College (IVC) campus, and the Advanced Technology & Education Park (ATEP) campus. The 2011 FMPs for Saddleback College and Irvine Valley College/ATEP describe the needed buildings, infrastructure, vehicular and pedestrian circulation improvements, and proposed sequencing schedules required for construction and operation of instructional and support facilities through the year 2031.

Compliance with the California Environmental Quality Act (CEQA)[1] is required before the implementation of the 2011 FMPs. The district has prepared a *CEQA Initial Study & Environmental Checklist*, which has determined that a Program EIR must be prepared for the 2011 FMPs. Pursuant to Section 21165 of CEQA, the district is the Lead Agency responsible for preparing the Program EIR, which will address the potential impacts associated with the 2011 FMPs. Section 15168 of the CEQA Guidelines describes a Program EIR as an EIR that may be prepared on a series of actions that are related either geographically; connected as part of a continuing program and/or carried out under the same authorizing statute or regulatory authority and have similar environmental impacts that can be mitigated in similar ways. Under a Program EIR, implementation of the 2011 FMP projects may or may not require subsequent environmental analysis to determine whether additional CEQA documentation needs to be prepared.

Your responses to the NOP will inform the district (the Lead Agency) of your environmental concerns, your ideas about the effects of the project, and ways the project might be revised or mitigated to reduce or avoid significant environmental effects.

[1] California Public Resources Code, Division 13, Sections 21000 through 21177 are commonly known as the California Environmental Quality Act (CEQA). Implementing procedures for CEQA are found in California Code of Regulations, Title 14, Chapter 3, Sections 15000 through 15387, commonly known as the CEQA Guidelines.

PROJECT LOCATIONS

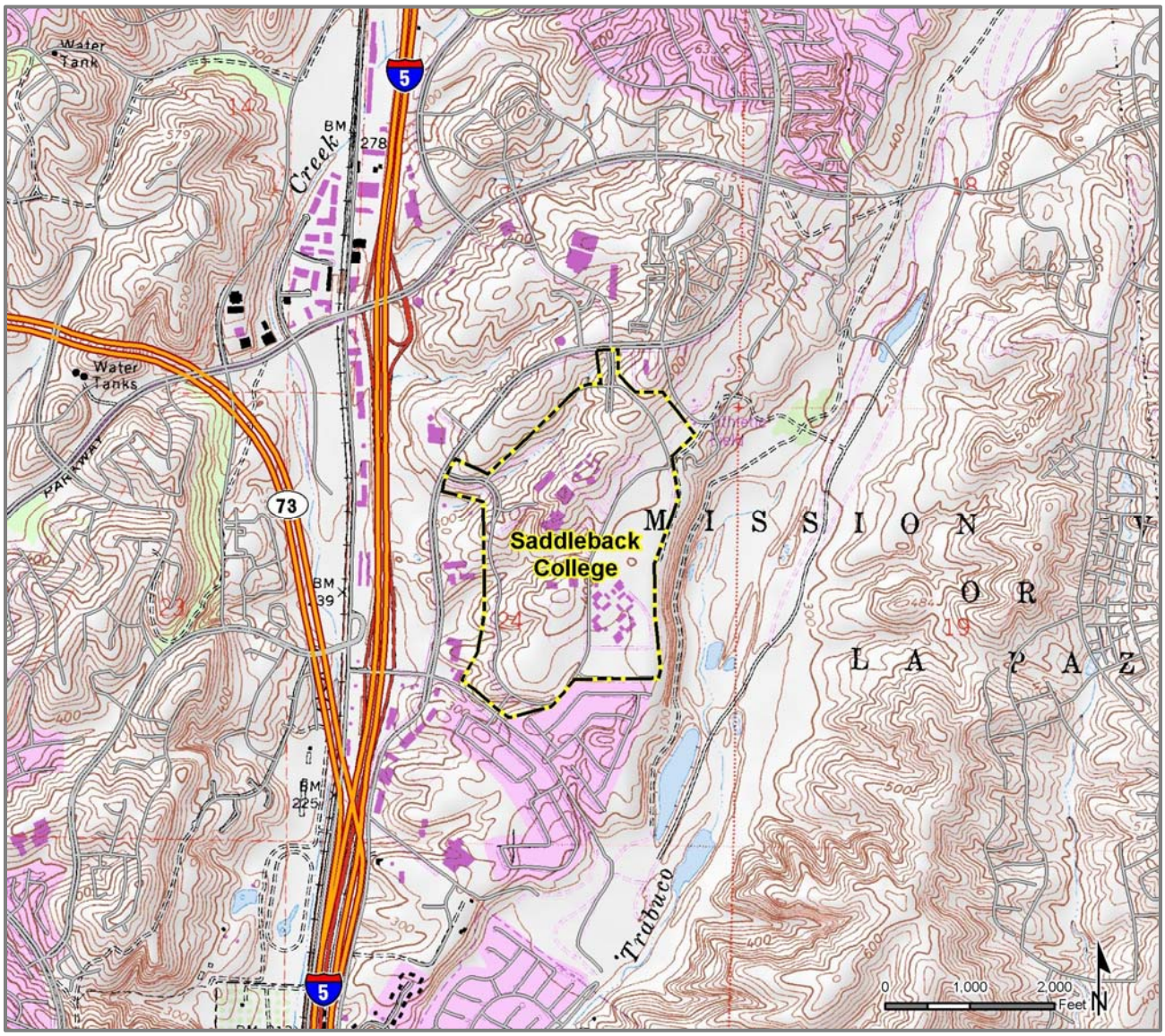
The SOCCCD college campus locations are each shown on Figure 1 (Regional Location). Complete descriptions of the campus locations and settings are provided in the *CEQA Initial Study & Environmental Checklist*, available for review at http://www.socccd.edu/about/about_planning.html.



FIGURE 1: REGIONAL LOCATION

Saddleback College

The 200-acre Saddleback College campus is located at 28000 Marguerite Parkway, at the northeast corner of Marguerite and Avery Parkways, in the City of Mission Viejo. The campus is in Section 24 of Township 7 South, Range 8 West, San Bernardino Baseline and Meridian (SBBM), as depicted on the United States Geological Survey (USGS) San Juan Capistrano, California (1981) 7.5-minute topographic quadrangle (Figure 2). Latitude and longitude coordinates are 33°33'08" North and 117°39'39" West, respectively.



Basemap: USGS 7.5-minute map series, San Juan Capistrano quadrangle, rev. 1981

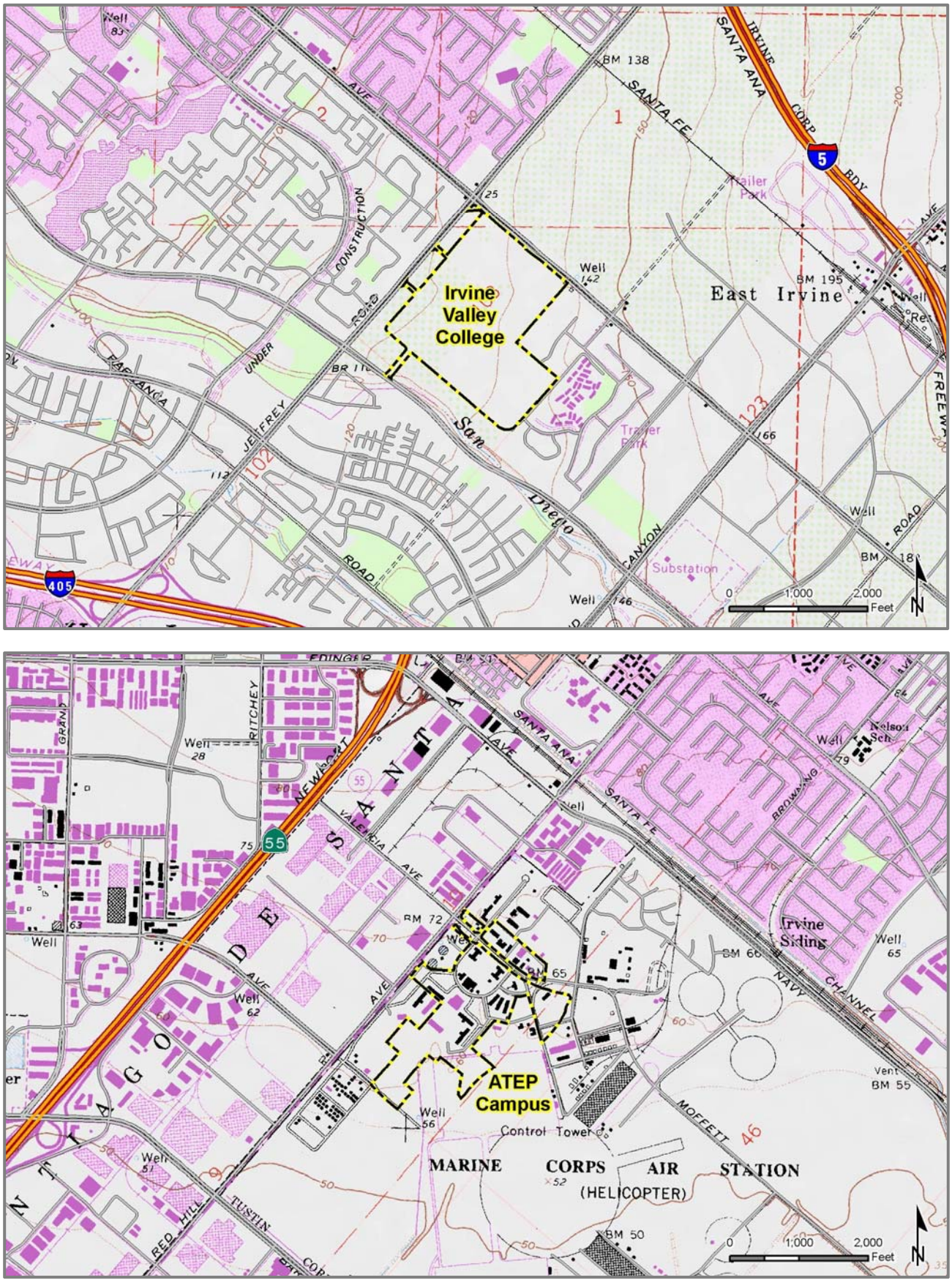
FIGURE 2: USGS MAP – SADDLEBACK COLLEGE

Irvine Valley College

The 100-acre Irvine Valley College campus is located at 5500 Irvine Valley Drive, at the southeast corner of Irvine Center Drive and Jeffrey Road, in the City of Irvine. The campus is partially in and south of Section 1 of Township 6 South, Range 9 West, SBBM, as depicted on the USGS Tustin, California (1981) 7.5-minute topographic quadrangle (Figure 3). Latitude and longitude coordinates are 33°40'34" North and 117°46' 26" West, respectively.

ATEP

The 68-acre ATEP campus is located at 15445 Lansdowne Road, east of the intersection of Red Hill Avenue and Valencia Avenue within the Tustin Legacy development (former Marine Corps Air Station Tustin) in the City of Tustin. The campus is in an unsectioned portion of Township 5 South, Range 9 West, SBBM, as also depicted on the Tustin 7.5-minute topographic quadrangle (Figure 3). Latitude and longitude coordinates are 33°42'55" North and 117°49' 43" West, respectively.



Source: USGS 7.5-minute map series, Tustin quadrangle, rev. 1981

FIGURE 3: USGS MAP – IVC AND ATEP CAMPUSES

PROJECT DESCRIPTION

Master Plan Purpose

A college 'Master Plan' is a comprehensive planning document encompassing all functions of a college or district. At present, the 2006 Facilities Master Plan (FMP) is the approved document that describes the instructional and support facilities needed to accommodate projected student enrollment through the year 2020 at the district's three campuses. The three campuses include Saddleback College in the City of Mission Viejo, Irvine Valley College (IVC) in the City of Irvine, and Advanced Technology & Education Park (ATEP) in the City of Tustin.

The 2011 Saddleback College and Irvine Valley College[2] FMPs describe the needed buildings, infrastructure, vehicular and pedestrian circulation improvements, and proposed sequencing schedules required for construction and operation of instructional and support facilities through the year 2031.

Facilities Master Plan Projects

The 2011 FMPs evaluate existing land, infrastructure, facilities and systems in relationship to the district's educational purposes, plans and needs, specifying the capital outlay projects necessary to meet these needs. Some overall objectives include accommodating future enrollments, improving structural safety, mitigating against known natural hazards, and producing measurable environmental benefits through sustainable development. As such, the 2011 FMPs establish design principles and guidelines that will become the road map for creating modern, safe and environmentally-responsible campuses. Design principles cover include building heights, lighting, public space usage, campus safety and accessibility, and site signage. The guidelines provide recommendations for the campus site layout, buildings, landscaping and hardscape scheme. Campus "sustainability" will be achieved through the use of LEED (Leadership in Energy and Environmental Design) technical guidelines in site selection, water conservation and management, energy efficiency, conservation of materials and resources, and indoor environmental quality. Those sustainable design and environmental sensitivity reference standards will be implemented immediately in new construction, and will serve as criteria that evolve as code compliance changes and technology advances.

Projects in the 2011 FMPs include new buildings, renovated/modernized existing buildings, and site improvements (e.g., roadways, pedestrian paths, parking facilities, etc.). The project design evolution is reflected in the sequencing of FMP projects in 5-, 10- and 20-year planning horizons, within which projects are prioritized and designed based on criteria such as existing building and infrastructure conditions, pedestrian and vehicular circulation, utility capacities, code compliance, and energy consumption. The 2011 FMPs also provide extensive guidance with regard to water and energy efficiency technologies and conservation practices; construction/demolition (C&D) and solid waste recycling; renewable energy standards; stormwater pollutant reduction; and overall sustainable design and building practices.

Some buildings are currently undergoing renovation and modernization, while others are planned for minor to major upgrades in order to address specific structural and safety issues; provide functional improvements; upgrade infrastructure; and bring buildings up to current code standards. The full scope of new and renovated buildings and other site improvement projects (i.e., utilities, roadways, pedestrian facilities, etc.) are best reviewed in the 2011 FMPs in their graphical and planning contexts, and with construction details and secondary effects (i.e., relocations, minor repairs, finish replacement) descriptions. Please refer to the 2011 FMPs available online at http://socccdefmp.com.

[2] SOCCCD has offered courses at the ATEP site since 2007. Saddleback College and IVC personnel develop curricula for courses offered at the ATEP location under the following program categories: Allied Health, Applied Technologies, Media Technologies and Green Technologies. During development of the ATEP campus, IVC will coordinate the management and operational aspects of the existing facility. Enrollment projections and facilities plans for ATEP are contained in the IVC and Saddleback EMPs and FMPs, respectively.

PROGRAM EIR ISSUE AREAS

The district prepared a *CEQA Initial Study and Environmental Checklist* (Initial Study) for the Proposed Project. An Initial Study is a preliminary analysis prepared by a Lead Agency to determine the appropriate CEQA document. If the Initial Study concludes that the project may have a significant effect on the environment, an EIR should be prepared. The Initial Study also is used to focus the EIR on the potential significant effects and allows the Lead Agency to avoid unnecessary analysis on those effects that are not potentially significant. The Initial Study is available for download in Adobe Acrobat PDF format at http://www.socccd.edu/about/about_planning.html. The Initial Study is also available for review at the SOCCCD main offices at the Saddleback College campus.

Through the Initial Study process, the district has determined that the Program EIR will focus on the following environmental issues:

- Aesthetics
- Air Quality
- Agricultural Resources
- Biological Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards/Hazardous Materials
- Hydrology/Water Quality
- Noise
- Transportation/Circulation
- Utilities/Service Systems

For each of the environmental concerns listed, the Program EIR will include a description of existing setting, potential impacts of the Proposed Project, and recommended mitigation measures for any significant impacts. Project alternatives to be addressed in the Program EIR will include No Project and Alternative Designs. Since the 2011 FMPs apply to long-established college campuses, Alternative Locations are infeasible and will not be considered.

As discussed in the Initial Study, no significant impacts will result under the following environmental topics:

- Land Use and Planning
- Mineral Resources
- Population and Housing
- Public Services
- Recreation

The Program EIR will not address those issues further, unless warranted by the NOP comments and/or public scoping meeting. Based on the final Cultural Resources Assessment (BCR 2011), the Initial Study also found that impacts related to Cultural Resources would be less than significant after incorporation of mitigation measures. Therefore, summary impact statements and corresponding mitigation measures will be carried forward into the Program EIR and implemented through the mitigation monitoring or reporting process, but the Cultural Resources topics (e.g., archaeological and paleontological resources, Native American resources, etc.) will not be readdressed.

PUBLIC AGENCY AND PUBLIC RESPONSE

Section 15082(b) of the State CEQA Guidelines requires that each responsible agency provide the Lead Agency with specific detail about the scope and content of the environmental information related to the responsible agency's area of statutory responsibility to be included in the draft Program EIR. Specific concerns related to the Proposed Project are sought in order to provide a document that best informs decision-makers and the general public. At a minimum, public agency responses should identify:

1. The significant environmental issues and reasonable alternatives and mitigation measures which the Responsible Agency will need to have explored in the Program EIR; and
2. Whether the agency will be a Responsible Agency or Trustee Agency for the Proposed Project.

Public responses to significant environmental issues, reasonable alternatives and mitigation measures are also welcomed. Comments to the NOP are most helpful when these comments disclose additional possible environmental issues that were not addressed in this NOP for inclusion in the Program EIR. Commenters should explain the basis for their comments and support the comments by substantial evidence such as data, references, expert opinion, or other facts. All commenters should include their name and contact information with their comments.

REQUEST FOR COMMENTS

All responses to the NOP should be sent at the earliest date but must not be received by the district no later than 30 days after receipt of this notice. It is anticipated that this deadline will be July 31, 2011.

Written or e-mail comments regarding the project should be sent to:

Dr. Debra Fitzsimons, Vice Chancellor
South Orange County Community College District
28000 Marguerite Parkway
Mission Viejo, CA 92692
E-mail: dfitzsimons@socccd.edu
Telephone: (949) 582-4663
Fax: (949) 347-2472

PROJECT FILES

Copies of this NOP and the Initial Study, the 2011 Facilities Master Plans for Saddleback College and Irvine Valley College (including ATEP), 2011 Education Master Plans, and other project information are on file and available for review at the SOCCCD office address shown above.

PUBLIC MEETINGS/HEARINGS

A scoping meeting is scheduled at **10:30 a.m. on Thursday July 21, 2011** to receive oral and written comments on the scope and content of the draft Program EIR. The scoping meeting will be held at:

Saddleback College
Ronald Reagan Board of Trustees, Room 145
Health Sciences/District Offices Building
28000 Marguerite Parkway
Mission Viejo, CA 92692

A public hearing on the 2011 FMPs and the Program EIR is anticipated for Winter 2011. Please contact the district using the above contact information to be notified of the availability of the Program EIR and/or public hearing.

DATE PREPARED

June 30, 2011

LEAD AGENCY SIGNATURE

Dr. Debra Fitzsimons, Vice Chancellor
South Orange County Community College District



Memorandum

To:	**CEQA Notice of Preparation (NOP) Mailing List**
Cc:	**Governor's Office of Planning and Research, State Clearinghouse**
From:	**RGP Planning & Development Services**
Date:	**July 6, 2011**
Subject:	**Correction to NOP of a draft Program EIR for the SOCCCD Saddleback College & Irvine Valley College 2011 Facilities Master Plans**

The South Orange County Community College District (SOCCCD) mailed a Notice of Preparation of a draft Program EIR to thirty-four (34) responsible and trustee agencies and other interested parties on July 1, 2011. The district is the CEQA lead agency responsible for preparing the draft Program EIR to address the potential environmental effects associated with the 2011 Facilities Master Plans.

This memo serves to correct an error in the contact information sections of the NOP and the CEQA Initial Study & Environmental Checklist. All comments on the NOP should be sent by mail, fax or e-mail to:

Dr. Debra Fitzsimons, Vice Chancellor
South Orange County Community College District
28000 Marguerite Parkway
Mission Viejo, CA 92692
E-mail: dfitzsimons@socccd.edu
Telephone: (949) 582-4663
Fax: (949) 347-2472

This correction does not change the 30-day response period during which you must provide NOP comments to the district. It is anticipated that the deadline will be July 31, 2011. Responses to the NOP should be sent at the earliest date but must not be received by the district later than 30 days after receipt of the NOP.

Thank you for your understanding and participation in this draft EIR scoping process. Please contact us at the address or phone number below if you have any questions.

RGP PLANNING & DEVELOPMENT SERVICES
8921 Research Drive ◆ Irvine, CA 92618
Phone: (949) 450-0171 ◆ Fax: (949) 450-0182

City of Aliso Viejo
ATTN: Director of Planning Services
12 Journey, Ste. 100
Aliso Viejo, CA 92656

City of Dana Point
ATTN: Director Of Community Development
33282 Golden Lantern, Suite 212
Dana Point, CA 92629-1805

City of Irvine
ATTN: Community Development Director
P.O. Box 19575
Irvine, CA 92623-9575

City of Laguna Beach
ATTN: Director of Community Development
505 Forest Avenue
Laguna Beach, CA 92651-2394

City of Laguna Hills
ATTN: Community Development Director
24035 El Toro Road
Laguna Hills, CA 92653

City of Laguna Niguel
ATTN: Community Development Director
27781 La Paz Road
Laguna Niguel, CA 92677

City of Laguna Woods
ATTN: Director of Community Development
24264 El Toro Road
Laguna Woods, CA 92653

City of Lake Forest
ATTN: Director of Development Services
25550 Commercentre, Suite 100
Lake Forest, CA 92630

City of Mission Viejo
ATTN: Director of Community Development
200 Civic Center
Mission Viejo, CA 92691

City of Newport Beach
ATTN: Planning Director
P.O. Box 1768
Newport Beach, CA 92658-8915

City of Orange
ATTN: Community Development Department
Orange Civic Center
300 East Chapman Avenue
Orange, CA 92866-1591

City of Rancho Santa Margarita
ATTN: Director of Development Services
22112 El Paseo
Rancho Santa Margarita, CA 92688

City of San Clemente
ATTN: Community Development Director
910 Calle Negocio, Suite 100
San Clemente, CA 92673

City of San Juan Capistrano
ATTN: Director of Planning Services
32400 Paseo Adelanto
San Juan Capistrano, CA 92675

City of Santa Ana
Planning Division
20 Civic Center Plaza,
Ross Annex M-20
Santa Ana, CA 92701

City of Tustin
ATTN: Community Development Director
300 Centennial Way
P.O. Box 3539
Tustin, CA 92781-3539

County of Orange
Community Development Dept.
ATTN: Community Development Manager
P.O. Box 4048
Santa Ana, CA 92702-4048

South Coast AQMD
21865 Copley Dr.
Diamond Bar, CA 91765

U.S. Army Corps of Engineers
Los Angeles District Regulatory Branch
911 Wilshire Blvd.
P.O. Box 2711
Los Angeles, CA 90053

U.S. Fish & Wildlife Service
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road
Carlsbad, CA 92009

Southern California Edison
P.O. Box 800
Rosemead, CA 91770

San Diego Gas & Electric
P.O. Box 129831
San Diego, CA 92112-9831

Southern California Gas Company
Centralized Correspondence
P.O. Box 3150
San Dimas, CA 91773

Moulton Niguel Water District
27500 La Paz Road
Laguna Niguel, CA 92677-3489

Irvine Ranch Water District
P.O. Box 57000
Irvine, CA 92619-7000

Orange County Transportation Authority
550 S. Main St.
P.O. Box 14184
Orange, CA 92863-1584

Rancho Santiago Community College District
2323 N. Broadway
Santa Ana, California 92706-1640

Coast Community College District
1370 Adams Avenue
Costa Mesa, CA 92626-5429

Naval Facilities Engineering Command Southwest
1220 Pacific Highway
San Diego, CA 92132-5190

The Irvine Company
550 Newport Center Drive
Newport Beach, CA 92660

Southern California Association of Governments
818 W. Seventh Street, 12th Floor
Los Angeles, CA 90017

Orange County Fire Authority
1 Fire Authority Road
Irvine, CA 92602

Rancho Mission Viejo
28811 Ortega Highway
P.O. Box 9
San Juan Capistrano, CA 92693

California Department of Fish & Game, Region 5
3883 Ruffin Road, San Diego, CA 92123

State Clearinghouse
1400 Tenth Street
Sacramento, CA 95814

Appendix A2

Initial Study/Environmental Checklist

SOUTH ORANGE COUNTY COMMUNITY COLLEGE DISTRICT
SADDLEBACK COLLEGE & IRVINE VALLEY COLLEGE
2011 FACILITIES MASTER PLANS

CEQA Initial Study & Environmental Checklist

Prepared for:

South Orange County Community College District
28000 Marguerite Parkway
Mission Viejo, California 92692

Prepared by:

RGP Planning & Development Services
8921 Research Drive
Irvine, CA 92618

June 2011

Table of Contents

1. Introduction 2
1.1 Purpose of Initial Study 2
1.2 Project Background 2
1.3 California Environmental Quality Act (CEQA) Compliance 3
2. Project Description 5
2.1 Development of the Facilities Master Plans 5
2.2 Saddleback College Facilities Master Plan 5
2.3 Irvine Valley College Facilities Master Plan 11
2.4 Advanced Technology & Education Park (ATEP) 16
3. Project and Environmental Information 19
4. Environmental Checklist 22
4.1 Aesthetics 22
4.2 Agriculture and Forest Resources 23
4.3 Air Quality 25
4.4 Biological Resources 26
4.5 Cultural and Paleontological Resources 29
4.6 Geology and Soils 35
4.7 Greenhouse Gas Emissions 39
4.8 Hazards and Hazardous Materials 40
4.9 Hydrology and Water Quality 42
4.10 Land Use and Planning 45
4.11 Mineral Resources 46
4.12 Noise 47
4.13 Population and Housing 50
4.14 Public Services 51
4.15 Recreation 54
4.16 Transportation and Circulation 55
4.17 Utilities and Service Systems 57
4.18 Mandatory Findings of Significance 59
5. Reference Documents 61
6. Document Preparers 63

List of Figures

Figure 1 Regional Location Map 3
Figure 2 Saddleback College Aerial View 6
Figure 3 Saddleback College Existing Campus Plan 7
Figure 4 Saddleback College Proposed Campus Plan 9
Figure 5 Irvine Valley College Aerial View 11
Figure 6 Irvine Valley College Existing Campus Plan 12
Figure 7 Irvine Valley College Proposed Campus Plan 14
Figure 8 ATEP Aerial View 16
Figure 9 ATEP Existing Campus Plan 17
Figure 10 ATEP Proposed Campus Plan 18

List of Tables

Table 1 Environmental Factors Potentially Affected 20
Table 2 Environmental Determination 21

1. Introduction

1.1 Purpose of Initial Study

This Initial Study evaluates potential environmental effects resulting from the construction and operational implementation of the 2011 Facilities Master Plans (FMPs) for the Saddleback College campus, the Irvine Valley College (IVC) campus, and the Advanced Technology & Education Park (ATEP) campus. The proposed 2011 FMPs will be reviewed, approved, and implemented by the South Orange County Community College District (SOCCCD or "district") and its agents, and therefore the district is the Lead Agency under the California Environmental Quality Act (CEQA), California Code of Regulations, Title 14, Chapter 3, known as the State CEQA Guidelines. This Initial Study incorporates the Environmental Checklist Form from Appendix G of the State CEQA Guidelines.

1.2 Project Background

Master Plan Purpose

A college 'Master Plan' is a comprehensive planning document encompassing all functions of a college or district. At present, the 2006 Facilities Master Plan (FMP) is the approved document that describes the instructional and support facilities needed to accommodate projected student enrollment through the year 2020 at the district's three campuses. The three campuses include Saddleback College in the City of Mission Viejo, Irvine Valley College (IVC) in the City of Irvine, and Advanced Technology & Education Park (ATEP) in the City of Tustin. The SOCCCD college campus locations are each shown on Figure 1 (Regional Location Map).

Master Plan Process

The Master Plan update process occurs every five years. In February 2010, the district began preparing the 2011 Education Master Plans (EMP) and Facilities Master Plans to update the previous space needs and growth plan assessments identified in the 2006 Educational Resource Plans and Facilities Master Plan.

Since the growth of the district is driven by the projected growth for each campus, the 2011 Education Master Plans (EMPs) are the foundational documents for the Facilities Master Plans (FMPs). The EMPs provide qualitative and quantitative assessments of enrollment changes for the prior five years, as well as 20-year forecasts of future enrollments. The EMPs use demographic and economic indicators to determine the amount of space that will be required to accommodate the academic program of instruction and support services, which in turn guides the FMP process. The 2011 Saddleback College and Irvine Valley College[1] FMPs thus describe the needed buildings, infrastructure, vehicular and pedestrian circulation improvements, and proposed sequencing schedules required for construction and operation of instructional and support facilities through the year 2031.

[1] SOCCCD has offered courses at the ATEP site since 2007. Saddleback College and IVC personnel develop curricula for courses offered at the ATEP location under the following program categories: Allied Health, Applied Technologies, Media Technologies and Green Technologies. During development of the ATEP campus, IVC will coordinate the management and operational aspects of the existing facility. Enrollment projections and facilities plans for ATEP are contained in the IVC and Saddleback EMPs and FMPs, respectively.



Figure 1 Regional Location Map

1.3 California Environmental Quality Act (CEQA) Compliance

Programmatic Approach to FMP Analysis

The 2011 FMPs' proposed patterns of growth at each campus were guided by the respective colleges and are based upon practical sequences of expansion, minimal impact upon campus function during construction, and strict compliance with instructional needs defined by the 2011 EMP forecasts.

The Environmental Checklist in Section 4 provides initial, scoping-level environmental evaluations for the proposed 2011 FMPs. The district has determined that a Program EIR will be prepared. The 2011 FMPs are carrying over and/or updating plans for new and renovated facilities, most of which were previously identified in the 2006 FMP. While the Program EIR will summarize the primary differences between the existing and proposed FMPs, the focus of the EIR analyses will be the change from existing physical conditions to those anticipated to result from implementation of the 2011 FMPs. Those analyses will

reflect the 2011 FMPs' project sequencing in 5-, 10- and 20-year planning horizons. Many of the projects in the 5-year horizon are approved to move into the planning, design, or construction phases; thus, the EIR will describe those projects more fully due to the amount of information currently available. Projects in later sequencing horizons will be evaluated to the extent that their effects can be reasonably ascertained at this time. Those later projects are also subject to review and revision in subsequent 5-year updates to the FMPs. If determined necessary at that time, the Program EIR might also be updated to account for changed project conditions, the availability of new information, or other warranted circumstances specified in CEQA.

Previous ATEP Environmental Documentation

As part of the Marine Corps Air Station (MCAS) Tustin Specific Plan, the ATEP component of the Irvine Valley College FMP has been a subject of numerous CEQA documents and site-specific environmental studies leading up to and since conveyance of the ATEP property from the U.S. Department of the Navy to the City of Tustin and ultimately to SOCCCD. The City of Tustin and the U.S. Department of the Navy (Navy) prepared a Final Joint Program Environmental Impact Statement/Environmental Impact Report (FEIS/EIR) in accordance with the CEQA and the National Environmental Policy Act (NEPA). The FEIS/EIR analyzed the environmental consequences of the Navy disposal and local community reuse of the MCAS Tustin Site per the Reuse Plan and the MCAS Tustin Specific Plan/Reuse Plan (now known as the Tustin Legacy Specific Plan, and referred to in this document as the "Specific Plan"). The FEIS/EIR is dated October 1996 and was amended by the Errata dated September 1998. The Mitigation Monitoring and Reporting Program (MMRP) for the FEIS/EIR was adopted by the City on January 16, 2001 (Resolution 00-90). On March 3, 2001, a Record of Decision (ROD) was issued by the Navy approving the FEIS/EIR and the Reuse Plan/Specific Plan. A Final Supplement #1 to the FEIS/EIR was certified by the Tustin City Council on December 6, 2004 (Resolution Nos. 04-76 and 04-77). An Addendum to the FEIS/EIR was adopted on April 3, 2006 (Resolution No. 06-43). The FEIS/EIR, City's Supplement #1, and City's Addendum are collectively referred to herein as the "FEIS/EIR."

Section 1.5.2 of the FEIS/EIR states that the FEIS/EIR is a Program EIR and is intended to be used as the CEQA compliance document for all public and private actions taken to, or in furtherance of, the Specific Plan. Therefore, the FEIS/EIR serves as a first-tier document under CEQA. Tiering is a method to streamline EIR preparation by allowing a Lead Agency to focus on the issues that relate to a proposed project and exclude from consideration issues already decided or not yet ready for decision.[2] When individual activities within the Specific Plan are proposed, the lead agency is required to examine the individual activities to determine if their effects were fully analyzed in the FEIS/EIR. The agency can approve the activities as being within the scope of the project covered by the FEIS/EIR. If the agency finds that pursuant to Sections 15162, 15163, 15164, and 15183 of the CEQA Guidelines, no new effects would occur, nor would a substantial increase in the severity of previously identified significant effects occur, then no supplemental or subsequent EIR is required.[3]

The MCAS Tustin Specific Plan proposed and the FEIS/EIR analyzed a multi-year development period for the planned urban reuse project (Tustin Legacy). Under the Specific Plan, the district is permitted to construct a maximum total floor area of 893,851 square feet of education-oriented development anywhere on its property in Planning Area 1. The district prepared and adopted an Addendum to the FEIS/EIR for the ATEP Long-Range Academic and Facilities Plan (LRP Addendum) in November 2008. The Long-Range Academic and Facilities Plan (LRP) establishes a framework for developing and operating the overall 68.37 acre ATEP site. The district also adopted the ATEP Long Range Academic Plan (LRAP), which describes the plan for education at ATEP. The LRP describes the planned permanent ATEP facilities, academic programs, circulation system and other onsite improvements for the entire 68-acre ATEP site.

[2] CEQA Guidelines Sections 15152 and 15385.
[3] MCAS Tustin Zone Change (Specific Plan Amendment) 05-002, DDA and Development Plan Addendum, p. 1-1.

The LRP Addendum: (1) documented the district's evaluation that the LRP Project's environmental impacts were already analyzed in the FEIS/EIR; (2) documented the district's findings with respect to the LRP and its environmental determinations; and (3) documented the district's evaluation and determination that a new, supplemental or subsequent EIR, Negative Declaration (ND), or Mitigated Negative Declaration (MND), or other CEQA document was not warranted.

Based on similar findings, the district later prepared and adopted an Addendum (Concept Plan Addendum) to the FEIS/EIR for the ATEP Phase 3A Concept Plan in March 2009, which contemplated 305,000 square feet of education-oriented development on 28 acres of the ATEP site's overall 68 acres. As indicated above, about 589,000 additional square feet of education-oriented development is considered included in the original FEIS/EIR.

2. Project Description

2.1 Development of the Facilities Master Plans

The participatory process used in the planning of the 2011 EMPs and FMPs reflects the shared vision of hundreds of students, faculty, staff, administrators, trustees and members of the community. The documents delineate broad solutions for areas of educational growth and details of specific projects will evolve as they are designed in the future. FMP projects include new buildings, renovated/modernized existing buildings, and site improvements (e.g., roadways, pedestrian paths, parking facilities, etc.). The project design evolution is reflected in the sequencing of FMP projects in 5-, 10- and 20-year planning horizons, within which projects are prioritized and designed based on criteria such as existing building and infrastructure conditions, pedestrian and vehicular circulation, utility capacities, code compliance, and energy consumption.

The 2011 FMPs are projected to a horizon year of 2031. The district's Five-Year Construction Plan, Initial Project Proposals and Final Project Proposals are the short-term implementation of each FMP, while the remaining projects are long-term and will undergo Project Prioritization reviews again in subsequent annual updates. In the 20-year period spanned by the 2011 FMPs, numerous modifications and upgrades to building code compliance and energy standards are anticipated. Specific criteria for projects are accomplished outside this long-range planning context. Nevertheless, the 2011 FMPs are forward-looking and balance short-term facilities and infrastructure needs with long-term planning principles – a primary example of which is found in the 2011 FMPs' Sustainability Principles. Those are sustainable design and environmental sensitivity reference standards that will be implemented immediately in new construction, and will serve as criteria that evolve as code compliance changes and technology advances. The 2011 FMPs provide extensive guidance with regard to water and energy efficient technologies and conservation practices; construction/demolition (C&D) and solid waste recycling; renewable energy standards; stormwater pollutant reduction; and overall sustainable design and building practices. In contrast, the 2006 FMP provided only limited guidance, and almost exclusively with reference to ATEP, yet it created the expectation of sustainability that has become a central theme in the 2011 FMPs.

2.2 Saddleback College Facilities Master Plan

Campus Location and Existing Setting

The 200-acre Saddleback College campus is located northeast of Marguerite Parkway and Avery Parkway in the City of Mission Viejo. The Interstate 5 (I-5) Freeway and San Joaquin Hills Transportation Corridor (73 Toll Road) are directly west of the campus. The campus is accessed primarily via freeway ramps from I-5 at Avery Parkway and Crown Valley Parkway (see Figure 2).



Figure 2 Saddleback College Aerial View

The Saddleback College campus is located on hilly terrain and topography. Terrain and vertical grade variations on the campus reach 80 feet in the central area of the campus (Lot #1 to the Quad). The campus academic core is positioned on a plateau surrounded by parking and athletic facilities at lower elevations. As a result, there have been challenges in designing and developing the overall campus. Most notably, the topographic setting limits campus constructability, impedes pedestrian access, and affects vehicular circulation and access.

The surrounding areas south, west and north of the campus are developed with commercial and residential uses. The Arroyo Trabuco immediately east of the campus is dedicated open space.

Existing Programs and Facilities

Saddleback College was founded in 1968 and currently serves a full-time student population of 26,000, with a combined full time and part-time faculty of 978 and classified staff of 270. The College offers over 322 associate degrees, certificates, and occupational skills awards in 190 programs.

The campus currently has 30 permanent structures for academic, administrative and facilities functions and 37 portable buildings identified as “The Village” (see Figure 3). In terms of gross square footage (GSF), the campus has 699,056 GSF (614,510 GSF permanent and 84,546 GSF in portables). Buildings range in age from approximately 7 to 38 years. In general, parking lots are located along the internal College Drive loop road. Several instructional and administrative buildings, a football stadium, softball fields, a golf driving range, and a swimming pool are also generally located within the College Drive loop

road. Warehouses, village classrooms, campus police, transportation yards, tennis courts, baseball fields, practice fields, and other recreational facilities are located outside and east of the loop road. Please refer to the Draft 2011 FMP for Saddleback College, including the Campus Photographic Record (Appendix B), for detailed information about existing facilities.

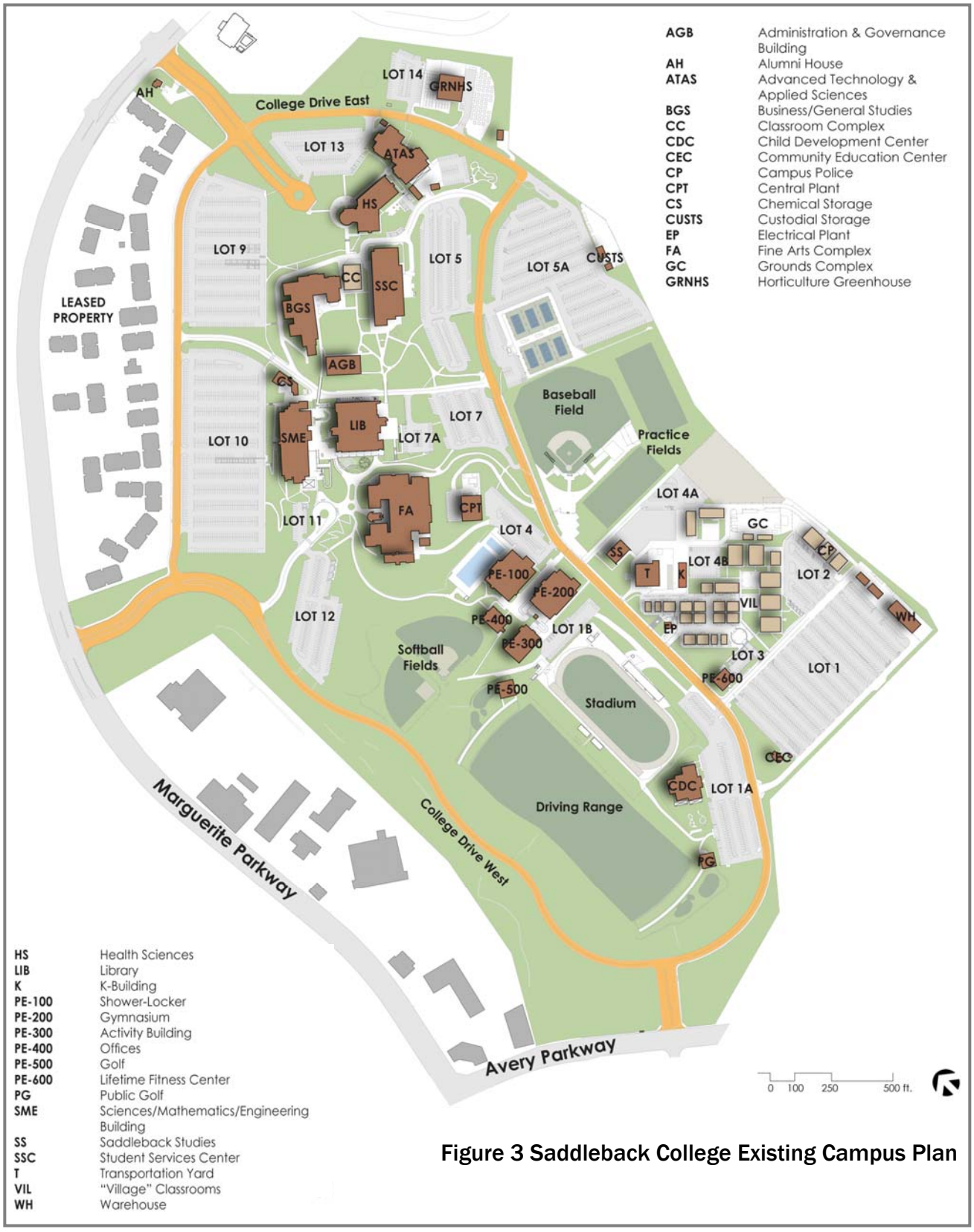


Figure 3 Saddleback College Existing Campus Plan

Proposed Building and Site Improvement Projects

Growth Forecasts and Space Needs

The 2011 Education Master Plan for Saddleback College forecasts average annual growth for each five-year planning horizon, as follows:

- 2011-2016 2.00%-2.25%
- 2016-2021 1.75%-2.00%
- 2021-2026 1.75%
- 2026-2031 1.50%

The 2011 EMP estimates an increase in student enrollment from about 26,000 students at present to 40,700 students by the year 2031. Combined with projected full/part-time faculty, this translates to a need for 416,901 assignable square feet[4] (ASF) of Instructional/Office space, of which the 2011 FMP has programmed 404,552 ASF (existing and new) through the 2031 planning horizon; thus, 12,349 ASF of the 20-year space need is presently unmet. The 20-year non-instructional space need is 143,538 ASF. In total, the FMP has planned for 838,510 GSF of permanent facilities, which is a 224,000-GSF increase over the existing 614,510 GSF. Some of the 84,546 GSF of existing portables will be removed from the campus in phases through 2031. The proposed campus build-out plan is provided in Figure 4.

Some buildings are currently undergoing renovation and modernization, while others are planned for minor to major upgrades in order to address specific structural and safety issues; provide functional improvements; upgrade infrastructure; and bring buildings up to current code standards. The full scope of new and renovated buildings and other site improvement projects (i.e., utilities, roadways, pedestrian facilities, etc.) are best reviewed in the 2011 FMPs in their graphical and planning contexts, and with construction details and secondary effects (i.e., relocations, minor repairs, finish replacement) descriptions (Please refer to the 2011 FMPs available online at http://socccdefmp.com). All of the projects from the Saddleback College FMPs 2011-2016 development horizon are listed below, followed by key new projects (or significant renovations) by type for the entire 2011-2031 project sequence.

2011-2016 Planning Horizon Projects

- New Sciences Building and Utilities Service: 80,000 GSF approved and in design. Includes a new 9,000 SF Sciences Building Demonstration Garden.
- Renovate Technology and Applied Sciences Building: 40,000 GSF approved and in planning.
- New Loop Road Alignment, Sitework and Infrastructure: Approved and in planning; includes renovations to southeast campus perimeter for drainage control.
- New Gateway Building: Multi-story 79,500 GSF building for Student Services and instructional labs, classrooms and support.
- Renovate Gateway Building/Transit Entrance Plaza: Approximately two-acres of demolition and new construction resulting in impervious surface area decrease (total 20 percent paved, 80 percent landscaped).

[4] Assignable square feet (ASF) is the space requirement for a given program based on instructional and non-instructional needs, including Lecture, Laboratory, and Office. ASF generally does not include corridors, restrooms and other building support spaces, nor does it include structural elements like walls and columns. Gross Square Feet (GSF) is the total enclosed area of the building. The ratio of ASF to GSF is the building efficiency described as a percentage. The 2011 FMPs use an average 68 percent efficiency rate (e.g., a 10,000 ASF space need requires a building with an area of about 14,700 GSF). Future building ASF, GSF and efficiency factors will be validated during subsequent programming processes.

- Renovate Quad Landscape/Hardscape: Approximately 2.4 acres (104,000 SF) of multi-phase demolition and new construction resulting in impervious surface area decrease (total 50 percent paved, 50 percent landscaped).

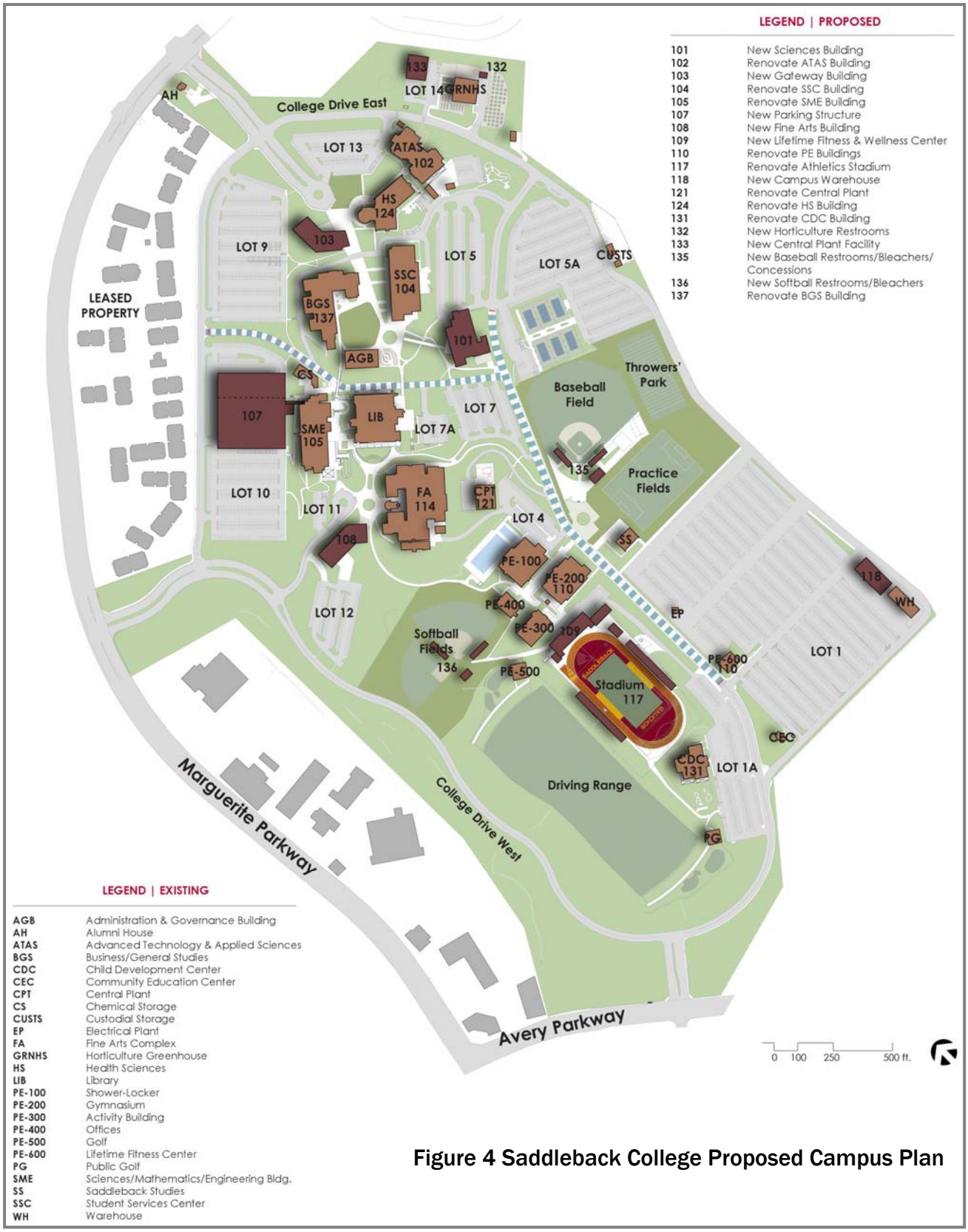


Figure 4 Saddleback College Proposed Campus Plan

Access, Circulation and Parking

The Saddleback College campus has three signalized entrance/exit drives: Marguerite Parkway at College Drive, Marguerite Parkway at College Drive West, and Avery Parkway. All three feed into College Drive East and College Drive West, which form a loop road with access to the 17 paved surface lots providing 4,436 parking spaces. There is a bus transit stop and auto court at the College Drive entrance. In addition, there is a campus "access" shuttle bus service with six stops on campus.

The FMP shows a new, easterly extension of the loop road along the eastern perimeter of the campus. Much of the eastern portion of the existing loop road alignment will be closed off and integrated into the pedestrian circulation system as East Campus Drive. As noted above, the New Loop Road alignment, sitework, and infrastructure project is approved for planning. Related projects include:

- Construct a new parking structure in the western portion of the campus along the existing loop road.
- Construct a new surface parking lot next to the existing football stadium and practice fields.

Athletic Improvements and Facilities

- Construct a new Lifetime Fitness and Wellness Center next to the existing football stadium.
- Construct a new throwers park and practice field next to the existing baseball field.
- Renovate existing football stadium.
- Construct a new Athletics Plaza next to the existing baseball field.
- Construct new Baseball restrooms, bleachers, and concessions near the existing baseball field.
- Construct new Softball restrooms and bleachers near the existing softball field.

Academic and Support Improvements and Facilities

- Construct a new Science building along the loop road, next to the Students Services Center.
- Construct a new Gateway building at the end of the northern campus entry.
- Renovate Student Services building.
- Construct a new Fine Arts building next to the existing Fine Arts Complex.
- Renovate Math/Science/Engineering building.
- Construct a new campus warehouse near the eastern boundaries of the campus.
- Renovate the existing Central Plant next to the existing Fine Arts building.
- Construct new Horticulture restrooms next to the existing Horticulture Greenhouse.
- Construct a new Central Plant and power generation facility next to the existing Horticulture Greenhouse.

Open Space and Related Improvements and Facilities

- Renovate the existing campus pedestrian pathways between the Fine Arts Plaza and PE Plaza.
- Renovate the existing Fine Arts Plaza next to the existing Fine Arts building.

2.3 Irvine Valley College Facilities Master Plan

Campus Location and Existing Setting

The approximately 100-acre Irvine Valley College campus is bordered by Irvine Center Drive to the north, Jeffrey Road to the west and Barranca Parkway to the south, within the City of Irvine (see Figure 5). The east perimeter is bounded by a single-family residential community. The surrounding area is primarily residential, with golf recreation and a mix of commercial and other land uses as well. The IVC campus is also in close proximity to the University of California, Irvine campus and the Spectrum commercial, retail and entertainment center.

Southern California Edison (SCE) right-of-way is located along the southern and western perimeters, fronting Barranca Parkway and Jeffrey Road, respectively. Directly fronting Barranca Parkway is a relatively undisturbed natural easement that is owned by the City of Irvine. The SCE right-of-way and City of Irvine easement are located outside the boundaries of the Irvine Valley College campus.

The IVC campus has no substantial topographic variation and slopes gently to the south toward Barranca Parkway and the City of Irvine easement. On campus, the impacts of topography upon building construction and accessibility is minimal, but drainage is seasonably affected and localized flooding can occur.



Figure 5 Irvine Valley College Aerial View

Existing Programs and Facilities

Irvine Valley College was founded in 1979 and was originally named the Saddleback College North Campus. Renamed as Irvine Valley College in 1985, IVC currently serves a student population of 15,000, with a combined full time and part-time faculty of 400 and classified staff of 178. The college currently provides academic services to students in 16 individual Schools and 10 affiliated programs and has a top-rated transfer rate to four-year institutions.

The campus has about 400,000 GSF among 22 permanent structures, and another 15,000 GSF of existing portables, for academic, administrative and facilities functions (see Figure 6). Buildings range in age from approximately about 3 to 30+ years. In general, parking lots are located along the Jeffrey Road and Irvine Center Drive frontages, with additional parking provided along the western border. The instructional and administrative buildings are generally located within the northern portion of the campus. Tennis and basketball courts, baseball fields, soccer fields, practice fields, and an agricultural field are located within the southern portion of the campus. Please refer to the Draft 2011 FMP for Irvine Valley College, including the Campus Photographic Record (Appendix B), for detailed information about existing facilities.

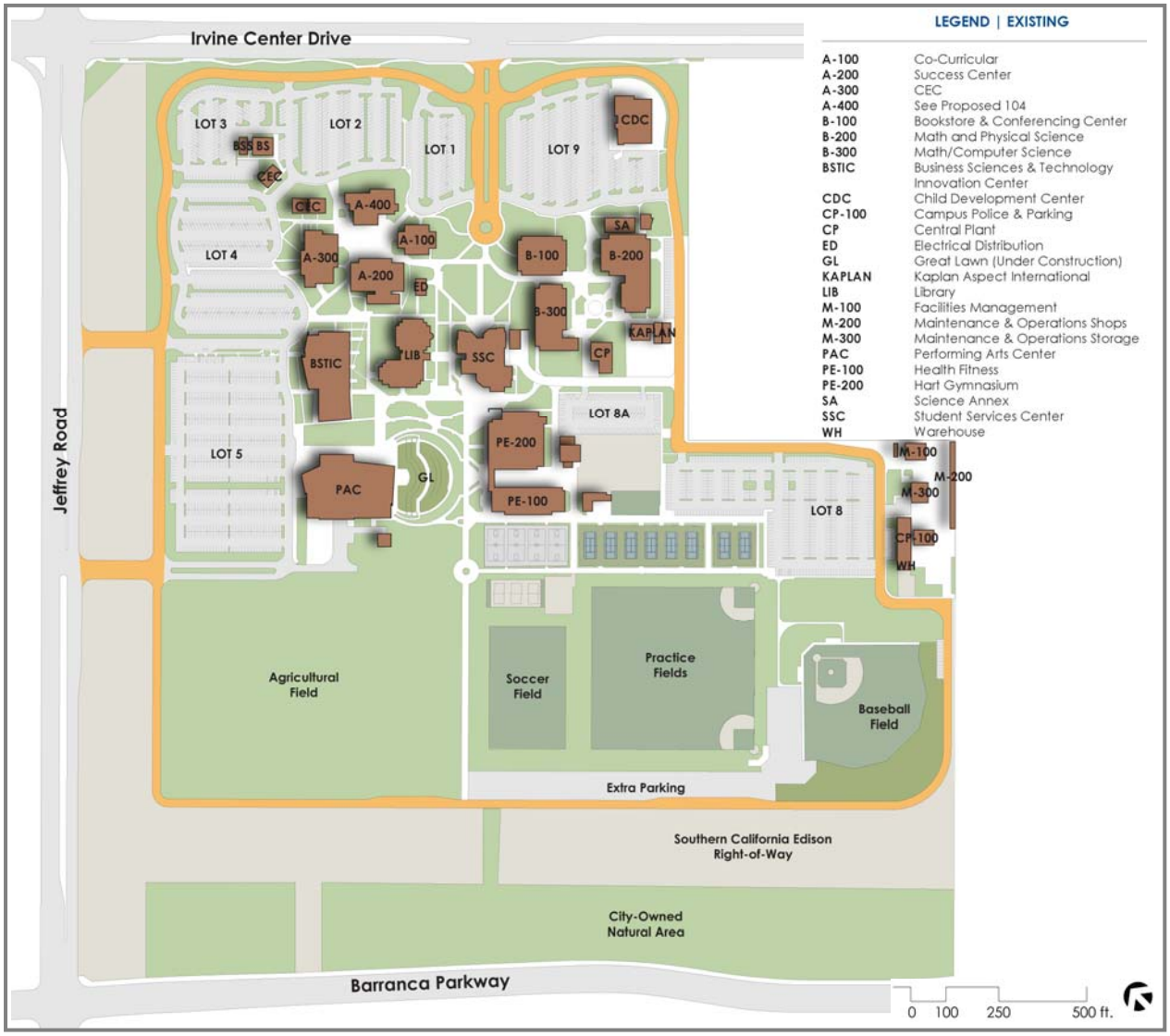


Figure 6 Irvine Valley College Existing Campus Plan

Proposed Building and Site Improvement Projects

Growth Forecasts and Space Needs

The 2011 Education Master Plan for Irvine Valley College forecasts average annual growth for each five-year planning horizon, as follows:

- 2011-2016 3.00%
- 2016-2021 2.50%
- 2021-2026 2.00%
- 2026-2031 2.00%

The 2011 EMP estimates an increase in student enrollment from about 15,000 students at present to 26,000 students by the year 2031. Combined with projected full/part-time faculty, this translates to a need for 263,032 assignable square feet (ASF) of Instructional/Office space, of which the 2011 FMP has programmed 262,824 ASF (existing and new) through the 2031 planning horizon; thus, only 208 ASF of the 20-year space need is presently unmet. The 20-year non-instructional space need is 141,984 ASF. In total, the FMP has planned for 556,440 GSF of permanent facilities, which is a 157,441-GSF increase over the existing 400,000 GSF. Another 15,000 GSF of existing portables will remain in use as needed through 2031. The proposed campus build-out plan is provided in Figure 7.

Some buildings are currently undergoing renovation and modernization, while others are planned for minor to major upgrades in order to address specific structural and safety issues; provide functional improvements; upgrade infrastructure; and bring buildings up to current code standards. The full scope of new and renovated buildings and other site improvement projects (i.e., utilities, roadways, pedestrian facilities, etc.) are best reviewed in the 2011 FMPs in their graphical and planning contexts, and with construction details and secondary effects (i.e., relocations, minor repairs, finish replacement) descriptions (Please refer to the 2011 FMPs available online at http://socccdefmp.com). Following is an overview of the projects from the IVC FMP's 2011-2016 development horizon, followed by key new projects (or significant renovations) by type for the entire 2011-2031 project sequence.

2011-2016 Planning Horizon Projects

- New Life Sciences Building: Multi-story 30,000 GSF building approved and in construction.
- New Barranca Parkway Campus Entrance/Exit Drive: Approved to begin construction second quarter of 2012.
- Renovate A-400: Humanities and Languages/Social Behavior Sciences/Co-curricular Center: Renovate and increase the size of the existing 12,094 GSF one-story to 24,000 GSF; update mechanical improvements; replace all interior partitions, lighting, and finishes; and renovate and modify exterior finishes.
- Renovate A-200: Renovate one-story 16,149 GSF Success Center (Writing Lab, World Language/English as Second Language, Reading/Tutoring); update mechanical improvements; replace 75 percent of interior partitions, 100 percent of lighting, and finishes; and renovate/modify restrooms and exterior finishes.
- Renovate B-300 Second Floor: Renovate two-story 10,000 GSF Math/Computer Science Building; update the first and second floor restrooms; and replace interior lighting and finishes.
- New Surface Parking Lot (Phase I): New 135,000 SF parking lot with 400 spaces and lighting.
- New Fine Arts Complex: New single-story 57,560 GSF building for Arts Instructional Labs and support, and hardscape/landscape for Campus connectivity.
- Renovate Performing Arts Yard: 31,000 SF area renovation, involving demolition of existing asphalt surface and replacement and expansion to new concrete surface.



Figure 7 Irvine Valley College Proposed Campus Plan

Access, Circulation and Parking

The IVC campus has three entrance/exit drives: one from Irvine Center Drive (signalized) and two from Jeffrey Road (one signalized, one unsignalized). All three feed into the campus loop road, with access to the eight (8) paved surface lots providing 2,262 parking spaces. The current campus is efficient for navigation, with parking located at the campus periphery and the center of campus primarily pedestrian-oriented.

There is a bus transit stop and auto court located at the Irvine Center Drive entrance. As noted above, a fourth entrance/exit drive from Barranca Parkway just east of Jeffrey Road is in the final engineering phase. The Barranca Parkway entrance will access the campus through the existing City of Irvine easement.

Other related projects include:

- The agricultural field located at the southwest corner of the campus will be developed as a new parking lot and parking structure.
- The existing extra parking lot along the southern perimeter of the campus will be enlarged.
- New western Irvine Center Drive Campus Entrance/Exit will be located along Irvine Center Drive.
- The primary Irvine Center Drive Plaza entrance will be renovated for entry re-route and bus drop-off.

Athletic Improvements and Facilities

- New baseball bleachers, restrooms, and concessions will be located near the backstop of the existing baseball field, which is located at the southeast corner of the campus.
- The existing soccer and practice fields will be renovated. In a later Planning Horizon, new bleachers, restroom/concession building, and a new regulation grass soccer field will comprise the new Athletics Stadium at the site of the existing soccer field.
- A new auxiliary gymnasium will replace existing basketball courts near the center of the campus.
- New sand volleyball courts and a new swimming pool will replace parking lot 8A.

Academic and Support Improvements and Facilities

- The agricultural field located at the southwest corner of the campus will be developed as a new Fine Arts complex.
- New Humanities and Languages/Social Behavioral Sciences building and Administration Annex building will be located at the end of the main Irvine Center Drive entrance.
- An existing building will be renovated into a new Bookstore/café, which will be located next to the Humanities and Languages/Social Behavioral Sciences building.
- A new Life Sciences building will be located at the existing Kaplan Aspect International portable buildings along the eastern perimeter of the campus. Kaplan A.I. will be relocated to the northern side of the campus.
- A new Outdoor Lab/Biology, Ecology, and Environmental Studies Garden expansion will replace existing parking near eastern perimeter of campus.

Open Space and Related Improvements and Facilities

- A new field observation area will be located near the existing City of Irvine-owned natural area which is located off-campus to the south.

- The existing plaza located in the center of the existing A-buildings will be renovated.
- A new pedestrian promenade will be located near the new Fine Arts complex.
- The existing plaza in the center of the existing B-buildings will be renovated.
- A new Clock Tower will be located next to the existing library.
- A new great lawn area will be located next to the existing physical education buildings and Performing Arts Center.

2.4 Advanced Technology & Education Park (ATEP)

Campus Location and Existing Setting

The 68-acre ATEP property is located in the City of Tustin at the site of the former MCAS Tustin, now referred to as "Tustin Legacy." Tustin Legacy is a 1,606-acre mixed-use project that will ultimately include housing, commercial businesses, a research park, a one million square-foot outdoor shopping mall, a conference center, hotels, schools, and community and regional parks. Portions of Tustin Legacy are developed. Approximately 1,511 acres of Tustin Legacy are located within the City of Tustin. Approximately 95 acres are located within the City of Irvine. The City of Santa Ana borders Tustin Legacy to the southwest. The ATEP site poses unique challenges in development, most notably the odd configuration of the property boundary and unusual land area shapes (see Figure 8).

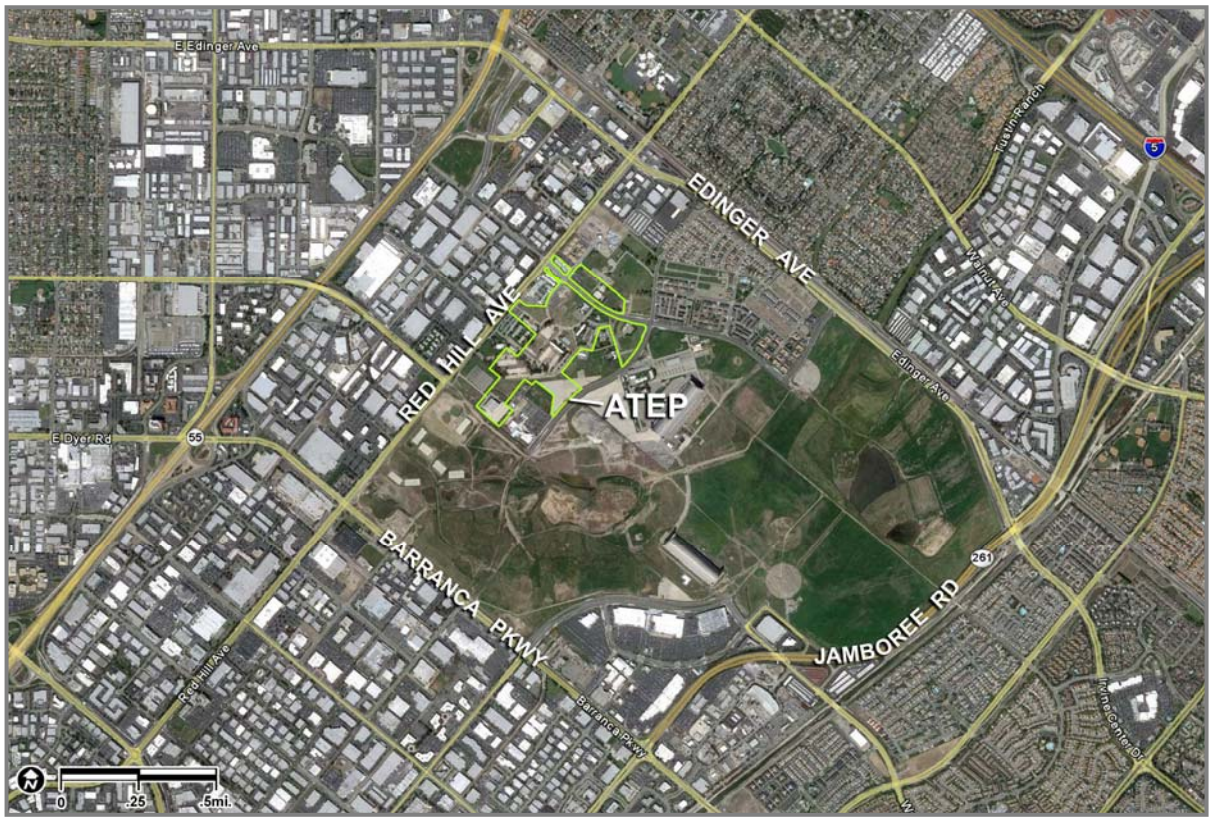


Figure 8 ATEP Aerial View

The ATEP property extends from about 300 feet north of Valencia Avenue to about 2,600 feet south of Valencia, and is generally is bordered by Red Hill Avenue to the west and Armstrong Avenue along the east. Entry into the existing campus portion of the property is provided along Valencia Avenue. The Costa Mesa (SR-55) and Santa Ana (I-5) freeways provide the closest regional access to ATEP.

The ATEP property is adjacent to the Orange County Rescue Mission, a parcel retained by the City of Tustin, the Rancho Santiago Community College District Sheriff's Training Academy, the County of Orange Sheriff's Training Center and the City of Tustin Child Care Facility. The west side of Red Hill Avenue is comprised largely of commercial business and light manufacturing.

Existing Programs and Facilities

ATEP opened in 2007 and operates as a one-acre campus in five buildings totaling about 15,000 GSF. ATEP currently serves a student population of 540. The existing ATEP campus facilities are located just east of Red Hill Avenue at the intersection of Lansdowne Road and Valencia Avenue, at the northernmost portion of the ATEP property (see Figure 9).

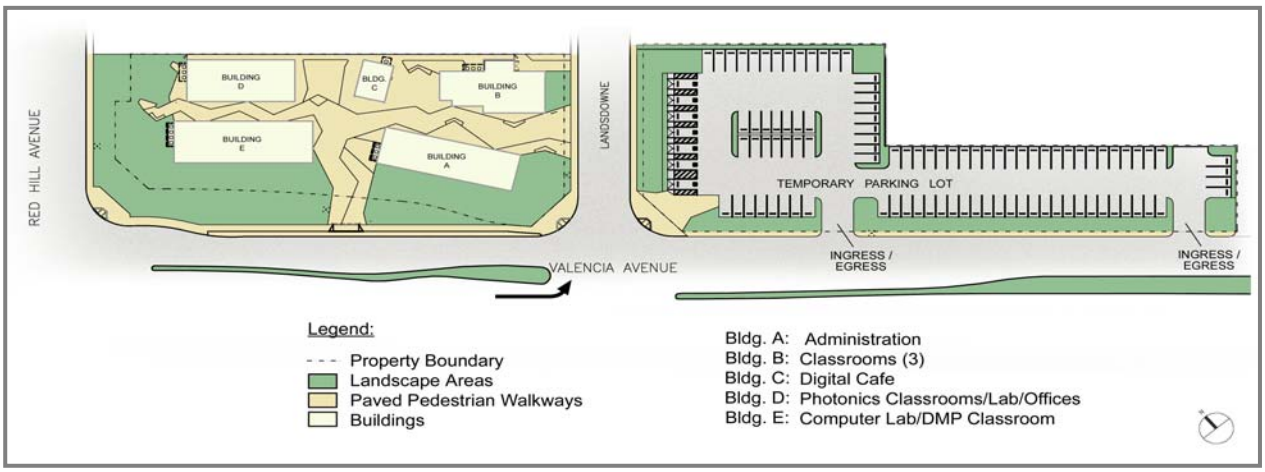


Figure 9 ATEP Existing Campus Plan

Courses being offered at ATEP include Technology Training, CAD/CAM Design Software, Business Improvement and Organizational Development, and Manufacturing Process Control and Improvement. The five buildings at the northwest corner of Valencia Avenue and Lansdowne Road house classrooms, laboratories, offices, food services, a high-end computer lab, a digital (Wi-Fi) café, a virtual library center, a design modeling and prototyping lab, an optics and photonics lab, and support space.

On the northeast corner of Valencia Avenue and Lansdowne Road, a 104-space parking lot serves the existing ATEP campus. Together the existing buildings and parking lot areas total approximately one acre. Bus transit stops are located on both sides of Red Hill Avenue at Valencia Avenue.

In addition to the existing campus facilities, approximately 19 military buildings and other ancillary structures are scattered throughout the remainder of the ATEP property, south of Valencia Avenue. Those structures and related roadways, utility infrastructure and landscaping are throughout the site, but are currently in various phases of demolition.

Proposed Building and Site Improvement Projects

ATEP was conceived as an education-oriented development as described in the MCAS Tustin Specific Plan. The program uses proposed on the ATEP campus support the education-oriented concepts established in the LRP/LRAP and Phase 3A Concept Plan. Current site planning and other future development are based on a Master Campus Plan Concept that provides for logical facilities growth that will incorporate instructional and support space, public-private partnership development, peripheral areas

of parking and a centralized network of pedestrian centered open space to connect all phases of the project.

A new building at ATEP is currently under program definition and review by the district. Based on initial programming, the building is tentatively proposed as a 30,000 GSF (21,000 ASF) multi-story facility with site work, parking and site access situated in the area designated as Phase 3A. This initial education building would be located near Valencia Avenue, creating a strong Campus identity and ease of access for daily traffic. Future growth will ultimately generate a physical presence on Valencia Avenue and Red Hill Avenue. ATEP's LRP land use map is provided in Figure 10.

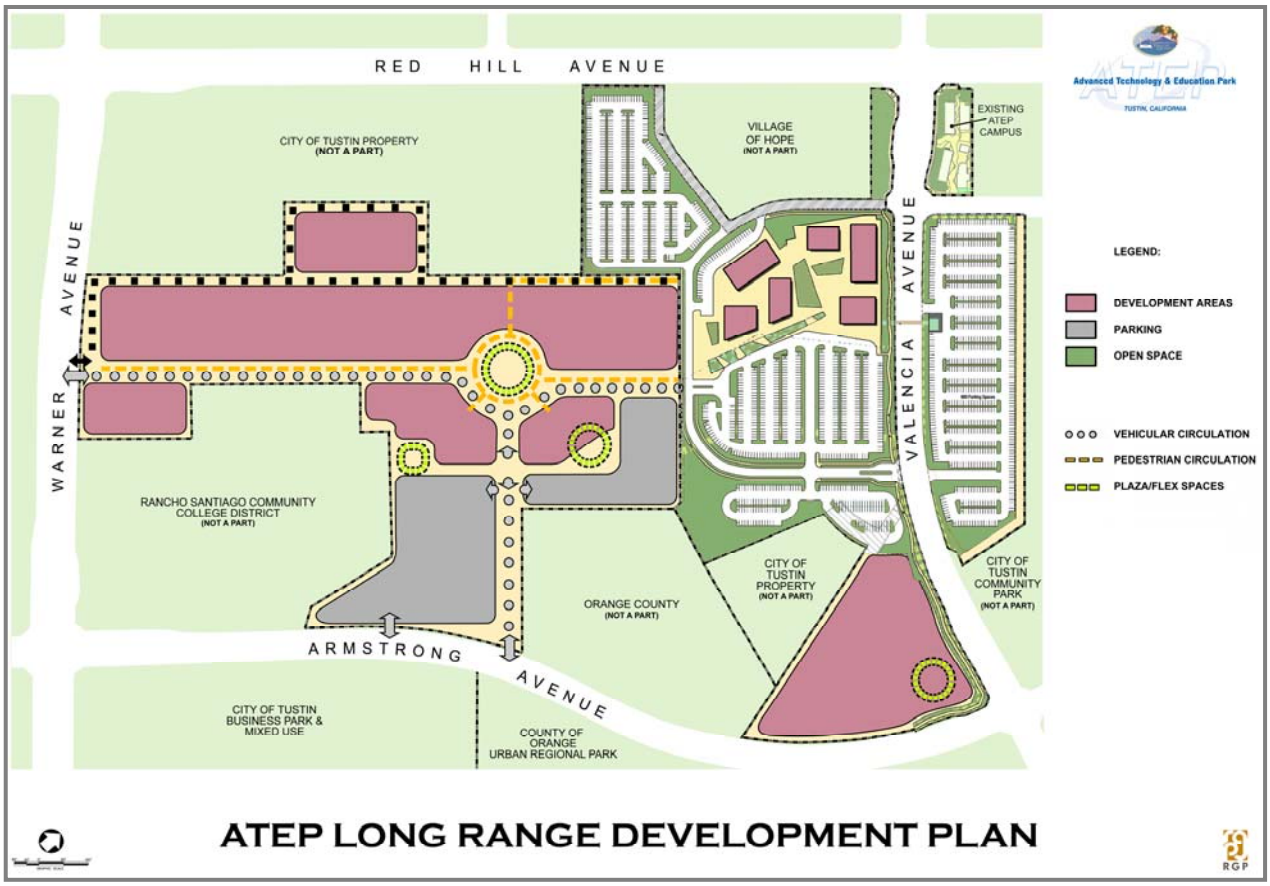


Figure 10 ATEP Proposed Campus Plan

Campus facilities will be designed as state-of-the-art instructional facilities. The permanent ATEP Campus will incorporate sustainable design and construction measures to meet current State of California Green Building Code and standards for LEED (Leadership in Energy and Environmental Design) certification. Design will incorporate LEED for New Construction (LEED-NC) program measures, including the following:

- Sustainable Sites
- Water Efficiency
- Energy and Atmosphere
- Materials and Resources
- Indoor Environmental Quality
- Innovation in Design

Further definition of LEED-NC standards are in the Sustainable Principles sections of the 2011 FMPs.

3. Project and Environmental Information

Project Title

2011 Facilities Master Plans for Saddleback College and Irvine Valley College, South Orange County Community College District

Lead Agency Name and Address

South Orange County Community College District
28000 Marguerite Parkway
Mission Viejo, CA 92692

Lead Agency Contact Person

Dr. Debra Fitzsimons, Vice Chancellor, (949) 582-4663, dfitzsimons@socccd.edu

Project Locations

Saddleback College is located at 28000 Marguerite Parkway, at the northeast corner of Marguerite and Avery Parkways, in the City of Mission Viejo.

Irvine Valley College is located at 5500 Irvine Valley Drive, at the southeast corner of Irvine Center Drive and Jeffrey Road, in the City of Irvine.

The Advanced Technology & Education Park is located at 15445 Lansdowne Road, east of the intersection of Red Hill Avenue and Valencia Avenue within the Tustin Legacy development (former MCAS Tustin) in the City of Tustin.

Project Sponsor's Name and Address

South Orange County Community College District
28000 Marguerite Parkway
Mission Viejo, CA 92692

General Plan Designation – Existing

Saddleback College (City of Mission Viejo): Community Facility

Irvine Valley College (City of Irvine): E (Educational Facilities)

Advanced Technology & Education Park (City of Tustin): MCAS Tustin Specific Plan

Zoning - Existing

Saddleback College (City of Mission Viejo): Community Facility (CF)

Irvine Valley College (City of Irvine): Institutional (6.1)

Advanced Technology & Education Park (City of Tustin): Education Village (EV) (Specific Plan 1-MCAS Tustin Specific Plan District)

Description of Project

The proposed 2011 Facilities Master Plans supersede the 2006 FMP by describing those instructional and support facilities needed at Saddleback College, Irvine Valley College, and ATEP to accommodate projected student enrollment increases and demands to the year 2031. Please refer to the Project Description in the previous section and the 2011 FMPs available online at http://socccdefmp.com.

Other Public Agency Approvals Required

Approval processes for the 2011 FMPs include SOCCCD Board of Trustees approval, State Chancellors office approval, and compliance with Board of Governors criteria for approval. Implementation of various projects under the 2011 FMPs might include local agency permits and/or agreements between the district and the City of Irvine (Barranca Parkway access drive); the City of Tustin (ATEP site development); and the City of Mission Viejo (Saddleback College Loop Road project).

The 2011 FMPs require the approval of the district's Board of Trustees, which has and will continue to fully consider all comments received from the Cities of Mission Viejo, Irvine, and Tustin prior to consideration of the 2011 FMPs at a public hearing. However, ultimate approval authority for the 2011 FMPs is with the district.

Environmental Factors Potentially Affected

Any environmental factors checked below would be potentially affected by this Project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages. The following table provides a summary of these environmental issue areas.

Table 1 Environmental Factors Potentially Affected

☒ Aesthetics	☒ Greenhouse Gas Emissions	☐ Population and Housing
☒ Agriculture Resources	☒ Hazards/Hazardous Materials	☐ Public Services
☒ Air Quality	☒ Hydrology/Water Quality	☐ Recreation
☒ Biological Resources	☒ Land Use and Planning	☒ Transportation/Circulation
☒ Cultural Resources	☐ Mineral Resources	☒ Utilities/Service Systems
☒ Geology and Soils	☒ Noise	☒ Mandatory Findings of Significance

Environmental Determination

Based on this initial evaluation, the following table identifies the environmental determination.

Table 2 Environmental Determination

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 a PROGRAM 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.	☐

Debra L. Fitzsimons

Signature Date

Dr. Debra Fitzsimons, Vice Chancellor
South Orange County Community College District

4. Environmental Checklist

4.1 Aesthetics

a) Would the project have a substantial adverse effect on a scenic vista?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

b) Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	Potentially Significant Impact ☐	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☒

c) Would the project substantially degrade the existing visual character or quality of the Site and its surroundings?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

d) Would the project create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	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?* ***Potentially Significant Impact***

Saddleback College, Irvine Valley College, and ATEP are located within urbanized areas of the cities of Mission Viejo, Irvine, and Tustin, respectively. All three campuses are operational and developed with instructional and support facilities. Though in various stages of demolition, much of the ATEP property outside the campus area is developed with military buildings, asphalt-paved streets and parking lots, concrete sidewalks and pads, and landscaping/groundcover from the former MCAS Tustin facilities.

Though each of the three campuses is currently developed with various structures and facilities, those new instructional and support facilities to be developed with the 2011 FMPs have the potential to interrupt some existing views. The Program EIR will include architectural designs and plans for the new facilities and will determine whether the building heights, massing, scale, etc. of the new facilities will significantly affect any scenic vista.

b. *Substantially damage scenic resources, including, trees, rock outcroppings, and historic buildings within a state scenic highway?* ***No Impact***

The college campuses and neighboring vicinities are presently urbanized and developed with college facilities and buildings, military structures, and other land uses. There are no known scenic resources

or State scenic highways in the campus vicinities. Future structures and improvements do not have the potential to affect any scenic resource. Further discussion in the Program EIR is not necessary.

c. *Substantially degrade the existing visual character or quality of the site and its surroundings?* ***Potentially Significant Impact***

As discussed, the college campuses and neighboring vicinities are presently urbanized and developed with college facilities and buildings, military structures, and other land uses. Those new instructional and support facilities and structures that will be constructed under the 2011 FMPs will be compatible with existing facilities and structures in terms of architecture and design. Therefore, it is unlikely that any new development would degrade the existing visual character or quality of the sites and their surroundings. The Program EIR, however, will include some architectural designs and/or massing plans, and will assess their compatibility with the visual character and quality of the three college campuses and their surrounding land uses.

d. *Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?* ***Potentially Significant Impact***

The new instructional and support facilities that will be constructed under the 2011 FMPs will create new sources of light and/or glare from new facilities, parking structures and lots, signage, etc. The Program EIR will describe any new and/or additional sources and levels of light and/or glare, and will determine how and to what degree any sensitive receptors might be affected.

4.2 Agriculture and Forest Resources

a) Would the project 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?	Potentially Significant Impact ☐	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☒

b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?	Potentially Significant Impact ☐	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☒

c) Would the project conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production?	Potentially Significant Impact ☐	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☒

d) Result in the loss of forest land or conversion of forest land to non-forest use?	Potentially Significant Impact ☐	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☒

e) Would the project involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	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-agriculture use?* ***No Impact***

Saddleback College, Irvine Valley College, and ATEP are located within urbanized areas of the cities of Mission Viejo, Irvine, and Tustin, respectively. All three campuses are presently operational as college campuses and are developed with instructional and support facilities and structures. The ATEP area is also presently developed with military buildings, asphalt-paved streets and parking lots, concrete sidewalks and pads, and landscaping/groundcover from the former MCAS Tustin facilities. The three college campuses are not designated Prime Farmland, Unique Farmland or Farmland of Statewide Importance. Therefore, there is no potential to affect any Prime Farmland, Unique Farmland or Farmland of Statewide Importance. Further discussion in the Program EIR is not necessary.

b. *Conflict with existing zoning for agricultural use, or a Williamson Act Contract?* ***No Impact***

The three college campuses contain no agricultural land that is subject to the provisions of the Williamson Act. There is no potential for the 2011 FMPs to conflict with any existing agricultural zone or any provisions of a Williamson Act contract. Further discussion in the Program EIR is not necessary.

c. *Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?* ***No Impact***

The three college campuses contain no forest land or timberland. There is no potential for the 2011 FMPs to conflict with any forest land or timberland zoning. Further discussion in the Program EIR is not necessary.

d. *Result in the loss of forest land or conversion of forest land to non-forest use?* ***No Impact***

The three college campuses contain no forest land. There is no potential for the 2011 FMPs to convert any forest land resource. Further discussion in the Program EIR is not necessary.

e. *Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?* ***Potentially Significant Impact***

There are no Farmlands within the Saddleback College or ATEP campuses. Irvine Valley College has an approximately 11-acre agricultural field at its southwest corner, adjacent to approximately 19

acres of agricultural fields in SCE easements along Barranca Parkway and Jeffrey Road, also adjacent to the IVC campus. The Program EIR will evaluate the potential for the 2011 FMP for IVC to impact or disrupt existing farmland or convert farmland into a non-agricultural use. The Saddleback and ATEP campuses will not be evaluated for agricultural impacts in the Program EIR.

4.3 Air Quality

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

b) Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

c) Would the project 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)?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

d) Would the project expose sensitive receptors to substantial pollutant concentrations?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

e) Would the project create objectionable odors affecting a substantial number of people?	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?* ***Potentially Significant Impact***

The 2011 FMPs will result in construction of instructional and support facilities that the Program EIR will evaluate for consistency with the South Coast Air Quality Management District's (SCAQMD) Air Management Plan and policies.

b. *Violate any air quality standard or contribute substantially to an existing or projected air quality violation?* ***Potentially Significant Impact***

An air quality analysis will be prepared for the Program EIR and will include a Construction Localized Significance Threshold (LST) analysis in accordance with SCAQMD procedures. The U.S. EPA-approved Industrial Source Complex (ISC3) air quality model will be used to calculate localized emissions as they relate to existing or prospective sensitive receptors near the college campuses. Operational emissions, based upon trip generation projections, will also be analyzed. Peak hour trips will be calculated along with estimates of the types of trips generated and average travel speeds to estimate daily emissions. Finally, a CO Hot Spot analysis of future conditions at key intersections will be prepared in accordance with those SCAQMD requirements described in their CEQA Air Quality Handbook, 1993. This analysis will use the CALINE4 computer dispersion model to estimate pollutant concentrations adjacent to affected roadways and intersections.

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.* ***Potentially Significant Impact***

An air quality analysis will be prepared for the Program EIR. The analysis will evaluate potential *cumulative* air quality impacts. The Program EIR will discuss any regional increases in non-attainment criteria pollutants.

d. *Expose sensitive receptors to substantial pollutants concentrations?* ***Potentially Significant Impact***

Sensitive receptors include residential, educational, and/or church uses and other related uses. An air quality analysis will be prepared for the Program EIR and will identify any neighboring sensitive receptors located near the college campuses, including on-campus college students, and evaluate potential air quality impacts to these sensitive receptors.

e. *Create objectionable odors affecting a substantial number of people?* ***Potentially Significant Impact***

An air quality analysis will be prepared for the Program EIR and will evaluate potential sources of odors from permanent facilities/operations and temporary construction activities.

4.4 Biological Resources

a) Would the project 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?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

c) Would the project 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?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

d) Would the project 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?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

f) Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	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?* ***Potentially Significant Impact***

The Program EIR will consult with the California Natural Diversity Data Base and determine whether any candidate, sensitive species and/or special status species are known to occur on or near any of

the three college campuses. Site reconnaissance will also be conducted to determine whether any sensitive species and/or communities are likely to occur. Any identified sensitive biological resources as designated by the California Department of Fish (CDFG) and Game or U.S. Fish and Wildlife Service (USFWS) will be evaluated. Any sensitive species or potential habitat for such species or sensitive communities shall be presented and located graphically. Permitting strategies will also be discussed.

b. *Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?* ***Potentially Significant Impact***

The Program EIR will include an overview of potential CDFG and USFWS jurisdictional boundaries within the three college campuses. Any riparian habitat or other sensitive natural communities will be examined for indicators of CDFG or USFWS jurisdiction.

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?* ***Potentially Significant Impact***

The Program EIR will prepare an overview of U.S. Army Corps of Engineers (ACOE) jurisdictional boundaries within the three campus areas. Specific conditions relating to jurisdictional criteria such as evidence of ordinary high water marks, wetland vegetation indicator species, hydric soils, and appropriate hydrology, as outlined in the 1987 ACOE Wetland Delineation Manual (1987 Manual) will also be investigated. Should any jurisdictional resources be identified, permitting strategies in accordance with Section 404 will also be discussed in the Program EIR.

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?* ***Potentially Significant Impact***

Given that the Irvine Valley College and ATEP campuses are currently developed with various structures and facilities, it is not likely that any native resident or migratory wildlife corridors presently traverse through those campus areas. There are no known wildlife corridors located near or within these campus vicinities. The proposed 2011 FMPs have no opportunity to affect the movement of any native fish or wildlife species or any wildlife corridor at these vicinities. Saddleback College however, could potentially be located near a wildlife corridor, since Trabuco Creek, which is part of the Ladera Open Space Reserve, is located to the east of the campus. The Program EIR will describe any wildlife corridor located near Saddleback College that could be affected by the proposed 2011 FMPs.

e. *Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?* ***Potentially Significant Impact***

Given that each of the three college campuses is currently developed with various structures and facilities, it is not likely that there are any sensitive trees existing within the college campuses. The Program EIR, however, will review relevant policies and ordinances of the cities of Mission Viejo, Irvine, and Tustin to ensure that the proposed 2011 FMPs will not affect any unique or sensitive trees or conflict with any tree preservation policy or ordinance.

f. *Conflict with the provisions of an adopted Habitat Conservation Plan, or other approved local, regional, or state habitat conservation plan?* ***Potentially Significant Impact***

The Program EIR will consult with the California Natural Diversity Data Base and determine whether any candidate, sensitive species and/or special status species are known to occur on or near any of the three college campuses. Site reconnaissance will also be conducted to determine whether any sensitive species and/or communities are likely to occur. Any identified sensitive biological resources as designated by the California Department of Fish (CDFG) and Game or U.S. Fish and Wildlife Service

(USFWS) will be evaluated. As part of the consultation and reconnaissance processes, the Program EIR will review the Orange County Central-Coastal Natural Community Conservation Plan and Habitat Conservation Plan (NCCP/HCP) to determine whether the proposed 2011 FMPs conflict with said plans. If there are resultant conflicts, the Program EIR will recommend mitigation measures to ensure that the proposed 2011 FMPs do not significantly conflict with any policies or provisions of said NCCP/HCP.

4.5 Cultural and Paleontological Resources

a) Would the project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	Potentially Significant Impact ☐	Less than Significant With Mitigation Incorporated ☐	Less than Significant Impact ☒	No Impact ☐

b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	Potentially Significant Impact ☐	Less than Significant With Mitigation Incorporated ☐	Less than Significant Impact ☒	No Impact ☐

c) Would the project directly or indirectly destroy a unique paleontological resource or Site or unique geologic feature?	Potentially Significant Impact ☐	Less than Significant With Mitigation Incorporated ☒	Less than Significant Impact ☐	No Impact ☐

d) Would the project disturb any human remains, including those interred outside of formal cemeteries?	Potentially Significant Impact ☐	Less than Significant With Mitigation Incorporated ☐	Less than Significant Impact ☒	No Impact ☐

a/b. Cause a substantial adverse change in the significance of a historical or archaeological resource as defined in Section 15064.5? ***Less Than Significant Impact***

Brunzell Cultural Resource Consulting (BCR) prepared a Phase I Cultural Resources Assessment (Cultural Assessment) for the IVC and Saddleback College campuses in June 2011. The purpose was to identify and document any cultural and paleontological resources that might be located on the campuses and to evaluate such resources pursuant to CEQA. The Cultural Assessment includes a cultural resources records search, literature review, intensive field survey, Native American Consultation, and vertebrate paleontological resources assessment. The full report, with records search results, detailed findings and recommendations, will be included as an appendix to the draft Program EIR and is available for review at SOCCCD offices at 28000 Marguerite Parkway in Mission Viejo, California 92692.

Prehistoric and Historic Settings

Both Irvine Valley College and Saddleback College are situated within the traditional boundaries of the Gabrielino (Tongva; see McCawley 1996, Heizer 1978, and Kroeber 1925 in BCR 2011). The Gabrielino name has been attributed by association with the Spanish mission of San Gabriel, and refers to a subset of people sharing speech and customs with other Cupan speakers (such as the Juaneño/Acjachemen) from the greater Takic branch of the Uto-Aztecan language family (Bean and Smith 1978, Shipley 1978 in BCR 2011). The Gabrielino were semi-nomadic hunter-gatherers who subsisted by exploitation of seasonably available plant and animal resources.

Since the Gabrielino were originally studied using ethnography, particularly during the early 20th century, their decimation through acculturation and disease has necessitated supplementing any social analysis with archaeological data. Therefore, identification, protection and potential recovery of such archaeological data is a primary focus of the Cultural Assessment.

In Southern California, the historic era is generally divided into three periods: the Spanish or Mission Period (1769 to 1821), the Mexican or Rancho Period (1821 to 1848), and the American Period (1848 to present). Each period is further described in the Cultural Assessment.

Literature Review and Records Search

Prior to fieldwork, BCR conducted a records search at the South Central Coastal Information Center (SCCIC) located at California State University, Fullerton. The search included a review of all recorded historic and prehistoric cultural resources, as well as a review of known cultural resources, and survey and excavation reports generated from projects located within one mile of each of the campuses. Also reviewed were the National Register of Historic Places (National Register), the California Register, and documents and inventories from the California Office of Historic Preservation including the lists of California Historical Landmarks, California Points of Historical Interest, Listing of National Register Properties, and the Inventory of Historic Structures.

Saddleback College

The SCCIC records search indicated that 69 cultural resource studies have been conducted in the area. The studies indicate 11 recorded cultural resources (eight prehistoric, two historic, and one with prehistoric and historic components) within a one-mile radius of the Saddleback College campus. The nearest previously recorded cultural resource was a concentration of historic debris remaining from a ca. 1930s Japanese settlement accompanied by a sparse prehistoric artifact scatter (Jones 1991; see also Appendix A of BCR 2011). None of the studies has assessed Saddleback College and no cultural resources have been recorded within its boundaries.

Irvine Valley College

The SCCIC records search indicated that 80 cultural resource studies have been conducted in the area. The studies indicate 16 recorded cultural resources (10 historic and 6 prehistoric) within a one-mile radius of the IVC campus. The nearest previously recorded cultural resource was a single isolated prehistoric mano (a stone used to manually grind seeds), located approximately 100 meters southwest of IVC's southwestern boundary (Evans 1991; see also Appendix A of BCR 2011). Two of the studies assessed portions of the IVC property, but recorded no cultural resources within its boundaries.

NAHC Records Search and Consultation

The Cultural Assessment included a request to the California Native American Heritage Commission (NAHC) for a Sacred Lands File search and Native American contacts list. The NAHC Sacred Lands Inventory did not indicate the presence of Native American cultural resources at or within ½ mile of the IVC or Saddleback College campuses. The NAHC provided a list of affected Native American tribal contacts, which BCR used to inquire whether any tribe or individual has knowledge of cultural resources in the campus vicinities that might be of religious and/or cultural significance to the tribal communities. As of June 21, 2011 no responses were provided to BCR.

No Native American resources, including human remains or burial artifacts, were identified or otherwise indicated as having a potential for occurrence.

Intensive Field Surveys

BCR conducted intensive archaeological field surveys of the IVC and Saddleback campuses in April 2011. The surveys were conducted by walking parallel transects spaced approximately 15 meters apart across 100 percent of the subject properties, where accessible. Soil exposures, including natural clearings, agricultural fields, and back dirt from rodent burrows were carefully inspected for evidence of cultural resources. Buildings and structural installations were also scrutinized for any evidence of historic-age components.

The field surveys did not identify any cultural or historic resources on either campus property. Ground disturbances were severe in most locations, and included plowed agricultural fields and disturbances related to campus grading, landscaping, paving, and building installations.

Saddleback College and IVC Conclusions

Based on the records searches and field survey results, implementation of the 2011 FMP building and infrastructure improvements at the IVC and Saddleback College campuses is not anticipated to affect any archaeological or historical resources. Therefore, BCR recommends that no additional cultural resources work or construction monitoring is necessary for developments associated with the 2011 FMPs. However, if previously undocumented cultural resources are identified during earthmoving activities, a qualified archaeologist will be contacted to assess the nature and significance of the find, diverting construction excavation if necessary. Notwithstanding the lack of comment by Native American tribal contacts, California Public Resources Code Section 5097.98, California Government Code §27491, and Health & Safety Code Section 7050.5 have provisions for archeological resources discovered during construction and mandate the processes to be followed if human remains are discovered in a project location other than a 'dedicated cemetery'. These are requirements of California law and thus preclude the need for project-specific mitigation measures.

ATEP Conclusions

The MCAS Tustin FEIS/EIR determined that two historic districts and two hangars (Hangar 28 and 29) that were located within the MCAS Tustin site were considered historical resources. (MCAS Tustin FEIS/EIR, p. 4-96 and 4-97) Therefore, demolition of the hangars and elimination of the historic districts were considered significant impacts. The MCAS Tustin FEIS/EIR concluded that the continued closing of other U.S. military bases in California could likewise result in the demolition and elimination of similar historic buildings and districts and accordingly would significantly reduce their total numbers. The MCAS Tustin FEIS/EIR recommended mitigation measures to reduce the significance of these impacts to the greatest extent feasible.

In March 2008, RGP Planning and Development Services prepared the document titled, "Advanced Technology Education Park (ATEP) Long Range Academic and Facilities Plan (LRP), Long Range Academic Plan (LRAP), and Mitigation Measures and 2008 Traffic Study Addendum/Initial Study"(2008 LRP/LRAP Addendum/IS) which was an Addendum to the MCAS Tustin FEIS/EIR and evaluated environmental impacts resulting specifically with development of the ATEP Campus. The 2008 LRP/LRAP Addendum/IS concluded that the historic districts and blimp hangars were not located within the ATEP site and therefore, development of the ATEP Campus would not result in any significant impact to known historic structures or resources. Therefore, the 2008 LRP/LRAP Addendum/IS determined that those mitigation measures that were recommended in the MCAS Tustin FEIS/EIR did not apply to the proposed development of the ATEP Campus. Further discussion of historical resources at the ATEP site is not required in the Program EIR.

Numerous archaeological surveys have been conducted at the former MCAS Tustin site. In 1988, the State Office of Historic Preservation (SHPO) provided written concurrence that all open spaces on MCAS Tustin had been adequately surveyed for archaeological resources, including the ATEP property. Although one archaeological site (CA-ORA-381) was previously recorded on the MCAS Tustin property, it was determined to have been destroyed by past military-related development activities. (MCAS Tustin FEIS/EIR, p. 3-71). Since it is possible that previously unidentified buried archaeological resources could be significantly impacted by grading and construction activities, the FEIS/EIR included mitigation measures that require construction monitoring and, if necessary, resource testing to determine significance and/or data recovery. The FEIS/EIR and the 2008 LRP/LRAP Addendum/IS determined that the following mitigation measure would reduce potential impacts to cultural resources to a level of insignificance. The following measure remains applicable to the ATEP site.

MM Arch-2 *Prior to issuance of grading permits, the cities of Tustin and Irvine shall each require applicants of individual development projects to retain, as appropriate, a county-certified archaeologist. If buried resources are found during grading within the reuse plan area, a qualified archaeologist would need to assess the site significance and perform the appropriate mitigation. The Native American view point shall be considered during this process. This could include testing or data recovery. Native American consultation shall also be initiated during this process.* (MCAS Tustin FEIS/EIR p. 4-98)

c. *Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?*
Less Than Significant With Mitigation Incorporated

The Cultural Assessment included a request to the Natural History Museum of Los Angeles County for a vertebrate paleontological records search. The search consisted of a thorough review of geological and paleontological maps and reports to reveal any known vertebrate fossil localities or sensitivity within or neighboring the campus areas. The Museum indicated that there are no vertebrate fossil localities that lie directly within the IVC or Saddleback College boundaries, but that there are fossil vertebrate locations nearby from the same sedimentary deposits that occur in the campus study areas. Attachment C of the Cultural Resources Assessment (BCR 2011) contains the detailed findings and recommendation of the Museum's paleontological resources assessment.

Irvine Valley College and Saddleback College are both located on the southern extent of the physiographic area known as the Los Angeles Basin. It is characterized as a transverse-oriented lowland basin and coastal plain approximately 50 miles long and 20 miles wide. The basin originated as a deep marine trough during the Pliocene epoch (2 to 7 million years ago) that eventually filled with shallow water fossil bearing sediments. By the beginning of the Pleistocene epoch (less than 2 million years ago), uplifting created the series of plains and mesas along the coast that now characterize the area (Lambert 1994, Mendenhall 1905, Woodford et al. 1954 in BCR 2011).

Saddleback College

Surficial deposits in the southeast portion of Saddleback College consist of non-marine Quaternary terrace deposits. The closest vertebrate fossil locality from Older Quaternary deposits is more than two miles west at LACM 4543, which is an area on the west side of Sulphur Creek Reservoir that produced a fossil specimen of bison.

The higher elevations in the western portion of the campus consist of the marine Pliocene Niguel Formation, which produced a fossil specimen of white shark at LACM 3804, to the north-northwest of the campus. At lower elevations in the western portion of the campus, there are exposures of the marine late Miocene siltstone facies of the Capistrano Formation that also underlies the Niguel Formation. The Capistrano Formation has yielded a great number of vertebrate fossil localities in this area of Orange County. The closest such locality is directly west of the campus at LACM 5002, which proposed a fossil specimen of baleen whale. Other nearby localities have produced numerous fossil marine vertebrates such as sharks, bony fishes, birds, walruses, dolphins and whales.

Although there are no known vertebrate fossil localities on the Saddleback College property, based on the history of vertebrate fossil discoveries in similar sedimentary units, the paleontological sensitivity of units underlying the campus is high, meaning that they have high resource yield potential, particularly at depth. The entire campus has been disturbed on the surface, and many developed areas have substantial fill at depth. However, without available documentation of the depth and lateral extent of fills, this analysis assumes the potential to encounter undisturbed sedimentary units at depth, particularly in areas where historic fills and/or surface disturbances might not extend deeper than five feet (i.e., in areas of agricultural use, recreational fields, parking lots, etc.). Based on those assumptions, grading and excavation activities during construction have the potential to encounter a paleontological resource, the destruction of which would result in a significant project impact. Therefore, mitigation measures require that substantial excavations at the campus first be evaluated by a paleontologist to determine the potential sensitivity of geological deposits. If warranted, the ground disturbance activities must be monitored in order to quickly and professionally recover any fossil remains discovered, while not impeding development. Any fossils collected would be placed in an accredited scientific institution, thereby reducing impacts to a level that is less than significant.

Irvine Valley College

The entire IVC campus has surficial deposits composed of younger Quaternary Alluvium, primarily derived as fan deposits from the hills to the east. These deposits usually do not contain significant vertebrate fossils, at least in the uppermost layers, but they may be underlain by older Quaternary deposits. The records search indicates that the closest vertebrate fossil locality from older Quaternary deposits is about 1.5 miles south-southeast at LACM 7713, which produced a fossil specimen of ground sloth, Mylodontidae.

Shallow excavations in the younger Quaternary Alluvium are unlikely to uncover any significant vertebrate fossils. However, deeper excavations (i.e., greater than five feet) in those areas that extend down into older Quaternary deposits may well encounter significant vertebrate fossil material. Similar to the Saddleback College campus, the entire IVC campus has been disturbed on the surface, and many developed areas have substantial fill at depth. However, without available documentation of the depth and lateral extent of fills, this analysis assumes the potential to encounter undisturbed sedimentary units at depth, particularly in areas where historic fills and/or surface disturbances might not extend deeper than five feet (i.e., in areas of agricultural use, recreational fields, parking lots, etc.). Based on those assumptions, grading and excavation activities during construction have the potential to encounter a paleontological resource, the destruction of which would result in a significant project impact. Therefore, any substantial excavations at the IVC campus will be subject to the same mitigation measures previously described for the Saddleback College campus. With mitigation, impacts will be reduced to a level that is less than significant.

ATEP

The MCAS Tustin FEIS/EIR (p. 4-97) states:

Direct impacts to paleontological resources may occur if earthwork activities, such as mass grading operations, cut into and destroy the geological deposits (formations) within which unique paleontological resources or sites are buried.· During construction of [ATEP facilities] *there is a high to moderate potential for grading activities to impact fossil resources, which would be a significant impact.*

In anticipation of possible impacts to resources, a Paleontological Resources Management Plan (PRMP) has been prepared (City of Tustin 1993q) which applies to any type of grading/development activity on the site. The PRMP details the methodologies to be used for paleontological resource surveillance during grading and the actions to be taken if fossils are exposed.

Paleo-1 *The cities of Tustin and Irvine shall each require applicants of individual development projects to comply with the requirements established in a PRMP prepared for the site, which details the methods to be used for surveillance of construction grading, assessing finds, and actions to be taken in the event that unique paleontological resources are discovered during construction.*

Paleo-2 *Prior to the issuance of a grading permit, project applicants shall provide written evidence to each city, that a county-certified paleontologist has been retained to conduct salvage excavation of unique paleontological resources if they are found.* (MCAS Tustin FEIS/EIR p. 4-99)

MITIGATION MEASURES

The paleontological resources assessments conducted for the Saddleback College and IVC campuses did not reveal vertebrate fossil localities directly within either campus location, but have shown vertebrate localities nearby from the same sedimentary deposits that occur within both campuses. The campuses have been developed or disturbed by other surface activities. Therefore, where proposed excavations are shallower than five feet in depth, significant vertebrate fossils are unlikely to be encountered and will not require paleontological monitoring. However, the following mitigation measures shall apply to all excavation and grading at the Saddleback and IVC campuses:

MM PR-1: *Prior to any excavation or grading, the district shall compare the limits of proposed excavations with the depth and lateral extent of existing sub-surface disturbances, including foundations, utility and fill materials. The district shall determine the extent of sub-surface disturbances by using information including, but not limited to, as-built construction plans, underground utility surveys, and/or historic or recent geotechnical information, including boring and trenching logs.*

MM PR-2: *Should resources be uncovered as a result of campus grading and/or excavation shallower than five feet, a qualified paleontologist shall be retained and notified, and work in the area of the find shall cease until a paleontological monitor under the supervision of the qualified paleontologist arrives. The paleontological monitor shall have the authority to halt or divert any activities adversely impacting potentially significant paleontological resources, and those resources must be recovered, analyzed, and curated with the Natural History Museum of Los Angeles County.*

MM PR-3: *Based on information obtained from compliance with Mitigation Measure PR-1, and should excavations exceed five feet in depth, a qualified paleontologist shall be retained to conduct additional paleontological assessment using pre-construction geotechnical surveys to better define the subsurface geological features of the campuses. Data from the geotechnical surveys will help define the vertical and*

horizontal distribution of paleontologically sensitive subsurface units to assist in the accurate development of any monitoring requirements. Should that data indicate paleontological sensitivity, the following shall occur:

- *A qualified paleontologist shall be retained to attend a pre-construction meeting with construction personnel. The paleontologist shall inform construction personnel that fossils may be encountered, and provide information on the appearance of fossils, the role of paleontological monitors, and on proper notification procedures; and*
- *A paleontological monitor under the supervision of a qualified paleontologist shall monitor all earth-moving activities with potential to disturb previously undisturbed paleontologically sensitive sediment. The paleontological monitor shall have the authority to halt or divert any activities adversely impacting potentially significant paleontological resources, and those resources must be recovered, analyzed, and curated with the Natural History Museum of Los Angeles County.*

d. *Disturb any human remains, including those interred outside of formal cemeteries?* ***Less Than Significant Impact***

As indicated in Item a/b. above, no Native American remains or burial artifacts have been identified on or within ½ mile of the IVC, Saddleback College, or ATEP campuses. Further, no parties contacted during the Native American Consultation identified the potential for undiscovered burial sites at the campuses.

If human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD will complete the inspection within 48 hours of notification by the NAHC. These requirements of California law preclude the need for project-specific mitigation measures.

4.6 Geology and Soils

a) Would the project 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? Refer to Division of Mines and Geology Special Publication 42.	Potentially Significant Impact ☐	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☒

a) Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: *ii)* Strong seismic ground shaking?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

a) Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: *iii)* Seismic-related ground failure, including liquefaction?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

a) Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: *iv)* Landslides?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

b) Would the project result in substantial soil erosion or the loss of topsoil?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

c) Would the project 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-site or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

d) Would the project 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?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

e) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	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 or 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? Refer to Division of Mines and Geology Special Publication 42.* ***No Impact***

None of the three campuses are located within any Alquist-Priolo Earthquake Fault Zoning Map study area. There is no potential to conflict with any provisions of the Fault Zoning Map or requirements of the State Geologist. There is no substantial evidence of any known faults capable of surface rupture on any of the campus properties. Further discussion in the Program EIR is not necessary.

ii. *Strong seismic groundshaking?* ***Potentially Significant Impact***

The campuses, like the rest of Southern California, are located within a seismically active region as a result of being located between the North American and Pacific tectonic plates. The principal source of seismic activity will come from northwest-trending regional faults such as the San Andreas, San Jacinto, Los Alamitos, Newport-Inglewood, and Elsinore Fault Zones.

The three campuses are subject to strong seismic activity and groundshaking. Significant impacts, however, are not expected. All future development projects will be reviewed by the Division of the State Architect (DSA) and will be required to comply with standards and requirements contained in the California Building Code relating to construction and paving, structural foundations, etc. Additionally, community college campuses must comply with the Field Act, which establishes higher seismic safety standards for public schools. Compliance with these standards and requirements significantly reduces the likelihood of construction being significantly impacted by future seismic activity. This issue will be further evaluated in the Program EIR.

iii. *Seismic-related ground failure, including liquefaction?* ***Potentially Significant Impact***

The term "liquefaction" describes a phenomenon in which saturated soil loses strength and becomes "liquefied" during strong ground shaking events. The factors known to influence liquefaction potential include soil type and depth, grain size, relative density, groundwater level, degree of saturation, and both the intensity and duration of ground shaking.

Mapping by the California Department of Conservation indicates that all of the ATEP campus and part of the Irvine Valley College campus are potentially subject to liquefaction. In addition, Trabuco Creek, which is located adjacent to the Saddleback College campus, is subject to liquefaction risk. Potentially significant impacts exist and will be evaluated in the Program EIR.

iv. *Landslides?* ***Potentially Significant Impact***

The topography of the Irvine Valley College and ATEP campuses is flat. No severe topographical features exist within the campuses that could potentially result in a landslide or similar ground failure. There is no potential for any landslide to affect these campuses. Further discussion in the Program EIR is not necessary.

Saddleback College is located in a hilly area and is adjacent to a steep slope leading to Trabuco Creek, immediately to the east. Landslide risks have been identified on and adjacent to the campus. Potentially significant impacts exist on this campus and will be evaluated in the Program EIR.

b. *Result in substantial soil erosion or the loss of topsoil?* ***Potentially Significant Impact***

Future grading activity resulting from the proposed 2011 FMPs will require preparation of grading plans that include erosion control plans and measures. The erosion control plans will explain how soil erosion and potential topsoil loss will be further controlled. All future projects and associated grading proposed with the 2011 FMPs for Saddleback and Irvine Valley Colleges will be reviewed and approved by the Division of the State Architect (DSA). Grading activities and erosion control at ATEP will be reviewed by the Division of the State Architect and the City of Tustin in accordance with their regulations, requirements, and procedures.

Given that the Irvine Valley College and ATEP sites are flat, further development on these campuses is not expected to result in substantial soil erosion or the loss of topsoil. Both of the campuses have been graded in the past and no significant changes in landforms will result with planned construction. The Saddleback College campus is in a hilly area and has been previously graded for existing development, yet any extensive grading could result in erosion. Therefore, the issue will be further addressed in the Program EIR.

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?* ***Potentially Significant Impact***

Given that the three campuses are currently developed, it is likely that there are no unstable geologic unit or soils underlying any of the campuses. Each of the college campuses is capable of supporting existing structures and improvements. However, as discussed previously, mapping by the California Department of Conservation indicates that all of the ATEP campus and part of the IVC campus are potentially subject to liquefaction. In addition, Trabuco Creek, which is located adjacent to the Saddleback College campus, is subject to liquefaction risk. These and other potential geologic risks will be further evaluated in the Program EIR.

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?* ***Potentially Significant Impact***

Expansive soils are known to exist on one or more of the campuses. Although each of the college campuses is capable of supporting existing structures and improvements, and future development might not result in substantial risks to life or property, further programmatic evaluation of this issue will be conducted in the Program EIR.

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?* ***No Impact***

Alternative wastewater disposal systems, including septic tanks, are neither required nor proposed on the SOCCCD campuses. All three campuses are served by existing sewer systems. Sewer lines will be extended and connected with existing sewer mains to service the needs of each campus. Further discussion in the Program EIR is not necessary.

4.7 Greenhouse Gas Emissions

a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

b) Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? ***Potentially Significant Impact***

Emitting greenhouse gases (GHGs) into the atmosphere is not itself an adverse environmental effect. Rather, it is the increased accumulation of GHGs in the atmosphere that can result in global climate change. The consequences of that climate change can cause adverse environmental effects. The State of California Governor's Office of Planning and Research (OPR) now requires that GHG be evaluated in all CEQA documents. The OPR, in their Technical Advisory document, "CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act" states that when considering GHG emissions: "Lead agencies should make a good-faith effort, based on available information, to calculate, model, or estimate the amount of CO2 and other GHG emissions from a project, including the emissions associated with vehicular traffic, energy consumption, water usage and construction activities." In accordance with OPR requirements, the Program EIR shall calculate CO2e emissions during short-term construction and long-term operational activity utilizing the URBEMIS2007, EMFAC2007, OFFROAD, and CCAR emissions inventory models as applicable. Emissions associated with construction activity, mobile source activity, energy consumption, and water usage will be quantified to the extent possible in the Program EIR.

b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? ***Potentially Significant Impact***

The Program EIR will calculate greenhouse gas emissions and assess whether there will be any resultant conflicts with applicable plans, policies or regulations relating to greenhouse gas emissions. In addition, the Program EIR will describe those features from the proposed FMPs that incorporate sustainable principles and technologies wherever feasible and appropriate. For example, landscaping could be irrigated by reclaimed water. In addition, LEED certification will be targeted as part of the project.

4.8 Hazards and Hazardous Materials

a) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

b) Would the project 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?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

d) Would the project 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?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

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?	Potentially Significant Impact ☐	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☒	No Impact ☐

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?	Potentially Significant Impact ☐	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☒

g) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

h) Would the project 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?	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?* ***Potentially Significant Impact***

All three colleges are operational and developed with instructional and support facilities. Although educational facilities do not typically use or generate potentially hazardous materials in large quantities, the Program EIR will provide an updated assessment of proposed chemical usage on each campus, as well as regulatory requirements and FMP provisions for transport, use, and storage onsite.

The ATEP site has areas of known hazardous materials contamination due to past military use of the property. There are also buildings and other structures slated for demolition that contain asbestos and/or lead-based paint. A brief overview of these and other historic hazardous materials uses, areas of groundwater and soil contamination, and their current remediation status will be included in the Program EIR.

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?* ***Potentially Significant Impact***

Since hazardous materials will be handled at the college campuses, the potential for upset and accident conditions will be evaluated in the Program EIR.

c. *Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?* ***Potentially Significant Impact***

The Saddleback College campus is located within 0.25 mile of Capistrano Valley High School and Sunflower Montessori School. Irvine Valley College is within 0.25 mile of Alderwood Basics Plus School. There are no schools within 0.25 mile of ATEP. Since schools are located within a quarter mile of the college campuses, and once an inventory of hazardous substances and is obtained for each campus, the potential to emit hazardous emissions affecting these schools will be further evaluated in the Program EIR.

d. *Be located on a site which is included on a list of hazardous materials sites complied pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or environment?* ***Potentially Significant Impact***

The lists of hazardous materials sites as designated by Government Code Section 65962.5 will be consulted to determine whether the Saddleback or Irvine Valley College campuses, or adjacent

properties, are included on those lists. The ATEP site has areas of known hazardous materials contamination due to past military use of the property. There are also buildings and other structures slated for demolition that contain asbestos and/or lead-based paint. A brief overview of these and other historic hazardous materials uses, areas of groundwater and soil contamination, and their current remediation status will be included in the Program EIR.

e. *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles or a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?* ***Less Than Significant Impact***

Saddleback College and Irvine Valley College are not within or in the vicinity of any Airport Environs Land Use Plan (AELUP). The AELUP for John Wayne Airport shows the ATEP campus to be within the 20,000-foot notification area for John Wayne Airport. During preparation of the MCAS Tustin Specific Plan, the Orange County Airport Land Use Commission (ALUC) reviewed and approved maximum heights for potential development on the ATEP site. The 2011 FMP does not propose to modify the ALUC's approved height limit for ATEP and thus is in compliance with AELUP. There will not be any significant impact associated with safety hazards to individuals residing or working near the ATEP campus. Further discussion in the Program EIR is not necessary.

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?* ***No Impact***

There are no private airstrips within the vicinities of the three college campuses. There is no potential to expose people residing or working in the vicinity to aviation safety hazards. Further discussion in the Program EIR is not necessary.

g. *Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?* ***Potentially Significant Impact***

The three college campuses are planned to provide adequate emergency access and comply with any emergency plans of the Cities of Mission Viejo, Irvine, and Tustin. Future structures and roads proposed in the 2011 FMPs will be evaluated in the Program EIR to determine whether there is any potential to conflict with an emergency response or 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?* ***Potentially Significant Impact***

According to mapping prepared by the California Department of Forestry and Fire Protection (CAL FIRE), neither the Irvine Valley College nor the ATEP campus is within an area at risk from wildland fires. The Saddleback College campus is located adjacent to wildlands and is within areas of moderate, high, and very high fire hazard. The Program EIR will evaluate potential impacts of wildland fires on the Saddleback College campus.

4.9 Hydrology and Water Quality

a) Would the project violate any water quality standards or waste discharge requirements?	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
	☒	☐	☐	☐

b) Would the project 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)?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

c) Would the project 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?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

d) Would the project 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?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

e) Would the project create or contribute runoff water, which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

f) Would the project otherwise substantially degrade water quality?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

g) Would the project 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?	Potentially Significant Impact ☐	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☒

h) Would the project place within a 100-year flood hazard area structures that would impede or redirect flood flows?	Potentially Significant Impact ☐	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☒

i) Would the project 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?	Potentially Significant Impact ☐	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☒

j) Would the project inundation by seiche, tsunami, or mudflow?	Potentially Significant Impact ☐	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☒

a-f. Drainage and Water Quality. ***Potentially Significant Impact***

Development resulting from the 2011 FMPs will be subject to numerous regulatory programs for the protection of drainage features and surface and groundwater quality. Compliance with these provisions and with requirements of the Regional Water Quality Control Boards typically ensure that development will not violate water quality standards or adversely affect drainage. However, each campus will be reviewed in the Program EIR to confirm compliance with applicable standards for each issue.

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?* ***No Impact***

According to the following FEMA Flood Insurance Rate Maps, none of the campuses are within a 100-year floodplain.

Saddleback:	06059C0441J
IVC:	06059C0291J and 06059C0292J
ATEP:	06059C0279J

In addition, no housing is proposed on any of the campuses. Therefore, there will be no impact associated with the placement of housing within a 100-year flood hazard area. Further discussion in the Program EIR is not necessary.

h. *Place within a 100-year flood hazard area structures which would impede or redirect flood flows?* ***No Impact***

As noted above, none of the campuses are within a 100-year floodplain. Therefore, there will be no impact associated with the placement of structures that can impede or redirect flood flows within a 100-year flood hazard area. Further discussion in the Program EIR is not necessary.

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?* ***No Impact***

None of the campuses are within a levee or dam inundation area, or other floodplain that could potentially expose the campuses to flooding hazards. Further discussion in the Program EIR is not necessary.

j. *Inundation by seiche, tsunami, or mudflow?* ***No Impact***

None of the three campuses is located near any ocean, harbor, bay, lake, river, or canal and therefore, is not subject to any tsunami hazard. The ATEP and Irvine Valley College campuses are located on flat topography and therefore, are not subject to any mudflow hazards. The Saddleback College campus is located above a canyon and will not be subject to mudflows. Further discussion in the Program EIR is not necessary.

4.10 Land Use and Planning

a) Would the project physically divide an established community?	Potentially Significant Impact ☐	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☒	No Impact ☐

b) Would the project 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?	Potentially Significant Impact ☐	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☒	No Impact ☐

c) Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

a. *Physically divide an established community?* ***Less Than Significant Impact***

Saddleback College, Irvine Valley College, and ATEP are located in urbanized areas of the cities of Mission Viejo, Irvine, and Tustin, respectively. All three campuses are presently operational as colleges with instructional and support facilities. The ATEP site is also undergoing demolition of the former MCAS Tustin facilities. The 2011 FMPs propose new instructional and support facilities at each campus, but will not increase or alter the property boundaries such that an established community would be physically divided. Further discussion in the Program EIR is not necessary.

b. *Conflict with any applicable land use plan, policy, or regulation of any 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?* ***Less Than Significant Impact***

The three college campuses are currently consistent with their respective underlying General Plan and Zoning designations. Saddleback College is designated Community Facility and zoned Community Facility (CF) by the City of Mission Viejo. Irvine Valley College is designated E (Educational Facilities) and zoned Institutional (6.1) by the City of Irvine. ATEP is designated Tustin Legacy Specific Plan and zoned Education Village (EV) (Specific Plan 1-MCAS Tustin Specific Plan District) by the City of Tustin. The proposed 2011 FMPs will develop new instructional and support facilities at each of the three campuses which are consistent with the underlying General Plan and zoning designations. Though it is unlikely that the proposed 2011 FMPs will conflict with any land use plan, policy or regulation, the Program EIR will review those applicable plans, policies, and regulations of the cities of Mission Viejo, Irvine, and Tustin that were adopted to avoid and mitigate environmental effects within the respective cities. It should be noted that the Program EIR will discuss project consistency with these plans, policies, and regulations as applicable to the related environmental topic (e.g., Air Quality, Biological Resources, etc.). Project consistency will not be discussed in a separate Land Use section.

c. *Conflict with any applicable habitat conservation plan or natural community conservation plan?* ***Potentially Significant Impact***

The Program EIR will consult with the California Natural Diversity Data Base and determine whether any candidate, sensitive species and/or special status species are known to occur on or near any of the three college campuses. Site reconnaissance will also be conducted to determine whether any sensitive species and/or communities are likely to occur. Any identified sensitive biological resources as designated by the California Department of Fish (CDFG) and Game or U.S. Fish and Wildlife Service (USFWS) will be evaluated. As part of the consultation and reconnaissance processes, the Program EIR will review the Orange County Central-Coastal Natural Community Conservation Plan and Habitat Conservation Plan (NCCP/HCP) to determine whether the proposed 2011 FMPs conflict with said plans. If there are resultant conflicts, the Program EIR will recommend mitigation measures to ensure that the proposed 2011 FMPs do not significantly conflict with any policies or provisions of said NCCP/HCP. This issue will be discussed in the Biological Resources section of the Program EIR.

4.11 Mineral Resources

a) Would the project 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?	Potentially Significant Impact ☐	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☒

b) Would the project 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?	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?* ***No Impact***

Saddleback College, Irvine Valley College, and ATEP are located in urbanized areas of the cities of Mission Viejo, Irvine, and Tustin, respectively. All three campuses are presently operational as college campuses and are developed with instructional and support facilities and structures. The ATEP area is also presently developed with military buildings, asphalt-paved streets and parking lots, concrete sidewalks and pads, and landscaping/groundcover from the former MCAS Tustin facilities. The 2011 FMPs propose new and renovated instructional and support facilities at each of the three college campuses. The 2011 FMPs will not increase the boundaries of any of the campuses and will continue the same college uses. There are no known valuable mineral resources located at any of the three campuses and the permanency of the college facilities would preclude the extraction of any unknown mineral resources. Further discussion in the Program EIR is not necessary.

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?* ***No Impact***

Given that the three campuses are presently developed, there are no available mineral resource recovery sites located within the campuses. Further discussion in the Program EIR is not necessary.

4.12 Noise

a) Would the project 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?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

b) Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

c) Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

d) Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

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?	Potentially Significant Impact ☐	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☒	No Impact ☐

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?	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?* ***Potentially Significant Impact***

The 2011 FMPs propose instructional and support facilities that respond to projected student enrollment increases through the year 2031. With the new and expanded facilities, there will be additional noise generated by increased traffic movements, student activities, and other college-related sources. The Program EIR will describe existing noise levels and noise to be generated by future development, uses and activities, increased motor vehicles, and other sources. The Program EIR will provide the following:

- Perform limited onsite ambient noise monitoring at campus locations.
- Develop a baseline noise exposure profile in terms of the CNEL noise metric using the FHWA Model with the latest California vehicle noise curves (CALVENO).
- Prepare a no-project versus with-project mobile noise impact comparison, including any viable project alternative development scenarios. Identify specific locations where mobile source noise impacts may impede the learning environment.
- Evaluate stationary noise impacts from temporary on-site construction noise sources.
- Identify possible recreational or athletic activity noise impacts.
- Relate project noise impacts to the Noise Element noise/land use compatibility guidelines in the City of Mission Viejo, Irvine and Tustin Noise Elements and other applicable noise exposure regulations.
- Develop a noise impact mitigation plan for any predicted noise impacts that may exceed target noise exposure limits.

b. *Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?* ***Potentially Significant Impact***

The Program EIR will determine whether the project-generated noise increases will result in excessive groundborne vibration and noise levels that will significantly disturb sensitive receptors, including neighboring residents and those students that are enrolled at the various colleges.

c. *A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?* ***Potentially Significant Impact***

As discussed, the Program EIR will describe existing noise levels and noise to be generated by future development, uses and activities, increased motor vehicles, and other sources. With this analysis, the Program EIR will determine whether there will be a substantial permanent increase in noise levels at the various colleges and their neighboring vicinities.

d. *A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?* ***Potentially Significant Impact***

Grading activities and construction of the proposed instructional and support facilities will generate levels of construction noise from construction equipment and machinery, construction trucks, etc. Potential noise disturbances to existing students and faculty, and neighboring residences will be evaluated in the Program EIR. For any noise impacts that exceed identified significance thresholds, feasible mitigation measures will be recommended, which may include modification of construction techniques (subject to engineering constraints and feasibility) or hours, and/or provision of temporary or long-term barriers to noise transmission. Compliance with the noise regulations of the affected cities will also be discussed.

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?* ***Less Than Significant Impact***

Neither the Saddleback nor Irvine Valley College campuses are located within an AELUP. ATEP is located within the AELUP for John Wayne Airport. However, the AELUP indicates that ATEP is located beyond the 60 dB CNEL noise contour for airport operations. Therefore, 2011 FMPs will not cause any significant exposure of students or others to excessive airport noise levels. Further discussion in the Program EIR is not necessary.

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?* ***No Impact***

There are no private airstrips within the vicinities of the three college campuses. There is no potential to expose any students, or people residing or working in the vicinity, to potentially excessive noise levels related to aircraft overflights. Further discussion in the Program EIR is not necessary.

4.13 Population and Housing

a) Would the project 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)?	Potentially Significant Impact ☐	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☒

b) Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	Potentially Significant Impact ☐	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☒

c) Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	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)?* ***No Impact***

The 2011 FMPs propose new instructional and support facilities to respond to growing demands for future college education. Residential and off-campus commercial uses will not be provided. All student and faculty support facilities will serve the needs of the respective campuses and not the population at large. The new facilities and structures will be located on-campus and therefore, will not require off-site extension of roads or other infrastructure. The 2011 FMPs will not induce substantial population growth. Further discussion in the Program EIR is not necessary.

b. *Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?* ***No Impact***

Residential uses do not exist at the three college campuses, nor are any planned in the FMP. The 2011 FMPs will not result in any displacement or need for replacement housing elsewhere. Further discussion in the Program EIR is not necessary.

c. *Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?* ***No Impact***

Since residential uses do not exist at any of the three campuses, there is no potential for people to be displaced. Likewise, there is no need for replacement housing elsewhere. Further discussion in the Program EIR is not necessary.

4.14 Public Services

a) Would the project result in 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:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Fire protection?	☐	☐	☒	☐
Police protection?	☐	☐	☒	☐
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

a. *Would the project result in 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:*

i. Fire Protection? ***Less Than Significant Impact***

The Cities of Mission Viejo, Irvine, and Tustin contract with the Orange County Fire Authority (OCFA), which provides fire prevention and suppression and emergency services to the cities and the three college campuses. The new instructional and support facilities to be constructed with the 2011 FMPs will not be of a scale that will significantly burden existing OCFA services to the extent that new off-site facilities construction would be required. Existing OCFA services and facilities are anticipated to be adequate in serving the campuses.

Future development resulting from the 2011 FMPs will be required to comply with existing OCFA regulations relating to construction materials and methods, emergency access, water mains, fire flow, fire hydrants, sprinkler systems, building setbacks, and other relevant regulations. Adherence to these regulations will reduce the risk of uncontrollable fire and increase the ability to efficiently provide fire protection services to the various college campuses.

Specific to the ATEP campus, the 2008 LRP/LRAP Addendum/IS recommended the following mitigation measures to ensure that OCFA regulations and requirements are satisfied, which will reduce impacts to a less than significant level.

LU-2 (e) *Prior to the issuance of the certificates of use and occupancy, the project developer shall ensure that fire hydrants capable of flows in amounts approved by the OCFA are in place and operational to meet fire flow requirements.*

LU-2 (m) *The City of Tustin and the City of Irvine, each within its respective jurisdiction, shall ensure that adequate fire protection, police protection, and parks and recreation facilities (including bikeways/trails) needed to adequately serve the reuse plan area shall be provided as necessary. To eliminate any negative impact the project could*

have on each community's general fund, financing mechanisms including but not limited to developer fees, assessment district financing and/or tax increment financing (in the event that a redevelopment project area is created for the site), shall be developed and used as determined appropriate by each City. Specifically;

(1) Applicants for private development projects shall be required to enter into an agreement with the City of Tustin or the City of Irvine, as applicable, to establish a fair-share mechanism to provide needed fire and police protection services, libraries, and parks and recreation facilities (including bikeways) through the use of fee schedules, assessment district financing, Community Facility District financing, or other mechanisms as determined appropriate by each respective city.

(2) Recipients of property through public conveyance process shall be required to mitigate any impacts of their public uses of property on public services and facilities.

LU-2 (o) *Prior to the first final map recordation or building permit issuance for development (except for financing and reconveyances purposes), the project developer could be required to enter into an agreement with the City of Tustin or City of Irvine/OCFA, as applicable, to address impacts of the project on fire services. Such agreement could include participation for fire protection, personnel and equipment necessary to serve the project and eliminate any negative impacts on fire protection services.*

LU-2 (p) *Prior to issuance of building permits, the project developer shall work closely with the OCFA to ensure that adequate fire protection measures are implemented in the project.*

LU-2 (q) *Prior to issuance of building permits for phased projects, the project developer shall submit a construction phasing plan to the OCFA demonstrating that emergency vehicle access is adequate.*

LU-2 (r) *Prior to the issuance of building permits, the project developer shall submit a fire hydrant location plan for the review and approval of the Fire Chief and ensure that fire hydrants capable of flows in amounts approved by the OCFA are in place and operational to meet fire flow requirements.*

It should be noted no new on-site fire protection facilities are proposed in the 2011 FMPs for the college campuses. If any such facilities are proposed prior to completion of the draft Program EIR, those on-campus facilities would be subject to all pertinent mitigation measures and development standards applicable to other campus development. For purposes of this impact criterion, they would not be considered new or altered facilities, the construction of which could alone cause significant environmental impacts. For these reasons, further discussion of fire protection facilities in the Program EIR is not necessary.

ii. Police Protection? ***Less Than Significant Impact***

The City of Mission Viejo contracts with the Orange County Sheriff's Department for police services. The Sheriff's Department is responsible for providing for the protection of citizens, the enforcement of laws, and crime prevention. Law enforcement services include patrol, general and special crime investigation, traffic enforcement, collision investigation, parking enforcement, crime prevention and the Community Support Unit. The Chief of Police is the Department Head for Public Safety and is responsible for the day-to-day operation of law enforcement services in the City. Additional police services include a canine unit, helicopter, bomb squad and a forensics bureau. Mission Viejo Police Services also participates in regional law enforcement programs with surrounding cities which include the Gang Enforcement Team (GET) and the regional Narcotics Suppression Program (RNSP). The

Cities of Irvine and Tustin have their own Police Departments which provide 911 dispatch, animal services, crime analysis and prevention, emergency management, investigation services, patrol services, and traffic services. Each of the colleges also has their own onsite campus police.

Both Irvine Valley College and ATEP have entered into agreements with the police departments for the cities of Irvine and Tustin, respectively regarding shared police and security services. Irvine Valley College and the City of Irvine entered into a Protocol Agreement in 2008 which established their separate responsibilities. ATEP and the City of Tustin entered into a Memorandum of Understanding in 2007 which also established their separate responsibilities. In accordance with their Protocol Agreement, the Irvine Valley College Campus Police is responsible for investigation of the following crimes: grand and petty theft, vehicle burglary and auto theft, vandalism, disturbing the peace, non-domestic violence, alcohol possession, trespassing, and misdemeanors. The City of Irvine Police Department is responsible for investigation of the following crimes: homicide, robbery, kidnapping, sex crimes, felony assaults, firearms, domestic violence, felony drug offenses, crimes against children, traffic collisions, driving under the influence, crime series, auto theft, and missing persons.

In accordance with their Memorandum of Understanding, the City of Tustin Police Department is responsible for investigation of the following crimes at the ATEP Campus: murder and homicide, sex offenses, robbery, aggravated assault, burglary, kidnapping, crimes against children, thefts, and drugs related offenses. The IVC Campus Police also provide onsite campus police services at ATEP. The 2008 LRP/LRAP Addendum/IS also recommended mitigation measures to ensure that adequate police protection services are provided at the ATEP campus, including the following:

Mitigation Measure LU-2 (m), listed above.

LU-2 (s) *Prior to issuance of building permits, the project developer shall work closely with the respective Police Department to ensure that adequate security precautions are implemented in the project.*

As discussed, the 2011 FMPs propose new instructional and support facilities; however, they will not be of a scale that will significantly burden existing police services. Existing police services and facilities at the various colleges and cities will adequately serve the 2011 FMP growth. The 2011 FMPs will not require additional police protection services or facilities.

It should be noted that the Program EIR will describe any new police protection facilities being proposed in the 2011 FMPs for the college campuses. Those on-campus facilities would be subject to all pertinent mitigation measures and development standards applicable to other campus development. For purposes of this impact criterion, they would not be considered new or altered facilities, the construction of which could alone cause significant environmental impacts. For these reasons, further discussion of police protection facilities in the Program EIR is not necessary.

iii. Schools? ***No Impact***

There are no K-12 schools located at any of the three college campuses. The 2011 FMPs are intended to serve the projected student enrollment increases and demands at each of the three colleges. The 2011 FMPs have no potential to impact any K-12 school. Further discussion in the Program EIR is not necessary.

iv. Parks? ***No Impact***

There are no public parks located at any of the three college campuses. The 2011 FMPs have no opportunity to impact any public park facility. Further discussion in the Program EIR is not necessary.

v. Other Public Facilities? ***No Impact***

There are no other public facilities located at any of the three college campuses. The 2011 FMPs have no potential to impact any other public facility. Further discussion in the Program EIR is not necessary.

4.15 Recreation

a) Would the project 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?	Potentially Significant Impact ☐	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☒	No Impact ☐

b) Does the project include recreational facilities or require the construction, expansion, or recreational facilities, which might have an adverse physical effect on the environment?	Potentially Significant Impact ☐	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☒	No Impact ☐

a. *Would the project 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?* ***Less Than Significant Impact***

The 2011 FMPs include new or upgraded recreational facilities that will be described in the Program EIR and are intended to meet the on-campus recreational demands. Existing park and recreational facilities at the various cities are adequate to serve current and future municipal demands. The new facilities to be constructed at the college campuses will not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of those off-campus facilities would occur or be accelerated.

Specific to the ATEP campus, the 2008 LRP/LRAP Addendum/IS also recommended mitigation measures to ensure that adequate parks and open space are provided in the City of Tustin to accommodate ATEP students and City residents, including the following:

Mitigation Measure LU-2 (m), listed above.

LU-2 (w) *Prior to the first concept plan for tentative tract map in the City of Tustin, the project developer shall file a petition for the creation of a landscape maintenance district for the project area with the City of Tustin. The district shall include public neighborhood parks, landscape improvements, and specific trails (Barranca only), the medians in arterials, or other eligible items mutually agreed to by the petitioner and the City of Tustin. In the event that a district is not established prior to issuance of the first building permit, maintenance of items mentioned above shall be the responsibility of a community association.*

Further discussion in the Program EIR is not necessary.

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?* ***Less Than Significant Impact***

The Program EIR will describe any new or expanded recreational facilities being proposed in the 2011 FMPs for the college campuses. Those on-campus facilities would be subject to all pertinent mitigation measures and development standards applicable to other campus development. For purposes of this impact criterion, they are not considered separate facilities, the construction of which could alone cause significant environmental impacts. For these reasons, further discussion of on-campus recreational facilities in the Program EIR is not necessary.

4.16 Transportation and Circulation

a) Would the project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

b) Would the project conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

c) Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	Potentially Significant Impact ☐	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☒

d) Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

e) Would the project result in inadequate emergency access?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

f) Would the project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

a. *Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?* ***Potentially Significant Impact***

To programmatically determine whether future growth at the campuses will result in traffic congestion or conflict with any applicable plan or policy, the Program EIR will develop a peak period traffic flow simulation model to test and quantitatively evaluate the assumptions in 2011 FMPs. This evaluation will provide quantified results that will be compared with accepted traffic environmental thresholds to determine if any significant impacts will result. The Program EIR will factor on- and off-campus operations and activities and will analyze up to 10 intersections and 20 roadways for each college campus. The analysis will include average daily trip volumes and ICU values to determine the level of service. With this analysis, the Program EIR can evaluate whether the 2011 FMPs will conflict with any applicable plan, ordinance, or policy relating to performance of the circulation system for the various college campuses.

The 2011 FMPs note that the use of community transit systems renders parking ratios acceptable but marginal. Parking issues typically arise in the first weeks of an academic term when a majority of students and faculty are on campus concurrently. These conditions ease as an academic term progresses and daily/weekly attendance patterns evolve based upon schedules. Nevertheless, impacts upon parking (and neighboring streets) at all campuses will increase commensurate with future growth and will be addressed further in the Program EIR.

For the Saddleback College and IVC campuses**,** access and egress to/from the campus and congestion due to car and bus traffic mixing will also be addressed in the Program EIR. The existing three (3) entrance/exit drives at both campuses meet current traffic needs. As the campuses grow, parking inventory will increase and traffic will increase. The Saddleback FMP notes that access points will not likely change in the foreseeable future due to topographic conditions and constraints from surrounding development.

The Irvine Valley FMP indicates that the combined use of the Irvine Center Drive entrance for parking, bus access and an auto court causes significant congestion issues due to short queuing distances and mixed flow of cars and buses. The extent to which the planned Barranca Parkway entrance/exit drive will alleviate those problems will be evaluated in the Program EIR.

b. *Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?* ***Potentially Significant Impact***

The Orange County Congestion Management Program (CMP) was developed as a means of addressing regional traffic growth and congestion as a function of land use and development decisions. If there are CMP arterial roadways and/or intersections being affected by the 2011 FMPs, the Program EIR and traffic analysis will evaluate traffic impacts in accordance with applicable CMP requirements.

c. *Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?* ***No Impact***

The college campuses and neighboring vicinities are presently urbanized and developed with college facilities and buildings, military structures, and other land uses. Those new instructional and support facilities and structures that will be constructed with the 2011 FMPs will be compatible with existing facilities and structures in terms of architecture, design, building height, and scale. New development will not affect air traffic patterns, nor will safety risks be created by implementing the 2011 FMPs. Further discussion in the Program EIR is not necessary.

d. *Substantially increase hazards due to a design feature (i.e., sharp curves or dangerous intersections) or incompatible uses (i.e., farm equipment)?* ***Potentially Significant Impact***

Driveways and access points will be designed with sufficient vehicular sight distance and turning radii in accordance with applicable engineering and safety standards. Although significant safety hazards are not anticipated with the proposed circulation and street improvements, each campus has unique issues that the Program EIR will review further.

e. *Result in inadequate emergency access?* ***Potentially Significant Impact***

The three college campuses are planned to provide adequate emergency access and comply with any emergency plans of the Cities of Mission Viejo, Irvine, and Tustin. Driveways and emergency access points will be designed with sufficient vehicular sight distance and turning radii in accordance with those applicable standards of the various cities and the OCFA. Future structures and roads proposed in the 2011 FMPs will be evaluated in the Program EIR to determine whether there is any potential to result in inadequate emergency access.

f. *Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?* ***Potentially Significant Impact***

The 2011 FMPs have been designed to facilitate and encourage the continued use of public transit and pedestrian facilities. The 2011 FMPs are anticipated to increase the safety and performance of public transit and pedestrian facilities. Those project objectives notwithstanding, the Program EIR will evaluate whether the 2011 FMPs have the potential to conflict with any applicable plan, ordinance, or policy relating to public transit, bicycle, or pedestrian facilities serving the various college campuses.

4.17 Utilities and Service Systems

a) Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

b) Would the project 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?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

c) Would the project 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?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

d) Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

e) Would the project 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?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

f) Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

g) Would the project comply with federal, state, and local statutes and regulations related to solid waste?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

a-f. Water/Wastewater, Storm Drains, and Solid Waste. ***Potentially Significant Impact***

Water and wastewater services and utilities are provided in the City of Mission Viejo by El Toro, Moulton Niguel, Santa Margarita, and Trabuco Canyon Water Districts; and in the City of Irvine by the Irvine Ranch Water District. Water services and utilities in the Tustin Legacy area are provided by Irvine Ranch and Orange County Water Districts. Wastewater services and utilities in the Tustin Legacy area are provided by the Orange County Sanitation District. The 2011 FMPs will construct new instructional and support facilities to respond to growing demands for future college education to the year 2031. Student enrollment increases at the various colleges can place potentially significant burdens on existing water and wastewater services and utilities. The Program EIR will calculate demands for water and wastewater services for each of the colleges to the year 2031 and summarize the FMP provisions for related improvements. Adequacy of water supplies will also be assessed in the Program EIR.

Stormwater facilities and services are provided by the Cities of Mission Viejo, Irvine, and Tustin. The cities are responsible for installing and maintaining storm drains and drainage facilities within the public rights-of-way.

The Program EIR will identify those companies that collect solid waste at the college campuses, calculate the increase in solid waste generation, identify the affected landfills, and determine whether the increase in solid waste generation will result in significant burden on solid waste collection and disposal services, including landfills and similar facilities.

4.18 Mandatory Findings of Significance

a) Does the project 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?	Potentially Significant Impact ☐	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☒	No Impact ☐

b) Does the project 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)?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	Potentially Significant Impact ☒	Less Than Significant With Mitigation Incorporated ☐	Less Than Significant Impact ☐	No Impact ☐

a. *Does the project 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?* ***Less Than Significant Impact***

Individual, campus-specific impacts to biological resources will be analyzed in the Program EIR. Limited and geographically specific direct and indirect species and habitat impacts notwithstanding, the 2011 FMPs will not 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, or reduce the number or restrict the range of a rare or endangered plant or animal.

Cultural resources have been analyzed in a Cultural Resources Assessment (BCR 2011), which has been summarized in Section 4.5 (Cultural Resources). As indicated, the 2011 FMPs do not have the potential to eliminate important examples of the major periods of California history or prehistory.

b. *Does the project have impacts that are individually limited, but cumulatively considerable?* ***Potentially Significant Impact***

Each section of the Program EIR will evaluate the potential for the 2011 FMPs to generate impacts that are individually limited, but will become cumulatively considerable.

c. *Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?* ***Potentially Significant Impact***

The 2011 FMPs have the potential to directly and/or indirectly affect human beings. Potential impacts associated with air quality, greenhouse gases, noise, and/or transportation and circulation could result from the proposed projects. The Program EIR will evaluate these and other issues with the potential to affect human health and safety.

5. Reference Documents

Austin-Foust Associates, Inc.

2009a Advanced Technology & Education Park at Tustin Legacy Phase 3A Traffic Circulation Analysis. Prepared for SOCCCD. February 2009.

2009b Advanced Technology & Education Park at Tustin Legacy Phase 3A Parking Analysis. Prepared for SOCCCD. February 2009.

Brunzell Cultural Resource Consulting (BCR Consulting)

2011 Cultural Resources Assessment, Irvine Valley College (Irvine) and Saddleback College (Mission Viejo) Campuses, Orange County, California. USGS 7.5-minute Quadrangles: San Juan Capistrano and Tustin, California 1981. June 21, 2011.

City of Tustin

1996 Marine Corps Air Station (MCAS) Tustin Specific Plan/Reuse Plan. Reuse Plan adopted October 31, 1996, amended September 8, 1998, Specific Plan adopted by City Council Ordinance No. 1257 on February 3, 2003, and Specific Plan Amendment Adopted by City Council Ordinance No. 1311 on April 17, 2006.

1998 City of Tustin and Department of the Navy. Program Final Environmental Impact Statement/Environmental Impact Report (Program EIS/EIR) for the Disposal and Reuse of Marine Corps Air Station (MCAS) Tustin (State Clearinghouse #94071005). Prepared 1998; certified by the Tustin City Council on January 16, 2001.

2008 City of Tustin General Plan.

City of Tustin Resolutions (including environmental checklists) regarding Tustin Legacy: 00-90; 04-32; 04-73; 04-74; 04-76; 04-77; 05-28; 05-35; 05-37; 05-38; 05-40; 05-71; 05-75; 05-76; 05-77; 05-78; 06-42; 06-43; 07-92; 08-09; 08-18; 08-38; 08-39; 08-42; 08-53.

gkkworks

2011a Irvine Valley College 2011 Education Master Plan, South Orange County Community College District – DRAFT. May 2.

2011b Saddleback College 2011 Education Master Plan, South Orange County Community College District – DRAFT. May 2.

2011c Irvine Valley College 2011 Facilities Master Plan, South Orange County Community College District – DRAFT. May 4.

2011d Saddleback College 2011 Facilities Master Plan, South Orange County Community College District – DRAFT. May 4.

RGP Planning & Development Services

2008a CEQA Initial Study for Advanced Technology & Education Park (ATEP) Long Range Academic and Facilities Plan (LRP). July 2008.

2008b CEQA Addendum/Initial Study and Appendices errata for Advanced Technology & Education Park (ATEP) Long Range Academic and Facilities Plan (LRP). October 2008.

2008c South Orange County Community College District ATEP Advanced Technology & Education Park Long-Range Academic Plan and Facilities Plan, as amended by the October and November 2008 Errata (LRP). November 2008.

2008d South Orange County Community College District ATEP Advanced Technology & Education Park Long-Range Academic Plan, as amended by the October 2008 Errata (LRAP). November 2008.

2009 South Orange County Community College District ATEP Advanced Technology & Education Park Phase 3A Concept Plan. March 2009.

2011 Field observations, Irvine Valley College campus photographs and site walkover. April 19, 2011.

2011 Field observations, Saddleback College campus photographs and site walkover. June 7, 2011.

South Orange County Community College District (SOCCCD)

2004 "Agreement" Between the City of Tustin and The South Orange County Community College District For Conveyance of a Portion of MCAS, Tustin and The Establishment of an Advanced Technology Educational Campus" (the "District Conveyance Agreement"). April 22, 2004.

2008 Resolution 08-35 Adopting the Addendum as Amended by the Errata dated November 2008 to the Final Environmental Impact Statement/Environment Impact Report for the Disposal and Reuse of the MCAS Tustin and the MCAS Tustin Specific Plan/Reuse Plan dated October 1996, as Amended by the Errata dated September 1998 pursuant to the California Environmental Quality Act for the Project, the Long-Range Academic and Facilities Plan dated June 2008 and as Amended by the Errata dated October 2008 and the Errata dated November 2008, and the Long-Range Academic Plan dated June 2008 and as Amended by the Errata dated October 2008. November 2008.

2009 Resolution No. 09-05 Adopting The Addendum Dated March 2009 as Amended by the Errata Dated March 2009 to the Final Joint Program Environmental Impact Statement/Environmental Impact Report for the Disposal and Reuse of MCAS Tustin and the MCAS Tustin Specific Plan/Reuse Plan Dated October 1996, as Amended by the Errata Dated September 1998 Pursuant to the California Environmental Quality Act for the Project.

2009 Resolution No. 09-06 Adopting the Concept Plan Dated March 2009 For The Advanced Technology & Education Park Campus.

Other

2008 BRAC PMO West. Final Amended Site Management Plan Fiscal Year 2009 Update Former Marine Corps Air Station Tustin, Tustin, California. November 2008.

6. Document Preparers

The following professional firms and team members were involved in the preparation of the CEQA documentation for the 2011 FMPs.

RGP Planning & Development Services (RGP)

- Jeremy Krout, Principal
- Duane Morita, Associate
- Mike DeVore, Senior Associate
- Rafik Albert, Associate

gkkworks (2011 Education and Facilities Master Plans)

- David Hunt, AIA, Vice President of Architecture

Appendix A3

Comments on Notice of Preparation and Initial Study

Memo

To: Brandye D'Lena, Director Facilities Planning and Purchasing

From: Jeremy Krout

CC: RGP file #31009

Date: 7/22/2011

Re: **Summary of Proceedings – Draft EIR Scoping Meeting**

Public Scoping Meeting Summary of Proceedings:

Program Environmental Impact Report (EIR) for the South Orange County Community College District (SOCCCD) Saddleback College & Irvine Valley College 2011 Facilities Master Plans

Date: July 21, 2011
Time: 10:30 a.m.
Location: Saddleback College
Ronald Reagan Board of Trustees, Room 145
Health Sciences/District Offices Building
28000 Marguerite Parkway
Mission Viejo, CA 92692

Attendance: Brandye D'Lena (SOCCCD), Jeremy Krout (RGP), Mike DeVore (RGP)

The district mailed a Notice of Preparation of a draft Program EIR to thirty-four (34) responsible and trustee agencies and other interested parties on July 1, 2011. The district is the CEQA lead agency responsible for preparing the draft Program EIR to address the potential environmental effects associated with the 2011 Facilities Master Plans. The NOP provided public notice of the scoping meeting scheduled at 10:30 a.m. on Thursday July 21, 2011 to receive oral and written comments on the scope and content of the draft Program EIR.

The scoping meeting convened at 10:30 a.m. With no interested parties in attendance from either public agencies or the general public, the meeting was adjourned at 10:50 a.m.

STATE OF CALIFORNIA

GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

STATE CLEARINGHOUSE AND PLANNING UNIT

EDMUND G. BROWN JR.
GOVERNOR

KEN ALEX
DIRECTOR

Notice of Preparation

July 1, 2011

To: Reviewing Agencies

Re: SOCCCD Saddleback College & Irvine Valley College 2011 Facilities Master Plans
SCH# 2011071005

Attached for your review and comment is the Notice of Preparation (NOP) for the SOCCCD Saddleback College & Irvine Valley College 2011 Facilities Master Plans 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:

Dr. Debra Fitzsimmons
South Orange County Community College District
2800 Marguerite Parkway
Mission Viejo, CA 92692

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
Director, State Clearinghouse

Attachments
cc: Lead Agency

Document Details Report
State Clearinghouse Data Base

SCH# 2011071005
Project Title SOCCCD Saddleback College & Irvine Valley College 2011 Facilities Master Plans
Lead Agency South Orange County Community College District

Type NOP Notice of Preparation

Description The 2011 Saddleback College and Irvine Valley College Facilities Master Plans (FMPs) describe the needed buildings, infrastructure, vehicular and pedestrian circulation improvements, and proposed sequencing schedules required for construction and operation of instructional and support facilities through the year 2031. The 2011 FMPs also provide extensive guidance with regard to water and energy efficiency technologies and conservation practices; construction/demolition (C&D) and solid waste recycling; renewable energy standards; stormwater pollutant reduction; and overall sustainable design and building practices.

Lead Agency Contact

Name Dr. Debra Fitzsimmons
Agency South Orange County Community College District
Phone (949) 582-4663 **Fax** (949) 347-2472
email dfitzsimmons@socccd.edu
Address 2800 Marguerite Parkway
City Mission Viejo **State** CA **Zip** 92692

Project Location

County Orange
City Mission Viejo, Irvine, Tustin
Region
Cross Streets Saddleback:Marguerite Prkwy, Avery Prkwys;Irvine:Irvine Valley Dr.,Irvine Center Dr.,Jeffrey Rd.
Lat / Long 33° 33' 08" N / 117° 39' 39" W
Parcel No.
Township 7S **Range** 8W **Section** 24 **Base** SBB&M

Proximity to:

Highways
Airports
Railways
Waterways
Schools
Land Use Multiple campuses

Project Issues Aesthetic/Visual; Air Quality; Agricultural Land; Biological Resources; Geologic/Seismic; Other Issues; Toxic/Hazardous; Water Quality; Noise; Traffic/Circulation; Public Services

Reviewing Agencies Resources Agency; Office of Historic Preservation; Department of Parks and Recreation; Department of Fish and Game, Region 5; Native American Heritage Commission; California Highway Patrol; Caltrans, District 7; Department of Toxic Substances Control; Regional Water Quality Control Board, Region 8; Regional Water Quality Control Board, Region 9

Date Received 07/01/2011 **Start of Review** 07/01/2011 **End of Review** 08/01/2011

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

NOP Distribution List

County: Orange

SCH# [illegible]

esources Agency

- [ ] **Resources Agency**
  Nadell Gayou
- [ ] **Dept. of Boating & Waterways**
  Mike Sotelo
- [ ] **California Coastal Commission**
  Elizabeth A. Fuchs
- [ ] **Colorado River Board**
  Gerald R. Zimmerman
- [ ] **Dept. of Conservation**
  Jonathan Martis
- [ ] **California Energy Commission**
  Eric Knight
- [ ] **Cal Fire**
  Allen Robertson
- [ ] **Central Valley Flood Protection Board**
  James Herota
- [ ] **Office of Historic Preservation**
  Ron Parsons
- [ ] **Dept of Parks & Recreation**
  Environmental Stewardship Section
- [ ] **California Department of Resources, Recycling & Recovery**
  Sue O'Leary
- [ ] **S.F. Bay Conservation & Dev't. Comm.**
  Steve McAdam
- [ ] **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 1E**
  Laurie Harnsberger
- [ ] **Fish & Game Region 2**
  Jeff Drongesen
- [ ] **Fish & Game Region 3**
  Charles Armor
- [ ] **Fish & Game Region 4**
  Julie Vance
- [x] **Fish & Game Region 5**
  Leslie Newton-Reed
  Habitat Conservation Program
- [ ] **Fish & Game Region 6**
  Gabrina Gatchel
  Habitat Conservation Program
- [ ] **Fish & Game Region 6 I/M**
  Brad Henderson
  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**
  Anna Garbeff
  Environmental Services Section
- [ ] **Dept. of Public Health**
  Bridgette Binning
  Dept. of Health/Drinking Water

Independent Commissions,Boards

- [ ] **Delta Protection Commission**
  Linda Flack
- [ ] **Cal EMA (Emergency Management Agency)**
  Dennis Castrillo
- [ ] **Governor's Office of Planning & Research**
  State Clearinghouse
- [■] **Native American Heritage Comm.**
  Debbie Treadway
- [ ] **Public Utilities Commission**
  Leo Wong
- [ ] **Santa Monica Bay Restoration**
  Guangyu Wang
- [ ] **State Lands Commission**
  Cy R. Oggins
- [ ] **Tahoe Regional Planning Agency (TRPA)**
  Cherry Jacques

Business, Trans & Housing

- [ ] **Caltrans - Division of Aeronautics**
  Philip Crimmins
- [ ] **Caltrans - Planning**
  Terri Pencovic
- [ ] **California Highway Patrol**
  Scott Loetscher
  Office of Special Projects
- [ ] **Housing & Community Development**
  CEQA Coordinator
  Housing Policy Division

Dept. of Transportation

- [ ] **Caltrans, District 1**
  Rex Jackman
- [ ] **Caltrans, District 2**
  Marcelino Gonzalez
- [ ] **Caltrans, District 3**
  Bruce de Terra
- [ ] **Caltrans, District 4**
  Lisa Carboni
- [ ] **Caltrans, District 5**
  David Murray
- [ ] **Caltrans, District 6**
  Michael Navarro
- [■] **Caltrans, District 7**
  Elmer Alvarez
- [ ] **Caltrans, District 8**
  Dan Kopulsky
- [ ] **Caltrans, District 9**
  Gayle Rosander
- [ ] **Caltrans, District 10**
  Tom Dumas
- [ ] **Caltrans, District 11**
  Jacob Armstrong
- [ ] **Caltrans, District 12**
  Marlon Regisford

Cal EPA

Air Resources Board

- [ ] Airport Projects
  Jim Lerner
- [ ] Transportation Projects
  Douglas Ito
- [ ] Industrial Projects
  Mike Tollstrup

- [ ] **State Water Resources Control Board**
  Regional Programs Unit
  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**
  Phil Crader
  Division of Water Rights

- [■] **Dept. of Toxic Substances Control**
  CEQA Tracking Center

- [ ] **Department of Pesticide Regulation**
  CEQA Coordinator

Regional Water Quality Control Board (RWQCB)

- [ ] **RWQCB 1**
  Cathleen Hudson
  North Coast Region (1)
- [ ] **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 6/28/11

Edmund G. Brown Jr.
Governor

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

Ken Alex
Director

Memorandum

Date: July 7, 2011

To: All Reviewing Agencies

From: Scott Morgan, Director

Re: SCH # 2011071005

SOCCCD Saddleback College & Irvine Valley College 2011 Facilities Master Plans

---

On July 1, 2011, the State Clearinghouse submitted the above Notice of Preparation to your agency. Per Lead Agency attached is the corrected contact information.

The correct contact information is:

Dr. Debra Fitzsimons
E-Mail: dfitzsimons@socccd.edu

We apologize for this error and request that you note the above information for your files. All other project information remains the same.

cc: Dr. Debra Fitzsimons
South Orange County Community College District
28000 Marguerite Parkway
Mission Viejo, CA 92692

Sheila Brown

SCH# 2011071005

From: Mike DeVore [mdevore@rgpcorp.com]
Sent: Wednesday, July 06, 2011 3:41 PM
To: State Clearinghouse
Subject: NOP for SOCCCD 2011 Facilities Master Plans
Attachments: 2011-07-06 memo_NOP contact information correction.pdf; 2011 FMP NOP Notice of Completion - corrected.pdf

Good afternoon,

Our lead agency client, the South Orange County Community College District (SOCCCD), has corrected a Notice of Preparation of a draft Program EIR for the Saddleback College and Irvine Valley College 2011 Facilities Master Plans. The NOP arrived via FedEx at OPR on Friday July 1, 2011.

I am attaching a supplemental memo explaining the correction to the contact person's name and e-mail address, as well as a corrected Notice of Completion & Environmental Document Transmittal. We understand that the State Clearinghouse will distribute the corrected information to applicable State agencies. RGP and the lead agency will send the supplement to all local agencies that received the NOP, as well as update the NOP and Initial Study available on the SOCCCD website.

Thank you very much for your time and assistance. Please contact me if you have any questions.

Mike DeVore

RGP

RGP Planning & Development Services
8921 Research Drive • Irvine, CA 92618
www.rgpcorp.com
mdevore@rgpcorp.com
Office (949) 450-0171 x316
Cell (949) 677-6571
Fax (949) 450-0182

RECEIVED
JUL - 6 2011
STATE

Confidentiality Notice: This communication and all attached documents and/or files are privileged and confidential, and are intended for the sole use of the addressee(s). Please be advised that any disclosure, copying, or distribution is strictly prohibited without prior permission. If you have received this communication in error, please delete it and contact me at mdevore@rgpcorp.com or telephone (949) 450-0171.

Memorandum

To:	**CEQA Notice of Preparation (NOP) Mailing List**
Cc:	**Governor's Office of Planning and Research, State Clearinghouse**
From:	**RGP Planning & Development Services**
Date:	**July 6, 2011**
Subject:	**Correction to NOP of a draft Program EIR for the SOCCCD Saddleback College & Irvine Valley College 2011 Facilities Master Plans**

The South Orange County Community College District (SOCCCD) mailed a Notice of Preparation of a draft Program EIR to thirty-four (34) responsible and trustee agencies and other interested parties on July 1, 2011. The district is the CEQA lead agency responsible for preparing the draft Program EIR to address the potential environmental effects associated with the 2011 Facilities Master Plans.

This memo serves to correct an error in the contact information sections of the NOP and the CEQA Initial Study & Environmental Checklist. All comments on the NOP should be sent by mail, fax or e-mail to:

Dr. Debra Fitzsimons, Vice Chancellor
South Orange County Community College District
28000 Marguerite Parkway
Mission Viejo, CA 92692
E-mail: dfitzsimons@socccd.edu
Telephone: (949) 582-4663
Fax: (949) 347-2472

RECEIVED
JUL - 6 2011
STATE CLEARING HOUSE

This correction does not change the 30-day response period during which you must provide NOP comments to the district. It is anticipated that the deadline will be July 31, 2011. Responses to the NOP should be sent at the earliest date but must not be received by the district later than 30 days after receipt of the NOP.

Thank you for your understanding and participation in this draft EIR scoping process. Please contact us at the address or phone number below if you have any questions.

RGP PLANNING & DEVELOPMENT SERVICES
8921 Research Drive • Irvine, CA 92618
Phone: (949) 450-0171 • Fax: (949) 450-0182

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH #

Project Title: SOCCCD Saddleback College & Irvine Valley College 2011 Facilities Master Plans

Lead Agency: South Orange County Community College District (SOCCCD) Contact Person: Dr. Debra Fitzsimons

Mailing Address: 28000 Marguerite Parkway Phone: (949) 582-4663

City: Mission Viejo Zip: 92692 County: Orange

Project Location: County: Orange City/Nearest Community: Mission Viejo, Irvine, Tustin

Cross Streets: See attachment and/or NOP for location information Zip Code: --

Longitude/Latitude (degrees, minutes and seconds): -- ° -- ' -- " N / -- ° -- ' -- " W Total Acres: --

Assessor's Parcel No.: -- Section: -- Twp.: -- Range: -- Base: --

Within 2 Miles: State Hwy #: -- Waterways: --

Airports: -- Railways: -- Schools: --

Document Type:

CEQA: ☑ NOP ☐ Draft EIR NEPA: ☐ NOI Other: ☐ Joint Document
☐ Early Cons ☐ Supplement/Subsequent EIR ☐ EA ☐ Final Document
☐ Neg Dec (Prior SCH No.) ☐ Draft EIS ☐ Other:
☐ Mit Neg Dec Other: ☐ FONSI

Local Action Type:

☐ General Plan Update ☐ Specific Plan ☐ Rezone ☐ Annexation
☐ General Plan Amendment ☑ Master Plan ☐ Prezone ☐ Redevelopment
☐ General Plan Element ☐ Planned Unit Development ☐ Use Permit ☐ Coastal Permit
☐ Community Plan ☐ Site Plan ☐ Land Division (Subdivision, etc.) ☐ Other:

Development Type:

☐ Residential: Units Acres
☐ Office: Sq.ft. Acres Employees ☐ Transportation: Type
☐ Commercial: Sq.ft. Acres Employees ☐ Mining: Mineral
☐ Industrial: Sq.ft. Acres Employees ☐ Power: Type MW
☑ Educational: Saddleback: 224,000 s.f. IVC: 157,441 s.f. ☐ Waste Treatment: Type MGD
☐ Recreational: ☐ Hazardous Waste: Type
☐ Water Facilities: Type MGD ☐ Other:

Project Issues Discussed in Document:

☑ Aesthetic/Visual ☐ Fiscal ☑ Recreation/Parks ☑ Vegetation
☑ Agricultural Land ☑ Flood Plain/Flooding ☑ Schools/Universities ☑ Water Quality
☑ Air Quality ☐ Forest Land/Fire Hazard ☐ Septic Systems ☑ Water Supply/Groundwater
☑ Archeological/Historical ☑ Geologic/Seismic ☑ Sewer Capacity ☑ Wetland/Riparian
☑ Biological Resources ☑ Minerals ☑ Soil Erosion/Compaction/Grading ☑ Growth Inducement
☐ Coastal Zone ☑ Noise ☑ Solid Waste ☑ Land Use
☑ Drainage/Absorption ☑ Population/Housing Balance ☑ Toxic/Hazardous ☐ Cumulative Effects
☐ Economic/Jobs ☑ Public Services/Facilities ☑ Traffic/Circulation ☐ Other:

Present Land Use/Zoning/General Plan Designation:

Multiple campuses -- Please see Notice of Preparation for land use information

Project Description: *(please use a separate page if necessary)*

The 2011 Saddleback College and Irvine Valley College Facilities Master Plans (FMPs) describe the needed buildings, infrastructure, vehicular and pedestrian circulation improvements, and proposed sequencing schedules required for construction and operation of instructional and support facilities through the year 2031. The 2011 FMPs also provide extensive guidance with regard to water and energy efficiency technologies and conservation practices; construction/demolition (C&D) and solid waste recycling; renewable energy standards; stormwater pollutant reduction; and overall sustainable design and building practices.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

Notice of Completion & Environmental Document Transmittal (continued)

Project Location:

-----Saddleback College-----
COUNTY: Orange CITY: Mission Viejo CROSS STREETS: Marguerite Parkway & Avery Parkway ZIP CODE: 92692
LATITUDE/LONGITUDE: 33 deg 33' 08" N / 117 deg 39' 39" W TOTAL ACRES: 200
APN: -- SECTION: 24 TOWNSHIP: 7S Range: 8W Base: SBBM
WITHIN 2 MILES: STATE HIGHWAY: I-5, SR-73 Waterways: Trabuco Crk
Airports: -- Railways: BNSF/Amtrak/Metrolink
SCHOOLS: Elementary: Bathgate, Bergeson, Chaparral, Crown Valley, Hankey, Heideman, Hidden Hills, Ladera Ranch, Oso Grande, San Juan, Viejo; Middle: Ladera Ranch, Niguel Hills; High: Capistrano Valley

-----Irvine Valley College-----
COUNTY: Orange CITY: Mission Viejo CROSS STREETS: Irvine Center Drive & Jeffrey Road ZIP CODE: 92618
LATITUDE/LONGITUDE: 33 deg 40' 34" N / 117 deg 46' 26" W TOTAL ACRES: 100
APN: -- SECTION: 1 TOWNSHIP: 6S Range: 9W Base: SBBM
WITHIN 2 MILES: STATE HIGHWAY: I-5, I-405, SR-133 Waterways: San Diego Creek
Airports: -- Railways: BNSF/Amtrak/Metrolink
SCHOOLS: Elementary: Alderwood Basics Plus, Eastshore, Greentree, Lakeside, Oak Creek, Plaza Vista, Springbrook, Southlake, Stone Creek, Vista Verde; Middle: Rancho San Joaquin; High: Irvine, Woodbridge

-----Advanced Technology & Education Park-----
COUNTY: Orange CITY: Tustin CROSS STREETS: Red Hill Avenue & Valencia Avenue ZIP CODE: 92782
LATITUDE/LONGITUDE: 33 deg 42' 55" N / 117 deg 49' 43" W TOTAL ACRES: 68
APN: -- SECTION: none TOWNSHIP: 5S Range: 9W Base: SBBM
WITHIN 2 MILES: STATE HIGHWAY: I-5, SR-55, SR-261 Waterways: --
Airports: -- Railways: BNSF/Amtrak/Metrolink
SCHOOLS: Elementary: Beswick, Madison, Nelson, Thorman, Utt, Veeh; Middle: Currie; High: Century, Pacific Coast, Tustin

Document Details Report
State Clearinghouse Data Base

SCH# 2011071005
Project Title SOCCCD Saddleback College & Irvine Valley College 2011 Facilities Master Plans
Lead Agency South Orange County Community College District

Type NOP Notice of Preparation

Description The 2011 Saddleback College and Irvine Valley College Facilities Master Plans (FMPs) describe the needed buildings, infrastructure, vehicular and pedestrian circulation improvements, and proposed sequencing schedules required for construction and operation of instructional and support facilities through the year 2031. The 2011 FMPs also provide extensive guidance with regard to water and energy efficiency technologies and conservation practices; construction/demolition (C&D) and solid waste recycling; renewable energy standards; stormwater pollutant reduction; and overall sustainable design and building practices.

Lead Agency Contact

Name Dr. Debra Fitzsimons
Agency South Orange County Community College District
Phone (949) 582-4663 **Fax** (949) 347-2472
email dfitzsimons@socccd.edu
Address 2800 Marguerite Parkway
City Mission Viejo **State** CA **Zip** 92692

Project Location

County Orange
City Mission Viejo, Irvine, Tustin
Region
Cross Streets Saddleback:Marguerite Prkwy, Avery Prkwys;Irvine:Irvine Valley Dr.,Irvine Center Dr.,Jeffrey Rd.
Lat / Long 33° 33' 08" N / 117° 39' 39" W
Parcel No.
Township 7S **Range** 8W **Section** 24 **Base** SBB&M

Proximity to:

Highways
Airports
Railways
Waterways
Schools
Land Use Multiple campuses

Project Issues Aesthetic/Visual; Air Quality; Agricultural Land; Biological Resources; Geologic/Seismic; Other Issues; Toxic/Hazardous; Water Quality; Noise; Traffic/Circulation; Public Services

Reviewing Agencies Resources Agency; Office of Historic Preservation; Department of Parks and Recreation; Department of Fish and Game, Region 5; Native American Heritage Commission; California Highway Patrol; Caltrans, District 7; Department of Toxic Substances Control; Regional Water Quality Control Board, Region 8; Regional Water Quality Control Board, Region 9

Date Received 07/01/2011 **Start of Review** 07/01/2011 **End of Review** 08/01/2011

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

NOP Distribution List

County: Orange

SCH# [illegible]

Resources Agency

- [x] **Resources Agency**
  Nadell Gayou
- [ ] **Dept. of Boating & Waterways**
  Mike Sotelo
- [ ] **California Coastal Commission**
  Elizabeth A. Fuchs
- [ ] **Colorado River Board**
  Gerald R. Zimmerman
- [ ] **Dept. of Conservation**
  Jonathan Martis
- [ ] **California Energy Commission**
  Eric Knight
- [ ] **Cal Fire**
  Allen Robertson
- [ ] **Central Valley Flood Protection Board**
  James Herota
- [ ] **Office of Historic Preservation**
  Ron Parsons
- [x] **Dept of Parks & Recreation**
  Environmental Stewardship Section
- [ ] **California Department of Resources, Recycling & Recovery**
  Sue O'Leary
- [ ] **S.F. Bay Conservation & Dev't. Comm.**
  Steve McAdam
- [ ] **Dept. of Water Resources**
  Resources Agency
  Nadell Gayou
- [ ] _____
  Conservancy

Fish and Game

- [ ] **Depart. of Fish & Game**
  Scott Flint
  Environmental Services Division
- [ ] **Fish & Game Region 1**
  Donald Koch
- [ ] **Fish & Game Region 1E**
  Laurie Harnsberger
- [ ] **Fish & Game Region 2**
  Jeff Drongesen
- [ ] **Fish & Game Region 3**
  Charles Armor
- [ ] **Fish & Game Region 4**
  Julie Vance
- [x] **Fish & Game Region 5**
  Leslie Newton-Reed
  Habitat Conservation Program
- [ ] **Fish & Game Region 6**
  Gabrina Gatchel
  Habitat Conservation Program
- [ ] **Fish & Game Region 6 I/M**
  Brad Henderson
  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**
  Anna Garbeff
  Environmental Services Section
- [ ] **Dept. of Public Health**
  Bridgette Binning
  Dept. of Health/Drinking Water

Independent Commissions,Boards

- [ ] **Delta Protection Commission**
  Linda Flack
- [ ] **Cal EMA (Emergency Management Agency)**
  Dennis Castrillo
- [ ] **Governor's Office of Planning & Research**
  State Clearinghouse
- [x] **Native American Heritage Comm.**
  Debbie Treadway
- [ ] **Public Utilities Commission**
  Leo Wong
- [ ] **Santa Monica Bay Restoration**
  Guangyu Wang
- [ ] **State Lands Commission**
  Cy R. Oggins
- [ ] **Tahoe Regional Planning Agency (TRPA)**
  Cherry Jacques

Business, Trans & Housing

- [ ] **Caltrans - Division of Aeronautics**
  Philip Crimmins
- [ ] **Caltrans - Planning**
  Terri Pencovic
- [x] **California Highway Patrol**
  Scott Loetscher
  Office of Special Projects
- [ ] **Housing & Community Development**
  CEQA Coordinator
  Housing Policy Division

Dept. of Transportation

- [ ] **Caltrans, District 1**
  Rex Jackman
- [ ] **Caltrans, District 2**
  Marcelino Gonzalez
- [ ] **Caltrans, District 3**
  Bruce de Terra
- [ ] **Caltrans, District 4**
  Lisa Carboni
- [ ] **Caltrans, District 5**
  David Murray
- [ ] **Caltrans, District 6**
  Michael Navarro
- [x] **Caltrans, District 7**
  Elmer Alvarez
- [ ] **Caltrans, District 8**
  Dan Kopulsky
- [ ] **Caltrans, District 9**
  Gayle Rosander
- [ ] **Caltrans, District 10**
  Tom Dumas
- [ ] **Caltrans, District 11**
  Jacob Armstrong
- [ ] **Caltrans, District 12**
  Marlon Regisford

Cal EPA

Air Resources Board

- [ ] Airport Projects
  Jim Lerner
- [ ] Transportation Projects
  Douglas Ito
- [ ] Industrial Projects
  Mike Tollstrup
- [ ] **State Water Resources Control Board**
  Regional Programs Unit
  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**
  Phil Crader
  Division of Water Rights
- [x] **Dept. of Toxic Substances Control**
  CEQA Tracking Center
- [ ] **Department of Pesticide Regulation**
  CEQA Coordinator

Regional Water Quality Control Board (RWQCB)

- [ ] **RWQCB 1**
  Cathleen Hudson
  North Coast Region (1)
- [ ] **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)
- [x] **RWQCB 8**
  Santa Ana Region (8)
- [x] **RWQCB 9**
  San Diego Region (9)

- [ ] **Other** _____

Last Updated 6/28/11

From: Bill Ramsey [mailto:BRamsey@sanjuancapistrano.org]
Sent: Tuesday, July 05, 2011 4:37 PM
To: 'Debra Fitzsimmons (dfitzsimmons@socccd.edu)'
Cc: Grant Taylor; Alan Oswald; 'info@rgpcorp.com'
Subject: NOP for a PEIR for SOCCCD 2011 FMPs

Good afternoon Dr. Fitzsimmons:

Earlier today, we received a copy of the Notice of Preparation (NOP) for a Program Environmental Impact Report (PEIR) for SOCCCD's 2011 Facilities Master Plans for the ATEP, IVC and SCC campuses from RGP in Irvine. Naturally, our primary interest would be Saddleback College and potential traffic/transportation impacts specifically. As part of this scoping process for the PEIR, we request that the scope of work include a traffic impact analysis (TIA) with the corresponding project study which includes potentially affected arterial street intersections.

As part of the TIA, we ask that your consulting traffic engineer perform the trip generation and distribution for the proposed project and provide the proposed project study area to the City's traffic engineer, Alan Oswald, Senior Engineer-Traffic for review and comment or concurrence, prior to embarking on the actual Intersection Capacity Utilization (ICU) and Highway Capacity Manual (HCM) analysis.

By doing so, SOCCCD can assure that the scope of the EIR traffic study for Saddleback is sufficient and adequately identifies and addresses all potentially significant traffic impacts Thanks you.

William A. Ramsey, AICP, Principal Planner
Environmental Administrator / Zoning Administrator
Development Services Department
32400 Paseo Adelanto
San Juan Capistrano, California 92675
(949) 443-6334
www.sanjuancapistrano.org

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
ds_nahc@pacbell.net

July 6, 2011

Dr. Debra Fitzsimmons

South Orange County Community College District

2800 Marguerite Parkway
Mission Viejo, CA 92692

Re: SCH#2011071005 CEQA Notice of Preparation (NOP); draft Environmental Impact Report (DEIR) for the **"SOCCD Saddleback College & Irvine Valley College 2011 Facilities Master Plans Project;"** located Orange County, California

Dear Dr. Debra Fitzsimmons:

The Native American Heritage Commission (NAHC), the State of California 'Trustee Agency' for the protection and preservation of Native American cultural resources pursuant to California Public Resources Code §21070 and affirmed by the Third Appellate Court in the case of EPIC v. Johnson (1985: 170 Cal App. 3rd 604.. The NAHC wishes to comment on the above-referenced proposed Project.

This letter includes state and federal statutes relating to Native American historic properties of religious and cultural significance to American Indian tribes and interested Native American individuals as 'consulting parties' under both state and federal law. State law also addresses the freedom of Native American Religious Expression in Public Resources Code §5097.9.

The California Environmental Quality Act (CEQA – CA Public Resources Code 21000-21177, amendments effective 3/18/2010) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR) per the CEQA Guidelines defines a significant impact on the environment as 'a substantial, or potentially substantial, adverse change in any of physical conditions within an area affected by the proposed project, including ...objects of historic or aesthetic significance." In order to comply with this provision, the lead agency is required to assess whether the project will have an adverse impact on these resources within the 'area of potential effect (APE), and if so, to mitigate that effect. The NAHC Sacred Lands File (SLF) search resulted as follows: **Native American cultural resources were not identified** within one-half mile of the project site, the 'area of potential effect (APE), based on the USGS coordinates provided. The absence of archaeological items at the surface level does not preclude their existence at the subsurface level once ground-breaking activity is underway.

The NAHC "Sacred Sites,' as defined by the Native American Heritage Commission and the California Legislature in California Public Resources Code §§5097.94(a) and 5097.96. Items in the NAHC Sacred Lands Inventory are confidential and exempt from the Public Records Act pursuant to California Government Code §6254 (r).

Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries of cultural resources or burial sites once a project is underway. Culturally affiliated tribes and individuals may have knowledge of the religious and cultural significance of the historic properties in the project area (e.g. APE). We strongly urge that you make contact with the list of Native American Contacts on the attached list of Native American contacts, to see if your proposed project might impact Native American cultural resources and to obtain their recommendations concerning the proposed project. Pursuant to C"A Public Resources Code § 5097.95, the NAHC requests that the Native American consulting parties be provided pertinent project information. Consultation with Native American communities is also a matter of environmental justice as defined by California Government Code §65040.12(e). Pursuant to CA Public Resources Code §5097.95, the NAHC requests that pertinent project information be provided consulting tribal parties. The NAHC recommends *avoidance* as defined by CEQA Guidelines §15370(a) to pursuing a project that would damage or destroy Native American cultural resources and Section 2183.2 that requires documentation, data recovery of cultural resources.

Furthermore we recommend, also, that you contact the California Historic Resources Information System (CHRIS) California Office of Historic Preservation for pertinent archaeological data within or near the APE, at (916) 445-7000 for the nearest Information Center in order to learn what archaeological fixtures may have been recorded in the APE.

Consultation with tribes and interested Native American consulting parties, on the NAHC list, should be conducted in compliance with the requirements of federal NEPA (42 U.S.C 4321-43351) and Section 106 and 4(f) of federal NHPA (16 U.S.C. 470 *et seq*), 36 CFR Part 800.3 (f) (2) & .5, the President's Council on Environmental Quality (CSQ, 42 U.S.C 4371 *et seq.* and NAGPRA (25 U.S.C. 3001-3013) as appropriate. The 1992 *Secretary of the Interiors Standards for the Treatment of Historic Properties* were revised so that they could be applied to all historic resource types included in the National Register of Historic Places and including cultural landscapes. Also, federal Executive Orders Nos. 11593 (preservation of cultural environment), 13175 (coordination & consultation) and 13007 (Sacred Sites) are helpful, supportive guides for Section 106 consultation.

Furthermore, Public Resources Code Section 5097.98, California Government Code §27491 and Health & Safety Code Section 7050.5 provide for provisions for accidentally discovered archeological resources during construction and mandate the processes to be followed in the event of an accidental discovery of any human remains in a project location other than a 'dedicated cemetery'.

To be effective, consultation on specific projects must be the result of an ongoing relationship between Native American tribes and lead agencies, project proponents and their contractors, in the opinion of the NAHC. Regarding tribal consultation, a relationship built around regular meetings and informal involvement with local tribes will lead to more qualitative consultation tribal input on specific projects.

The response to this search for Native American cultural resources is conducted in the NAHC Sacred Lands Inventory, established by the California Legislature (CA Public Resources Code 5097.94(a) and is exempt from the CA Public Records Act (c.f. California Government Code 6254.10) although Native Americans on the attached contact list may wish to reveal the nature of identified cultural resources/historic properties. Confidentiality of "historic properties of religious and cultural significance" may also be protected under Section 304 of he NHPA or at the Secretary of the Interior discretion if not eligible for listing on the National Register of Historic Places and there may be sites within the APE eligible for listing on the California Register of

Historic Places. The Secretary may also be advised by the federal Indian Religious Freedom Act (cf. 42 U.S.C., 1996) in issuing a decision on whether or not to disclose items of religious and/or cultural significance identified in or near the APEs and possibility threatened by proposed project activity.

If you have any questions about this response to your request, please do not hesitate to contact me at (916) 653-6251.

Sincerely,

Dave Singleton
Program Analyst

Cc: State Clearinghouse

Attachment: Native American Contact List

California Native American Contact List
Orange County
July 6, 2011

Ti'At Society/Inter-Tribal Council of Pimu
Cindi M. Alvitre, Chairwoman-Manisar
3098 Mace Avenue, Aapt. D Gabrielino
Costa Mesa, , CA 92626
calvitre@yahoo.com
(714) 504-2468 Cell

Gabrielino Tongva Nation
Sam Dunlap, Chairperson
P.O. Box 86908 Gabrielino Tongva
Los Angeles , CA 90086
samdunlap@earthlink.net

(909) 262-9351 - cell

Juaneno Band of Mission Indians Acjachemen Nation
David Belardes, Chairperson
32161 Avenida Los Amigos Juaneno
San Juan Capistrano CA 92675
(949) 493-4933 - home
chiefdavidbelardes@yahoo.com
(949) 293-8522

Juaneno Band of Mission Indians Acjachemen Nation
Anthony Rivera, Chairman
31411-A La Matanza Street Juaneno
San Juan Capistrano CA 92675-2674
arivera@juaneno.com
(949) 488-3484
(949) 488-3294 - FAX
(530) 354-5876 - cell

Tongva Ancestral Territorial Tribal Nation
John Tommy Rosas, Tribal Admin.
Private Address Gabrielino Tongva
,
tattnlaw@gmail.com
310-570-6567

Gabrielino Tongva Indians of California Tribal Council
Robert F. Dorame, Tribal Chair/Cultural Resources
P.O. Box 490 Gabrielino Tongva
Bellflower , CA 90707
gtongva@verizon.net
562-761-6417 - voice
562-761-6417- fax

Gabrieleno/Tongva San Gabriel Band of Mission
Anthony Morales, Chairperson
PO Box 693 Gabrielino Tongva
San Gabriel , CA 91778
GTTribalcouncil@aol.com
(626) 286-1632
(626) 286-1758 - Home
(626) 286-1262 -FAX

Juaneno Band of Mission Indians
Alfred Cruz, Culural Resources Coordinator
P.O. Box 25628 Juaneno
Santa Ana , CA 92799
alfredgcruz@sbcglobal.net
714-998-0721
714-998-0721 - FAX
714-321-1944 - cell

This list is current only as of the date of this document.
Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH#2011071005; CEQA Notice of Preparation (NOP); draft Environmental Impact Report (DEIR) for the SOCCCD Saddleback College & Irvine Valley College 2011 Facilities Master Plans Project; located in Orange County, California.

California Native American Contact List
Orange County
July 6, 2011

Juaneno Band of Mission Indians
Adolph 'Bud' Sepulveda, Vice Chairperson
P.O. Box 25828 Juaneno
Santa Ana , CA 92799
bssepul@yahoo.net
714-838-3270
714-914-1812 - CELL
bsepul@yahoo.net

Juaneño Band of Mission Indians
Sonia Johnston, Tribal Chairperson
P.O. Box 25628 Juaneno
Santa Ana , CA 92799
sonia.johnston@sbcglobal.net
(714) 323-8312

Juaneno Band of Mission Indians
Anita Espinoza
1740 Concerto Drive Juaneno
Anaheim , CA 92807
(714) 779-8832

United Coalition to Protect Panhe (UCPP)
Rebecca Robles
119 Avenida San Fernando Juaneno
San Clemente CA 92672
rebrobles1@gmail.com
(949) 573-3138

Gabrielino-Tongva Tribe
Bernie Acuna
1875 Century Pk East #1500 Gabrielino
Los Angeles , CA 90067
(760) 721-0371-work
(310) 428-7720 - cell
(310) 587-0170 - FAX
bacuna1@gabrieinotribe.org

Juaneno Band of Mission Indians Acjachemen Nation
Joyce Perry; Representing Tribal Chairperson
4955 Paseo Segovia Juaneno
Irvine , CA 92612
949-293-8522

Gabrielino-Tongva Tribe
Linda Candelaria, Chairwoman
1875 Century Park East, Suite 1500
Los Angeles , CA 90067 Gabrielino
lcandelaria1@gabrielinoTribe.org
626-676-1184- cell
(310) 587-0170 - FAX
760-904-6533-home

This list is current only as of the date of this document.
Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH#2011071005; CEQA Notice of Preparation (NOP); draft Environmental Impact Report (DEIR) for the SOCCCD Saddleback College & Irvine Valley College 2011 Facilities Master Plans Project; located in Orange County, California.

OCTA

AFFILIATED AGENCIES

Orange County Transit District

Local Transportation Authority

Service Authority for Freeway Emergencies

Consolidated Transportation Service Agency

Congestion Management Agency

Service Authority for Abandoned Vehicles

July 20, 2011

Dr. Debra Fitzsimmons
Vice Chancellor
South Orange County Community College District
28000 Marguerite Parkway
Mission Viejo, CA 92692

Subject: Notice of Preparation of a Program Environmental Impact Report for the South Orange Community College District Saddleback College and Irvine Valley College 2011 Facilities Master Plan.

Dear Dr. Fitzsimmons:

The Orange County Transportation Authority (OCTA) has reviewed the above referenced document. The following comments are provided for your consideration:

- The 2011 Irvine Valley College Facilities Master Plan indicates that the auto court just south of the entrance from Irvine Center Drive will be refurbished. OCTA currently operates four routes through the Irvine Valley College (IVC) auto court. Routes 66 and 167 layover at the auto court bus stop. Both Routes 90 and 175 make pass-through stops at the IVC auto court in each direction. OCTA must maintain a presence at the IVC bus stop due to high ridership demand from the students and staff at the facility. OCTA would require a bus stop zone adequate to layover two routes and have enough additional space to accommodate the pass-through routes as well. Please forward detailed street improvement plans for additional review and comments when available for Irvine Valley College and Saddleback College.

- Please be sure to address the needs of on- and off-road bicycle and pedestrian facilities in addition to all other transportation modes. This should include, but is not limited to bikeways, sidewalks, crosswalks, as well as facilities such as bicycle parking.

If you have any questions or comments, please contact Carolyn Mamaradlo by phone at (714) 560-5748 or by email at cmamaradlo@octa.net.

Sincerely,

Charles Larwood

Charles Larwood
Manager, Transportation Planning

c: Gregory Nord, OCTA
Bill Batory, OCTA

Department of Toxic Substances Control

Deborah O. Raphael, Director
5796 Corporate Avenue
Cypress, California 90630

Linda S. Adams
Acting Secretary for
Environmental Protection

Edmund G. Brown Jr.
Governor

SOUTH ORANGE COUNTY
COMMUNITY COLLEGE DISTRICT

JUL 29,2011

OFFICE OF THE VICE CHANCELLOR
BUSINESS SERVICES

July 26, 2011

Ms. Debra Fitzsimmons
South Orange County Community College District
2800 Marguerite Parkway
Mission Viejo, California 92692

Cleye-
-orig to
Bobbye
-copy for
our
file
dlf

NOTICE OF PREPARATION (NOP) FOR SOCCCD SADDLEBACK COLLEGE & IRVINE VALLEY COLLEGE 2011 FACILITIES MASTER PLANS (SCH# 2011071005)

Dear Ms. Fitzsimmons:

The Department of Toxic Substances Control (DTSC) has received your submitted Notice of Preparation Report for the above-mentioned project. The following project description is stated in your document: "The 2011 Saddleback College and Irvine College Facilities Master Plans (FMPs) describe the needed buildings, infrastructure, vehicular and pedestrian circulation improvements, and proposed sequencing schedules required for construction and operation of instructional and support facilities through the year 2031. The 2011 FMPs also provide extensive guidance with regard to water and energy efficiency technologies and conservation practices; construction/demolition (C&D) and solid waste recycling; renewable energy standards; storm water pollutant reduction; and overall sustainable design and building practices".

Based on the review of the submitted document DTSC has the following comments:

1) The EIR should evaluate whether conditions within the project area may pose a threat to human health or the environment. Following are the databases of some of the regulatory agencies:

   - National Priorities List (NPL): A list maintained by the United States Environmental Protection Agency (U.S.EPA).
   - Envirostor (formerly CalSites): A Database primarily used by the California Department of Toxic Substances Control, accessible through DTSC's website (see below).
   - Resource Conservation and Recovery Information System (RCRIS): A database of RCRA facilities that is maintained by U.S. EPA.

Printed on Recycled Paper

- Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS): A database of CERCLA sites that is maintained by U.S.EPA.

- Solid Waste Information System (SWIS): A database provided by the California Integrated Waste Management Board which consists of both open as well as closed and inactive solid waste disposal facilities and transfer stations.

- GeoTracker: A List that is maintained by Regional Water Quality Control Boards.

- Local Counties and Cities maintain lists for hazardous substances cleanup sites and leaking underground storage tanks.

- The United States Army Corps of Engineers, 911 Wilshire Boulevard, Los Angeles, California, 90017, (213) 452-3908, maintains a list of Formerly Used Defense Sites (FUDS).

2) The EIR should identify the mechanism to initiate any required investigation and/or remediation for any site that may be contaminated, and the government agency to provide appropriate regulatory oversight. If necessary, DTSC would require an oversight agreement in order to review such documents.

3) Any environmental investigations, sampling and/or remediation for a site should be conducted under a Workplan approved and overseen by a regulatory agency that has jurisdiction to oversee hazardous substance cleanup. The findings of any investigations, including any Phase I or II Environmental Site Assessment Investigations should be summarized in the document. All sampling results in which hazardous substances were found above regulatory standards should be clearly summarized in a table. All closure, certification or remediation approval reports by regulatory agencies should be included in the EIR.

4) If buildings, other structures, asphalt or concrete-paved surface areas are being planned to be demolished, an investigation should also be conducted for the presence of other hazardous chemicals, mercury, and asbestos containing materials (ACMs). If other hazardous chemicals, lead-based paints (LPB) or products, mercury or ACMs are identified, proper precautions should be taken during demolition activities. Additionally, the contaminants should be remediated in compliance with California environmental regulations and policies.

5) Future project construction may require soil excavation or filling in certain areas. Sampling may be required. If soil is contaminated, it must be properly disposed

and not simply placed in another location onsite. Land Disposal Restrictions (LDRs) may be applicable to such soils. Also, if the project proposes to import soil to backfill the areas excavated, sampling should be conducted to ensure that the imported soil is free of contamination.

6) Human health and the environment of sensitive receptors should be protected during any construction or demolition activities. If necessary, a health risk assessment overseen and approved by the appropriate government agency should be conducted by a qualified health risk assessor to determine if there are, have been, or will be, any releases of hazardous materials that may pose a risk to human health or the environment.

7) If it is determined that hazardous wastes are, or will be, generated by the proposed operations, the wastes must be managed in accordance with the California Hazardous Waste Control Law (California Health and Safety Code, Division 20, Chapter 6.5) and the Hazardous Waste Control Regulations (California Code of Regulations, Title 22, Division 4.5). If it is determined that hazardous wastes will be generated, the facility should also obtain a United States Environmental Protection Agency Identification Number by contacting (800) 618-6942. Certain hazardous waste treatment processes or hazardous materials, handling, storage or uses may require authorization from the local Certified Unified Program Agency (CUPA). Information about the requirement for authorization can be obtained by contacting your local CUPA.

8) DTSC can provide cleanup oversight through an Environmental Oversight Agreement (EOA) for government agencies that are not responsible parties, or a Voluntary Cleanup Agreement (VCA) for private parties. For additional information on the EOA or VCA, please see www.dtsc.ca.gov/SiteCleanup/Brownfields, or contact Ms. Maryam Tasnif-Abbasi, DTSC's Voluntary Cleanup Coordinator, at (714) 484-5489.

If you have any questions regarding this letter, please contact me at ashami@dtsc.ca.gov, or by phone at (714) 484-5472.

Sincerely,

Al Shami
Project Manager
Brownfields and Environmental Restoration Program

cc: Governor's Office of Planning and Research
State Clearinghouse
P.O. Box 3044
Sacramento, California 95812-3044
state.clearinghouse@opr.ca.gov

CEQA Tracking Center
Department of Toxic Substances Control
Office of Environmental Planning and Analysis
P.O. Box 806
Sacramento, California 95812
nritter@dtsc.ca.gov.

CEQA # 3261

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

July 26, 2011

- orig to Bady E
- copies for our files

Dr. Debra Fitzsimmons, Vice Chancellor
South Orange County Community College District
28000 Marguerite Parkway
Mission Viejo, CA 92692

Notice of Preparation of a CEQA Document for the South Orange County Community College District, Saddleback College & Irvine Valley College 2011 Facilities Master Plans

The South Coast Air Quality Management District (SCAQMD) appreciates the opportunity to comment on the above-mentioned document. The SCAQMD's comments are recommendations regarding the analysis of potential air quality impacts from the proposed project that should be included in the draft environmental impact report (EIR). Please send the SCAQMD a copy of the Draft EIR upon its completion. Note that copies of the Draft EIR that are submitted to the State Clearinghouse are not forwarded to the SCAQMD. Please forward a copy of the Draft EIR directly to SCAQMD at the address in our letterhead. **In addition, please send with the draft EIR all appendices or technical documents related to the air quality and greenhouse gas analyses and electronic versions of all air quality modeling and health risk assessment files. These include original emission calculation spreadsheets and modeling files (not Adobe PDF files). Without all files and supporting air quality documentation, the SCAQMD will be unable to complete its review of the air quality analysis in a timely manner. Any delays in providing all supporting air quality documentation will require additional time for review beyond the end of the comment period.**

Air Quality Analysis

The SCAQMD adopted its California Environmental Quality Act (CEQA) Air Quality Handbook in 1993 to assist other public agencies with the preparation of air quality analyses. The SCAQMD recommends that the Lead Agency use this Handbook as guidance when preparing its air quality analysis. Copies of the Handbook are available from the SCAQMD's Subscription Services Department by calling (909) 396-3720. The lead agency may wish to consider using land use emissions estimating software such as URBEMIS 2007 or the recently released CalEEMod. These models are available on the SCAQMD Website at: http://www.aqmd.gov/ceqa/models.html.

The Lead Agency should identify any potential adverse air quality impacts that could occur from all phases of the project and all air pollutant sources related to the project. Air quality impacts from both construction (including demolition, if any) and operations should be calculated. Construction-related air quality impacts typically include, but are not limited to, emissions from the use of heavy-duty equipment from grading, earth-loading/unloading, paving, architectural coatings, off-road mobile sources (e.g., heavy-duty construction equipment) and on-road mobile sources (e.g., construction worker vehicle trips, material transport trips). Operation-related air quality impacts may include, but are not limited to, emissions from stationary sources (e.g., boilers), area sources (e.g., solvents and coatings), and vehicular trips (e.g., on- and off-road tailpipe emissions and entrained dust). Air quality impacts from indirect sources, that is, sources that generate or attract vehicular trips should be included in the analysis.

The SCAQMD has developed a methodology for calculating PM2.5 emissions from construction and operational activities and processes. In connection with developing PM2.5 calculation methodologies, the SCAQMD has also developed both regional and localized significance thresholds. The SCAQMD requests that the lead agency quantify PM2.5 emissions and compare the results to the recommended PM2.5 significance thresholds. Guidance for calculating PM2.5 emissions and PM2.5 significance thresholds can be found at the following internet address: http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html.

In addition to analyzing regional air quality impacts the SCAQMD recommends calculating localized air quality impacts and comparing the results to localized significance thresholds (LSTs). LST's can be used in addition to the

recommended regional significance thresholds as a second indication of air quality impacts when preparing a CEQA document. Therefore, when preparing the air quality analysis for the proposed project, it is recommended that the lead agency perform a localized significance analysis by either using the LSTs developed by the SCAQMD or performing dispersion modeling as necessary. Guidance for performing a localized air quality analysis can be found at http://www.aqmd.gov/ceqa/handbook/LST/LST.html.

In the event that the proposed project generates or attracts vehicular trips, especially heavy-duty diesel-fueled vehicles, it is recommended that the lead agency perform a mobile source health risk assessment. Guidance for performing a mobile source health risk assessment ("Health Risk Assessment Guidance for Analyzing Cancer Risk from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis") can be found on the SCAQMD's CEQA web pages at the following internet address: http://www.aqmd.gov/ceqa/handbook/mobile_toxic/mobile_toxic.html. An analysis of all toxic air contaminant impacts due to the decommissioning or use of equipment potentially generating such air pollutants should also be included.

Mitigation Measures

In the event that the project generates significant adverse air quality impacts, CEQA requires that all feasible mitigation measures that go beyond what is required by law be utilized during project construction and operation to minimize or eliminate significant adverse air quality impacts. To assist the Lead Agency with identifying possible mitigation measures for the project, please refer to Chapter 11 of the SCAQMD CEQA Air Quality Handbook for sample air quality mitigation measures. Additional mitigation measures can be found on the SCAQMD's CEQA web pages at the following internet address: www.aqmd.gov/ceqa/handbook/mitigation/MM_intro.html Additionally, SCAQMD's Rule 403 – Fugitive Dust, and the Implementation Handbook contain numerous measures for controlling construction-related emissions that should be considered for use as CEQA mitigation if not otherwise required. Other measures to reduce air quality impacts from land use projects can be found in the SCAQMD's Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. This document can be found at the following internet address: http://www.aqmd.gov/prdas/aqguide/aqguide.html. In addition, guidance on siting incompatible land uses can be found in the California Air Resources Board's Air Quality and Land Use Handbook: A Community Perspective, which can be found at the following internet address: http://www.arb.ca.gov/ch/handbook.pdf. CARB's Land Use Handbook is a general reference guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process. Pursuant to state CEQA Guidelines §15126.4 (a)(1)(D), any impacts resulting from mitigation measures must also be discussed.

Data Sources

SCAQMD rules and relevant air quality reports and data are available by calling the SCAQMD's Public Information Center at (909) 396-2039. Much of the information available through the Public Information Center is also available via the SCAQMD's World Wide Web Homepage (http://www.aqmd.gov).

The SCAQMD is willing to work with the Lead Agency to ensure that project-related emissions are accurately identified, categorized, and evaluated. If you have any questions regarding this letter, please call Ian MacMillan, Program Supervisor, CEQA Section, at (909) 396-3244.

Sincerely,

Ian MacMillan
Program Supervisor, CEQA Inter-Governmental Review
Planning, Rule Development & Area Sources

IM
ORC110701-07
Control Number

1919 S. State College Blvd.
Anaheim, CA 92806-6114

Southern California Gas Company

A Sempra Energy utility℠

- orig to Brandy
- copy for our files

July 26, 2011

South Orange County Community College District
28000 Marguerite Parkway
Mission Viejo, CA 92692

Attention: Dr. Debra Fitzsimons

Subject: Program Environmental Impact Report for the South Orange County Community College District for Saddleback College

Thank you for providing the opportunity to respond to this E.I.R. Document. We are pleased to inform you that Southern California Gas Company has facilities in the area where the aforementioned project is proposed. Gas service to the project can be provided from an existing gas main located in various locations. The service will be in accordance with the Company's policies and extension rules on file with the California Public Utilities Commission when the contractual arrangements are made.

This letter is not a contractual commitment to serve the proposed project but is only provided as an informational service. The availability of natural gas service is based upon conditions of gas supply and regulatory agencies. As a public utility, Southern California Gas Company is under the jurisdiction of the California Public Utilities Commission. Our ability to serve can also be affected by actions of federal regulatory agencies. Should these agencies take any action, which affect gas supply or the conditions under which service is available, gas service will be provided in accordance with the revised conditions.

This letter is also provided without considering any conditions or non-utility laws and regulations (such as environmental regulations), which could affect construction of a main and/or service line extension (i.e., if hazardous wastes were encountered in the process of installing the line). The regulations can only be determined around the time contractual arrangements are made and construction has begun.

Estimates of gas usage for residential and non-residential projects are developed on an individual basis and are obtained from the Commercial-Industrial/Residential Market Services Staff by calling (800) 427-2000 (Commercial/Industrial Customers) (800) 427-2200 (Residential Customers). We have developed several programs, which are available upon request to provide assistance in selecting the most energy efficient appliances or systems for a particular project. If you desire further information on any of our energy conservation programs, please contact this office for assistance.

Sincerely,

Mike Harriel
Technical Services Supervisor
Orange Coast Region - Anaheim

MH/ag
eir02.doc

SOUTH ORANGE COUNTY COMMUNITY COLLEGE DISTRICT

AUG 1, 2011

OFFICE OF THE VICE CHANCELLOR BUSINESS SERVICES

1919 S. State College Blvd.
Anaheim, CA 92806-6114

Southern California Gas Company

A Sempra Energy utility℠

July 26, 2011

South Orange County Community College District
28000 Marguerite Parkway
Mission Viejo, CA 92692

Attention: Dr. Debra Fitzsimons

Subject: Program Environmental Impact Report for the South Orange County Community College District for Irvine Valley College

Thank you for providing the opportunity to respond to this E.I.R. Document. We are pleased to inform you that Southern California Gas Company has facilities in the area where the aforementioned project is proposed. Gas service to the project can be provided from an existing gas main located in various locations. The service will be in accordance with the Company's policies and extension rules on file with the California Public Utilities Commission when the contractual arrangements are made.

This letter is not a contractual commitment to serve the proposed project but is only provided as an informational service. The availability of natural gas service is based upon conditions of gas supply and regulatory agencies. As a public utility, Southern California Gas Company is under the jurisdiction of the California Public Utilities Commission. Our ability to serve can also be affected by actions of federal regulatory agencies. Should these agencies take any action, which affect gas supply or the conditions under which service is available, gas service will be provided in accordance with the revised conditions.

This letter is also provided without considering any conditions or non-utility laws and regulations (such as environmental regulations), which could affect construction of a main and/or service line extension (i.e., if hazardous wastes were encountered in the process of installing the line). The regulations can only be determined around the time contractual arrangements are made and construction has begun.

Estimates of gas usage for residential and non-residential projects are developed on an individual basis and are obtained from the Commercial-Industrial/Residential Market Services Staff by calling (800) 427-2000 (Commercial/Industrial Customers) (800) 427-2200 (Residential Customers). We have developed several programs, which are available upon request to provide assistance in selecting the most energy efficient appliances or systems for a particular project. If you desire further information on any of our energy conservation programs, please contact this office for assistance.

Sincerely,

Mike Harriel
Technical Services Supervisor
Orange Coast Region - Anaheim

MH/ag
eir02.doc

SOUTH ORANGE COUNTY
COMMUNITY COLLEGE DISTRICT

AUG 1, 2011

OFFICE OF THE VICE CHANCELLOR
BUSINESS SERVICES

1919 S. State College Blvd.
Anaheim, CA 92806-6114

Southern California Gas Company

A Sempra Energy utility℠

July 26, 2011

South Orange County Community College District
28000 Marguerite Parkway
Mission Viejo, CA 92692

Attention: Dr. Debra Fitzsimons

Subject: Program Environmental Impact Report for the South Orange County Community College District for ATEP Campus

Thank you for providing the opportunity to respond to this E.I.R. Document. We are pleased to inform you that Southern California Gas Company has facilities in the area where the aforementioned project is proposed. Gas service to the project can be provided from an existing gas main located in various locations. The service will be in accordance with the Company's policies and extension rules on file with the California Public Utilities Commission when the contractual arrangements are made.

This letter is not a contractual commitment to serve the proposed project but is only provided as an informational service. The availability of natural gas service is based upon conditions of gas supply and regulatory agencies. As a public utility, Southern California Gas Company is under the jurisdiction of the California Public Utilities Commission. Our ability to serve can also be affected by actions of federal regulatory agencies. Should these agencies take any action, which affect gas supply or the conditions under which service is available, gas service will be provided in accordance with the revised conditions.

This letter is also provided without considering any conditions or non-utility laws and regulations (such as environmental regulations), which could affect construction of a main and/or service line extension (i.e., if hazardous wastes were encountered in the process of installing the line). The regulations can only be determined around the time contractual arrangements are made and construction has begun.

Estimates of gas usage for residential and non-residential projects are developed on an individual basis and are obtained from the Commercial-Industrial/Residential Market Services Staff by calling (800) 427-2000 (Commercial/Industrial Customers) (800) 427-2200 (Residential Customers). We have developed several programs, which are available upon request to provide assistance in selecting the most energy efficient appliances or systems for a particular project. If you desire further information on any of our energy conservation programs, please contact this office for assistance.

Sincerely,

Mike Harriel
Technical Services Supervisor
Orange Coast Region - Anaheim

MH/ag
eir02.doc

SOUTH ORANGE COUNTY
COMMUNITY COLLEGE DISTRICT

AUG 1, 2011

OFFICE OF THE VICE CHANCELLOR
BUSINESS SERVICES

Community Development Department

TUSTIN

COMMUNITY TREES HISTORY FUTURE

BUILDING OUR FUTURE
HONORING OUR PAST

July 27, 2011

Dr. Debra Fitzsimmons, Vice Chancellor
South Orange County Community College District
28000 Marguerite Parkway
Mission Viejo, CA 92692

Cheryl -
org to Bardge
- copy for our file
dlf

SUBJECT: REVIEW OF NOTICE OF PREPARATION FOR SOUTH ORANGE COUNTY COMMUNITY COLLEGE DISTRICT SADDLEBACK COLLEGE AND IRVINE VALLEY COLLEGE 2011 FACILITIES MASTER PLANS

Dear Ms. Fitzsimmons:

Thank you for the opportunity to provide comments on the Notice of Preparation of a Program Environmental Impact Report (EIR) for the South Orange County Community College District Saddleback College and Irvine Valley College 2011 Facilities Master Plans. The City of Tustin has prepared the following comments and corrections:

1. Initial Study – Page 4: The Final Joint Environmental Impact Statement/Environmental Impact Report (FEIS/EIR) for the Disposal and Reuse of Marine Corps Air Station (MCAS) Tustin and the Mitigation Monitoring and Reporting Program for the FEIS/EIR were adopted by the Tustin City Council on January 16, 2001. The October 1996 date on page 4 of the Initial Study does not pertain to the FEIS/EIR. The Reuse Plan for MCAS Tustin was adopted on October 31, 1996, and the MCAS Tustin Specific Plan was adopted on February 3, 2003. The portion of the MCAS Tustin Specific Plan project area within Tustin is now referred to as "Tustin Legacy," but the Specific Plan itself is not referred to as the Tustin Legacy Specific Plan, as was indicated on page 4 (and Page 46) of the Initial Study.

2. Initial Study – Page 16: Approximately 95 acres of the 1,606 acres of the MCAS Tustin Specific Plan/Reuse Plan project area lie within the City of Irvine. The remaining 1,511 acres comprise Tustin Legacy and are located within the City of Tustin. No portion of Tustin Legacy is located within the City of Irvine.

3. Initial Study – Page 16: It should be noted that the Tustin Fields neighborhoods and The District outdoor shopping mall are complete and that the Columbus Square and Columbus Grove neighborhoods are nearing completion. The statement that "portions of Tustin Legacy are developed" should be further clarified.

4. Initial Study – Page 17: It is indicated that the existing buildings and parking lot areas of the existing ATEP campus total approximately one acre. However, the site is larger than one acre, and the correct size should be indicated in the Draft Program EIR.

5. Initial Study – Page 17: All references to the former military buildings within the MCAS Tustin Specific Plan project area should include the word "former" prior to "military buildings."

6. Initial Study – Page 20: The implementation of various projects under the 2011 Facilities Master Plans will include any required local agency permits and/or agreements between the District and the City of Tustin for ATEP site development. Therefore, similar statements in the Draft Program EIR regarding other agency approvals should use the words "will include any required" rather than the words "might include," which suggest that agreements may not be necessary.

7. Initial Study – Page 41: The ATEP campus is located within 0.25 miles of Heritage School (Tustin Unified School District), which is completed, but not yet occupied. Therefore, the Program EIR should analyze the potential to emit hazardous emissions affecting the school.

The City of Tustin appreciates the opportunity to provide comments on this project. I would appreciate receiving a copy of the Draft Program EIR when it becomes available. If you have any questions regarding the City's comments, please call Scott Reekstin, Senior Planner, at (714) 573-3016.

Sincerely,

Elizabeth A. Binsack
Community Development Director

cc: William Huston
Christine Shingleton
Doug Stack
Dana Kasdan
Doug Anderson
Scott Reekstin

SR:environmental\SOCCCD Facilities Master Plans NOP Comment Letter.doc

CITY of LAGUNA NIGUEL
Community Development Department
27781 La Paz Road • Laguna Niguel, California 92677
Phone/949 • 362 • 4360 Fax/949 • 362 • 4369

CITY COUNCIL
Joe Brown
Gary G. Capata
Paul G. Glaab
Linda Lindholm
Robert Ming

July 28, 2011

Dr. Debra Fitzsimmons, Vice Chancellor
South Orange County Community College District
28000 Marguerite Parkway
Mission Viejo, CA 92692
dfitzsimmons@socccd.edu

Cert mail to Blvdge - copy for file dlf

SUBJECT: SOCCCD 2011 Facilities Master Plan for Saddleback College - NOP for Program EIR

Dear Dr. Fitzsimmons:

Thank you for the opportunity to comment on the preparation of a Program EIR for the SOCCCD 2011 Facilities Master Plan (FMP) for Saddleback College in the City of Mission Viejo. The City of Laguna Niguel, located directly west of Mission Viejo, is interested in potential traffic impacts related to the FMP for Saddleback College. Please consider the following comments during preparation of the EIR for the Saddleback College FMP.

1. The City of Laguna Niguel has recently prepared a Draft Program EIR for a Specific Plan Update in our Gateway area, located in the northeast corner of Laguna Niguel, accessed from Crown Valley Parkway, Avery Parkway, and Paseo De Colinas. A Notice of Preparation for the Gateway EIR was issued on October 1, 2010, and a Notice of Availability was issued on July 25, 2011.

   Traffic related to Saddleback College would potentially impact Gateway area streets and intersections. Please review and consider the traffic assumptions, analysis, and conclusions included within the project EIR, for the streets and intersections listed below to ensure consistency with our EIR findings and the analysis contained in your EIR. In instances where your analysis and conclusions are not consistent with our Gateway Specific Plan EIR, please discuss why. A copy of the Gateway Program EIR can be found on-line using the following link: http://www.ci.laguna-niguel.ca.us/index.aspx?NID=603

2. Please include the following intersections, located in the City of Laguna Niguel, in your traffic impact analysis:
   - Avery Parkway/Camino Capistrano
   - Crown Valley Parkway/Forbes Road
   - Crown Valley Parkway/Cabot Road
   - Crown Valley Parkway/Greenfield Drive
   - Paseo De Colinas/Camino Capistrano
   - Paseo De Colinas/Cabot Road

SOUTH ORANGE COUNTY COMMUNITY COLLEGE DISTRICT
AUG 29, 2011
OFFICE OF THE VICE CHANCELLOR BUSINESS SERVICES

3. All intersections within the City of Laguna Niguel should be analyzed using a threshold Level of Service (LOS) "D" to determine impact significance, in accordance with the City's General Plan Land Use Element Policy 1.2. This threshold LOS "D" should also be utilized for CMP arterial intersections located in Laguna Niguel, rather than the applicable OC CMP requirements (threshold LOS "E") as stated in the project Initial Study for Impact Category 4.16(b).

4. Please include the following street segments, located in the City of Laguna Niguel, in your traffic impact analysis:
   - Crown Valley Parkway, between Greenfield Drive and Cabot Road
   - Crown Valley Parkway, between Cabot Road and Forbes Road
   - Crown Valley Parkway, between Forbes Road and I-5 southbound ramps
   - Avery Parkway, between Camino Capistrano and I-5 southbound ramps
   - Paseo De Colinas, between El Sur and Cabot Road
   - Paseo De Colinas, between Cabot Road and Camino Capistrano
   - Camino Capistrano, between Paseo De Colinas and Avery Parkway
   - Camino Capistrano, south of Avery Parkway
   - Forbes Road, south of Crown Valley Parkway (leads to transit station)
   - Cabot Road, between Crown Valley Parkway and Vista Viejo (in Laguna Hills)

Thank you again for the opportunity to comment at this early stage of the environmental review process. Please do not hesitate to contact me if you have any questions or need additional information. We respectfully request that we be provided an opportunity to review the Draft EIR once it is available for review.

Sincerely,
COMMUNITY DEVELOPMENT DEPARTMENT
Daniel Fox, AICP, Director

Larry Longenecker, AICP, Senior Planner
Direct Phone: 949-362-4321
e-mail: llongenecker@ci.laguna-niguel.ca.us

Moulton Niguel Water

WATER QUALITY AND SERVICE ARE #1

July 28, 2011

Cheryl send one to Blandyce copy for our file dlf

Dr. Debra Fitzsimons, Vice Chancellor
South Orange County Community College District
28000 Marguerite Parkway
Mission Viejo, CA 92692

Re: CEQA Notice of Preparation - 2011 Facilities Master Plans
Saddleback College & Irvine Valley College

Dear Dr. Fitzsimons:

Moulton Niguel Water District (MNWD) has reviewed the Notice of Preparation of the Program EIR for the South Orange County Community College District (Saddleback College & Irvine Valley College) 2011 Facilities Master Plans and determined that, as presented, the project does not conflict with existing MNWD water, sewer or recycled facilities. Proposed improvements may require that new water and sewer services be constructed or upgraded.

As the scope of work becomes more defined, and domestic/irrigation water demands are quantified, development plans for connections to the water, sewer and recycled systems are to be submitted for review and approval. At that time, hydraulic modeling may be performed to assess the performance of the distribution and collection systems under these new demands, and may identify the need for additional improvements. All applicable connection fees and charges will be due prior to MNWD signing approved improvement plans.

Should you have any questions or require further information, please contact me at (949) 425-3555.

Regards,

MOULTON NIGUEL WATER DISTRICT

Mark H. Mountford, P.E.
Associate Engineer

SOUTH ORANGE COUNTY COMMUNITY COLLEGE DISTRICT
AUG 01, 2011
OFFICE OF THE VICE CHANCELLOR BUSINESS SERVICES

a public agency at:
27500 La Paz Road, Laguna Niguel, CA 92677-3489
Mailing Address: P.O. Box 30203, Laguna Niguel, CA 92607-0203
949/425-3532 FAX 949/643-2489

DEPARTMENT OF TRANSPORTATION
District 12
3347 Michelson Drive, Suite 100
Irvine, CA 92612-8894
Tel: (949) 724-2241
Fax: (949) 724-2592

org to Bandye
- copies for files

Flex your power!
Be energy efficient!

August 1, 2011

Debra Fitzsimmons
South Orange County Community College District
2800 Marguerite Parkway
Mission Viejo, CA 92692

File: IGR/CEQA
SCH#: 2011071005
Log #: 2766
I-5, I-405

Subject: Saddleback College and Irvine Valley College 2011 Facilities Master Plans

Dear Ms. Fitzsimmons,

Thank you for the opportunity to review and comment on the **Notice of Preparation (NOP) for the Saddleback College and Irvine Valley College 2011 Facilities Master Plans.** The 2011 Saddleback College and Irvine Valley College Facilities Master Plans (FMP's) describe the needed buildings, infrastructure, and vehicular and pedestrian circulation improvements, and proposed sequencing schedules required for construction and operation of instructional and support facilities through the year 2031. The 2011 FMP's also provide extensive guidance with regard to water and energy efficiency technologies and conservation practices; construction/demolition (C&D) and solid waste recycling; renewable energy standards; stormwater pollutant reduction; and overall sustainable design and building standards. The planning area is located within the campuses of Irvine Valley College in the City of Irvine and Saddleback College in the City of Mission Viejo. The nearest State routes to the planning area are I-5 and I-405.

The Department of Transportation (Department) is a commenting agency on this project and has no comment at this time. However, in the event of any activity in the Department's right-of-way, an encroachment permit will be required.

Please continue to keep us informed of this project and any future developments that could potentially impact State transportation facilities. If you have any questions or need to contact us, please do not hesitate to call Marlon Regisford at (949) 724-2241.

Sincerely,

Christopher Herre, Branch Chief
Local Development/Intergovernmental Review

SOUTH ORANGE COUNTY
COMMUNITY COLLEGE DISTRICT

Aug 2, 2011

OFFICE OF THE VICE CHANCELLOR
BUSINESS SERVICES

ORANGE COUNTY
OC PublicWorks
Our Community. Our Commitment.

Jess A. Carbajal, Director
300 N. Flower Street
Santa Ana, CA

P.O. Box 4048
Santa Ana, CA 92702-4048

Telephone: (714) 834-2300
Fax: (714) 834-5188

NCL 11-028

- one to Brandy e
- copy for our files

August 1, 2011

Dr. Debra Fitzsimmons, Vice Chancellor
South Orange County Community College District
28000 Marguerite Parkway
Mission Viejo, California 92692

SUBJECT: Notice of Preparation of a Program Environmental Impact Report for the South Orange County Community College District/Saddleback College and Irvine Valley College – 2011 Facilities Master Plan

Dear Dr. Fitzsimmons:

The County of Orange has reviewed the Notice of Preparation of a Program Environmental Impact Report for the South Orange County Community College District/Saddleback College and Irvine Valley College – 2011 Facilities Master Plan and offers the following comments:

Flood Programs:

In response to your request dated July 13, 2011, Flood Programs/Hydrology has reviewed Notice of Preparation of a Program Environmental Impact Report (EIR) for the South Orange County Community College District/Saddleback College, Irvine Valley College and ATEP campus 2011 Facilities Master Plan located in the cities of Mission Viejo and Irvine. We offer the following comments for your consideration:

1. The three college campus project areas cover over 350 acres of land and the proposed Facilities Master Plans include new buildings and site improvements. The Program EIR should (1) clearly identify all regional and subregional drainage facilities and natural watercourses within and in vicinity of the project areas and (2) assess any impact to these facilities. For Saddleback College that includes but is not limited to Oso Creek (L03) and/or Trabuco Creek (L02); for Irvine Valley College, San Diego

ORANGE COUNTY COMMUNITY COLLEGE DISTRICT
AUG 3 2011
OFFICE OF THE VICE CHANCELLOR
BUSINESS SERVICES

Creek (F05) and its tributaries; and for ATEP campus Barranca Channel (F09) and its tributaries.

2. Increases in impervious areas caused by development when combined with improved local drainage facilities will likely increase the amount of runoff entering local and regional drainage facilities. A discussion of such impacts supported by hydrology and hydraulic analyses, and mitigation measures, including erosion and scour in natural watercourses, should be included in the Program EIR.

3. Hydrologic, hydraulic and sediment transport analyses should evaluate and compare quantitatively the runoff volumes, peak flow rate increases, adequacy of existing drainage facilities, and erosion and scour issues to ensure existing conditions are not worsened in the post-project condition. All hydrologic, hydraulic and sediment transport studies must conform to the current guidelines and criteria as specified in the Orange County Hydrology Manual (OCHM), Addendum No. 1 to the OCHM, and the OCFCD Design Manual.

4. FEMA's Flood Insurance Rate Maps, Panels No. 441J and No. 291-2J show the project sites may be placed within the special flood hazard areas subject to inundation by the 1% annual chance flood. The draft program EIR needs to (1) identify all relevant FEMA floodplain designations and address corresponding FEMA regulations and requirements applicable to the sites, and (2) discuss and recommend methods to protect the proposed development from flooding, erosion and scour resulting from the FEMA designated storm events .

5. Any/all work within or adjacent to any OCFCD right-of-way for regional flood control facilities should be conducted so as not to adversely impact channel's structural integrity, hydraulic flow conditions, access and maintainability. Furthermore, all work within OCFCD's right-of-way should be conducted only after an encroachment permit for the proposed work has been obtained from the County. For information regarding the permit application process and other details please refer to the County Property Permit Section link on OC Planning's website http://ocplanning.net/.

If you have any questions regarding these comments, please contact Anna Brzezicki at (714) 647-3989.

Environmental Resources:

In response to your request for input on the subject project, Environmental Resources has reviewed the document, and offers the following comments:

Potential water quality impacts of the project should be evaluated in the DEIR. At minimum, the following information should be provided:

i. Description of project characteristics with respect to water quality issues, such as: project site location in a given watershed, site acreage, known ground contamination,

known ground-water contamination, and anticipated change in percent impervious surface area.

ii. Identification of receiving waters; The EIR should identify all downstream receiving waters that may receive contributory runoff from the project site.

iii. Description of the sensitivity of the receiving waters; In particular the EIR should identify Areas of Special Biological Significance, water bodies with Total Maximum Daily Loads (TMDL), and Clean Water Act Sec. 303(d) listed impaired water bodies.

iv. Characterization of the potential water quality impacts from the proposed project and identification of the anticipated pollutants to be generated by the project.

v. Identification of downstream hydrologic conditions of concern that may be affected by project - related changes in runoff volume and velocity; sediment load, makeup or characteristics; reduced infiltration; and/or increased flow, frequency, duration, and peak(s) of storm runoff.

vi. Evaluation of thresholds of significance.

vii. Assessment of project impact significance to water quality.

viii. If a proposed project has the potential to create a major new stormwater discharge to a water body with an established TMDL, the EIR should consider quantitative analysis of the anticipated pollutant loads in the stormwater discharges to the receiving waters.

ix. A reasonable analysis of the cumulative impacts of the proposed project together with past, present and reasonably anticipated future projects (related projects) that could produce cumulative impacts together with the proposed project.

If you require any additional information, please contact Grant Sharp at (714) 955-0674.

Sincerely,



Michael Balsamo
Manager, OC Communities Planning
OC Public Works/OC Planning
300 North Flower Street
Santa Ana, California 92702-4048
Michael.Balsamo@ocpw.ocgov.com

MB/mmc

cc: Chris Crompton, Environmental Resources
Mehdi Sobhani, Flood Programs

Community Development www.cityofirvine.org

City of Irvine, One Civic Center Plaza, P.O. Box 19575, Irvine, California 92623-9575 (949) 724-6000

- orig to Brandye copy for our files

August 2, 2011

Dr. Debra Fitzsimons, Vice Chancellor
South Orange County Community College District
28000 Marguerite Parkway
Mission Viejo, CA 92692

Subject: NOP for Program EIR for the SOCCCD Saddleback College and Irvine Valley College 2011 Facilities Master Plans

Dear Dr. Fitzsimons:

Thank you for the opportunity to comment on the NOP for the EIR the proposed Facilities Master Plans for Irvine Valley College and Saddleback College. The City has reviewed the project, and has the following comments regarding the Irvine Valley College Master Plan to which should be addressed in the Draft EIR and Revised Master Plan.

Transportation Planning

1. The traffic analysis should discuss project phasing and include interim (2015) and long- term (Year 2030/Post-2030) analysis of traffic impacts for build-out of the campus. It is necessary to perform this analysis that considers the environment as we know it today, including the updated network and land use assumptions of the model.

2. Include an exhibit depicting the study area, intersections and links.

3. Page 56: The traffic analysis should analyze all proposed vehicular access points per the Vehicle Access Diagram for interim and long-term impacts.

4. Pedestrian access from public sidewalks onto and throughout campus should be discussed and depicted clearly.

5. Provide information regarding location and number of parking stalls required and provided for the phases of the project.

OFFICE OF THE VICE CHANCELLOR

SOUTH ORANGE COUNTY

Traffic Operations

6. There are new driveways proposed on Irvine Center Drive and Barranca Parkway, which may potentially disrupt the flow of traffic on these public streets. The EIR will need to analyze and mitigate this issue.

7. Page 38: The Barranca Parkway access needs to be designed to handle the expected traffic from the future parking structure located near the Barranca vehicular access.

8. Page 38 and 42: The report indicates that re-design of the Irvine Center Drive entrance will improve traffic control and campus arrival. The proposed re-design indicated on Sheet 43 (Legend 115) does not address the existing vehicle circulation congestion/concerns at the perimeter road and driveway access during college peak traffic times. The vehicle circulation congestion/concerns are due to the short distance from Irvine Center Drive and the perimeter road.

9. Page 43: Based on the improvements indicated as Legend 116, the existing perimeter road will be too close to Irvine Center Drive at the proposed new right in/out driveway on Irvine Center Drive. In addition this driveway does not indicate any right turn lane on Irvine Center Drive, and once a right turn lane is constructed for the new driveway, the distance will be even less.

10. Page 59: The Pedestrian Circulation Diagram and EIR Traffic Study will need to identify pedestrian access to the campus from Barranca Parkway, Jeffrey Road and Irvine Center Drive, and pedestrian circulation along the above-named streets adjacent to campus property.

Hydrology

11. The existing Agricultural Field in the west corner of the site is proposed to be a parking lot with 3 new buildings. This will significantly increase the water runoff as there is a decrease in impervious area. Address the additional runoff and how it will be mitigated.

Please forward copies of all additional documentation associated with this project for our review. If you have any questions, please contact me at (949) 724-6521 or via e-mail at bjacobs@ci.irvine.ca.us.

Sincerely,

Bill Jacobs, AICP
Principal Planner

ec: Karen Urman, Senior Transportation Analyst
Thomas Perez, Senior Civil Engineer
Tran Tran, Associate Engineer
Andrew Pham, Assistant Engineer

RANCHO MISSION VIEJO

Send To Brandy E org
Copy for my files
debra

August 24, 2011

Dr. Debra Fitzsimmons, Vice Chancellor
South Orange County Community College District
28000 Marguerite Parkway
Mission Viejo, CA 92692

Subject: Response to NOP - Program EIR for the South Orange County Community College District Saddleback College & Irvine Valley College 2011 Facilities Master Plans

Dear Vice Chancellor Fitzsimmons,

In response to the Notice of Preparation prepared for the subject project, Rancho Mission Viejo would offer the following comments for the Saddleback College Master Facility Plan (FMP):

1. The forecasted student enrollment for the Saddleback College FMP shows continued growth from 26,000 students in 2011 to 40,700 students by 2030 as presented in the FMP. This growth represents a substantial increase in student population and related impacts particularly in air quality, noise, transportation and circulation for the south Orange County area.
2. The Program EIR should evaluate the Saddleback FMP traffic congestion with current and forecasted plans and use peak period traffic flow simulation modeling to test and quantitatively evaluate the planned growth and performance of the circulation system.
3. The Program EIR regional transportation assessment should include on- and off-campus operations and activities and should analyze local intersections, roadways and I-5 mainline and on and off ramp impacts. The analysis would include the average daily trip volumes and ICU values to determine the level of service as well as Caltrans criteria for interstate freeway system impacts. The assessment should also take into account the first weeks of an academic term when a majority of students and faculty are creating a higher peak demand particularly on the I-5 mainline traffic and interchange ramps accessing the campus.
4. The Program EIR should use the Orange County Congestion Management Program (CMP) as a means of addressing regional traffic growth and congestion but also specifically consider cumulative impacts associated with nearby projects such as the growth plans for Mission Hospital, the Laguna Niguel Gateway project (now under review with a draft EIR), other applicable nearby City general plan and zoning plans and other agency plans in the area.
5. The Program EIR should also demonstrate how the FMP will compliment Orange County Transportation Authority's SOCMIS that was completed in 2009.

DRUG USE IS LIFE ABUSE

28811 ORTEGA HIGHWAY • P.O. BOX 9 • SAN JUAN CAPISTRANO, CA 92693 • (949) 240-3363 • FAX (949) 248-1763

6. The Program EIR should also address alternative for campus access that include integrated multimodal shuttle/bus/bikeway systems to connect key transportation nodes for metrolink, OCTA bus lines, bikeway trail systems, riding and hiking trail systems or other transportation linkages available in the local area.
7. Project specific mitigations should be included to address support and funding of transportation/circulation improvement measures to mitigate added impacts.

We appreciate this opportunity to comment on the preparation of the Program EIR for the FMP.

Sincerely,

Sam Couch
Vice President, Planning & Entitlement

City of Mission Viejo

Community Development Department

Dave Leckness
Mayor
Frank Ury
Mayor Pro Tem
Trish Kelley
Council Member
Rhonda Reardon
Council Member
Cathy Schlicht
Council Member

September 8, 2011

Dr. Debra Fitzsimons, Vice Chancellor
South Orange County Community College District
28000 Marguerite Parkway
Mission Viejo, CA 92692
(949) 582-4663

SUBJECT: Notice of Preparation for a Draft Program Environmental Impact Report for SOCCCD Saddleback College and Irvine Valley College 2011 Facilities Master Plans

Dear Dr. Fitzsimons:

Thank you for the opportunity to review and comment on the Notice of Preparation dated July 6, 2011, for a Draft Program Environmental Impact Report (EIR) for the SOCCCD Saddleback College and Irvine Valley College 2011 Facilities Master Plans. Staff has reviewed the document and provides comments in the attached memorandum. Please feel from to call me at (949) 470-3029, or Philip Nitollama, Traffic Engineer at (949) 470-3068, in the event you would like clarification or to discuss traffic-related comments further.

I thank you in advance for your consideration of the City's comments and look forward to reviewing the EIR when it is available.

Sincerely,

Elaine Lister, AICP
Planning Manager

cc: Charles E. Wilson, Director of Community Development

City of Mission Viejo

Memorandum

Date: July 22, 2011

To: Elaine Lister, Planning Department

From: Philip Nitollama, Traffic Engineer

Subject: CEQA NOP for a draft Program EIR for the SOCCCD Saddleback College 2011 Facilities Master Plan

---

In review of the CEQA NOP of a draft Program EIR for the SOCCCD Saddleback College 2011 Facilities Master Plans, the transportation issues were identified:

1) The project needs to provide a traffic impact report for intersections assigned up to 1% impact for any locations within the City of Mission Viejo. The study should assume the traffic generated by the approved Lexus Dealership master plan and any other known and approved projects. The traditional am and pm peak-periods need to be expanded to include a mid-day peak period since the college has traffic-generating classes that have start and dismissal times throughout the day.

   It should be noted that the project needs to provide near-term mitigation of its impacts. A "fair-share" contribution is not an acceptable mitigation if the improvements are not built by the time the new college buildings are occupied.

   The phasing of improvements should be identified for each incremental Development Horizon Master Plan – 2016 (5 year), 2021 (10 year) and 2031 (20 year).

2) Both Interstate-5 interchanges at Avery Parkway and Crown Valley Parkway need to be reviewed at an operational level of impact using the Highway Capacity Manual and / or Synchro to assess the combined impacts at the ramps and the adjacent intersections. Their unique condition of closely spaced intersection and lack of capacity to manage queues needs to be properly evaluated beyond the normal Intersection Capacity Utilization (ICU) analysis.

3) Roadway infrastructure improvements (i.e. college drive road, parking lots, parking structure, bus facility improvements, etc) shall be constructed prior to the construction of any proposed building structures (i.e. new science buildings, new gate building, etc) in order to accommodate any new traffic generated by the buildings.

   Of particular concern is the primary access to the south at the signalized intersection of Avery Parkway and La Plata. The College Drive roadway segment just east of the

intersection of La Plata & College Drive only has one ingress lane. Traffic congestion at this location has been observed and causes vehicular queues to back up to the intersection of Avery Parkway and La Plata during peak hours. The addition of ingress lanes shall be evaluated and implemented if necessary.

Appendix B

Traffic Study



South Orange County Community College District (SOCCCD) Master Plan for Saddleback College Campus and Irvine Valley College Campus Traffic Study

March 2012 Draft Report

Prepared For: SOCCCD

2073006530

South Orange County Community College District (SOCCCD) Master Plan for Saddleback College Campus and Irvine Valley College Campus

Traffic Study

March 5, 2012

Draft Report

Prepared for:

South Orange County Community College District

28000 Marguerite Parkway

Mission Viejo, CA 92692-3625

Submitted by:

Stantec Consulting Services Inc.

19 Technology Drive, Suite 200

Irvine, CA 92618

Stantec

Table of Contents

1.0 INTRODUCTION 1.1
1.1 PROJECT DESCRIPTION 1.1
1.2 ANALYSIS SCOPE AND METHODOLOGY 1.6
1.2.1 Traffic Analysis Scenarios 1.7
1.2.2 Study Area 1.7
1.2.3 Special Issue 1.7
1.2.4 Traffic Model Background 1.11
1.3 PERFORMANCE CRITERIA 1.11
1.4 REFERENCES 1.15

2.0 PROJECT DESCRIPTION 2.1
2.1 CAMPUS MASTER PLAN CHANGES AND CAMPUS ACCESS 2.1
2.2 PROJECT TRIP GENERATION 2.4
2.3 PROJECT TRIP DISTRIBUTION 2.4

3.0 TRANSPORTATION SETTING 3.1
3.1 EXISTING CONDITIONS 3.1
3.1.1 Average Daily Traffic Volumes and Levels of Service 3.1
3.1.2 Peak Hour Intersection Levels of Service 3.6
3.1.3 Existing-Plus-Project Conditions 3.6
3.2 PLANNED CIRCULATION SYSTEM 3.6

4.0 YEAR 2015/2016 PROJECT IMPACT ANALYSIS 4.1
4.1 YEAR 2015/2016 TRAFFIC IMPACTS 4.1
4.1.1 Average Daily Traffic Volumes and Levels of Service 4.1
4.1.2 Peak Hour Intersection Levels of Service 4.1

5.0 YEAR 2030 PROJECT IMPACT ANALYSIS 5.1
5.1 YEAR 2030 TRAFFIC IMPACTS 5.1
5.1.1 Average Daily Traffic Volumes and Levels of Service 5.1
5.1.2 Peak Hour Intersection Levels of Service 5.1
5.2 2030 PROJECT MITIGATION AND FAIR SHARES 5.9

6.0 SPECIAL ISSUE 6.1
7.0 CONCLUSIONS AND MITIGATION MEASURES 7.1

Appendices

Appendix A: Intersection Capacity Utilization (ICU) Worksheets
Appendix B: HCM Intersection Analysis Worksheets

Table of Contents

List of Figures

Figure 1-1 Project Location - Saddleback College Campus 1.2
Figure 1-2 Project Location – Irvine Valley College Campus..... 1.3
Figure 1-3 Existing Campus Plan – Saddleback College..... 1.4
Figure 1-4 Existing Campus Plan – Irvine Valley College 1.5
Figure 1-5 Traffic Analysis Study Area – Saddleback College Campus 1.9
Figure 1-6 Traffic Analysis Study Area – Irvine Valley College Campus..... 1.10

Figure 2-1 Proposed Campus Plan – Saddleback College 2.2
Figure 2-2 Proposed Campus Plan – Irvine Valley College..... 2.3
Figure 2-3 2030 Project Trip Distribution – Saddleback College 2.6
Figure 2-4 2030 Project Trip Distribution – Irvine Valley College..... 2.7

Figure 3-1 Existing Circulation System – Saddleback College Campus Study Area..... 3.2
Figure 3-2 Existing Circulation System –Irvine Valley College Campus Study Area 3.3
Figure 3-3 Existing ADT Volumes (000s) – Saddleback College 3.4
Figure 3-4 Existing ADT Volumes (000s) and V/C Ratios – Irvine Valley College 3.5
Figure 3-5 Existing Intersection Location Map – Saddleback College..... 3.7
Figure 3-6 Existing Intersection Location Map – Irvine Valley College 3.8
Figure 3-7 2015 Circulation System – Irvine Valley College Campus Study Area..... 3.11
Figure 3-8 2030 Circulation System – Saddleback College Campus Study Area 3.12
Figure 3-9 2030 Circulation System – Irvine Valley College Campus Study Area..... 3.13

Figure 4-1 2016 ADT Volumes (000s) – Saddleback College (No-Project and With-Project).... 4.2
Figure 4-2 2015 ADT Volumes (000s) and V/C Ratios – Irvine Valley College (No-Project) 4.3
Figure 4-3 2015 ADT Volumes (000s) and V/C Ratios – Irvine Valley College (With-Project) .. 4.4
Figure 4-4 2016 Intersection Location Map – Saddleback College..... 4.5
Figure 4-5 2015 Intersection Location Map – Irvine Valley College 4.6

Figure 5-1 2030 ADT Volumes (000s) – Saddleback College (No-Project and With-Project).... 5.2
Figure 5-2 2030 ADT Volumes (000s) and V/C Ratios – Irvine Valley College (No-Project) 5.3
Figure 5-3 2030 ADT Volumes (000s) and V/C Ratios – Irvine Valley College (With-Project) .. 5.4
Figure 5-4 2030 Intersection Location Map – Saddleback College..... 5.5
Figure 5-5 2030 Intersection Location Map – Irvine Valley College 5.6

Figure A-1 2030 Intersection Location Map – Saddleback College A.5
Figure A-2 2030 Intersection Location Map – Irvine Valley College..... A.6

Table of Contents

List of Tables

Table 1-1 Traffic Analysis Use Scenarios 1.8
Table 1-2 Volume/Capacity Ratio Level of Service Ranges – Irvine Arterial Roads 1.12
Table 1-3 Performance Criteria for Locations Analyzed Within the Study Areas 1.13
Table 1-4 Intersection Level of Service Ranges (ICU and HCM Delay) 1.16
Table 1-5 Level of Service Descriptions – Urban Streets 1.17
Table 1-6 Level of Service Descriptions – Signalized Intersections 1.18

Table 2-1 Project Trip Generation Summary 2.5

Table 3-1 Existing Intersection LOS Summary 3.9

Table 4-1 2015/2016 Intersection LOS Summary 4.7

Table 5-1 2030 Intersection LOS Summary 5.7

Table 6-1 2030 Intersection LOS Summary (HCM Methodology) 6.1

1.0 Introduction

This report presents the findings of a traffic study for the proposed Master Plan update for the Saddleback College campus in the city of Mission Viejo and the Irvine Valley College campus in the city of Irvine, which are both in Orange County, California. The campuses are referred to as the "proposed projects" throughout this report. The purpose of the study is to evaluate the potential impacts of the proposed project in accordance with specified criteria and to provide traffic analysis data for the Master Plan application and a circulation evaluation for the California Environmental Quality Act (CEQA) analysis prepared for the project.

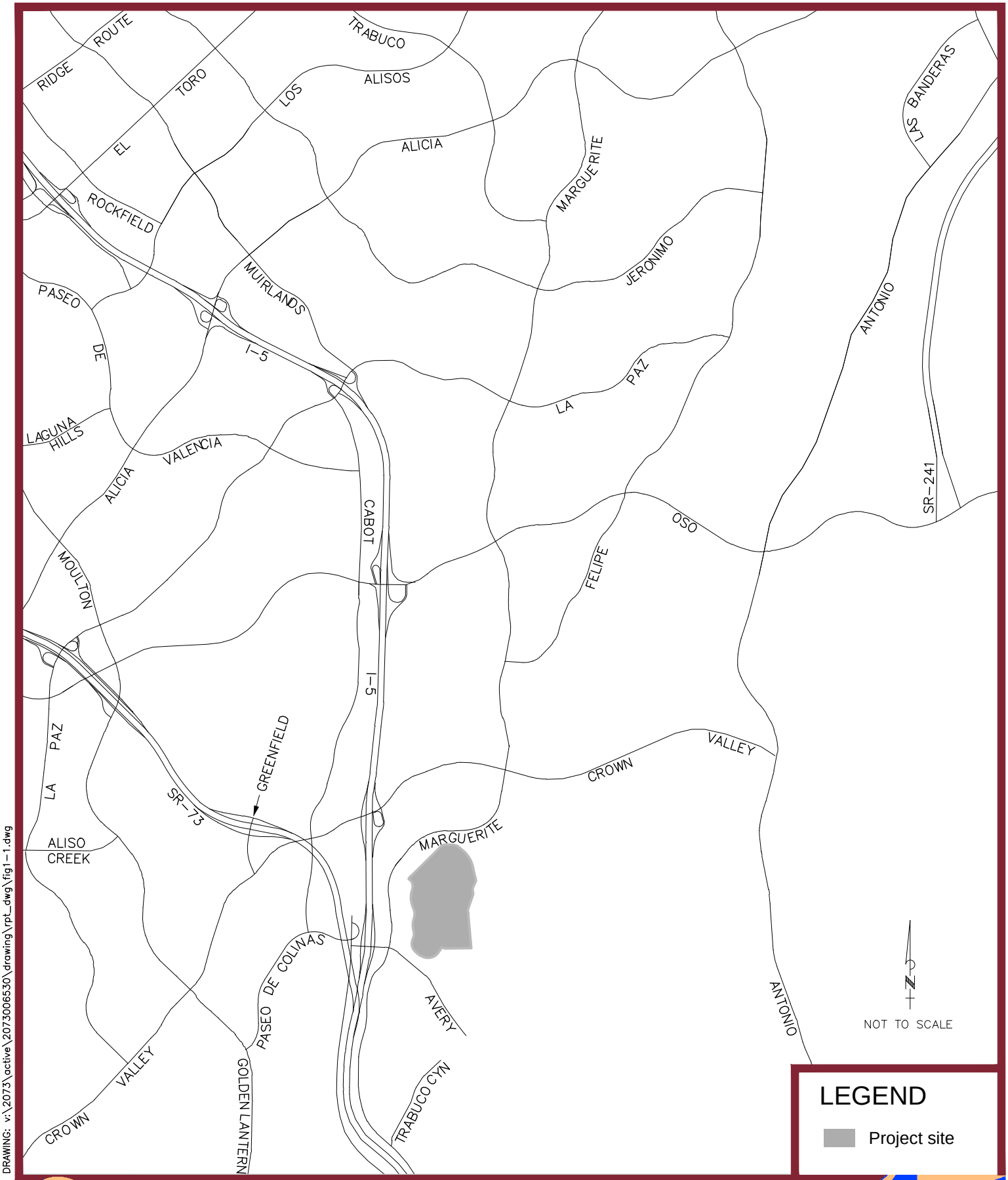
1.1 Project Description

The proposed projects included in this study are the South Orange County Community College District (SOCCCD) Master Plan update for the Saddleback College campus and the Irvine Valley College campus. The former is located just east of Marguerite Parkway and north of Avery Parkway in the City of Mission Viejo. Interstate 5 (I-5) Freeway is located nearby to the west while State Route 241 (SR-241) is around four miles northeast of the campus. The latter is in the city of Irvine and bounded by Irvine Center Drive to the northeast, Orange Tree to the southeast, Barranca Parkway to the southwest and Jeffrey Road to the northwest. I-5, State Route 133 (SR-133) and Interstate 405 (I-405) Freeways are located nearby to the north, east and south, respectively. Figures 1-1 and 1-2 illustrate the location of the Saddleback College campus and the Irvine Valley College campus, respectively.

The proposed Master Plan update increases the building square footage on each campus to accommodate South Orange County's population growth. For purposes of the traffic analysis, increased student enrollment and faculty/staff employees will determine the impacts of the proposed projects due to the Master Plan update.

Access to the Saddleback College campus is provided via three signalized driveway entrances (see Figure 1-3). Two of the driveways are located on Marguerite Parkway between Crown Valley Parkway and Avery Parkway, one directly across Medical Center Road and the other across the College Center shopping center driveway. The third driveway is on Avery Parkway across from Plata Place. Both Marguerite Parkway and Avery Parkway are four-lane secondary arterials. College Drive, a two-lane internal road, provides circulation within the campus.

Figure 1-4 shows the Irvine Valley College campus access points at three existing driveways. The main entrance into the campus is signalized and is located on Irvine Center Drive southeast of Jeffrey Road. The other two existing driveways are on Jeffrey Road. One driveway is just southwest of Irvine Center Drive and is restricted to right-turn in and out movements. The second driveway is northeast of Barranca Parkway and is a full access signalized intersection.



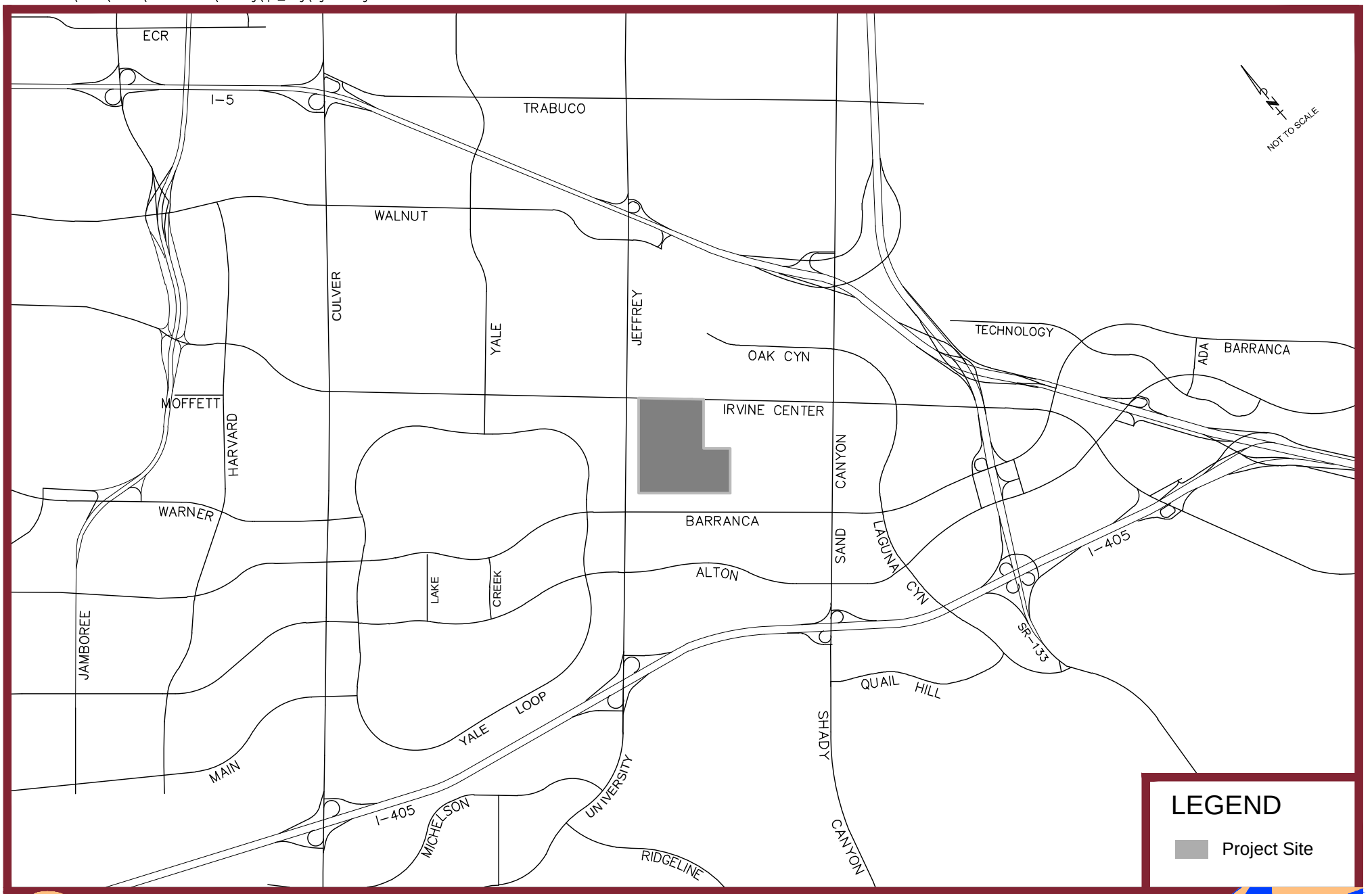
DRAWING: v:\2073\active\2073006530\drawing\rpt_dwg\fig1-1.dwg

Stantec

PROJECT LOCATION
- SADDLEBACK COLLEGE CAMPUS

Figure 1-1

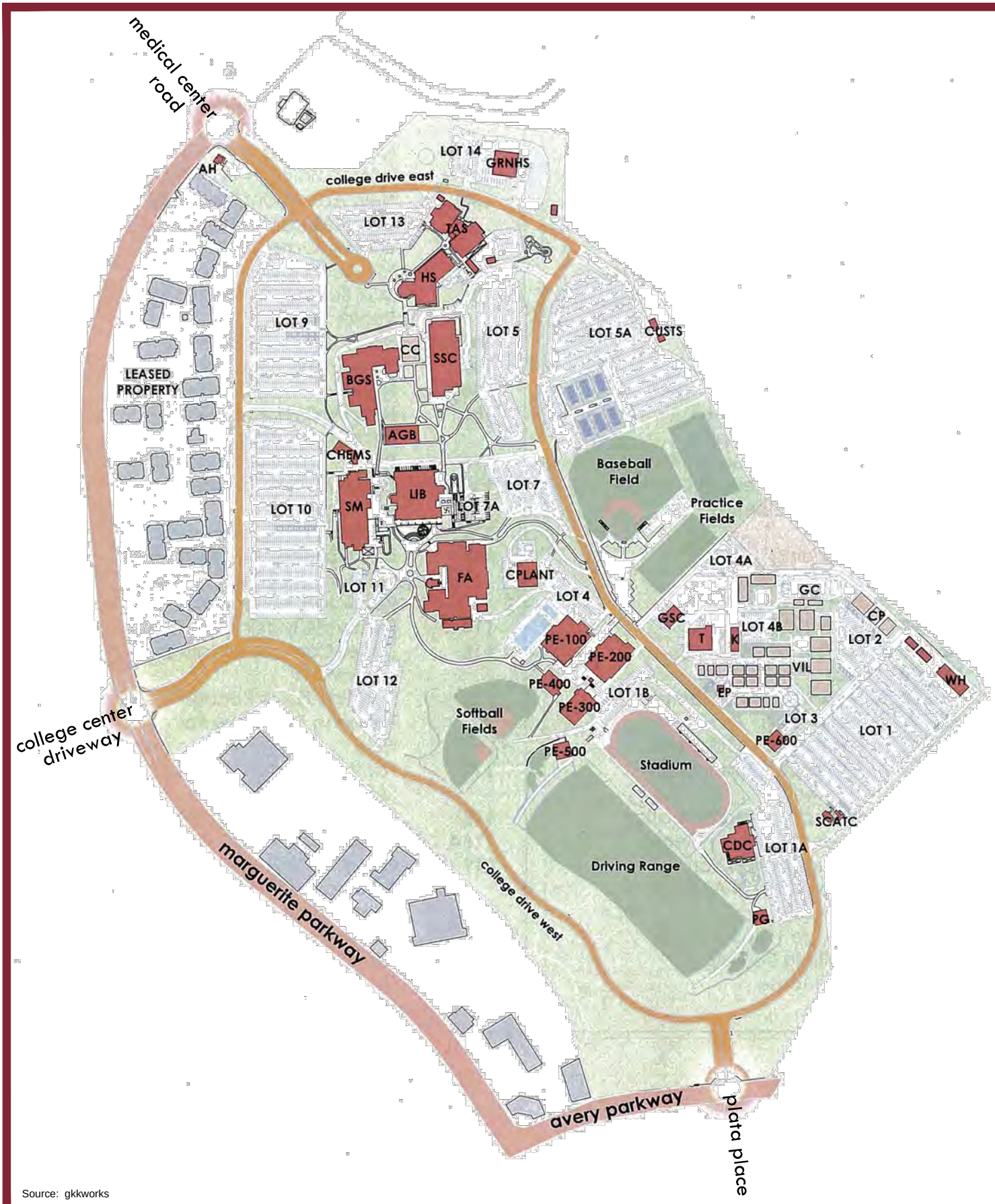
DRAWING: v:\2073\active\2073006530\drawing\rpt_dwg\fig1-2.dwg



Stantec

PROJECT LOCATION - IRVINE VALLEY COLLEGE CAMPUS

Figure 1-2



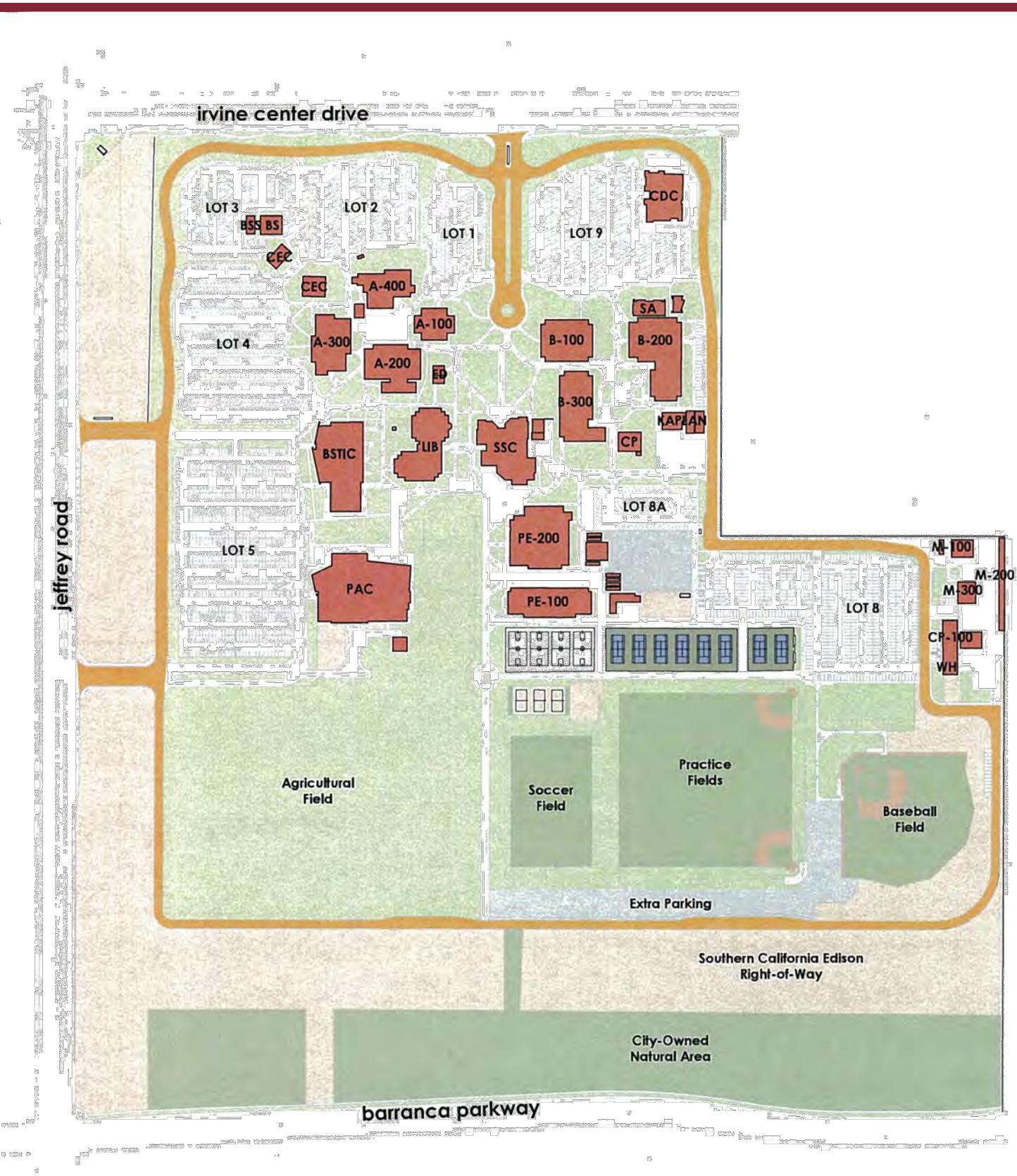
Source: gkkworks

DRAWING: v:\2073\active\2073006530\drawing\rpt_dwg\fig1-3.dwg

Stantec

EXISTING CAMPUS PLAN
- SADDLEBACK COLLEGE

Figure 1-3



Source: gkkworks

DRAWING: v:\2073\active\2073006530\drawing\rpt_dwg\fig1-4.dwg

Stantec

EXISTING CAMPUS PLAN - IRVINE VALLEY COLLEGE

Figure 1-4

Two future driveways planned for the campus are located on Irvine Center Drive and Barranca Parkway. The former is restricted to right-turn in and right-turn out movements and located just southeast of the existing main access on Irvine Center Drive. The latter is located on Barranca Parkway just southeast of Jeffrey Road across the Shadow Oaks apartment complex driveway and is the fourth full access for the campus. Proposed to be signalized, the Barranca Parkway access is planned to be constructed by 2015 and the restricted Irvine Center Drive access by 2030. However, for a more conservative approach so that worst-case conditions are analyzed, the Barranca Parkway access has not been included in 2015 and the restricted Irvine Center Drive access is not in 2030 since an additional driveway would improve accessibility to the campus thereby reducing project traffic impacts (i.e., operation of other campus driveways and campus circulation are improved).

Irvine Center Drive and Jeffrey Road are both six-lane major arterials, and Barranca Parkway is a four-lane primary arterial.

1.2 Analysis Scope and Methodology

The analysis in this report identifies potential impacts of the proposed projects due to the Master Plan update based on existing traffic conditions and short-term (2015/2016) and long-term 2030 future traffic conditions. Existing traffic conditions are based on observed traffic counts, whereas future traffic conditions were prepared using the Irvine Transportation Analysis Model, Version 8.4-10 (ITAM 8.4-10) for the Irvine Valley College campus analysis area and the South (Orange) County Sub-Area Model (SCSAM) for the Saddleback College campus analysis area.

The forecasts for the Irvine Valley College campus are based on the ITAM version used for the Irvine Planning Area 6 proposed development changes, and forecasts for the Saddleback College campus are based on the SCSAM version used for the Laguna Niguel Gateway Specific Plan Update. For purposes of this traffic analysis, full buildout of the Irvine Valley College campus and Saddleback College campus have been assumed to occur in 2030 to be consistent with the ITAM and SCSAM data. Even though the buildout year for the Master Plan is 2031, there is a negligible change in background traffic due to a one year difference for the year 2030 used in this analysis. Also for Saddleback College, 2030 is used and not 2035 as in the Laguna Niguel traffic study because as stated in the La Pata Traffic Study, there is only minor growth between 2030 and 2035 SCSAM assumptions.

Major development projects approved in and around the Irvine Valley College campus analysis area are included in the future traffic conditions analyzed here along with any circulation system improvements related to those approved projects. Added to the ITAM are the Planning Area 40 (PA40) Tentative Tract Map 17277 project, and the Great Park Neighborhoods GPA/ZC and Tentative Tract Maps 17364, 17283 Amended, 17366, 17368 and 17202 project.

In 2003, the North Irvine Transportation Mitigation (NITM) Program was established to provide a funding mechanism for transportation improvements needed in north Irvine, including certain locations in the traffic analysis study area defined for the Irvine College campus analysis. The circulation system improvements that are programmed to be fully funded by the NITM Program have been included in the 2015 and 2030 scenarios analyzed in this study for the Irvine Valley College campus. Circulation system improvements that are only partially funded by the NITM Program have not been assumed in this analysis.

1.2.1 Traffic Analysis Scenarios

Table 1-1 summarizes the student population and faculty/staff for the no-project and with-project traffic analysis scenarios under future (2015/2016 and 2030) conditions. The existing student population and number of faculty/staff are assumed for no-project conditions and future 2030 with-project conditions are assumed to have buildout of the Master Plan for both campuses. The short-term 2015 no-project and with-project forecasts for the Irvine Valley College campus are based on ITAM 2015. The baseline (no-project) short-term 2016 forecasts for the Saddleback College Campus area are based on applying growth factors to existing counts, a methodology consistent with the La Pata Traffic Study. While the Master Plan presents short-term enrollment and faculty/staff numbers at each campus, for worse case analysis purposes, the Saddleback College campus was assumed to be built out per the Master Plan for 2016 with-project conditions. Therefore the project traffic differences in 2030 were applied to 2016 baseline conditions.

1.2.2 Study Area

Figures 1-5 and 1-6 illustrate the study area defined in this traffic study and applied in the analysis that is summarized in this report for the Saddleback College campus and Irvine Valley College campus, respectively. The study area includes portions of the cities of Irvine, Mission Viejo and Laguna Niguel. The study area limits were reviewed during the course of this study based on no-project versus with-project traffic forecast data to verify whether or not significant project impacts occur beyond the study area boundary based on the circulation system performance criteria applied in the study. Based on the findings of the project traffic impact analysis, no expansion of the study area beyond the limits presented here is warranted.

1.2.3 Special Issue

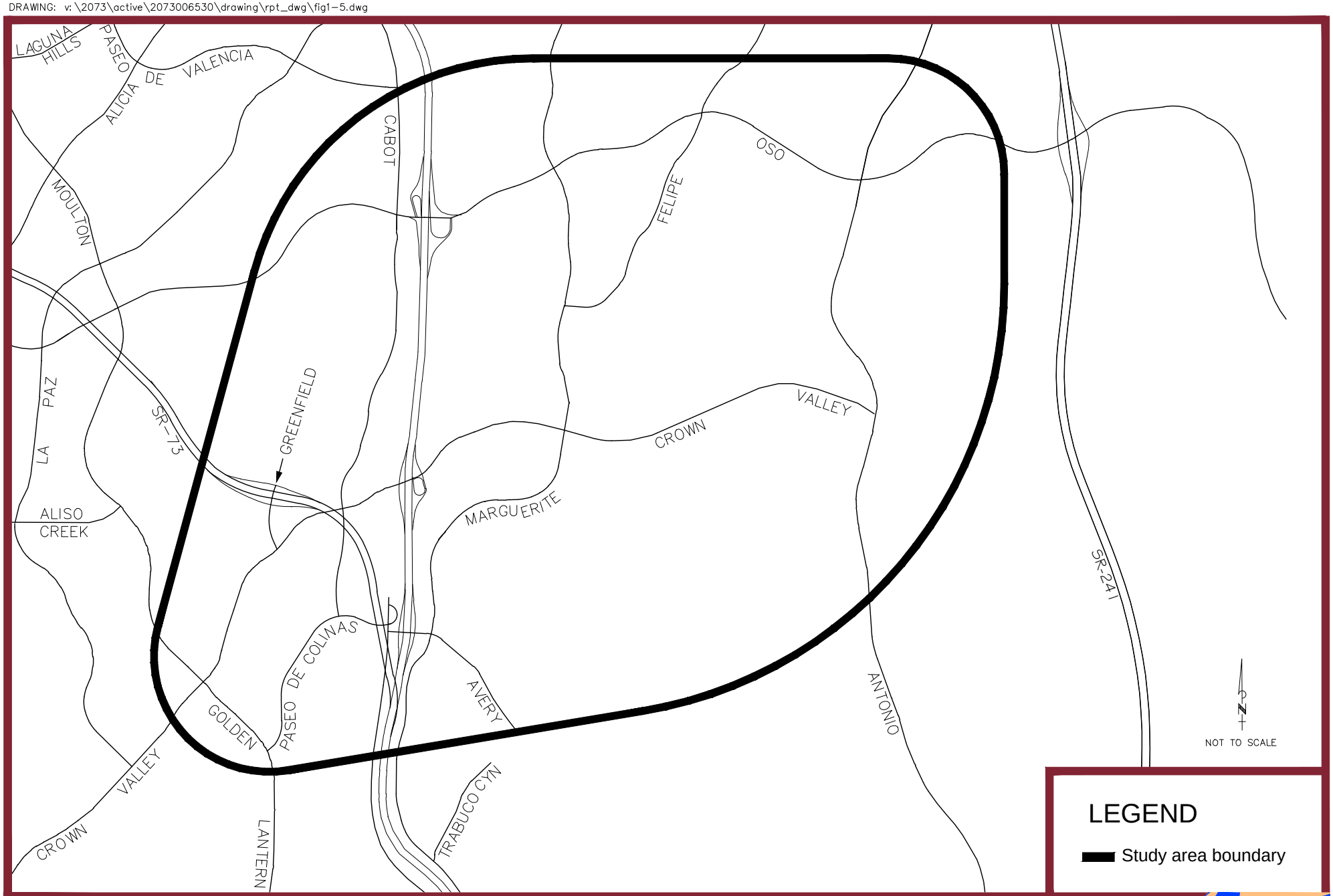
An operations analysis is carried out along Avery Parkway from Camino Capistrano to Plata Place to determine if any additional level of service deficiencies are created within the Saddleback College campus study area by the Master Plan update. A determination is made as to whether the project contributes to potential future deficiencies, and if necessary, project fair share towards mitigation will be identified.

Table 1-1 Traffic Analysis Use Scenarios

	Saddleback College			Irvine Valley College		
Scenario	**FTEF**	**FTES**	**FTES***	**FTEF**	**FTES**	**FTES***
Existing	473	8,106	6,971	255	4,496	4,001
2015/2016 No-Project	473	8,106	6,971	255	4,496	4,001
2015/2016 With-Project	575	10,079	8,668	315	5,438	4,677
2030 No-Project	473	8,106	6,971	255	4,496	4,001
2030 With-Project	748	13,081	11,250	433	7,511	6,685

Abbreviations: FTEF – Full-Time Equivalent Faculty
FTES – Full-Time Equivalent Students
FTES* – FTES without online students (14% Saddleback College and 11% Irvine Valley College)

DRAWING: v:\2073\active\2073006530\drawing\rpt_dwg\fig1-5.dwg

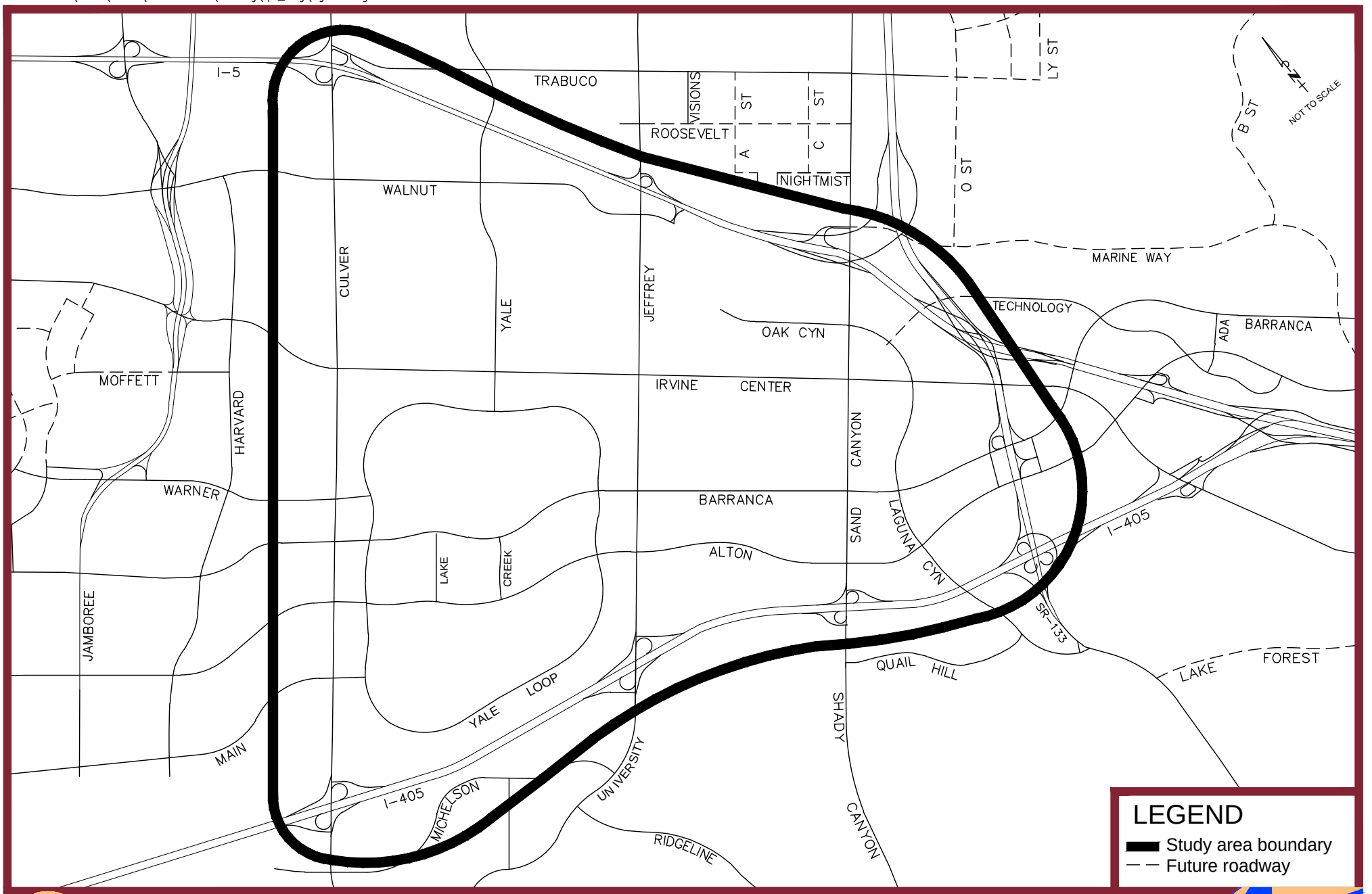


TRAFFIC ANALYSIS STUDY AREA
- SADDLEBACK COLLEGE CAMPUS

Figure 1-5

Stantec

DRAWING: v:\2073\active\2073006530\drawing\rpt_dwg\fig1-6.dwg



TRAFFIC ANALYSIS STUDY AREA - IRVINE VALLEY COLLEGE CAMPUS

Figure 1-6

Stantec

1.2.4 Traffic Model Background

Traffic forecast data for the Saddleback College campus study area and the Irvine Valley College campus analysis area was prepared using the SCSAM and the ITAM 8.4-10 traffic model, respectively. These traffic forecasting models are a focused sub-area model derived from the Orange County Transportation Analysis Model (OCTAM) and were specifically designed to provide detailed forecasting capability within the study areas. The OCTAM is maintained by the OCTA, and has been developed according to the Orange County sub-area traffic modeling guidelines adopted by the OCTA. The OCTA has certified the SCSAM and ITAM traffic models as being consistent with the OCTAM regional model.

The forecasts for the Irvine Valley College campus are based on the ITAM version used for the Irvine Planning Area 6 proposed development changes, and forecasts for the Saddleback College campus are based on the SCSAM version used for the Laguna Niguel Gateway Specific Plan Update. It should be noted that because the Master Plan buildout year is 2030, the buildout forecasts presented here from SCSAM are 2030 rather than 2035.

1.3 Performance Criteria

In this report, a set of performance criteria is utilized to identify future level of service (LOS) deficiencies on the study area circulation system. Traffic LOS is designated "A" through "F" with LOS "A" representing free flow conditions and LOS "F" representing severe traffic congestion. Table 1-2 summarizes the volume/capacity (V/C) ranges that correspond to LOS "A" through "F" for arterial roads in the City of Irvine where roadway analysis is implemented. The V/C ranges listed for arterial roads are designated in the Orange County Congestion Management Program (CMP) and for the city of Irvine General Plan.

The overall performance criteria applied in this study are summarized in Table 1-3. The criteria include components for arterial roadways and intersections, and are based on LOS calculation methodologies and performance standards used by the cities in the study areas and by the OCTA as part of the CMP.

The arterial roadway criteria for Irvine locations involve the use of average daily traffic (ADT) V/C ratios. The criteria is supplemented by the city of Irvine's Link Capacity Analysis guidelines which require that arterial deficiencies identified based on ADT V/C ratios be further examined using peak hour data. LOS "D" (V/C not to exceed .90) is the city of Irvine's performance standard for the locations of the arterial roadway system within the study area for the Irvine Valley College campus. As for the Saddleback College campus area, the ADT volumes are not used in the traffic impact analysis, but are presented here to provide a reference point for the traffic forecasts and for other sections of the project EIR such as "Air Quality" and "Noise."

Table 1-2 Volume/Capacity Ratio Level of Service Ranges – Irvine Arterial Roads

Level of Service (LOS)	Volume/Capacity (V/C) Ratio Range Arterial Roads
A	.00 – .60
B	.61 – .70
C	.71 – .80
D	.81 – .90
E	.91 – 1.00
F	Above 1.00

Table 1-3 Performance Criteria for Locations Analyzed Within the Study Areas

I. Arterial Roads (Irvine Valley College Campus Study Area Only)

V/C Calculation Methodology

Level of service based on average daily traffic (ADT) volume/capacity (V/C) ratios calculated using the following capacities:

Major Arterial	8 lane	72,000
	7 lane	63,000
	6 lane	54,000
Primary Arterial	4 lane	32,000
Secondary Arterial	4 lane	28,000
Commuter	2 lane	13,000

As required by the city of Irvine Link Capacity Analysis guidelines, arterial deficiencies identified based on ADT V/C ratios are to be further examined using peak hour data.

Performance Standard

Arterials within Irvine Valley College campus study area only: Level of Service D (V/C less than or equal to .90).

Mitigation Requirement

For V/C greater than the acceptable level of service, mitigation of the project contribution is required to bring the location back to acceptable level of service or to no-project conditions if project contribution is .02 or greater for Irvine arterial roads in the Irvine Valley College campus study area.

II. Intersections

V/C Calculation Methodology

Level of service based on peak hour intersection capacity utilization (ICU) values calculated using the following assumptions:

Saturation Flow Rate: 1,700 vehicles per hour per lane
Clearance Interval: .05
Right-Turn-On-Red Utilization Factor*: .75

* "De facto" right-turn lane is assumed in the ICU calculation if 19 feet from edge to outside of through-lane exists and parking is prohibited during peak periods.

Table 1-3 Performance Criteria for Locations Analyzed Within the Study Area (continued)

II. Intersections (continued)

Performance Standard

E

Intersections (seven) on Crown Valley between I-5 and Marguerite Parkway: Level of Service (peak hour ICU less than or equal to 1.00).
All other intersections: Level of Service D (peak hour ICU less than or equal to .90).

Mitigation Requirement

Irvine: For ICU greater than the acceptable level of service, mitigation of the project contribution is required to bring intersection back to acceptable level of service where the deficiency is caused by the project or to no-project conditions or better where the project adds to a deficient condition and the project contribution is .02 or greater (i.e., more than 1.0 percent).

Laguna Niguel: For ICU greater than the acceptable level of service, mitigation is required to bring intersection back to acceptable level of service where the deficiency is caused by the project. If the project adds to a deficient condition by .02 or greater (i.e., more than 1.0 percent), the project will pay its fair share towards any improvements.

Mission Viejo: For ICU greater than the acceptable level of service, mitigation is required to bring intersection back to acceptable level of service where the deficiency is caused by the project. If the project adds to a deficient condition by .01 or greater (i.e., 1.0 percent or more), the project will pay its fair share towards any improvements.

The intersection criteria involve the use of peak hour intersection capacity utilization (ICU) values. The ICU ranges that correspond to LOS "A" through "F" are the same as the V/C ranges shown in Table 1-2 for arterial roads. By practice the ICU methodology assumes that intersections are signalized. LOS "D" (ICU not to exceed .90) is the performance standard for the intersections in the study areas except for seven intersections along Crown Valley Parkway between I-5 Freeway and Marguerite Parkway in Mission Viejo where LOS "E" is acceptable (ICU not to exceed 1.00).

As a special issue, an operations analysis is performed for Avery Parkway due to the project's impacts to the forecast deficiencies along this road. Using the Highway Capacity Manual (HCM) intersection analysis methodology, the LOS at an intersection location is determined based on the estimated average delay experienced by all traffic using the intersection. The vehicle delay ranges that correspond to LOS "A" through "F" as specified in the HCM are summarized in Table 1-4.

Tables 1-5 and 1-6 summarize the general LOS descriptions for arterial highways and intersections, respectively.

1.4 References

1. "Great Park Neighborhoods General Plan Amendment/Zone Change and VTTM 17008 Amendment Traffic Study," Urban Crossroads, May 2011.

2. "Great Park Neighborhoods Vesting Tentative Tract Maps 17364, 17283 Amended, 17366, 17368 and 17202 Traffic Impact Analysis," Urban Crossroads, May 2011.

3. "City of Irvine Planning Area 40 Vesting Tentative Tract Map 17277 Traffic Study," Austin-Foust Associates, Inc., October 2010.

4. "City of Irvine Planning Area 40/Planning Area 12 (Traveland Site) GPA/ZC and Planning Areas 1 and 9 Density Transfer Traffic Study," Austin-Foust Associates, Inc., June 2008.

5. "North Irvine Transportation Mitigation (NITM) Program Nexus Study," Austin-Foust Associates, Inc., April 2003.

6. "North Irvine Transportation Mitigation (NITM) Program Five-Year Review," Parsons Brinkerhoff, June 2010.

7. "City of Irvine Planning Area 40 GPA/ZC NITM Program Fee Re-Allocation Study," Austin-Foust Associates, Inc., March 2011.

8. "Circulation Phasing Study," City of Irvine, 2008.

Table 1-4 Intersection Level of Service Ranges (ICU and HCM Delay)

Level of Service (LOS)	Intersection Capacity Utilization (ICU)	Highway Capacity Manual (HCM) Average Delay
A	.00 – .60	.00 – 10.0 seconds
B	.61 – .70	10.1 – 20.0 seconds
C	.71 – .80	20.1 – 35.0 seconds
D	.81 – .90	35.1 – 55.0 seconds
E	.91 – 1.00	55.1 – 80.0 seconds
F	Above 1.00	Above 80.0 seconds

Table 1-5 Level of Service Descriptions – Urban Streets

The average travel speed along an urban street is the determinant of the operating level of service (LOS). The travel speed along a segment, section, or entire length of an urban street is dependent on the running speed between signalized intersections and the amount of control delay incurred at signalized intersections. The following general statements characterize LOS along urban streets and show the relationship to free flow speeds (FFS):

LOS	Description
A	LOS A describes primarily free-flow operations at average travel speeds, usually about 90 percent of the FFS for the given street class. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at signalized intersections is normal.
B	LOS B describes reasonably unimpeded operations at average travel speeds, usually about 70 percent of the FFS for the street class. Vehicles are completely unimpeded in their ability to maneuver with the traffic stream. Control delay at signalized intersections is minimal.
C	LOS C describes stable operations; however, ability to maneuver and change lanes in midblock locations may be more restricted that at LOS B, and longer queues, adverse signal coordination, or both may contribute to lower average travel speeds of about 50 percent of the FFS for the street class.
D	LOS D borders on a range in which small increases in flow may cause substantial increases in delay and decreases in travel speed. LOS D may be due to adverse signal progression, inappropriate signal timing, high volumes, or a combination of these factors. Average travel speeds are about 40 percent of FFS.
E	LOS E is characterized by significant delays and average travel speeds of 33 percent or less of the FFS. Such operations are caused by a combination of adverse progression, high signal density, high volumes, extensive delays at critical intersections, and inappropriate signal timing.
F	LOS F is characterized by urban street flow at extremely low speeds, typically one-third to one-fourth of the FFS. Intersection congestion is likely at critical signalized locations, with high delays, high volumes, and extensive queuing.

Source: Highway Capacity Manual 2010, Transportation Research Board of the National Academies.

Table 1-6 Level of Service Descriptions – Signalized Intersections

Levels of service (LOS) for signalized intersections are defined in terms of control delay as follows:

LOS	Description
A	LOS A describes operations with low control delay, up to 10 seconds per vehicle. This LOS occurs when progression is extremely favorable and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.
B	LOS B describes operations with control delay greater than 10 and up to 20 seconds per vehicle. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than the LOS A, causing higher levels of delay.
C	LOS C describes operations with control delay greater than 20 and up to 35 seconds per vehicle. These higher delays may result from only fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. Cycle failure occurs when a given green phase does not serve queued vehicles, and overflows occur. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.
D	LOS D describes operations with control delay greater than 35 and up to 55 seconds per vehicle. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, and high V/C ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	LOS E describes operations with control delay greater than 55 and up to 80 seconds per vehicle. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent.
F	LOS F describes operations with control delay in excess of 80 seconds per vehicle. This level, considered unacceptable to most drivers, often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of lane groups. It may also occur at high V/C ratios with many individual cycle failures. Poor progression and long cycle lengths may also contribute significantly to high delay levels.

Source: Highway Capacity Manual 2010, Transportation Research Board of the National Academies.

9. "Traffic Impact Analysis Guidelines," City of Irvine, August 24, 2004.

10. "Highway Capacity Manual 2010," Transportation Research Board of the National Academies.

11. "Draft 2011 Orange County Congestion Management Program," Orange County Transportation Authority, November 2011.

12. "OCTAM 3.2 Summary Documentation and Validation Report," OCTA, June 2001.

13. "Orange County Sub-Area Modeling Guidelines Manual," Orange County Transportation Authority, July 2005.

14. "South (Orange) County Sub-Area Traffic Model (SCSAM) Traffic Model Description and Validation," Austin-Foust Associates, Inc., April 2002.

15. "La Pata Avenue Gap Closure and Camino Del Rio Extension Traffic Study," Austin-Foust Associates, Inc., December 2009.

16. "Traffic Study for the Laguna Niguel Gateway Area Specific Plan Update," Iteris, Inc., June 2011.

2.0 Project Description

This report section describes the traffic characteristics of the proposed Master Plan projects. The project sites and proposed changes to student enrollment and faculty/staff employees and site access are summarized. The trip generation estimates and traffic distribution patterns associated with the proposed projects will then be presented. This project description information is applied in the traffic impact analysis sections of this report to analyze the project under 2015/2016 and 2030 conditions.

2.1 Campus Master Plan Changes and Campus Access

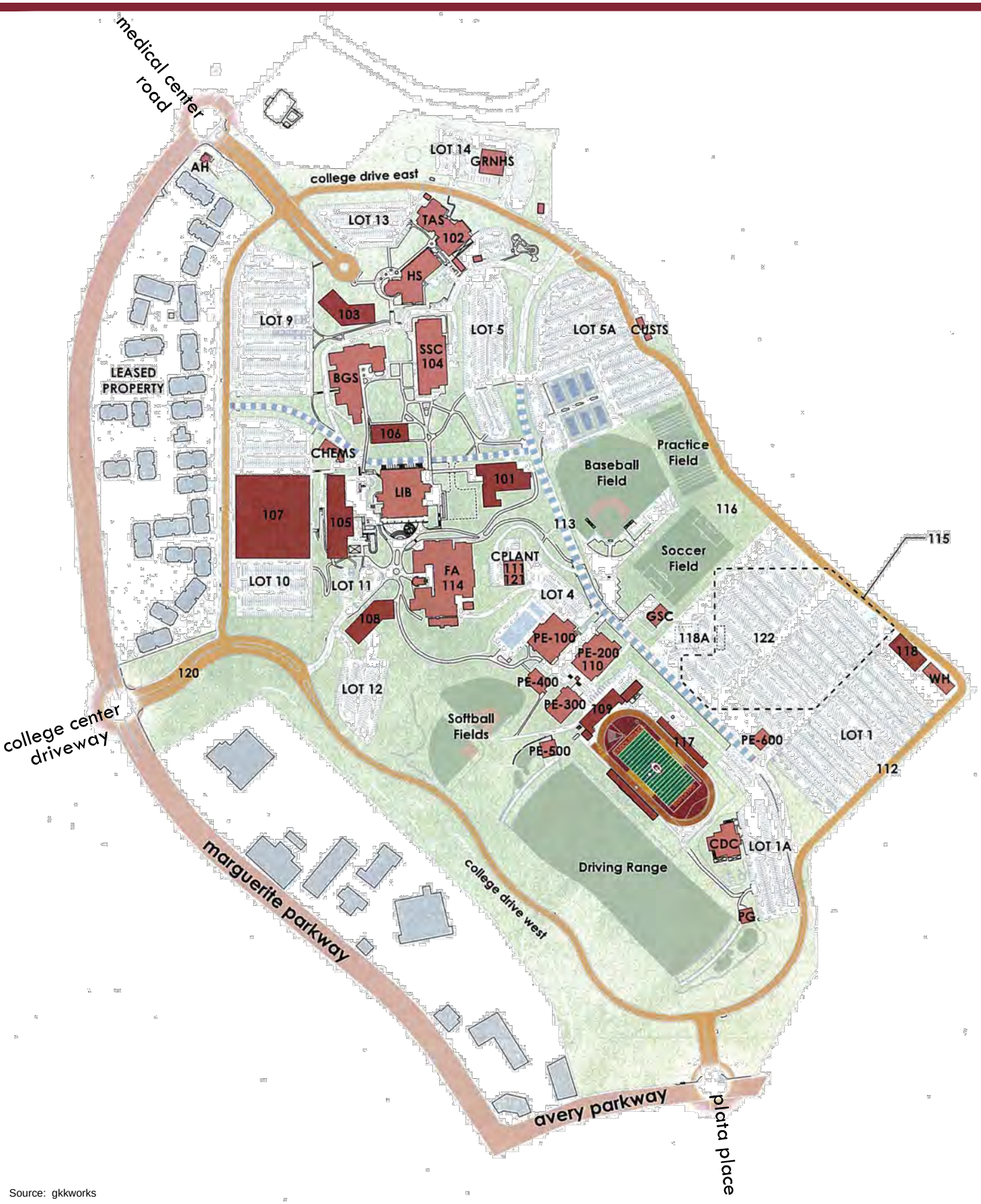
The proposed projects included in this study are the SOCCCD Master Plan update for the Saddleback College campus and the Irvine Valley College campus. The former is located just east of Marguerite Parkway and north of Avery Parkway in the city of Mission Viejo. The latter is bounded by Irvine Center Drive to the northeast, Orange Tree to the southeast, Barranca Parkway to the southwest and Jeffrey Road to the northwest.

The proposed Master Plan update increases the building square footage on each campus to accommodate South Orange County's population growth. For purposes of the traffic analysis, increased student enrollment and faculty/staff employees will determine the impacts of the proposed projects due to the Master Plan update.

As illustrated in the proposed campus plan, access to the Saddleback College campus is provided via three signalized driveway entrances (see Figure 2-1). Two of the driveways are located on Marguerite Parkway between Crown Valley Parkway and Avery Parkway, one directly across Medical Center Road and the other across the College Center shopping center driveway. The third driveway is on Avery Parkway across from Plata Place. Both Marguerite Parkway and Avery Parkway are four-lane secondary arterials. College Drive, a two-lane internal road, provides circulation within the campus.

Figure 2-2 shows the Irvine Valley College proposed campus plan and the access points at three existing driveways and two future driveways. The main entrance into the campus is signalized and is located on Irvine Center Drive southeast of Jeffrey Road. The other two existing driveways are on Jeffrey Road. One driveway is just southwest of Irvine Center Drive and is restricted to right-turn in and out movements. The second driveway is northeast of Barranca Parkway and is a full access signalized intersection.

Two future driveways planned for the campus are located on Irvine Center Drive and Barranca Parkway. The former is restricted to right-turn in and right-turn out movements and located just southeast of the existing main access on Irvine Center Drive. The latter is located on Barranca Parkway just southeast of Jeffrey Road across the Shadow Oaks apartment complex driveway and



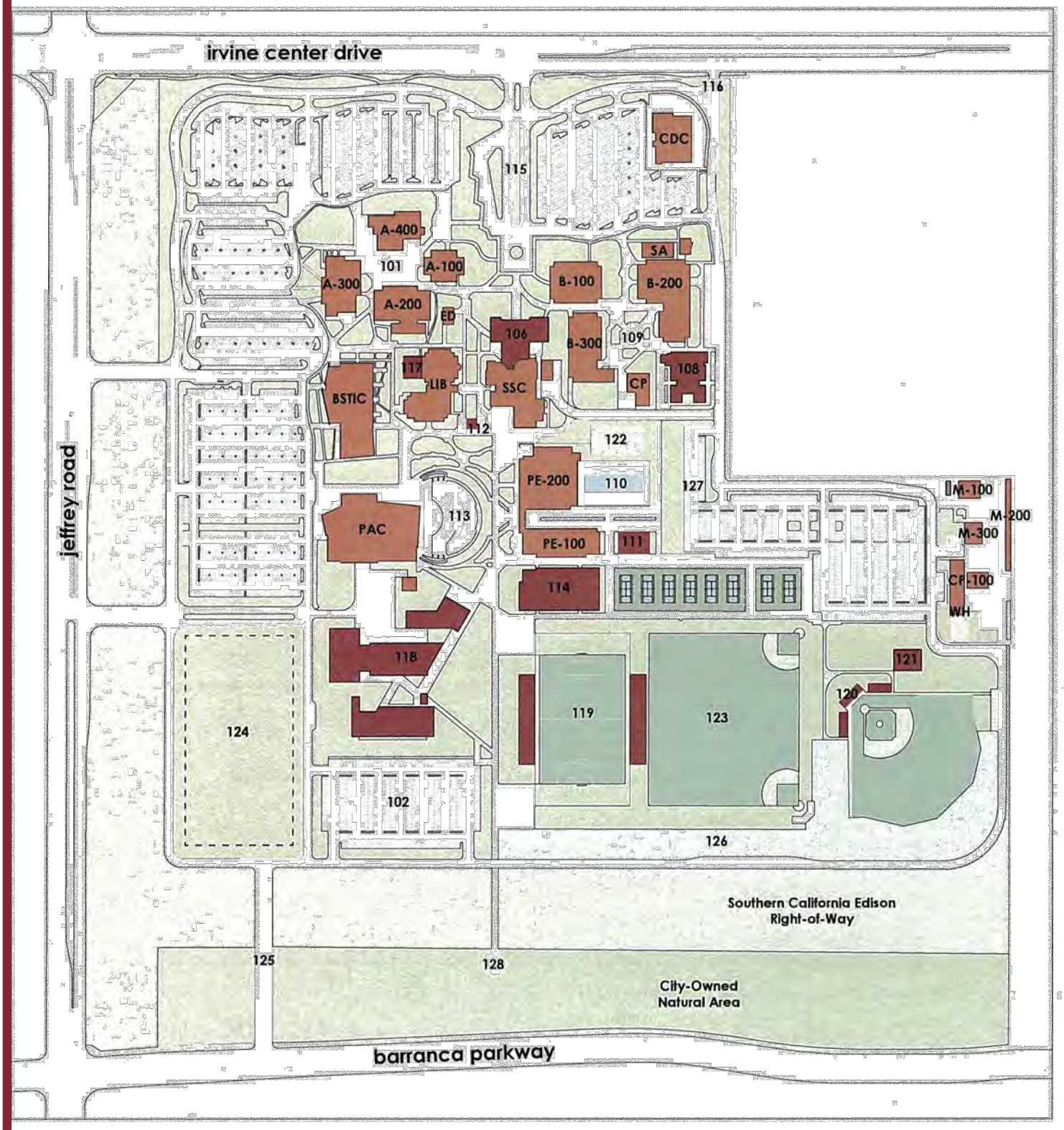
Source: gkkworks

DRAWING: v:\2073\active\2073006530\drawing\rpt_dwg\fig2-1.dwg

Stantec

PROPOSED CAMPUS PLAN
- SADDLEBACK COLLEGE

Figure 2-1



Source: gkkworks

DRAWING: v:\2073\active\2073006530\drawing\rpt_dwg\fig2-2.dwg

PROPOSED CAMPUS PLAN
- IRVINE VALLEY COLLEGE

Figure 2-2

Stantec

is the fourth full access for the campus. Proposed to be signalized, the Barranca Parkway access is planned to be constructed by 2015 and the restricted Irvine Center Drive access by 2030. However, for a more conservative approach so that worst-case conditions are analyzed, the Barranca Parkway access has not been included in 2015 and the restricted Irvine Center Drive access is not in 2030 since an additional driveway would improve accessibility to the campus thereby reducing project traffic impacts (i.e., operation of other campus driveways and campus circulation are improved).

Irvine Center Drive and Jeffrey Road are both six-lane major arterials, and Barranca Parkway is a four-lane primary arterial.

2.2 Project Trip Generation

The 2015 and 2030 trip generation for the proposed projects under the no-project and with-project traffic analysis scenarios is summarized in Table 2-1. The trip generation shown in this table for each campus is based on SCSAM and ITAM Version 8.4-10 (ITAM 8.4-10) outputs. The modest growth at Saddleback College in 2016 is not shown here. As previously discussed in the Traffic Analysis Scenarios section of Chapter 1.0, the Saddleback College campus was assumed for worse case analysis purposes to be built out per the Master Plan for 2016 with-project conditions even though the Master Plan presents short-term enrollment and faculty/staff numbers for the campus. As indicated in Table 2-1 and according to the trip generation estimates, the proposed project at Master Plan buildout is forecast to generate around 740 AM and 700 PM peak hour trips and 7,160 daily trips at Saddleback College and around 500 AM and 450 PM peak hour trips and 5,130 daily trips at Irvine Valley College.

2.3 Project Trip Distribution

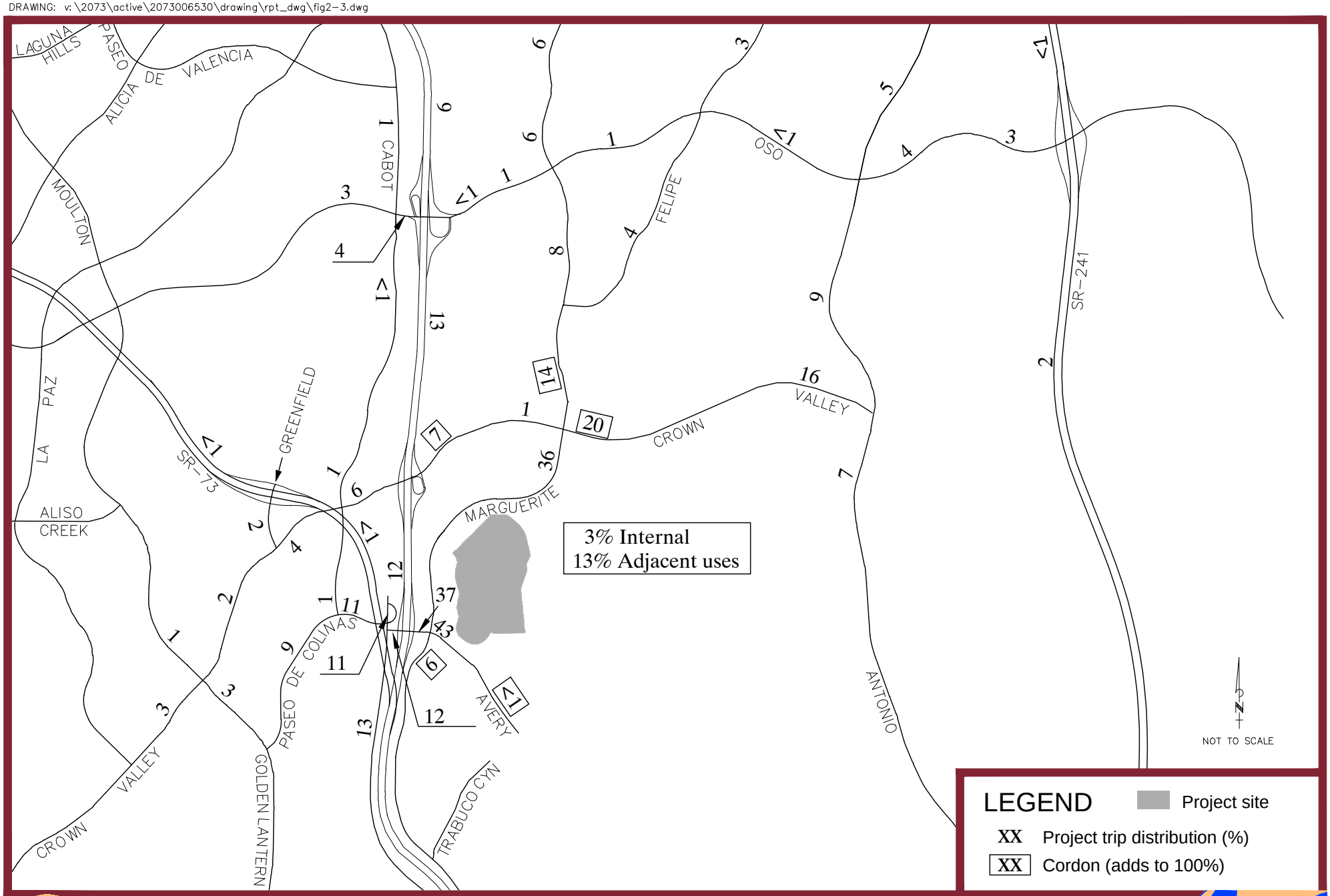
Trip distribution patterns for each campus project site were developed using the SCSAM and ITAM traffic models and are presented in Figures 2-3 and 2-4 for year 2030. The trip distribution patterns are based on each model's distribution of daily project traffic. These percentages differ slightly in the peak hours, and the traffic models use the individual peak hour distribution patterns to assign peak hour trips.

Table 2-1 Project Trip Generation Summary

Land Use	FTES*	FTEF	AM Peak Hour			PM Peak Hour			ADT
			In	Out	Total	In	Out	Total	
Saddleback College (SCSAM)									
2030 No-Project	6,971	473	1,730	340	2,070	1,070	970	2,040	30,780
2030 With-Project	11,250	748	2,350	460	2,810	1,230	1,510	2,740	37,940
Difference	4,279	255	620	120	740	160	540	700	7,160
Irvine Valley College (ITAM)									
2015 No-Project	4,001	255	1,500	320	1,820	590	1,080	1,670	18,570
2015 With-Project	4,677	315	1,630	350	1,980	640	1,170	1,810	20,200
Difference	676	60	130	30	160	50	90	140	1,630
2030 No-Project	4,001	255	1,490	320	1,810	580	1,070	1,650	18,570
2030 With-Project	6,685	433	1,900	410	2,310	740	1,360	2,100	23,700
Difference	2,684	178	410	90	500	160	290	450	5,130

Abbreviations: ADT – Average Daily Trips
FTEF – Full-Time Equivalent Faculty
FTES* – FTES without online students (14% Saddleback College and 11% Irvine Valley College). Online students do not generate traffic.
ITAM – Irvine Transportation Analysis Model, Version 8.4-10 (ITAM 8.4-10)
SCSAM – South (Orange) County Sub-Area Model

DRAWING: v:\2073\active\2073006530\drawing\rpt_dwg\fig2-3.dwg

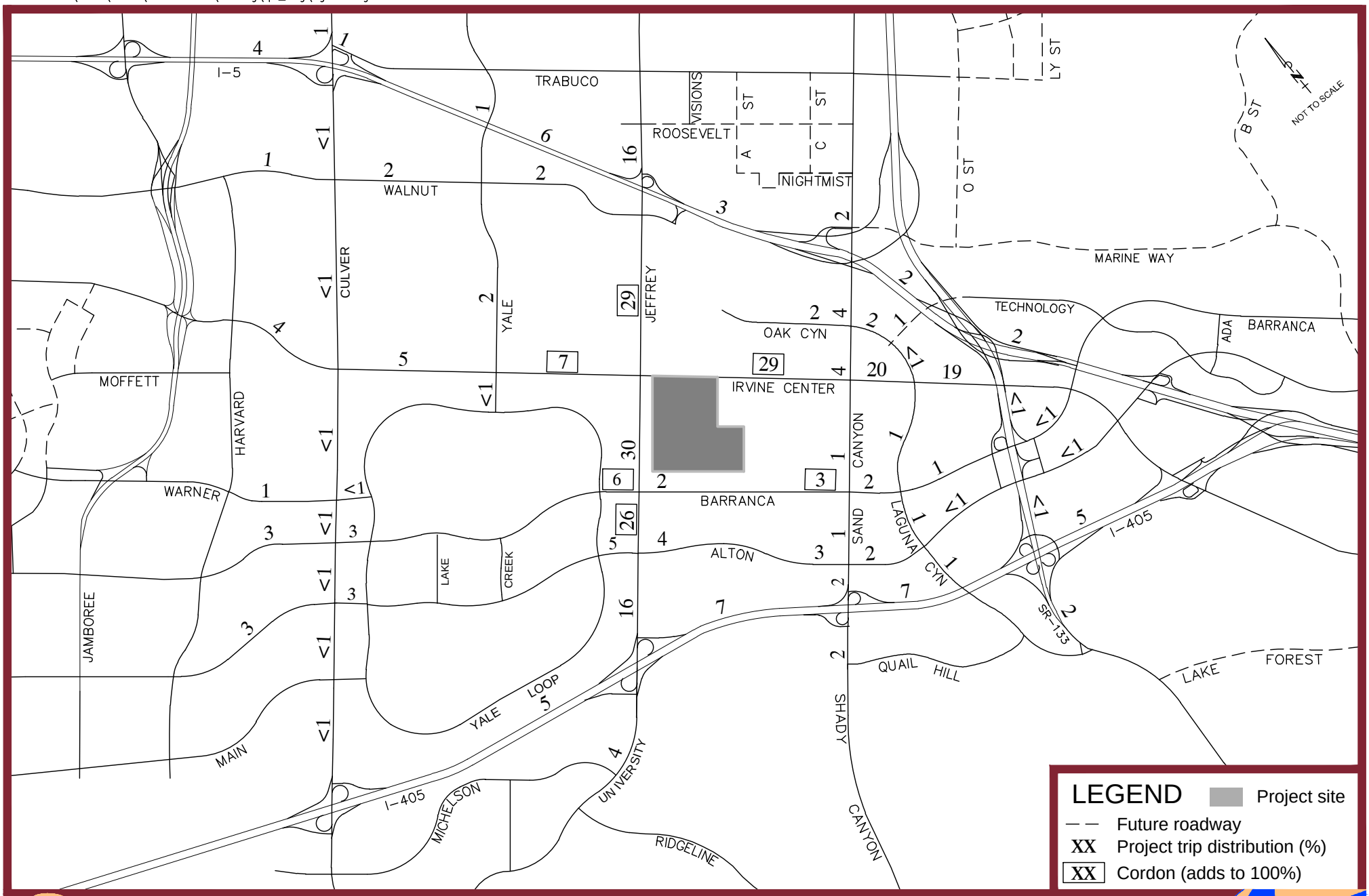


2030 PROJECT TRIP DISTRIBUTION - SADDLEBACK COLLEGE

Figure 2-3

Stantec

DRAWING: v:\2073\active\2073006530\drawing\rpt_dwg\fig2-4.dwg



Stantec

2030 PROJECT TRIP DISTRIBUTION - IRVINE VALLEY COLLEGE

Figure 2-4

3.0 Transportation Setting

This chapter describes the transportation setting for the proposed projects. Existing traffic conditions in the traffic analysis study area are summarized, and the future circulation systems planned for 2015/2016 and 2030 within the Saddleback College campus and Irvine Valley College campus study areas are described.

3.1 Existing Conditions

The existing circulation system in the study areas is illustrated in Figures 3-1 and 3-2 together with existing midblock lanes on arterial roadways and the number of existing travel lanes on freeway mainline segments. Existing traffic conditions in the study areas were identified based on observed traffic counts. Current average daily traffic (ADT) counts and AM and PM peak hour turn movement counts at intersection locations in the study areas were taken from the Irvine Planning Area 6, La Pata and Laguna Niguel Gateway traffic studies. Volumes for the access driveways at both campuses and select key intersections around Saddleback College were collected in 2011. The following sub-sections summarize the existing traffic conditions for the various components of the study area circulation system including arterial roads and intersections.

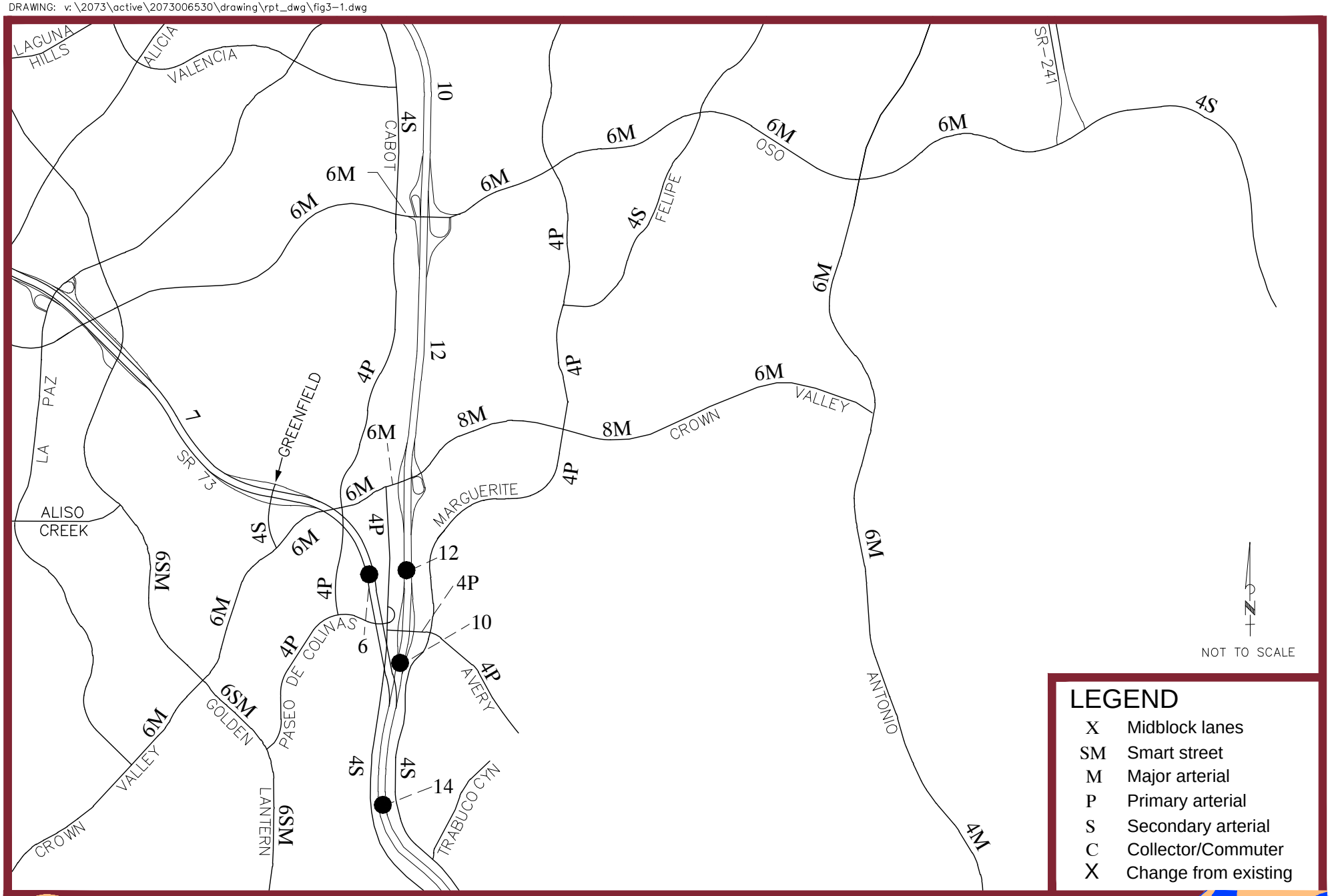
3.1.1 Average Daily Traffic Volumes and Levels of Service

Current ADT volumes on the arterial roadway system and the freeway system in the Irvine Valley College campus study area are illustrated in Figure 3-3. The existing ADT volume/capacity (V/C) ratios on the arterial roadway system in the study area are also illustrated in Figure 3-3. For the Saddleback Valley College campus study area, current ADT volumes on the arterial roadway system and the freeway system are illustrated in Figure 3-4. As previously mentioned, the ADT volumes are not used in the traffic impact analysis for the Saddleback College campus area, but are presented here to provide a reference point for the traffic forecasts and for other sections of the project EIR such as “Air Quality” and “Noise.”

For the Irvine Valley College campus study area, based on the ADT V/C level of service (LOS) performance criteria outlined in Chapter 1.0, all arterials in the study area currently operate at an acceptable LOS with the exception of the following location:

- University Avenue (I-405 northbound ramps to Michelson Avenue) – ADT LOS=F

DRAWING: v:\2073\active\2073006530\drawing\rpt_dwg\fig3-1.dwg

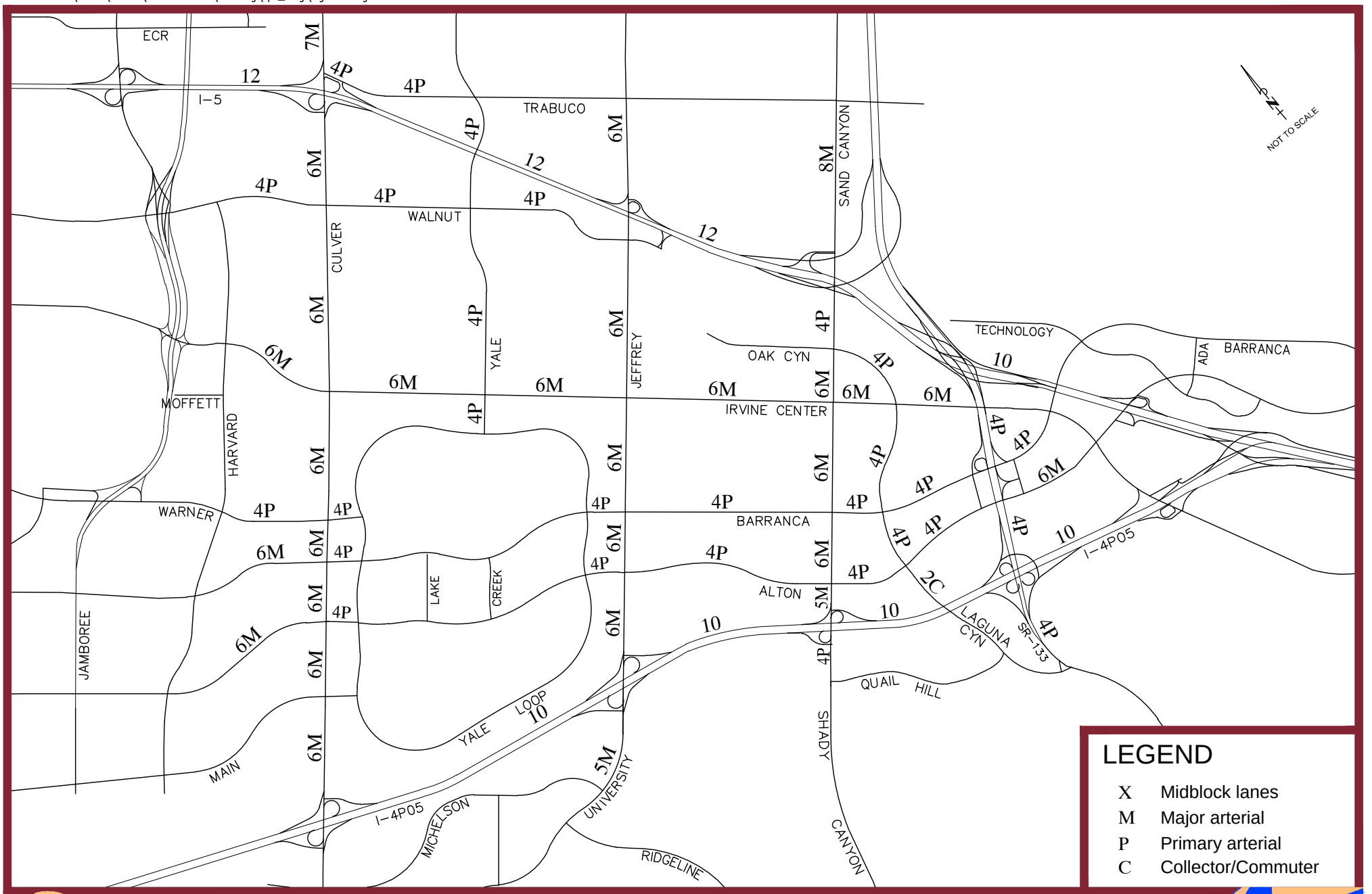


EXISTING CIRCULATION SYSTEM
- SADDLEBACK COLLEGE CAMPUS STUDY AREA

Figure 3-1

Stantec

DRAWING: v:\2073\active\2073006530\drawing\rpt_dwg\fig3-2.dwg

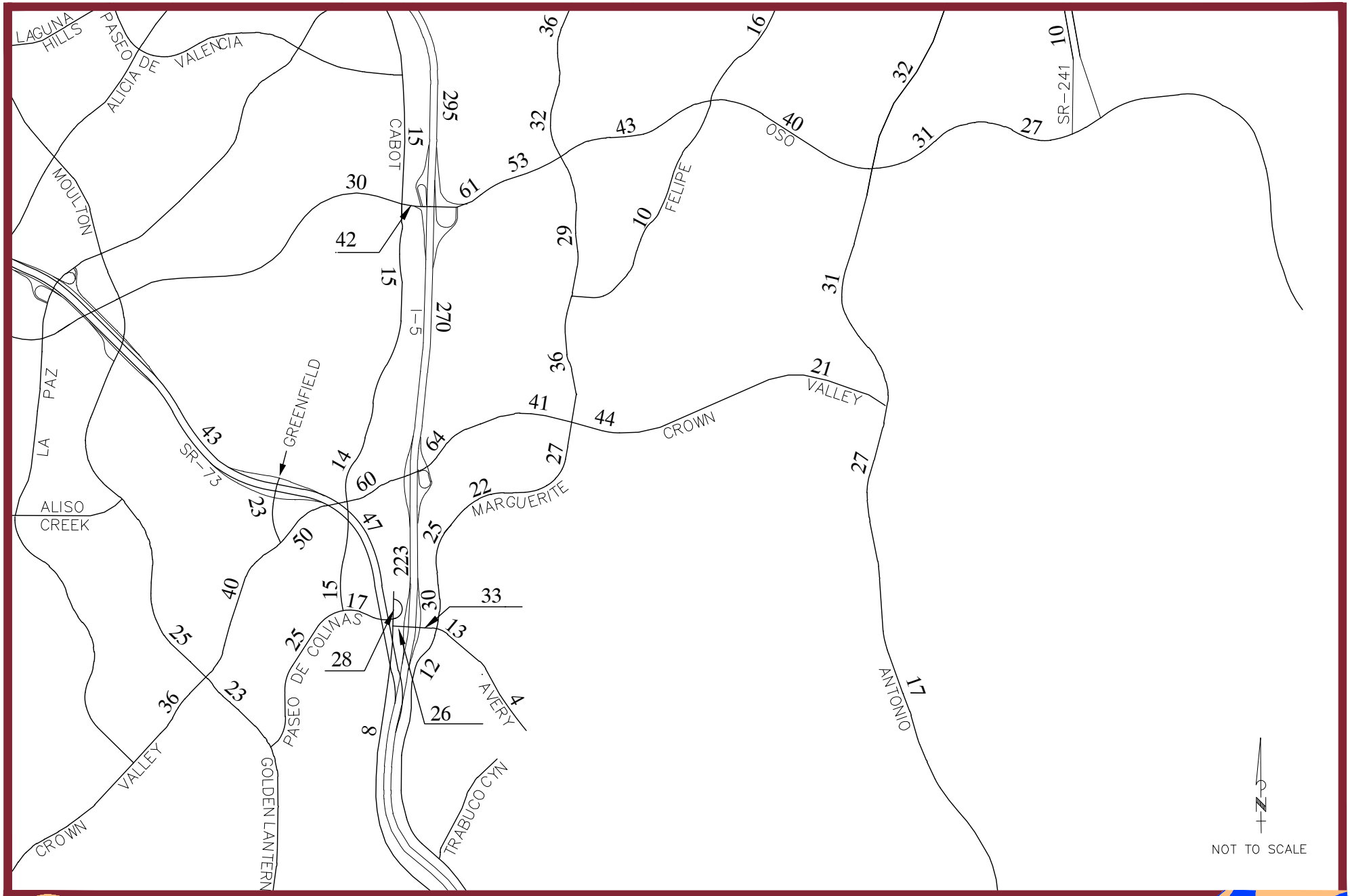


EXISTING CIRCULATION SYSTEM - IRVINE VALLEY COLLEGE CAMPUS STUDY AREA

Figure 3-2

Stantec

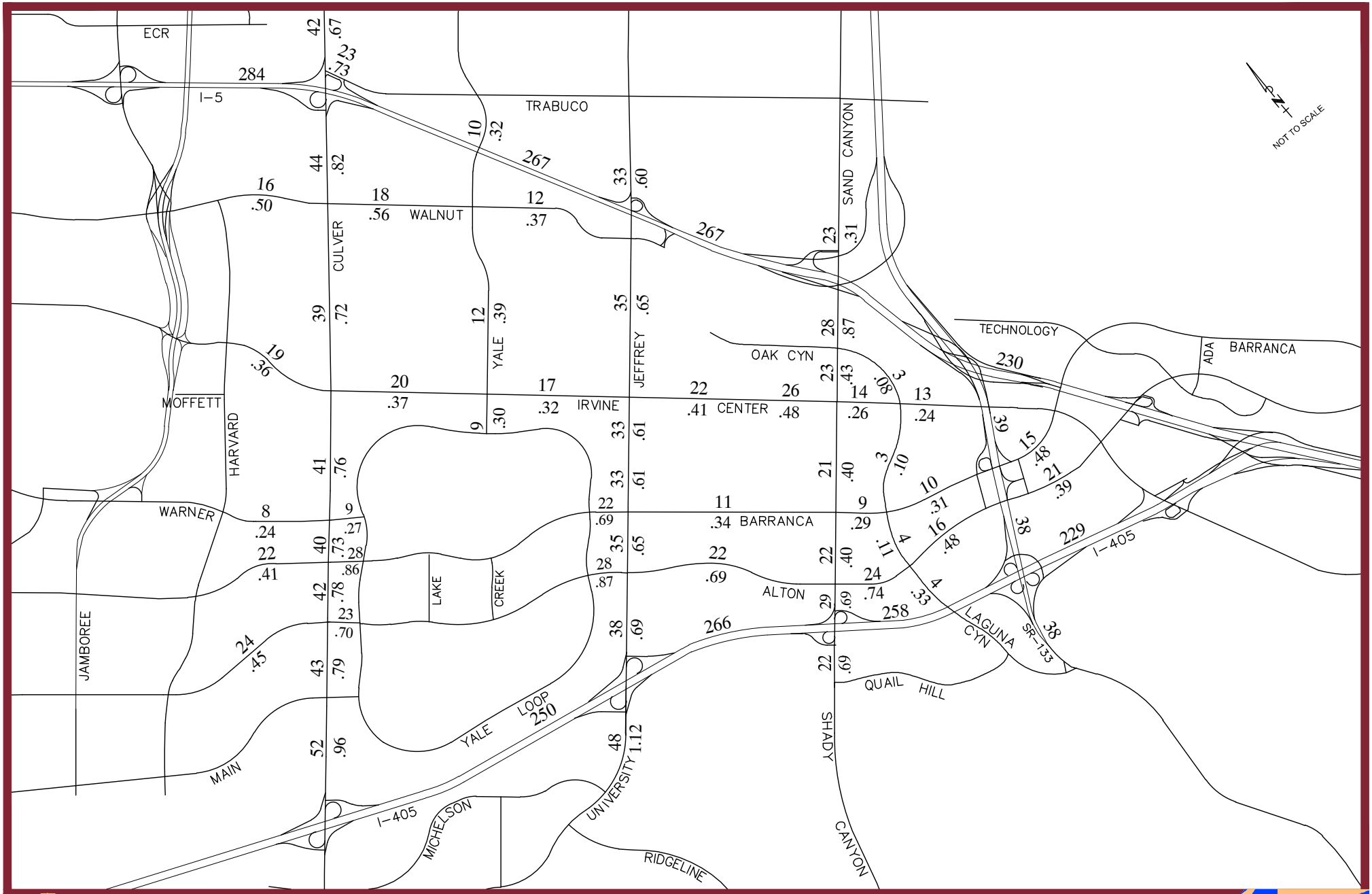
DRAWING: v:\2073\active\2073006530\drawing\rpt_dwg\fig3-3.dwg



EXISTING ADT VOLUMES (000s)
- SADDLEBACK COLLEGE

Figure 3-3

DRAWING: v:\2073\active\2073006530\drawing\rpt_dwg\fig3-4.dwg



EXISTING ADT VOLUMES (000s) AND V/C RATIOS
- IRVINE VALLEY COLLEGE

Figure 3-4

Stantec

3.1.2 Peak Hour Intersection Levels of Service

Figures 3-5 and 3-6 illustrate the intersection locations that were analyzed under existing conditions. Existing intersection capacity utilization (ICU) values were calculated using peak hour traffic count data in combination with the existing lane configuration of each location. Existing AM and PM peak hour ICU values are summarized in Table 3-1 (actual turn volumes and ICU calculation worksheets are included in Appendix A). Use of the ICU methodology is consistent with the traffic analysis guidelines of the cities of Irvine, Mission Viejo and Laguna Niguel and the Orange County Transportation Authority (OCTA) Congestion Management Program (CMP), and by practice the ICU methodology assumes that intersections are signalized. Based on the intersection LOS performance criteria outlined in Chapter 1.0, all intersection locations analyzed in the study area currently operate at an acceptable LOS.

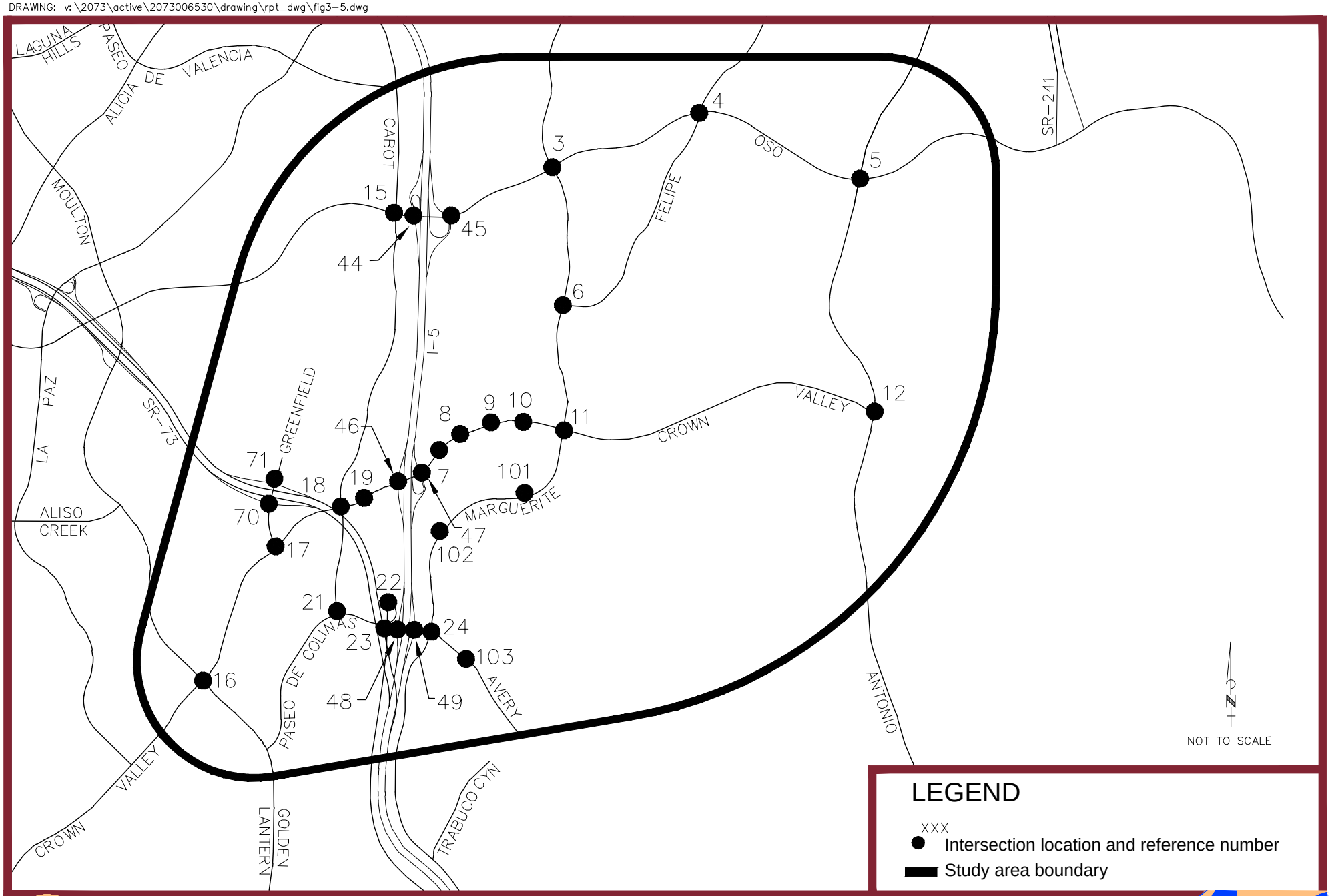
3.1.3 Existing-Plus-Project Conditions

The purpose of this section is to discuss the existing-plus-project analysis in order to comply with the California Environmental Quality Act (CEQA) which indicates that the baseline for assessing environmental impacts is generally the existing conditions at the time that the environmental document for the project is prepared. The existing intersection LOS summary presented in this chapter indicates that enough capacity is available to accommodate the proposed project with all intersections operating at LOS "C" or better in both the Saddleback College and Irvine Valley College campus study areas. Therefore no mitigation would be necessary. Any comparative traffic analysis of full buildout of the proposed project versus existing traffic conditions would be hypothetical because of the actual buildout time frame of the project for each campus (around 18 years). Hence the information provided here is intended to satisfy the CEQA requirements.

3.2 Planned Circulation System

The circulation system that is planned in the traffic analysis study areas under 2015/2016 and 2030 conditions is illustrated in Figures 3-7 through 3-9, respectively. The 2016 circulation system for the Saddleback College campus study area is the same as existing. Each illustration shows the roadway network that is planned in each time frame as well as midblock travel lanes on individual segments of the roadway network. The 2015/2016 and 2030 circulation systems only assume improvements that are committed for construction (i.e., public agency capital improvement programs, state transportation improvement program, etc.) or would be constructed as part of previously entitled development by 2015/2016 or 2030. Along with the committed improvements, the SR-241 extension is also assumed in the 2030 highway network for Saddleback College.

DRAWING: v:\2073\active\2073006530\drawing\rpt_dwg\fig3-5.dwg

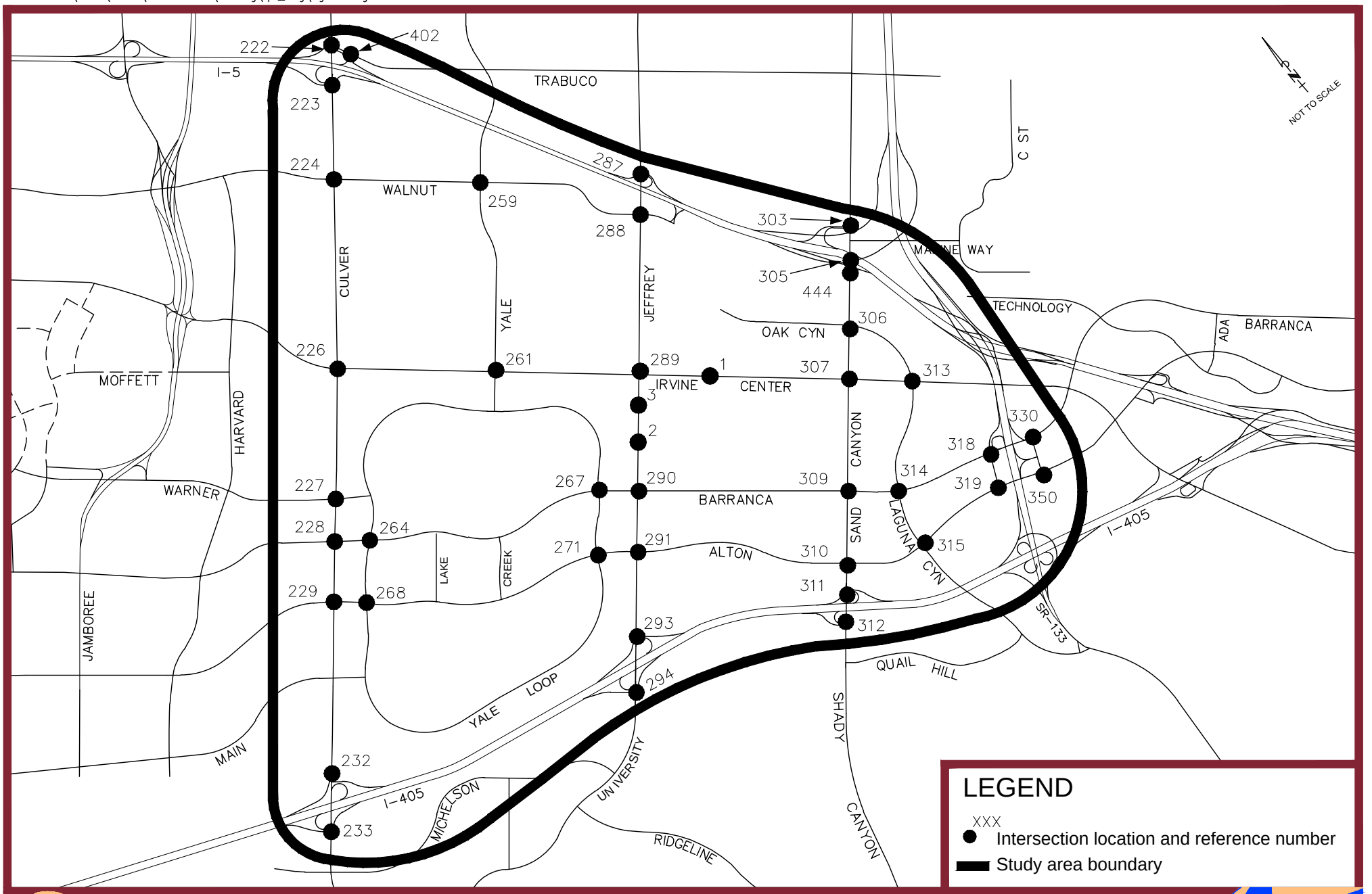


EXISTING INTERSECTION LOCATION MAP
- SADDLEBACK COLLEGE

Figure 3-5

Stantec

DRAWING: v:\2073\active\2073006530\drawing\rpt_dwg\fig3-6.dwg



EXISTING INTERSECTION LOCATION MAP - IRVINE VALLEY COLLEGE

Figure 3-6

Stantec

Table 3-1 Existing Intersection LOS Summary

Intersection	AM Peak Hour		PM Peak Hour	
	ICU	LOS	ICU	LOS
Saddleback College Campus Study Area				
3. Marguerite & Oso	.66	B	.65	B
4. Felipe & Oso	.76	C	.75	C
5. Antonio & Oso	.70	B	.67	B
6. Marguerite & Felipe	.65	B	.64	B
7. Puerta Real & Crown Valley (a)	.51	A	.68	B
8. Medical Center & Crown Valley (a)	.43	A	.52	A
9. Los Altos & Crown Valley (a)	.40	A	.38	A
10. Bellogente & Crown Valley(a)	.42	A	.36	A
11. Marguerite Pkwy & Crown Valley (a)	.60	A	.72	C
12. Antonio & Crown Valley	.39	A	.47	A
15. Cabot & Oso Pkwy	.54	A	.61	B
16. Moulton Pkwy & Crown Valley	.53	A	.57	A
17. Greenfield & Crown Valley	.55	A	.62	B
18. Cabot & Crown Valley	.58	A	.66	B
19. Forbes Rd & Crown Valley	.46	A	.61	B
21. Cabot & Paseo De Colinas	.60	A	.51	A
22. Cm Capistrano & Paseo De Colinas	.44	A	.48	A
23. Camino Capistrano & Avery	.48	A	.49	A
24. Marguerite & Avery	.72	C	.75	C
44. I-5 SB Ramps & Oso	.56	A	.72	C
45. I-5 NB Ramps & Oso	.57	A	.73	C
46. I-5 SB & Crown Valley	.66	B	.75	C
47. I-5 NB & Crown Valley	.63	B	.69	B
48. I-5 SB Ramps & Avery	.56	A	.69	B
49. I-5 NB Ramps & Avery	.62	B	.61	B
70. Greenfield & SR-73 SB Ramps	.44	A	.50	A
71. Greenfield & SR-73 NB Ramps	.53	A	.46	A
101. Marguerite & Med Ctr/College	.66	B	.63	B
102. Marguerite & College Ctr/College	.35	A	.43	A
103. College/Plata & Avery	.47	A	.30	A
Irvine Valley College Campus Study Area				
1. College at Irvine Center	.36	A	.31	A
2. Jeffrey at College	.38	A	.45	A
3. Jeffrey at College RIRO	.38	A	.37	A
222. Culver at Trabuco	.54	A	.66	B
223. Culver at I-5 SB Ramps	.55	A	.62	B
224. Culver at Walnut	.59	A	.74	C
226. Culver at Irvine Center	.56	A	.57	A
227. Culver at Warner	.59	A	.61	B
228. Culver at Barranca	.56	A	.64	B
229. Culver at Alton	.67	B	.74	C

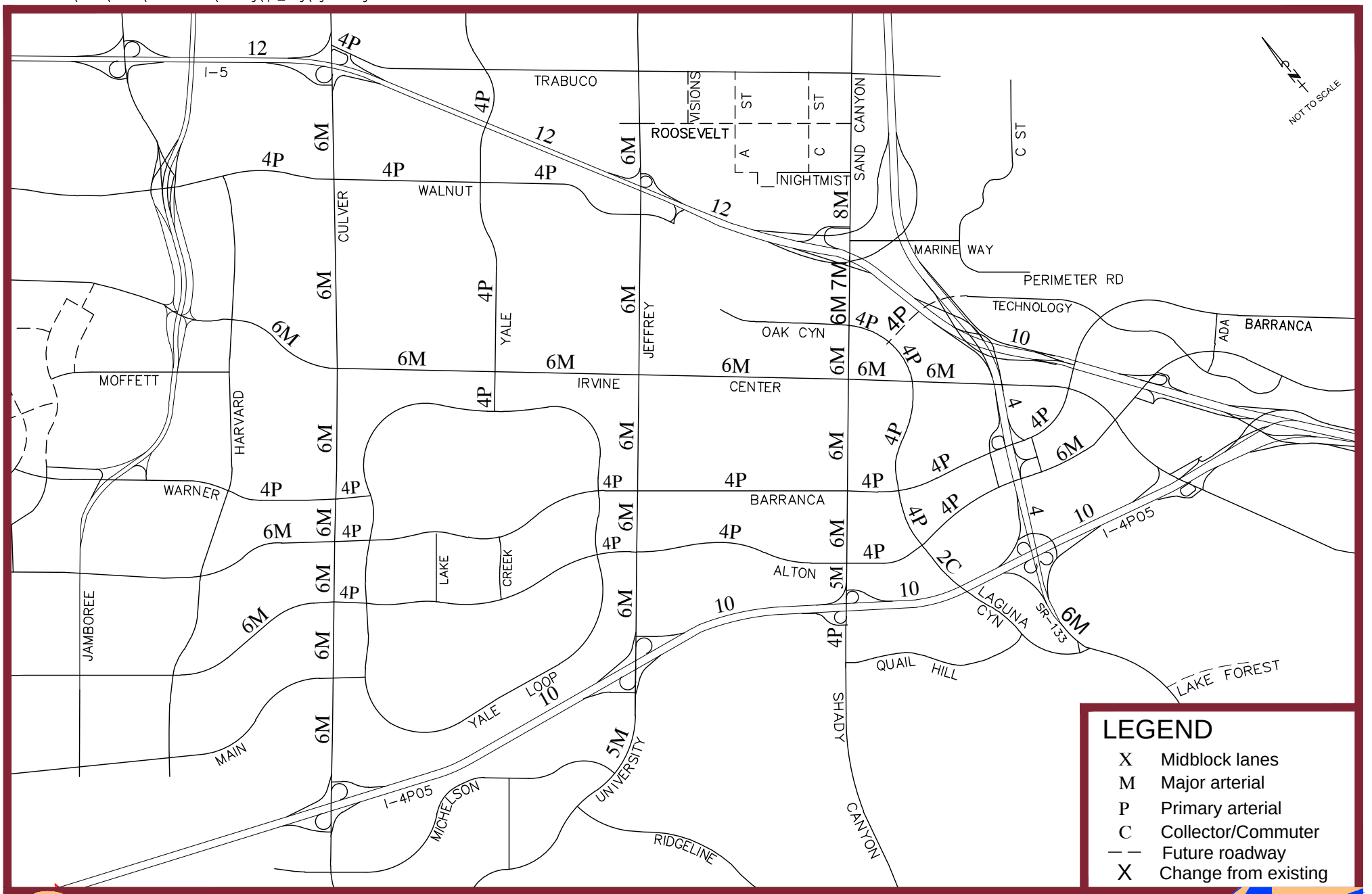
Table 3-1 Existing Intersection LOS Summary (continued)

Intersection	AM Peak Hour		PM Peak Hour	
	ICU	LOS	ICU	LOS
232. Culver at I-405 NB Ramps	.48	A	.72	C
233. Culver at I-405 SB Ramps	.54	A	.69	B
259. Yale at Walnut	.35	A	.53	A
261. Yale at Irvine Center	.48	A	.40	A
264. West Yale Loop at Barranca	.53	A	.54	A
267. East Yale Loop at Barranca	.54	A	.49	A
268. West Yale Loop at Alton	.48	A	.61	B
271. East Yale Loop at Alton	.55	A	.62	B
287. Jeffrey at I-5 NB Ramps	.37	A	.59	A
288. Jeffrey at Walnut	.58	A	.56	A
289. Jeffrey at Irvine Center	.46	A	.65	B
290. Jeffrey at Barranca	.64	B	.61	B
291. Jeffrey at Alton	.79	C	.78	C
293. Jeffrey at I-405 NB Ramps	.68	B	.73	C
294. University at I-405 SB Ramps	.54	A	.52	A
303. Sand Canyon at I-5 NB Ramps	.70	B	.56	A
304. Sand Canyon at Marine Way	.53	A	.60	A
305. Sand Canyon at I-5 SB Ramps	.67	B	.62	B
306. Sand Canyon at Oak/Laguna Canyon	.55	A	.54	A
307. Sand Canyon at Irvine Center	.38	A	.39	A
309. Sand Canyon at Barranca	.40	A	.38	A
310. Sand Canyon at Alton. Pkwy	.58	A	.59	A
311. Sand Canyon at I-405 NB Ramps	.51	A	.39	A
312. Sand Canyon at I-405 SB Ramps	.68	B	.49	A
313. Laguna Canyon at Irvine Center	.19	A	.24	A
314. Laguna Canyon at Barranca	.26	A	.25	A
315. Laguna Canyon at Alton	.40	A	.36	A
318. Banting at Barranca	.49	A	.48	A
319. Banting at Alton	.48	A	.40	A
330. Barranca at Pacifica	.48	A	.64	B
350. Alton at Pacifica	.43	A	.31	A
402. I-5 NB Ramps at Trabuco	.47	A	.53	A
444. Sand Canyon at Burt	.70	B	.67	B

Abbreviations: ICU – intersection capacity utilization
LOS – level of service
NB – northbound
SB – southbound

(a) LOS E is acceptable at this intersection.

DRAWING: v:\2073\active\2073006530\drawing\rpt_dwg\fig3-7.dwg

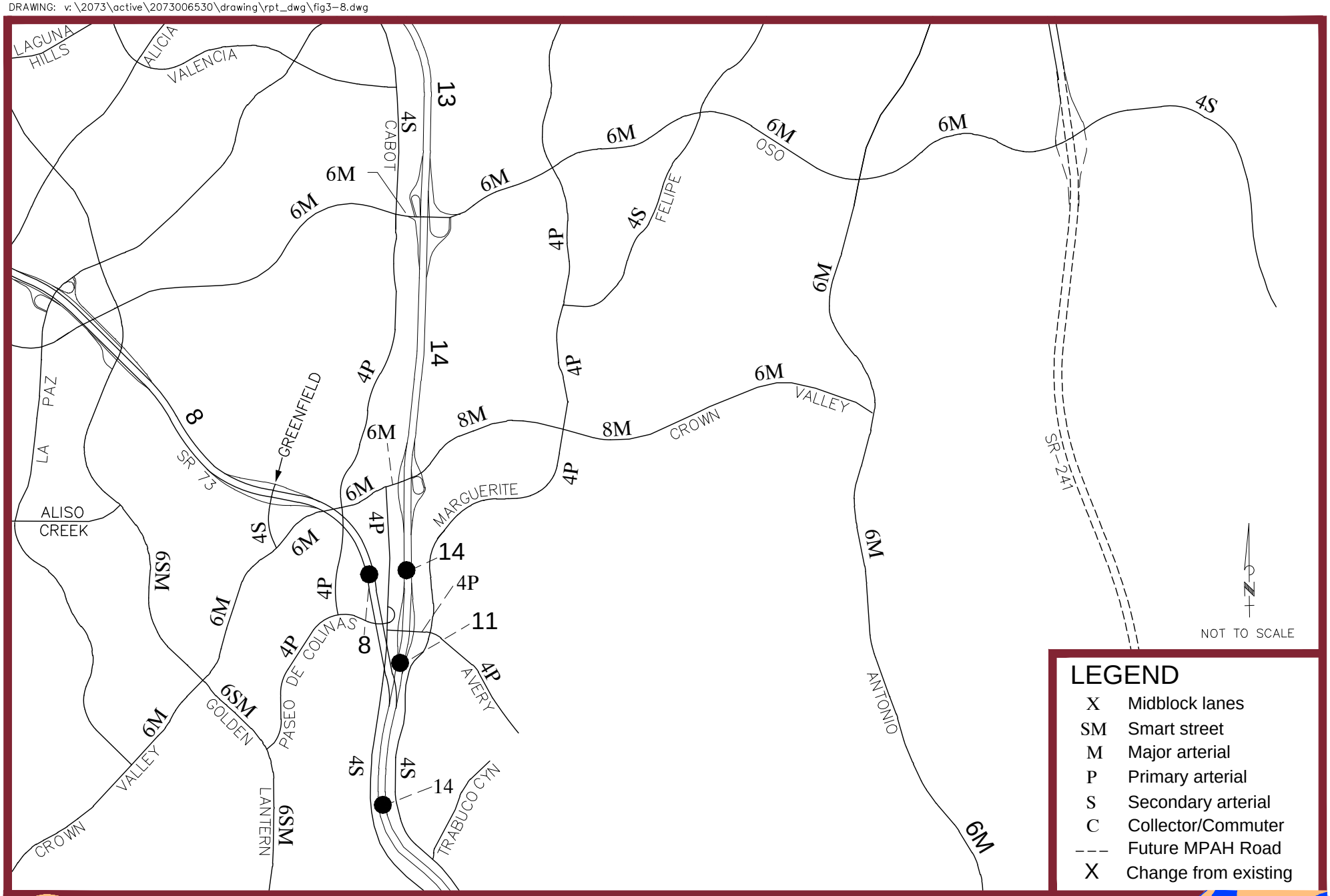


2015 CIRCULATION SYSTEM
- IRVINE VALLEY COLLEGE CAMPUS STUDY AREA

Figure 3-7

Stantec

DRAWING: v:\2073\active\2073006530\drawing\rpt_dwg\fig3-8.dwg

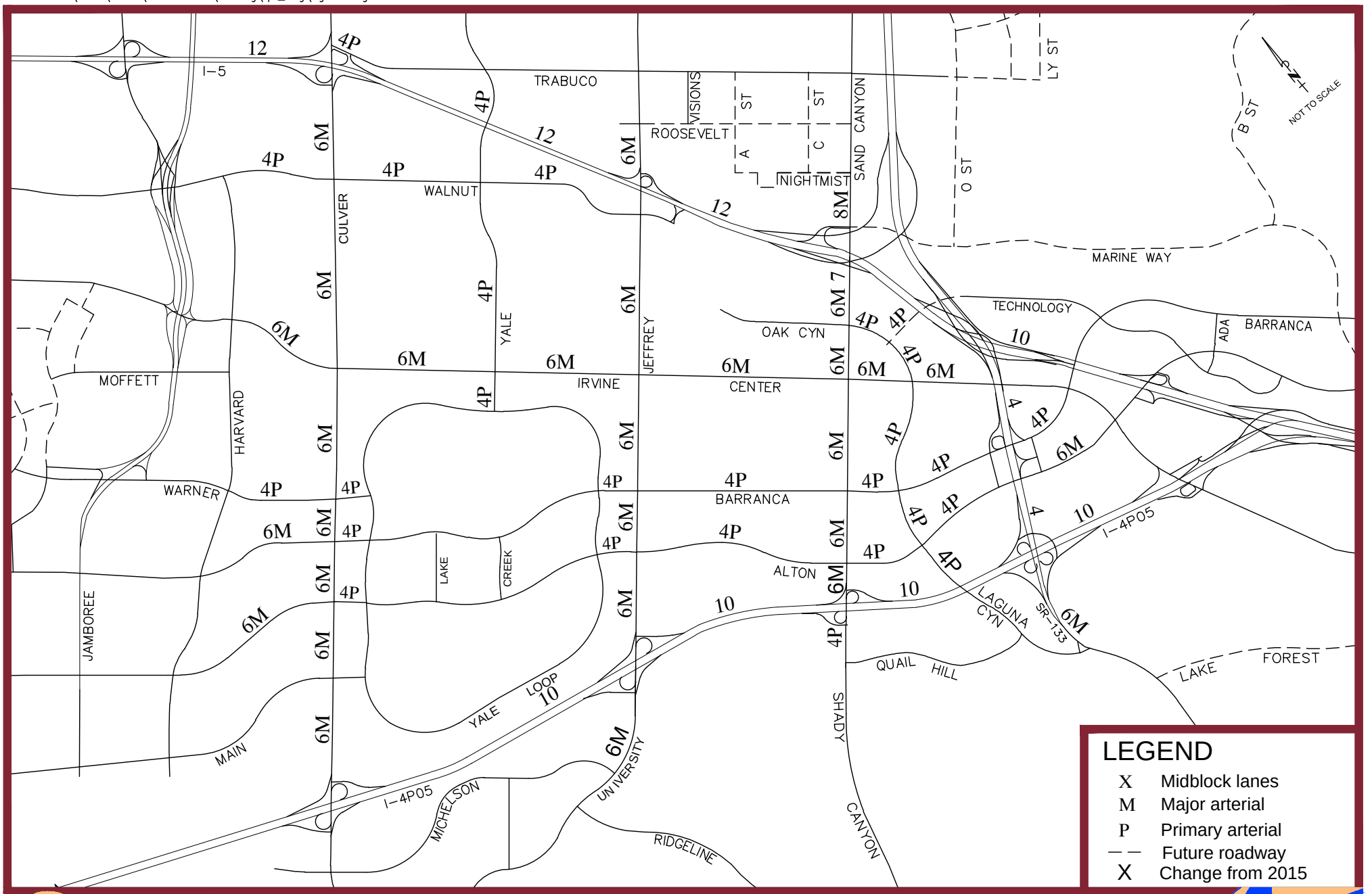


2030 MPAH CIRCULATION SYSTEM
- SADDLEBACK COLLEGE CAMPUS STUDY AREA

Figure 3-8

Stantec

DRAWING: v:\2073\active\2073006530\drawing\rpt_dwg\fig3-9.dwg



2030 CIRCULATION SYSTEM
- IRVINE VALLEY COLLEGE CAMPUS STUDY AREA

Figure 3-9

Stantec

4.0 Year 2015/2016 Project Impact Analysis

This chapter analyzes the impacts of the Saddleback College and Irvine Valley College proposed projects on year 2015/2016 traffic conditions in the traffic analysis study areas. The potential traffic impacts of the projects are assessed based on a comparison of 2015/2016 no-project and with-project conditions. As previously noted, the time frame of the short-term analysis for the Irvine Valley College campus study area is 2015 and 2016 for the Saddleback College campus study area.

4.1 Year 2015/2016 Traffic Impacts

As discussed in Chapter 1.0, ITAM Version 8.4-10 (ITAM 8.4-10) was used to prepare the year 2015 no-project and with-project traffic forecasts that are applied in the Irvine Valley College campus analysis. For the Saddleback College Campus area, the baseline (no-project) short-term 2016 forecasts are based on applying growth factors to existing counts, a methodology consistent with the La Pata Traffic Study. The project sites are assumed to have existing enrollment and faculty/staff employees under 2015/2016 no-project conditions. While the Master Plan presents short-term enrollment and faculty/staff numbers at each campus, for worse case analysis purposes, the Saddleback College campus was assumed to be built out per the Master Plan for 2016 with-project conditions. Therefore the project traffic differences in 2030 were applied to 2016 baseline conditions, and the proposed project for the Irvine Valley College campus is assumed developed according to the Master Plan under 2015/2016 with-project conditions.

The following sub-sections summarize the resulting 2015/2016 no-project and with-project traffic conditions for arterial roads and intersections.

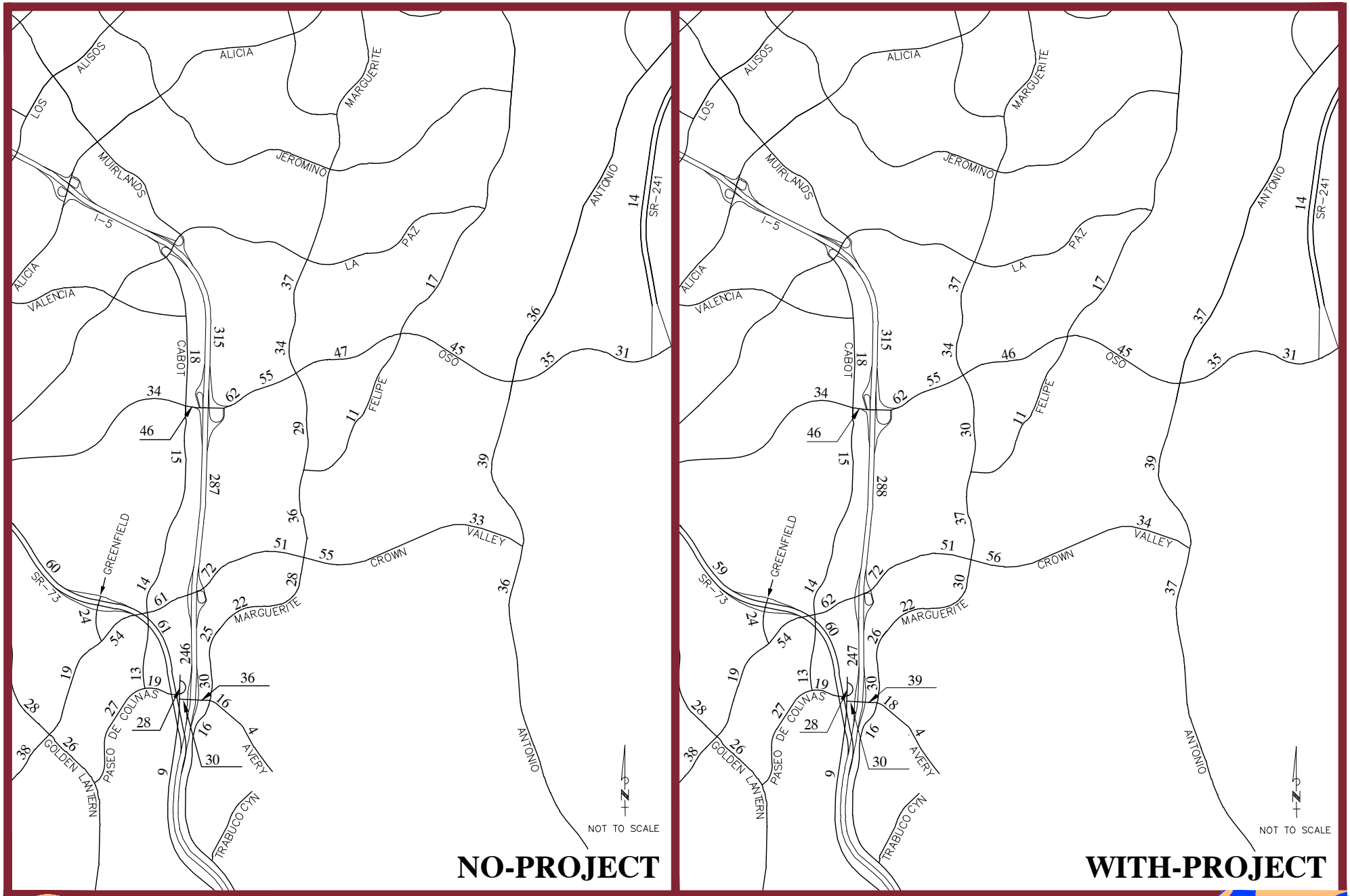
4.1.1 Average Daily Traffic Volumes and Levels of Service

Year 2015/2016 no-project and with-project average daily traffic (ADT) volumes are illustrated in Figures 4-1 through 4-3. The corresponding year 2015 no-project and with-project ADT volume/capacity (V/C) ratios for the Irvine Valley College campus study area are also illustrated in Figures 4-2 and 4-3, respectively. Based on the ADT V/C performance criteria and impact thresholds discussed in Chapter 1.0 for the Irvine Valley College campus study area, no arterial roadway segment is significantly impacted by the Irvine Valley College campus proposed project under 2015 with-project conditions.

4.1.2 Peak Hour Intersection Levels of Service

Figures 4-4 and 4-5 illustrate the intersection locations that were analyzed based on year 2015/2016 conditions. Year 2015/2016 no-project and with-project AM and PM peak hour intersection capacity utilization (ICU) values are summarized in Table 4-1 (actual turn volumes

DRAWING: v:\2073\active\2073006530\drawing\rpt_dwg\fig4-1.dwg

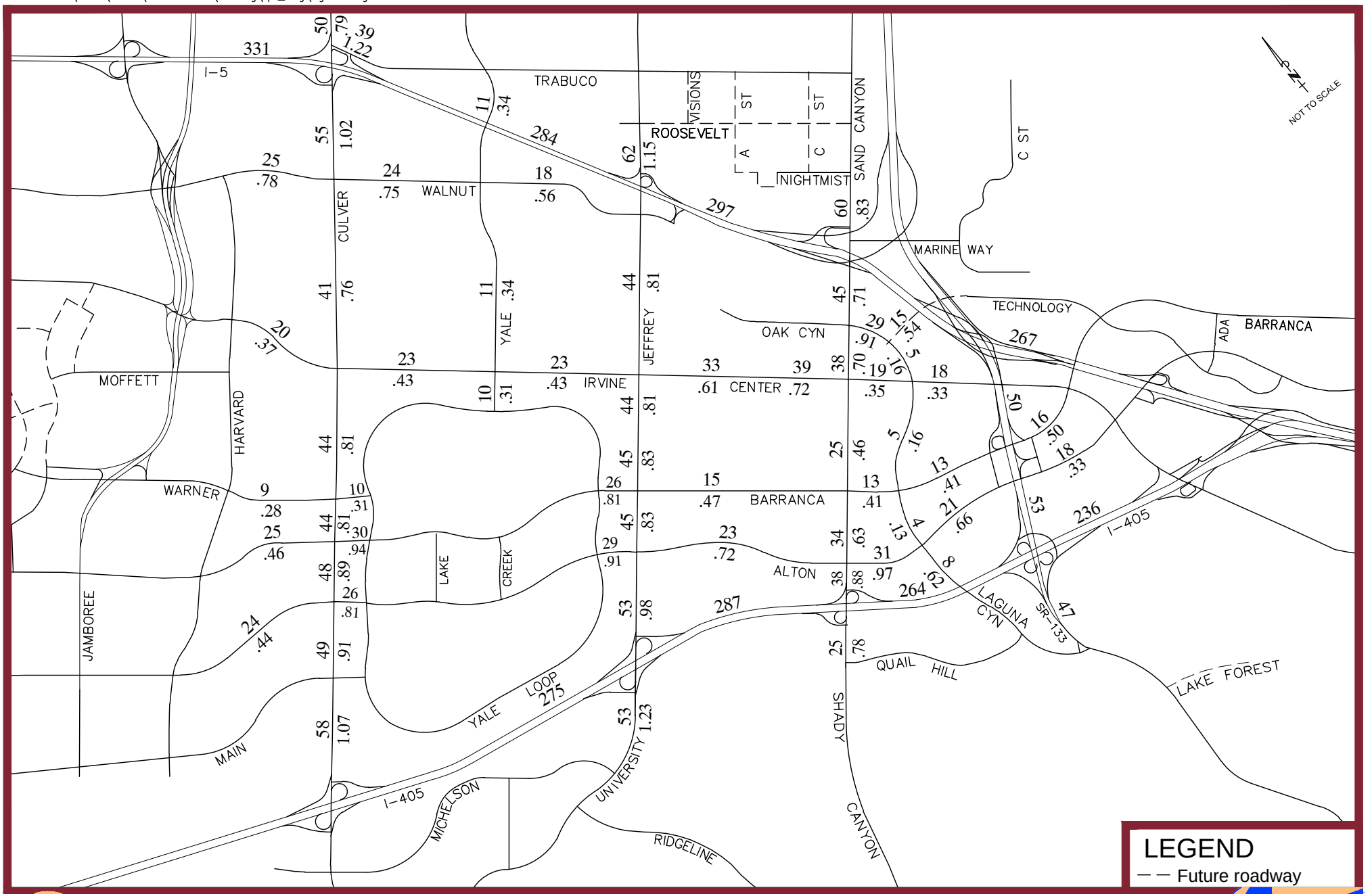


2016 ADT VOLUMES (000s)
- SADDLEBACK COLLEGE (NO-PROJECT & WITH-PROJECT)

Figure 4-1

Stantec

DRAWING: v:\2073\active\2073006530\drawing\rpt_dwg\fig4-2.dwg

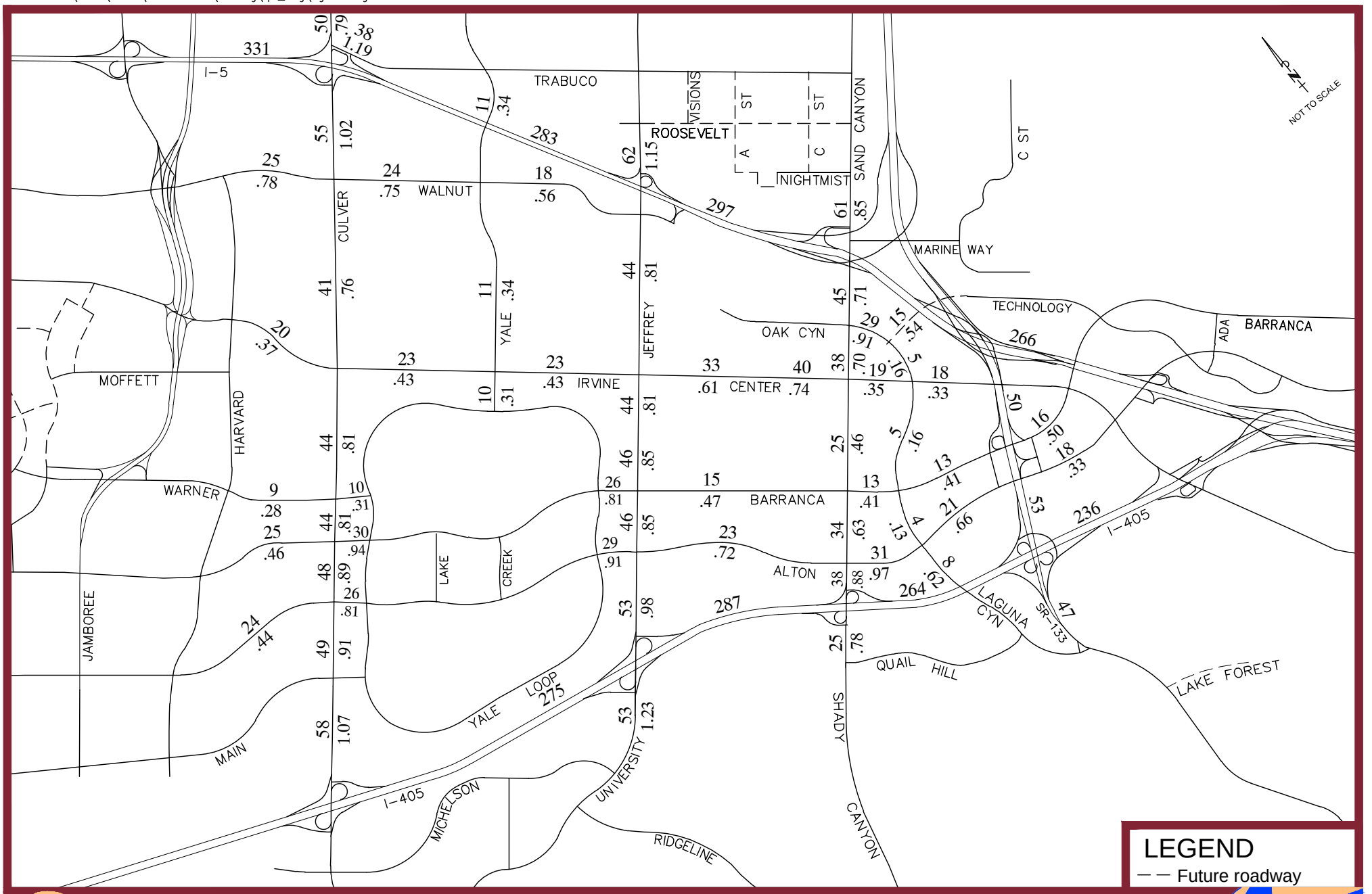


2015 ADT VOLUMES (000s) AND V/C RATIOS - IRVINE VALLEY COLLEGE (NO-PROJECT)

Figure 4-2

Stantec

DRAWING: v:\2073\active\2073006530\drawing\rpt_dwg\fig4-3.dwg

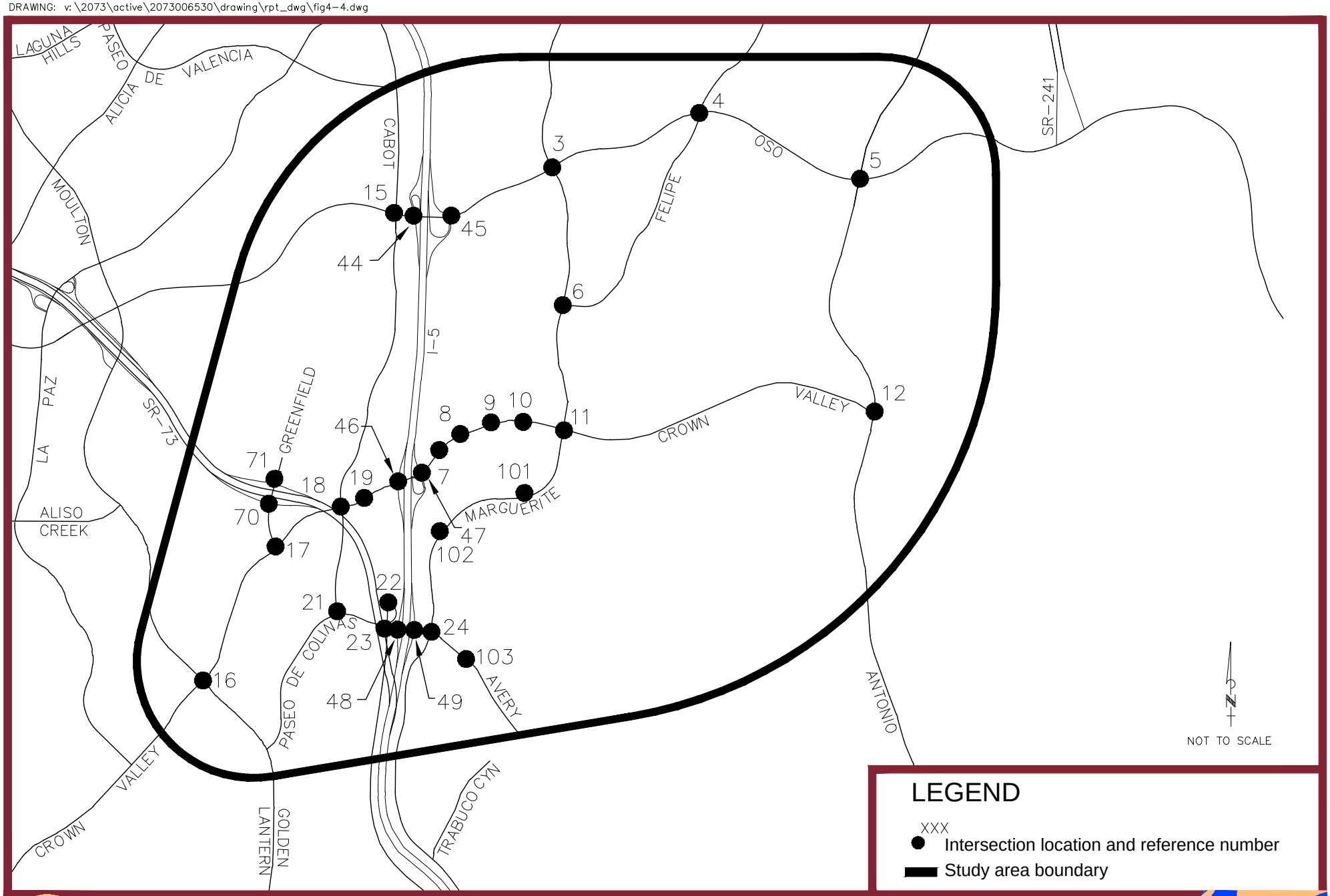


2015 ADT VOLUMES (000s) AND V/C RATIOS - IRVINE VALLEY COLLEGE (WITH-PROJECT)

Figure 4-3

Stantec

DRAWING: v:\2073\active\2073006530\drawing\rpt_dwg\fig4-4.dwg

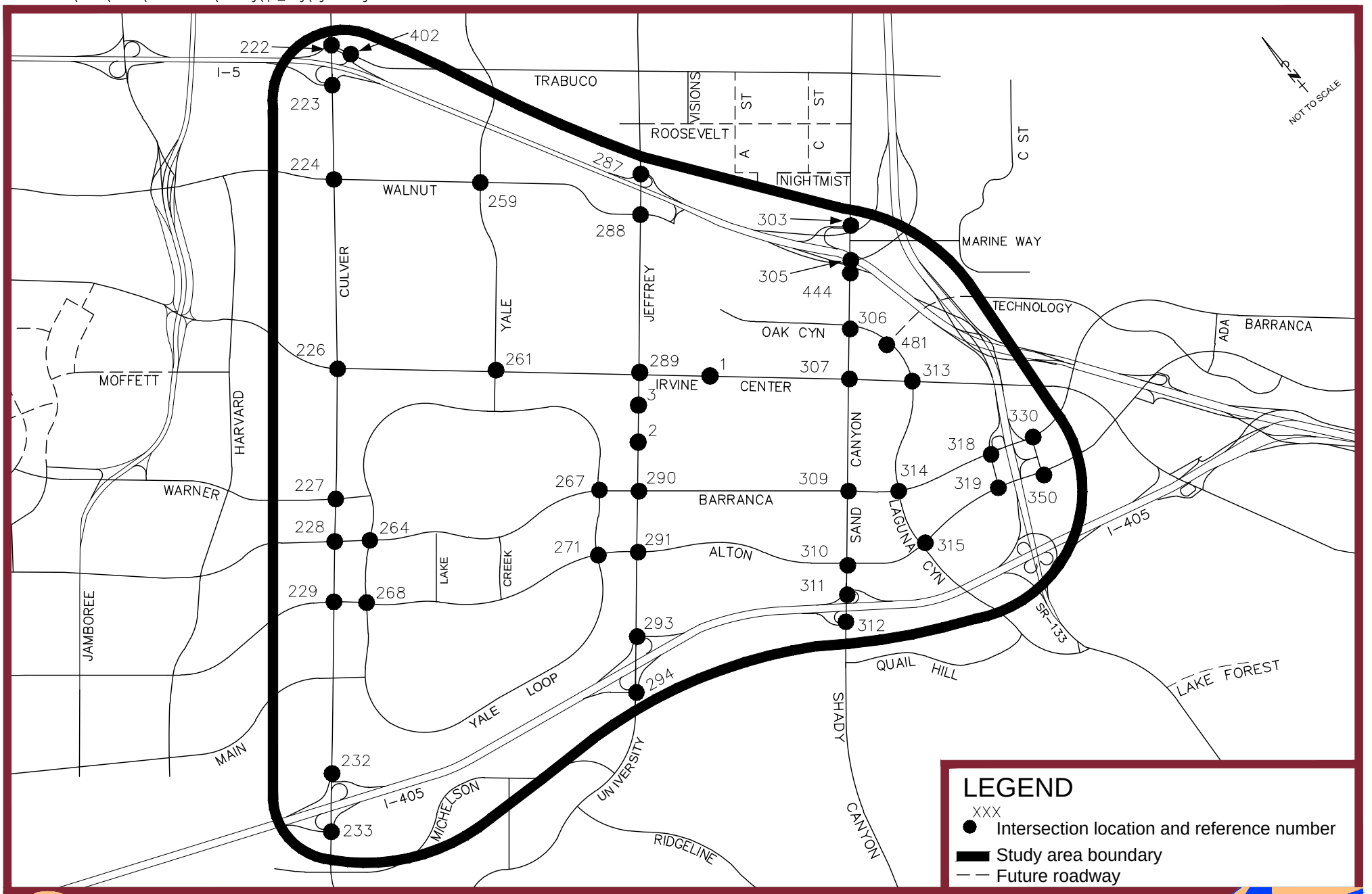


2016 INTERSECTION LOCATION MAP - SADDLEBACK COLLEGE

Figure 4-4

Stantec

DRAWING: v:\2073\active\2073006530\drawing\rpt_dwg\fig4-5.dwg



2015 INTERSECTION LOCATION MAP
- IRVINE VALLEY COLLEGE

Figure 4-5

Stantec

Table 4-1 2015/2016 Intersection LOS Summary

Intersection	No-Project				With-Project			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS
Saddleback College Campus Study Area								
3. Marguerite & Oso	.72	C	.69	B	.74	C	.69	B
4. Felipe & Oso	.81	D	.81	D	.80	C	.82	D
5. Antonio & Oso	.82	D	.75	C	.82	D	.75	C
6. Marguerite & Felipe	.68	B	.70	B	.70	B	.72	C
7. Puerta Real & Crown Valley (a)	.62	B	.75	C	.61	B	.76	C
8. Medical Center & Crown Valley (a)	.53	A	.66	B	.53	A	.67	B
9. Los Altos & Crown Valley (a)	.50	A	.60	A	.50	A	.60	A
10. Bellogente & Crown Valley(a)	.54	A	.49	A	.53	A	.48	A
11. Marguerite Pkwy & Crown Valley (a)	.77	C	.82	D	.76	C	.85	D
12. Antonio & Crown Valley	.55	A	.67	B	.56	A	.68	B
15. Cabot & Oso Pkwy	.60	A	.71	C	.60	A	.71	C
16. Moulton Pkwy & Crown Valley	.64	B	.69	B	.65	B	.70	B
17. Greenfield & Crown Valley	.66	B	.70	B	.65	B	.70	B
18. Cabot & Crown Valley	.64	B	.74	C	.65	B	.74	C
19. Forbes Rd & Crown Valley	.60	A	.66	B	.60	A	.66	B
21. Cabot & Paseo De Colinas	.63	B	.58	A	.64	B	.59	A
22. Cm Capistrano & Paseo De Colinas	.52	A	.52	A	.54	A	.54	A
23. Camino Capistrano & Avery	.58	A	.55	A	.60	A	.55	A
24. Marguerite & Avery	.80	C	.83	D	.83	D	.89	D
44. I-5 SB Ramps & Oso	.59	A	.75	C	.59	A	.75	C
45. I-5 NB Ramps & Oso	.60	A	.75	C	.59	A	.75	C
46. I-5 SB & Crown Valley	.70	B	.83	D	.71	C	.82	D
47. I-5 NB & Crown Valley	.67	B	.76	C	.68	B	.76	C
48. I-5 SB Ramps & Avery	.63	B	.78	C	.66	B	.82	D
49. I-5 NB Ramps & Avery	.65	B	.68	B	.73	C	.70	B
70. Greenfield & SR-73 SB Ramps	.51	A	.53	A	.51	A	.53	A
71. Greenfield & SR-73 NB Ramps	.62	B	.48	A	.62	B	.48	A
101. Marguerite & Med Ctr/College	.67	B	.66	B	.84	D	.76	C
102. Marguerite & College Ctr/College	.39	A	.49	A	.45	A	.51	A
103. College/Plata & Avery	.46	A	.31	A	.57	A	.41	A
Irvine Valley College Campus Study Area								
1. College at Irvine Center	.37	A	.47	A	.39	A	.46	A
2. Jeffrey at College	.56	A	.56	A	.55	A	.56	A
3. Jeffrey at College RIRO	.56	A	.48	A	.56	A	.48	A
222. Culver at Trabuco	.71	C	.77	C	.73	C	.77	C
223. Culver at I-5 SB Ramps	.59	A	.66	B	.59	A	.66	B
224. Culver at Walnut	.78	C	.81	D	.78	C	.81	D
226. Culver at Irvine Center	.72	C	.64	B	.72	C	.64	B
227. Culver at Warner	.77	C	.60	A	.77	C	.60	A

Table 4-1 2015/2016 Intersection LOS Summary (continued)

Intersection	No-Project				With-Project			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS
228. Culver at Barranca	.86	D	.74	C	.85	D	.74	C
229. Culver at Alton	.80	C	.82	D	.80	C	.82	D
232. Culver at I-405 NB Ramps	.51	A	.89	D	.50	A	.89	D
233. Culver at I-405 SB Ramps	.52	A	.62	B	.52	A	.62	B
259. Yale at Walnut	.58	A	.68	B	.58	A	.68	B
261. Yale at Irvine Center	.59	A	.58	A	.59	A	.58	A
264. West Yale Loop at Barranca	.62	B	.59	A	.62	B	.59	A
267. East Yale Loop at Barranca	.65	B	.61	B	.66	B	.61	B
268. West Yale Loop at Alton	.62	B	.60	A	.63	B	.60	A
271. East Yale Loop at Alton	.68	B	.67	B	.69	B	.67	B
287. Jeffrey at I-5 NB Ramps	.68	B	.78	C	.68	B	.78	C
288. Jeffrey at Walnut	.72	C	.69	B	.73	C	.69	B
289. Jeffrey at Irvine Center	.72	C	.81	D	.73	C	.81	D
290. Jeffrey at Barranca	.84	D	.73	C	.84	D	.73	C
291. Jeffrey at Alton	.96	E	.90	D	.97	E	.89	D
293. Jeffrey at I-405 NB Ramps	.70	B	.82	D	.70	B	.82	D
294. University at I-405 SB Ramps	.60	A	.64	B	.60	A	.64	B
303. Sand Canyon at I-5 NB Ramps	.86	D	.80	C	.87	D	.80	C
304. Sand Canyon at Marine Way	.82	D	.87	D	.82	D	.87	D
305. Sand Canyon at I-5 SB Ramps	.79	C	.81	D	.80	C	.81	D
306. Sand Canyon at Oak/Laguna Canyon	.67	B	.84	D	.67	B	.84	D
307. Sand Canyon at Irvine Center	.53	A	.63	B	.53	A	.63	B
309. Sand Canyon at Barranca	.49	A	.49	A	.49	A	.49	A
310. Sand Canyon at Alton. Pkwy	.67	B	.69	B	.67	B	.69	B
311. Sand Canyon at I-405 NB Ramps	.65	B	.47	A	.65	B	.47	A
312. Sand Canyon at I-405 SB Ramps	.82	D	.62	B	.81	D	.62	B
313. Laguna Canyon at Irvine Center	.30	A	.38	A	.30	A	.39	A
314. Laguna Canyon at Barranca	.37	A	.34	A	.37	A	.34	A
315. Laguna Canyon at Alton	.53	A	.51	A	.53	A	.51	A
318. Banting at Barranca	.65	B	.51	A	.66	B	.51	A
319. Banting at Alton	.58	A	.55	A	.58	A	.55	A
330. Barranca at Pacifica	.57	A	.72	C	.57	A	.74	C
350. Alton at Pacifica	.61	B	.56	A	.61	B	.55	A
402. I-5 NB Ramps at Trabuco	.58	A	.63	B	.57	A	.62	B
444. Sand Canyon at Burt	.76	C	.61	B	.76	C	.61	B
481. Laguna Canyon at Technology	.40	A	.36	A	.41	A	36	A

Abbreviations: ICU – intersection capacity utilization
LOS – level of service
NB – northbound
SB – southbound

(a) LOS E is acceptable at this intersection.

and ICU calculation worksheets are included in Appendix A). Based on the intersection LOS performance criteria and impact thresholds outlined in Chapter 1.0, no intersection location analyzed in the study areas is adversely impacted by the proposed project in the year 2015/2016 ICU analysis.

5.0 Year 2030 Project Impact Analysis

This chapter analyzes the impacts of the Saddleback College and Irvine Valley College proposed projects on year 2030 traffic conditions in the traffic analysis study areas. The potential traffic impacts of the projects are assessed based on a comparison of 2030 no-project and with-project conditions.

5.1 Year 2030 Traffic Impacts

As discussed in Chapter 1.0, ITAM Version 8.4-10 (ITAM 8.4-10) was used to prepare the year 2030 no-project and with-project traffic forecasts that are applied in the Irvine Valley College campus analysis. For the Saddleback College Campus area, the baseline (no-project) short-term 2030 forecasts are based on growth factors consistent with the methodology used for the La Pata Traffic Study. The project sites are assumed to have existing enrollment and faculty/staff employees under 2030 no-project conditions. While the Master Plan presents short-term enrollment and faculty/staff numbers at each campus, for worse case analysis purposes, the Saddleback College campus was assumed to be built out per the Master Plan for 2030 with-project conditions. Therefore the project traffic differences in 2030 were applied to 2030 baseline conditions, and the proposed project for the Irvine Valley College campus is assumed developed according to the Master Plan under 2030 with-project conditions.

The following sub-sections summarize the resulting 2030 no-project and with-project traffic conditions for arterial roads and intersections.

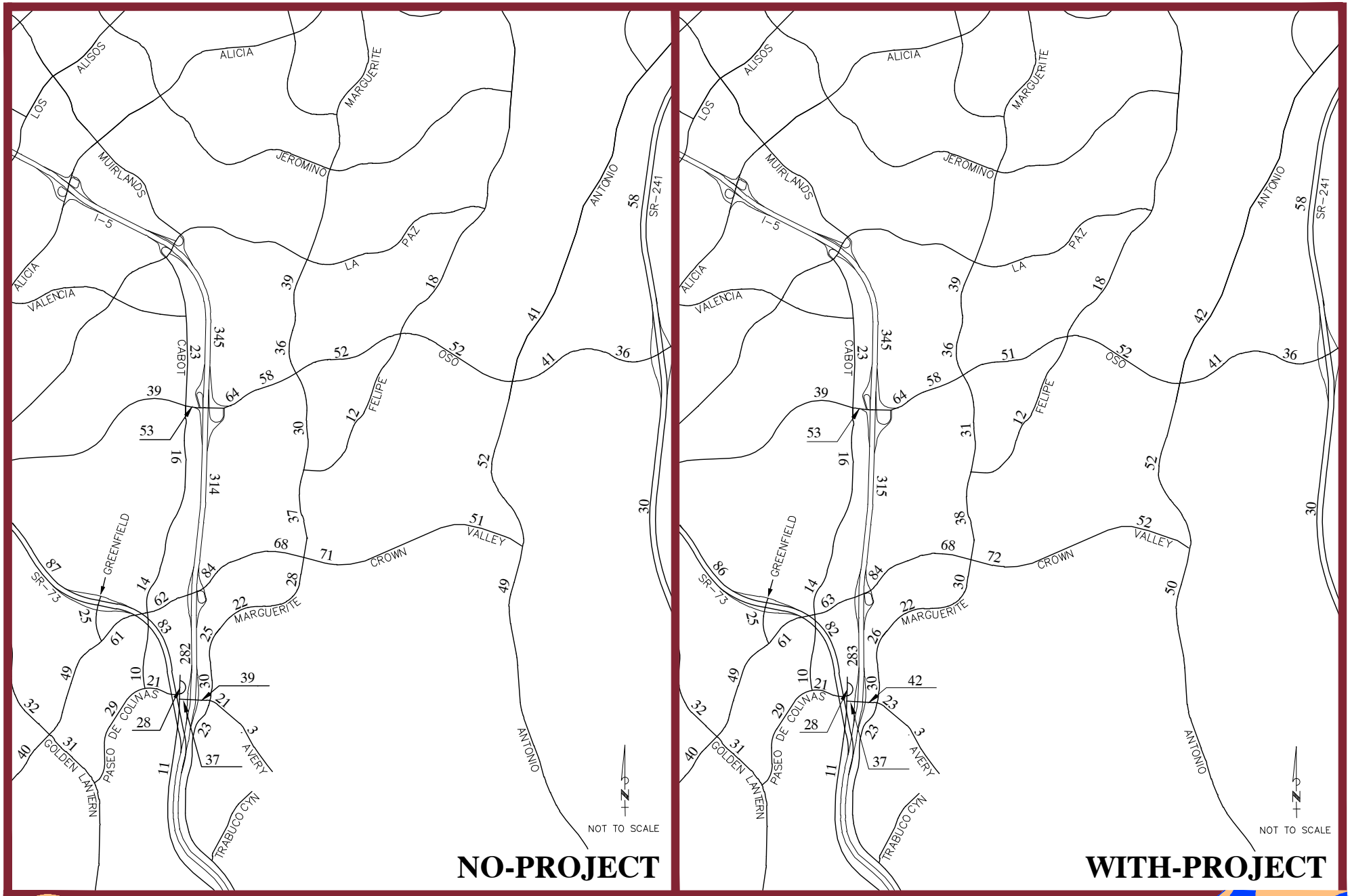
5.1.1 Average Daily Traffic Volumes and Levels of Service

Year 2030 no-project and with-project average daily traffic (ADT) volumes are illustrated in Figures 5-1 through 5-3. The corresponding year 2030 no-project and with-project ADT volume/capacity (V/C) ratios for the Irvine Valley College campus study area are also illustrated in Figures 5-2 and 5-3, respectively. Based on the ADT V/C performance criteria and impact thresholds discussed in Chapter 1.0 for the Irvine Valley College campus study area, no arterial roadway segment is significantly impacted by the Irvine Valley College campus proposed project under 2030 with-project conditions.

5.1.2 Peak Hour Intersection Levels of Service

Figures 5-4 and 5-5 illustrate the intersection locations that were analyzed based on year 2030 conditions. Year 2030 no-project and with-project AM and PM peak hour intersection capacity utilization (ICU) values are summarized in Table 5-1 (actual turn volumes and ICU calculation

DRAWING: v:\2073\active\2073006530\drawing\rpt_dwg\fig5-1.dwg

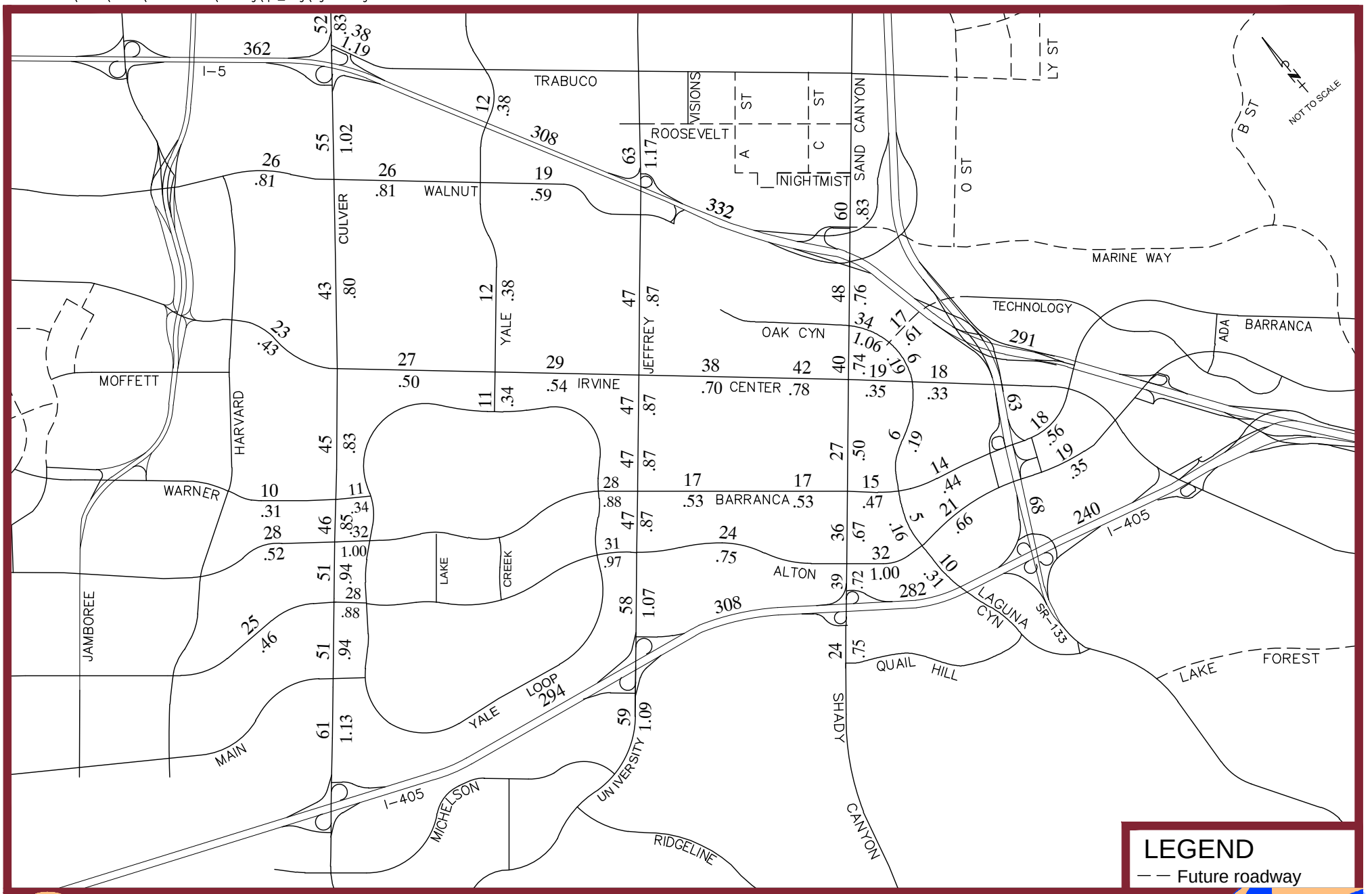


2030 ADT VOLUMES (000s)
- SADDLEBACK COLLEGE (NO-PROJECT & WITH-PROJECT)

Figure 5-1

Stantec

DRAWING: v:\2073\active\2073006530\drawing\rpt_dwg\fig5-2.dwg

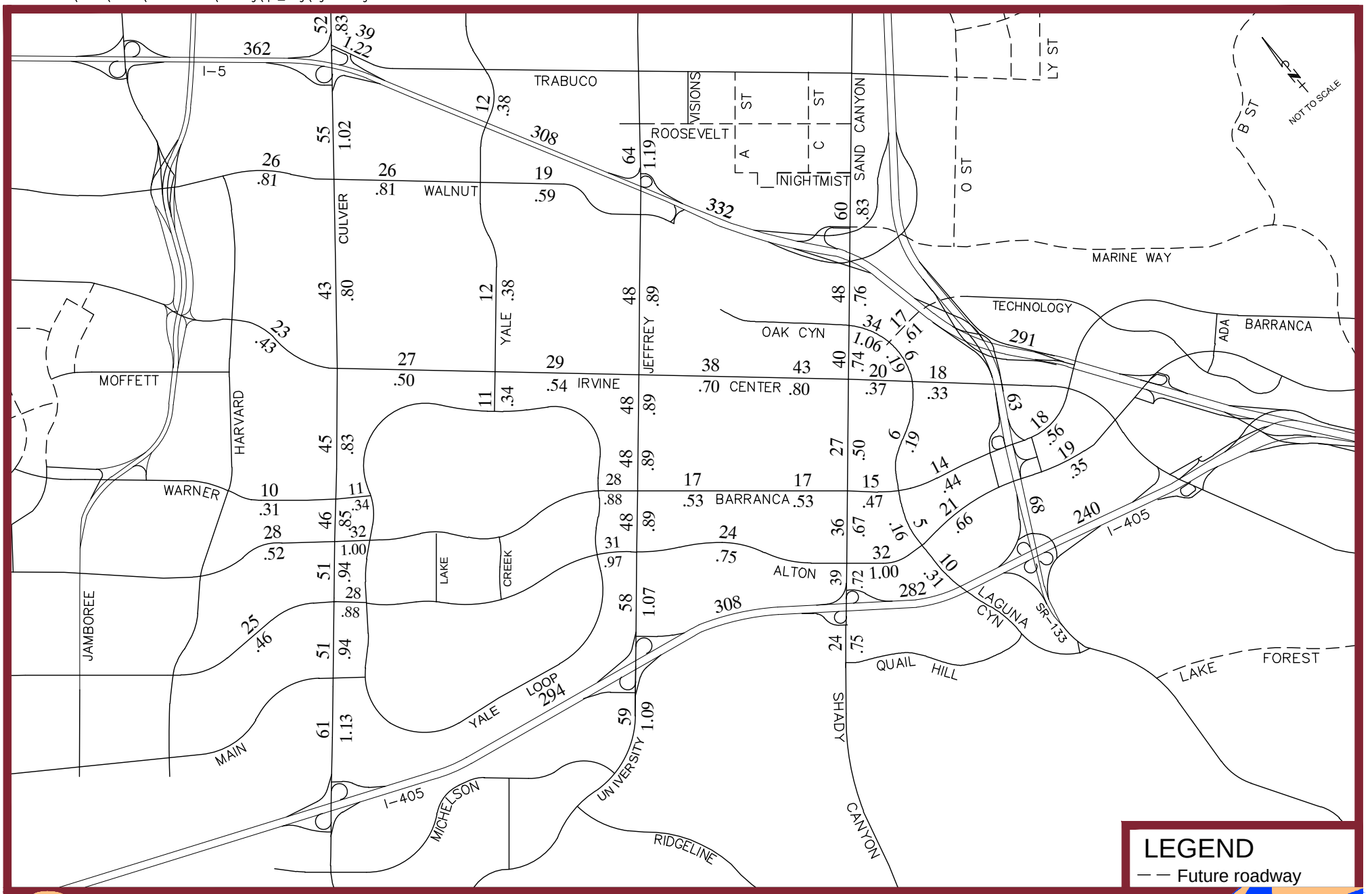


2030 ADT VOLUMES (000s) AND V/C RATIOS - IRVINE VALLEY COLLEGE (NO-PROJECT)

Figure 5-2

Stantec

DRAWING: v:\2073\active\2073006530\drawing\rpt_dwg\fig5-3.dwg

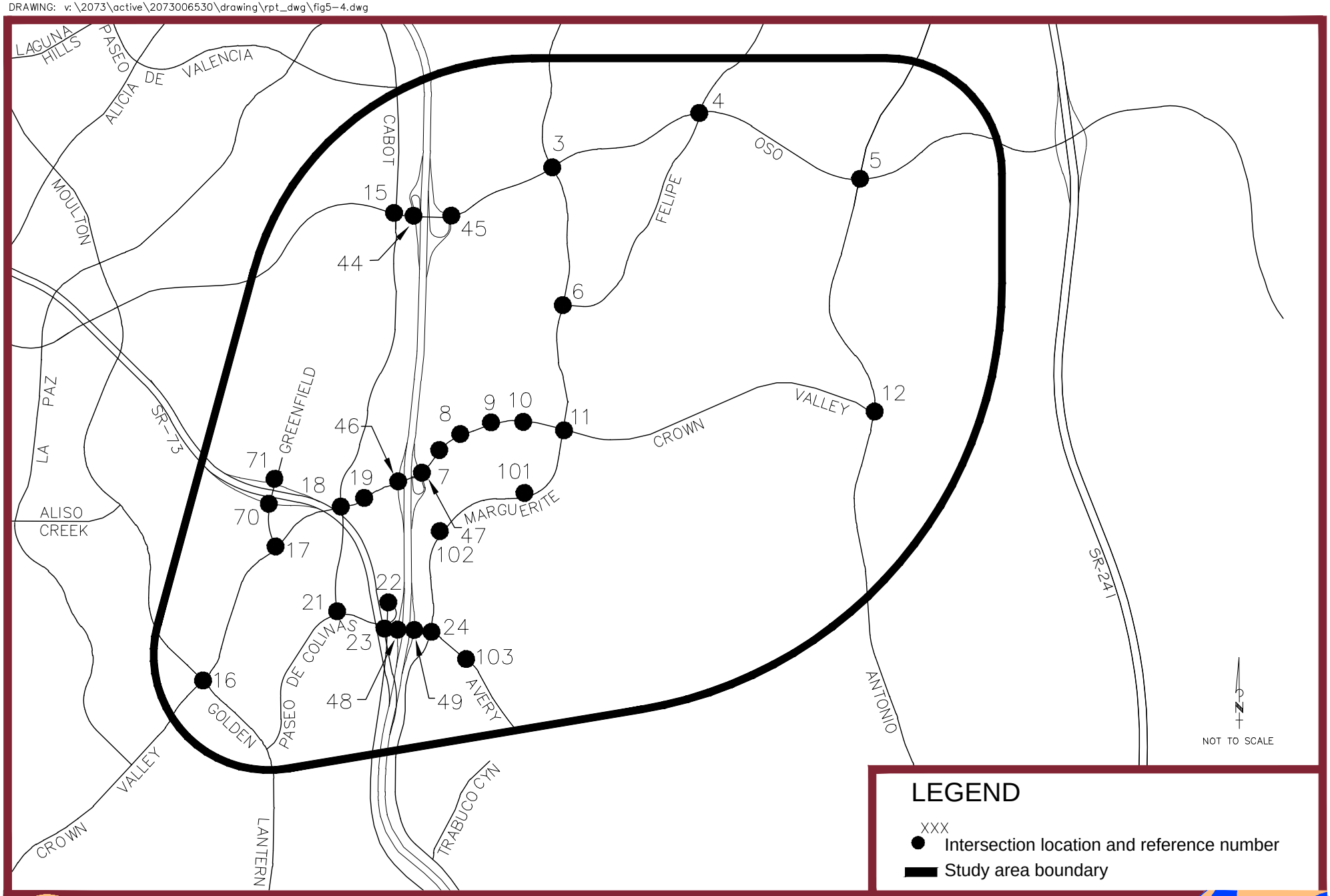


2030 ADT VOLUMES (000s) AND V/C RATIOS - IRVINE VALLEY COLLEGE (WITH-PROJECT)

Figure 5-3

Stantec

DRAWING: v:\2073\active\2073006530\drawing\rpt_dwg\fig5-4.dwg

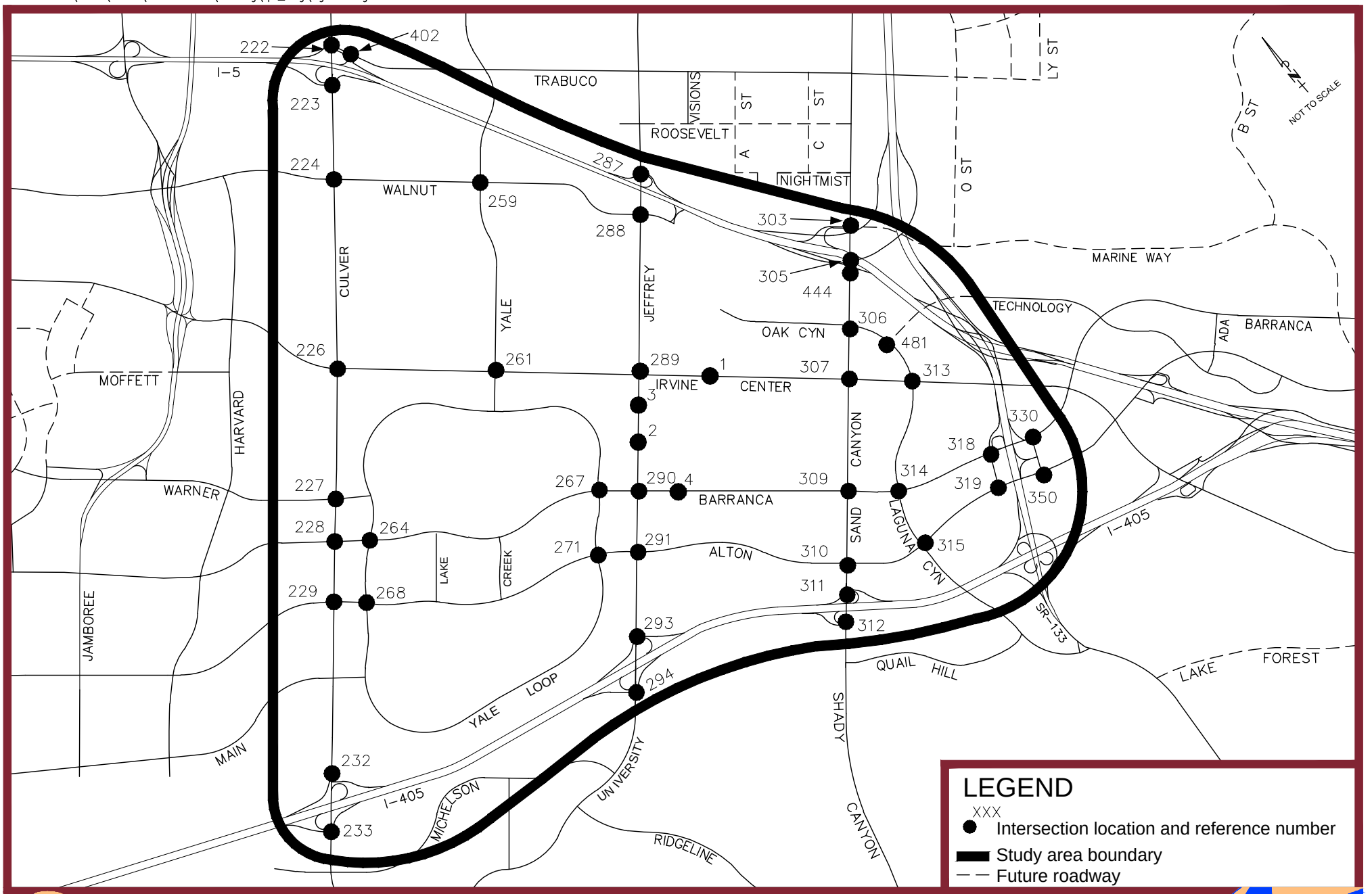


Stantec

2030 INTERSECTION LOCATION MAP - SADDLEBACK COLLEGE

Figure 5-4

DRAWING: v:\2073\active\2073006530\drawing\rpt_dwg\fig5-5.dwg



Stantec

2030 INTERSECTION LOCATION MAP - IRVINE VALLEY COLLEGE

Figure 5-5

Table 5-1 2030 Intersection LOS Summary

Intersection	No-Project				With-Project			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS
Saddleback College Campus Study Area								
3. Marguerite & Oso	.83	D	.74	C	.84	D	.75	C
4. Felipe & Oso	.81	D	.82	D	.82	D	.83	D
5. Antonio & Oso	.89	D	.82	D	.88	D	.82	D
6. Marguerite & Felipe	.71	C	.85	D	.73	C	.87	D
7. Puerta Real & Crown Valley (a)	.78	C	.93	E	.77	C	.93	E
8. Medical Center & Crown Valley (a)	.69	B	.89	D	.69	B	.90	D
9. Los Altos & Crown Valley (a)	.69	B	.94	E	.69	B	.94	E
10. Bellogente & Crown Valley(a)	.71	C	.70	B	.70	B	.70	B
11. Marguerite Pkwy & Crown Valley (a)	.97	E	1.02	F	.99	E	1.04	F
12. Antonio & Crown Valley	.64	B	.75	C	.65	B	.76	C
15. Cabot & Oso Pkwy	.71	C	.89	D	.71	C	.89	D
16. Moulton Pkwy & Crown Valley	.81	D	.88	D	.82	D	.89	D
17. Greenfield & Crown Valley	.88	D	.79	C	.88	D	.79	C
18. Cabot & Crown Valley	.79	C	.81	D	.79	C	.82	D
19. Forbes Rd & Crown Valley	.82	D	.73	C	.82	D	.72	C
21. Cabot & Paseo De Colinas	.66	B	.70	B	.67	B	.71	C
22. Cm Capistrano & Paseo De Colinas	.63	B	.60	A	.65	B	.62	B
23. Camino Capistrano & Avery	.72	C	.65	B	.74	C	.64	B
24. Marguerite & Avery	.88	D	.95	E	.88	D	1.01	F
44. I-5 SB Ramps & Oso	.64	B	.80	C	.64	B	.79	C
45. I-5 NB Ramps & Oso	.59	A	.77	C	.59	A	.78	C
46. I-5 SB & Crown Valley	.68	B	.87	D	.69	B	.87	D
47. I-5 NB & Crown Valley	.62	B	.69	B	.63	B	.69	B
48. I-5 SB Ramps & Avery	.54	A	.51	A	.55	A	.53	A
49. I-5 NB Ramps & Avery	.49	A	.63	B	.50	A	.67	B
70. Greenfield & SR-73 SB Ramps	.61	B	.58	A	.61	B	.58	A
71. Greenfield & SR-73 NB Ramps	.74	C	.48	A	.74	C	.48	A
101. Marguerite & Med Ctr/College	.71	C	.70	B	.87	D	.81	D
102. Marguerite & College Ctr/College	.47	A	.59	A	.52	A	.60	A
103. College/Plata & Avery	.43	A	.29	A	.55	A	.36	A
Irvine Valley College Campus Study Area								
1. College at Irvine Center	.47	A	.54	A	.48	A	.55	A
2. Jeffrey at College	.55	A	.58	A	.55	A	.59	A
3. Jeffrey at College RIRO	.56	A	.50	A	.58	A	.51	A
4. College at Barranca	--	--	--	--	.46	A	.45	A
222. Culver at Trabuco	.79	C	.78	C	.80	C	.78	C
223. Culver at I-5 SB Ramps	.61	B	.68	B	.61	B	.68	B
224. Culver at Walnut	.83	D	.86	D	.83	D	.86	D
226. Culver at Irvine Center	.78	C	.72	C	.78	C	.72	C

Table 5-1 2030 Intersection LOS Summary (continued)

Intersection	No-Project				With-Project			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS
227. Culver at Warner	.82	D	.65	B	.81	D	.65	B
228. Culver at Barranca	.92	E	.79	C	.92	E	.79	C
229. Culver at Alton	.84	D	.87	D	.84	D	.87	D
232. Culver at I-405 NB Ramps	.57	A	.94	E	.58	A	.94	E
233. Culver at I-405 SB Ramps	.63	B	.67	B	.63	B	.67	B
259. Yale at Walnut	.61	B	.73	C	.61	B	.73	C
261. Yale at Irvine Center	.68	B	.67	B	.69	B	.66	B
264. West Yale Loop at Barranca	.65	B	.62	B	.64	B	.62	B
267. East Yale Loop at Barranca	.70	B	.66	B	.71	C	.66	B
268. West Yale Loop at Alton	.64	B	.63	B	.64	B	.63	B
271. East Yale Loop at Alton	.74	C	.69	B	.75	C	.69	B
287. Jeffrey at I-5 NB Ramps	.70	B	.80	C	.70	B	.80	C
288. Jeffrey at Walnut	.77	C	.77	C	.78	C	.77	C
289. Jeffrey at Irvine Center	.82	D	.75	C	.83	D	.76	C
290. Jeffrey at Barranca	.89	D	.79	C	.90	D	.80	C
291. Jeffrey at Alton	.98	E	.84	D	.98	E	.85	D
293. Jeffrey at I-405 NB Ramps	.75	C	.89	D	.74	C	.89	D
294. University at I-405 SB Ramps	.63	B	.70	B	.63	B	.70	B
303. Sand Canyon at I-5 NB Ramps	.84	D	.82	D	.84	D	.82	D
305. Sand Canyon at I-5 SB Ramps	.80	C	.81	D	.81	D	.82	D
306. Sand Canyon at Oak/Laguna Canyon	.79	C	.88	D	.79	C	.88	D
307. Sand Canyon at Irvine Center	.58	A	.64	B	.60	A	.64	B
309. Sand Canyon at Barranca	.55	A	.55	A	.56	A	.56	A
310. Sand Canyon at Alton. Pkwy	.65	B	.72	C	.66	B	.73	C
311. Sand Canyon at I-405 NB Ramps	.59	A	.42	A	.59	A	.42	A
312. Sand Canyon at I-405 SB Ramps	.86	D	.63	B	.86	D	.63	B
313. Laguna Canyon at Irvine Center	.33	A	.41	A	.34	A	.41	A
314. Laguna Canyon at Barranca	.40	A	.40	A	.40	A	.40	A
315. Laguna Canyon at Alton	.54	A	.58	A	.54	A	.58	A
318. Banting at Barranca	.65	B	.52	A	.65	B	.53	A
319. Banting at Alton	.58	A	.54	A	.57	A	.54	A
330. Barranca at Pacifica	.59	A	.77	C	.59	A	.77	C
350. Alton at Pacifica	.60	A	.56	A	.60	A	.56	A
402. I-5 NB Ramps at Trabuco	.64	B	.66	B	.61	B	.67	B
444. Sand Canyon at Burt	.78	C	.62	B	.79	C	.62	B
481. Laguna Canyon at Technology	.46	A	.42	A	.46	A	.41	A

Abbreviations: ICU – intersection capacity utilization NB – northbound
LOS – level of service SB – southbound
(a) LOS E is acceptable at this intersection. Note: Shaded area signifies a project impact.

worksheets are included in Appendix A). Based on the intersection LOS performance criteria and impact thresholds in Chapter 1.0, two intersection locations, Marguerite Parkway at Crown Valley Parkway and Marguerite Parkway at Avery Parkway, analyzed in the Saddleback College traffic study area are forecast to be adversely impacted by the proposed project in the year 2030 in the PM peak hour. The proposed project contributes further to these already deficient intersections (i.e., these intersections are forecast to operate at an unacceptable level without the proposed project).

5.2 2030 Project Mitigation and Fair Shares

The proposed project at Saddleback College significantly impacts Marguerite Parkway at Crown Valley Parkway and at Avery Parkway in the PM peak hour under year 2030 conditions with the project and as previously mentioned the project further contributes to these already deficient intersections. The proposed mitigation for these cumulative impacts (i.e., the project has a significant contribution but does not cause the deficiency) is for the project to pay its fair share in the intersection improvements.

The project mitigation measure is to participate in the improvements on a fair share basis. The project fair share is a function of the project portion to the growth at the location. This can be calculated using the ICU values. Since the project impacts the intersections at 2030 in the PM peak hour, the share is based on year 2030 volumes in the PM peak hour.

The resulting project shares for both intersections are summarized as follows:

Marguerite Parkway at Crown Valley Parkway	PM Peak Hour
a. Existing ICU	.72
b. Future 2030 No-Project ICU	1.02
c. Future 2030 With-Project ICU	1.04
d. Future 2030 With-Project ICU Minus Existing ICU (c-a)	.32
e. Project ICU increment (c-b)	.02
Project Share (e÷d)	6.3%
Marguerite Parkway at Avery Parkway	**PM Peak Hour**
a. Existing ICU	.75
b. Future 2030 No-Project ICU	.95
c. Future 2030 With-Project ICU	1.01
d. Future 2030 With-Project ICU Minus Existing ICU (c-a)	.26
e. Project ICU increment (c-b)	.06
Project Share (e÷d)	23.1%

Hence the project would have a 6.3 percent share towards any future intersection improvements at Marguerite Parkway/Crown Valley Parkway and a 23.1 percent share towards any future intersection improvements at Marguerite Parkway/Avery Parkway.

It should also be noted that several transportation planning studies have been or are being carried out in the south Orange County area that may alleviate the deficiencies realized in the Saddleback College campus study area. The South Orange County Transportation Infrastructure Improvement Project (SOCTIIP) analyzed various scenarios for the extension of the SR-241. The Orange County Transportation Authority (OCTA) currently has an ongoing project that affects the study area. The I-5 Project Approval/ Environmental Document (PA/ED) between El Toro Road and SR-73 is evaluating the needed improvements for the Marguerite Parkway at Avery Parkway in conjunction with the I-5/Avery Parkway interchange evaluation and the ultimate design will ensure that the intersection will operate at an acceptable level of service. Additional planning efforts that may affect nearby but outside the study area involve the SR-74 Ortega Widening, which is planned to be constructed by year 2016 and the Antonio Parkway Widening project, which is expected to be completed by year 2016.

6.0 Special Issue

This chapter summarizes the special issue that was evaluated as part of the traffic analysis for the proposed project. As a special issue, an operations analysis is performed for Avery Parkway due to the project's impacts to the forecast deficiencies along this road. Using the Highway Capacity Manual (HCM) intersection analysis methodology, the level of service (LOS) at an intersection location is determined based on the estimated average delay experienced by all traffic using the intersection. The vehicle delay ranges that correspond to LOS "A" through "F" as specified in the HCM were summarized in Chapter 1.0.

The Avery Parkway intersections have been analyzed in previous chapters in this study using the intersection capacity utilization (ICU) methodology. The intersections are analyzed here using the HCM intersection analysis methodology with the LOS at an intersection location determined based on the estimated average delay experienced by all traffic using the intersection. With Year 2030 AM and PM peak hour being the worst-case scenario, the HCM-based intersection levels of service under with-project conditions are summarized in Table 6-1 (HCM intersection LOS calculation worksheets are included in Appendix B). As the summary table indicates, the only intersection forecast to operate at an unacceptable level based on the HCM intersection LOS methodology is Marguerite Parkway and Avery Parkway which is consistent with the LOS results based on the ICU methodology.

Table 6-1 2030 Intersection LOS Summary (HCM Methodology)

Intersection	With-Project			
	AM Peak Hour		PM Peak Hour	
	ICU	LOS	ICU	LOS
23. Camino Capistrano & Avery	15.6	B	16.3	B
48. I-5 SB Ramps & Avery	17.6	B	14.7	B
49. I-5 NB Ramps & Avery	21.0	C	19.9	B
24. Marguerite & Avery	56.4	E	109.3	F
103. College/Plata & Avery	26.4	C	18.4	B

7.0 Conclusions and Mitigation Measures

The traffic impacts of the Master Plan proposed projects at the Saddleback College campus and Irvine Valley College campus were identified by analyzing the traffic conditions for the study area circulation system based on two time frames: 2015/2016 and 2030 future traffic conditions. In each case, traffic conditions under no-project and with-project were compared to identify the potential traffic impacts of the project. The project sites remain as existing under future (2015/2016 and 2030) no-project conditions, and the proposed Master Plan changes on the project sites are assumed to be fully developed under future 2030 with-project conditions and a phase of the Master Plan under 2015/2016 conditions. However, for worst-case traffic analysis purposes the 2030 project differences were applied to the Saddleback College campus study area baseline conditions that were derived using growth factors (i.e., interpolation between existing and 2030).

The two future settings (2015/2016 and 2030) are based on the existing circulation system plus improvements that are planned to be in place in each future time frame and the land use and development growth that is projected in each future time frame.

The circulation system performance criteria applied in the analysis are based on level of service (LOS) calculation methodologies and performance standards that have been used by the governing jurisdictions in the study area. The criteria include components for arterial roadways (Irvine only) and intersections.

The results of the year 2015/2016 and year 2030 project impact analysis, which are summarized in detail in Chapters 5.0 and 6.0 of this report, indicate that the proposed project is forecast to significantly impact two intersections in the Saddleback College Campus study area under 2030 conditions, Marguerite Parkway/Crown Valley Parkway and Marguerite Parkway/Avery Parkway. The project is not forecast to significantly impact any arterial roadways and other intersections in the study areas. The mitigation measure identified to address the project impact is for the project to participate in future intersection improvements on a fair share basis. The project fair share is a function of the project portion to the growth at the location and as identified in Chapter 5.0, the project would have a 6.3 percent share towards any future intersection improvements at Marguerite Parkway/Crown Valley Parkway and a 23.1 percent share towards any future intersection improvements at Marguerite Parkway/Avery Parkway.

The project under an existing context is mentioned in Chapter 3.0. The existing-plus-project analysis is to comply with the California Environmental Quality Act (CEQA) which indicates that the baseline for assessing environmental impacts is generally the existing conditions at the time that the environmental document for the project is prepared. The existing intersection LOS summary presented in Chapter 3.0 indicated that enough capacity is available to

accommodate the proposed project with all intersections operating at LOS "C" or better in both the Saddleback College and Irvine Valley College campus study areas. Therefore no mitigation would be necessary. Any comparative traffic analysis of full buildout of the proposed project versus existing traffic conditions would be hypothetical because of the actual buildout time frame of the project for each campus (around 18 years). Hence the information provided here is intended to satisfy the CEQA requirements.

Appendix A

Intersection Capacity Utilization (ICU) Worksheets

Appendix A Intersection Capacity Utilization (ICU) Worksheets

This appendix summarizes information pertaining to the intersection analysis portion of the traffic study for the proposed Master Plan update for the Saddleback College campus and Irvine Valley College campus. Intersection location reference maps are provided in Figures A-1 and A-2 for the Saddleback College campus and Irvine Valley College campus study areas, respectively. The AM and PM peak hour intersection capacity utilization (ICU) worksheets for existing and future traffic analysis scenarios analyzed in the study area are presented in the following order:

ICU Data Sets

1. Existing – Saddleback College A.7
2. Existing – Irvine Valley College A.16
3. 2016 No-Project – Saddleback College A.28
4. 2016 With-Project – Saddleback College A.37
5. 2015 No-Project – Irvine Valley College A.46
6. 2015 With-Project – Irvine Valley College A.58
7. 2030 No-Project – Saddleback College A.70
8. 2030 With-Project – Saddleback College A.79
9. 2030 No-Project – Irvine Valley College A.88
10. 2030 With-Project – Irvine Valley College A.100

ICU Calculation Methodology

The ICU calculation procedure is based on a critical movement methodology that shows the amount of capacity utilized by each critical movement at an intersection. A capacity of 1,700 vehicles per hour per lane is assumed together with a .05 clearance interval. A "de facto" right-turn lane is used in the ICU calculation for cases where a curb lane is wide enough to separately serve both through and right-turn traffic (typically with a width of 19 feet or more from curb to outside of through-lane with parking prohibited during peak periods). Such lanes are treated the same as striped right-turn lanes during the ICU calculations, but they are denoted on the ICU calculation worksheets using the letter "d" in place of a numerical entry for right-turn lanes.

The methodology also incorporates a check for right-turn capacity utilization. Both right-turn-on-green (RTOG) and right-turn-on-red (RTOR) capacity availability are calculated and checked

against the total right-turn capacity need. If insufficient capacity is available, then an adjustment is made to the total capacity utilization value. The following example shows how this adjustment is made.

Example for Northbound Right

1. Right-Turn-On-Green (RTOG)

If NBT is critical move, then:
RTOG = V/C (NBT)
Otherwise,
RTOG = V/C (NBL) + V/C (SBT) - V/C (SBL)

2. Right-Turn-On-Red (RTOR)

If WBL is critical move, then:
RTOR = V/C (WBL)
Otherwise,
RTOR = V/C (EBL) + V/C (WBT) - V/C (EBT)

3. Right-Turn Overlap Adjustment

If the northbound right is assumed to overlap with the adjacent westbound left, adjustments to the RTOG and RTOR values are made as follows:

RTOG = RTOG + V/C (WBL)
RTOR = RTOR - V/C (WBL)

4. Total Right-Turn Capacity (RTC) Availability For NBR

RTC = RTOG + factor x RTOR
Where factor = RTOR saturation flow factor (75%)
Right-turn adjustment is then as follows: Additional ICU = V/C (NBR) – RTC

A zero or negative value indicates that adequate capacity is available and no adjustment is necessary. A positive value indicates that the available RTOR and RTOG capacity does not adequately accommodate the right-turn V/C, therefore the right-turn is essentially considered to be a critical movement. In such cases, the right-turn adjustment is noted on the ICU worksheet and it is included in the total capacity utilization value. When it is determined that a right-turn adjustment is required for more than one right-turn movement, the word "multi" is printed on the worksheet instead of an actual right-turn movement reference, and the right-turn adjustments are

cumulatively added to the total capacity utilization value. In such cases, further operational evaluation is typically carried out to determine if under actual operational conditions, the critical right-turns would operate simultaneously, and therefore a right-turn adjustment credit should be applied.

Shared Lane V/C Methodology

For intersection approaches where shared usage of a lane is permitted by more than one turn movement (e.g., left/through, through/right, left/through/right), the individual turn volumes are evaluated to determine whether dedication of the shared lane is warranted to any one given turn movement. The following example demonstrates how this evaluation is carried out:

Example for Shared Left/Through Lane

1. Average Lane Volume (ALV)

$$ALV = \frac{\text{Left-Turn Volume + Through Volume}}{\text{Total Left + Through Approach Lanes (including shared lane)}}$$

2. ALV for Each Approach

$$ALV\ (Left) = \frac{\text{Left-Turn Volume}}{\text{Left Approach Lanes (including shared lane)}}$$

$$ALV\ (Through) = \frac{\text{Through Volume}}{\text{Through Approach Lanes (including shared lane)}}$$

3. Lane Dedication is Warranted

If ALV (Left) is greater than ALV then full dedication of the shared lane to the left-turn approach is warranted. Left-turn and through V/C ratios for this case are calculated as follows:

$$V/C\ (Left) = \frac{\text{Left-Turn Volume}}{\text{Left Approach Capacity (including shared lane)}}$$

$$V/C\ (Through) = \frac{\text{Through Volume}}{\text{Through Approach Capacity (excluding shared lane)}}$$

Similarly, if ALV (Through) is greater than ALV then full dedication to the through approach is warranted, and left-turn and through V/C ratios are calculated as follows:

$$V/C\ (Left) = \frac{\text{Left-Turn Volume}}{\text{Left Approach Capacity (excluding shared lane)}}$$

$$V/C\ (Through) = \frac{\text{Through Volume}}{\text{Through Approach Capacity (including shared lane)}}$$

4. Lane Dedication is not Warranted

If ALV (Left) and ALV (Through) are both less than ALV, the left/through lane is assumed to be truly shared and each left, left/through or through approach lane carries an evenly distributed volume of traffic equal to ALV. A combined left/through V/C ratio is calculated as follows:

$$V/C\ (Left/Through) = \frac{\text{Left-Turn Volume + Through Volume}}{\text{Total Left + Through Approach Capacity (including shared lane)}}$$

This V/C (Left/Through) ratio is assigned as the V/C (Through) ratio for the critical movement analysis and ICU summary listing.

If split phasing has not been designated for this approach, the relative proportion of V/C (Through) that is attributed to the left-turn volume is estimated as follows:

If approach has more than one left-turn (including shared lane), then:

V/C (Left) = V/C (Through)

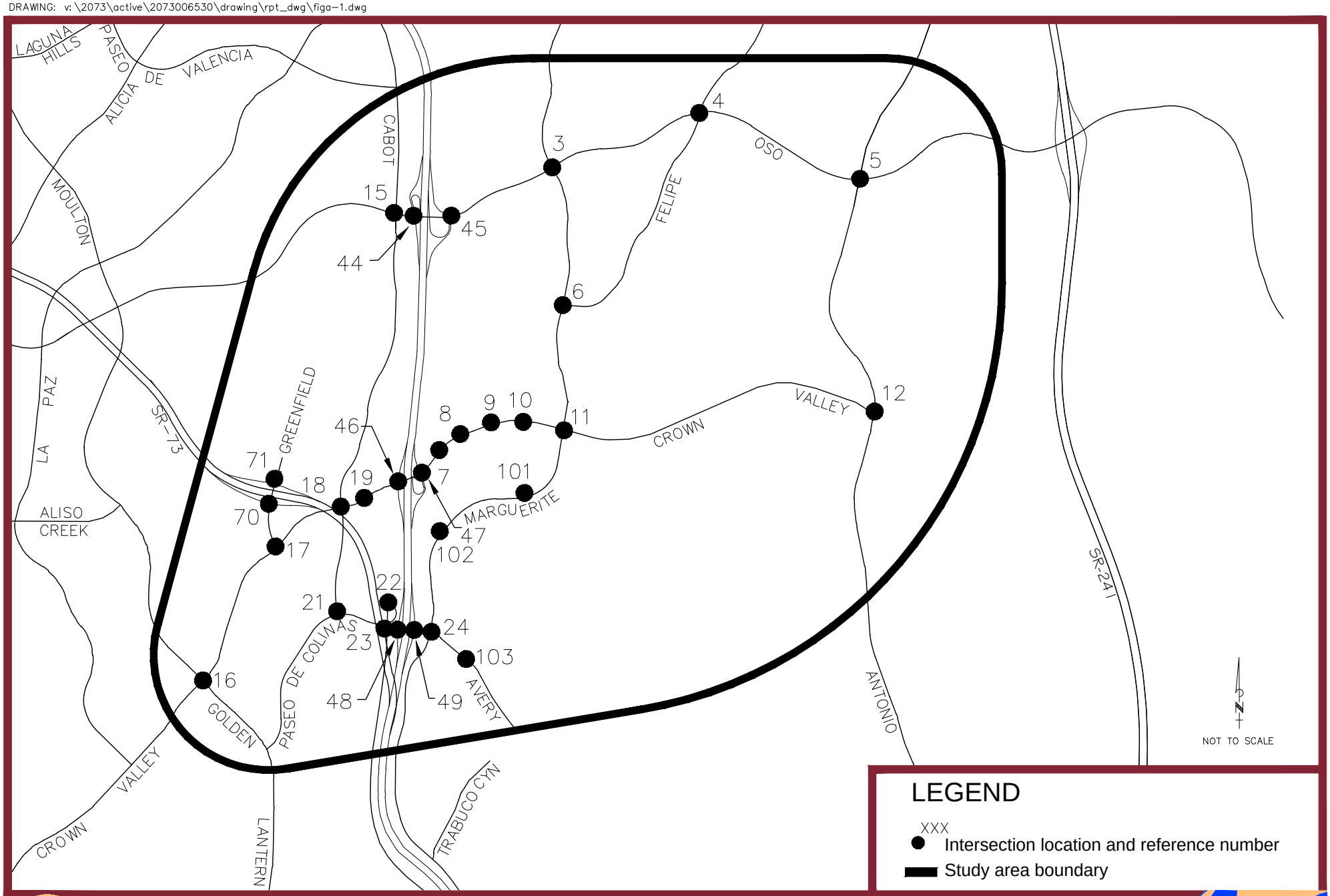
If approach has only one left-turn lane (shared lane), then:

$$V/C\ (Left) = \frac{\text{Left-Turn Volume}}{\text{Single Approach Lane Capacity}}$$

If this left-turn movement is determined to be a critical movement, the V/C (Left) value is posted in brackets on the ICU summary printout.

These same steps are carried out for shared through/right lanes. If full dedication of a shared through/right lane to the right-turn movement is warranted, the right-turn V/C value calculated in step three is checked against the RTOR and RTOG capacity. When an approach contains more than one shared lane (e.g., left/through and through/right), steps one and two listed above are carried out for the three turn movements combined. Step four is carried out if dedication is not warranted for either of the shared lanes. If dedication of one of the shared lanes is warranted to one movement or another, step three is carried out for the two movements involved, and then steps one through four are repeated for the two movements involved in the other shared lane.

DRAWING: v:\2073\active\2073006530\drawing\rpt_dwg\figa-1.dwg

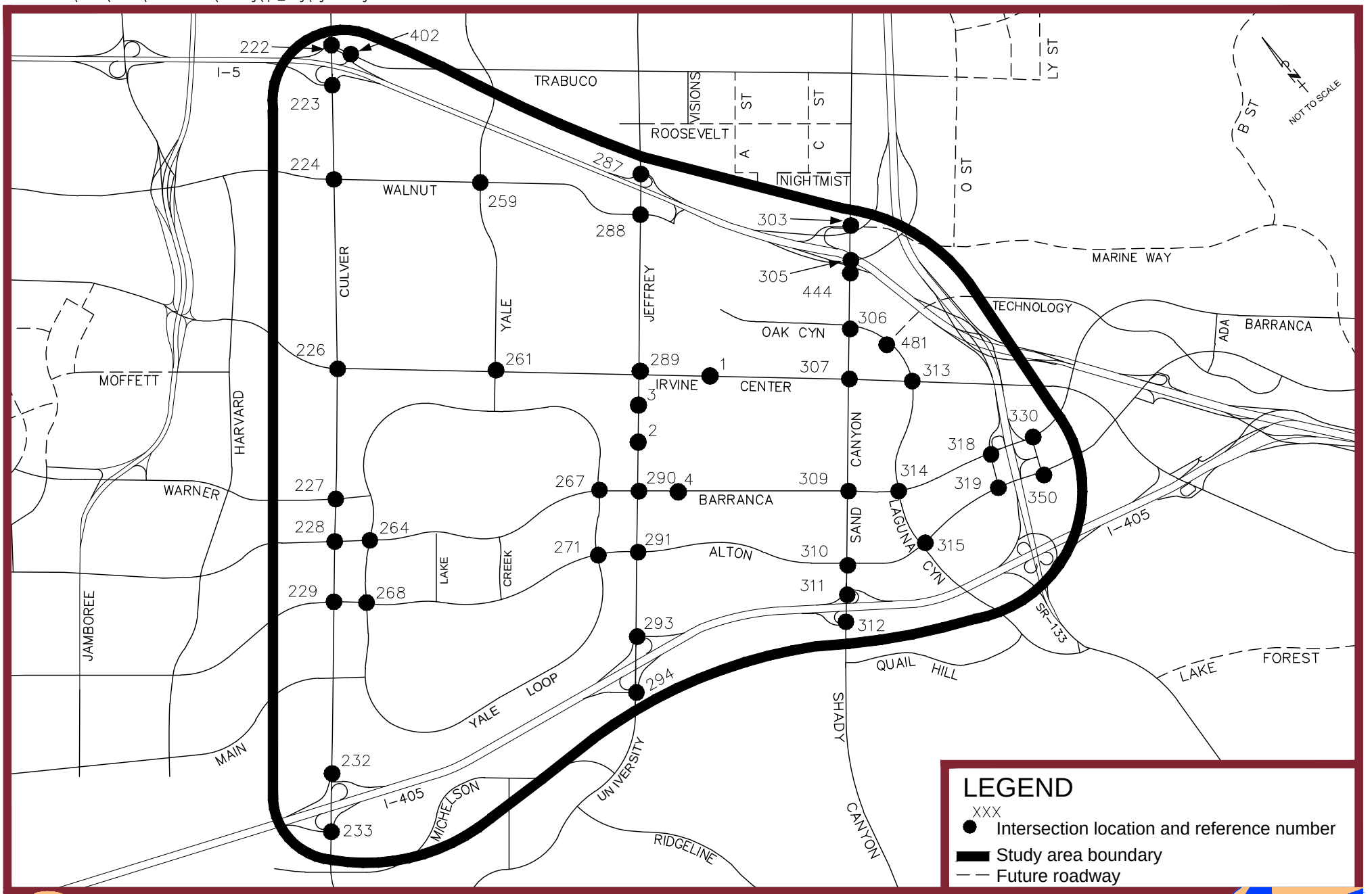


Stantec

2030 INTERSECTION LOCATION MAP - SADDLEBACK COLLEGE

Figure A-1

DRAWING: v:\2073\active\2073006530\drawing\rpt_dwg\figa-2.dwg



Stantec

2030 INTERSECTION LOCATION MAP - IRVINE VALLEY COLLEGE

Figure A-2

ICU Data Set 1

Existing – Saddleback College

3. Marguerite & Oso

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	390	.11*	220	.06*
NBT	2	3400	770	.23	730	.21
NBR	1	1700	50	.03	70	.04
SBL	2	3400	100	.03	250	.07
SBT	2	3400	520	.15*	740	.22*
SBR	1	1700	270	.16	230	.14
EBL	2	3400	250	.07*	280	.08
EBT	4	6800	1060	.16	1790	.26*
EBR	d	1700	180	.11	560	.33
WBL	2	3400	90	.03	120	.04*
WBT	4	6800	1880	.28*	1220	.18
WBR	d	1700	60	.04	150	.09
Right Turn Adjustment					EBR	.02*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.66** **.65**

4. Felipe & Oso

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	150	.09	70	.04
NBT	2	3400	190	.06*	340	.10*
NBR	1	1700	110	.06	100	.06
SBL	1	1700	390	.23*	400	.24*
SBT	2	3400	580	.17	230	.07
SBR	d	1700	230	.14	110	.06
EBL	1	1700	170	.10*	230	.14*
EBT	3	5100	1100	.22	1510	.30
EBR	d	1700	90	.05	70	.04
WBL	1	1700	150	.09	70	.04
WBT	3	5100	1630	.32*	1100	.22*
WBR	d	1700	390	.23	220	.13
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.76** **.75**

5. Antonio & Oso

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	190	.06	230	.07*
NBT	3	5100	820	.16*	720	.14
NBR	1	1700	390	.23	650	.38
SBL	2	3400	110	.03*	140	.04
SBT	3	5100	590	.12	780	.15*
SBR	f		650		950	
EBL	2	3400	690	.20*	890	.26*
EBT	3	5100	750	.15	720	.14
EBR	1	1700	210	.12	250	.15
WBL	2	3400	700	.21	570	.17
WBT	3	5100	1350	.26*	600	.12*
WBR	1	1700	300	.18	160	.09
Right Turn Adjustment					NBR	.02*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.70** **.67**

6. Marguerite & Felipe

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	40	.02	30	.02
NBT	2	3400	690	.20*	770	.23*
NBR	1	1700	410	.24	460	.27
SBL	1	1700	100	.06*	350	.21*
SBT	2	3400	630	.19	900	.26
SBR	d	1700	20	.01	30	.02
EBL	1	1700	60	.04*	50	.03
EBT	1	1700	40	.04	60	.04*
EBR	0	0	30		10	
WBL	1.5		960		350	{.11}*
WBT	0.5	3400	50	.30*	30	.11
WBR	1	1700	340	.20	120	.07
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.65** **.64**

7. Puerta Real & Crown Valley

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	40	.01*	520	.15*
NBT	1	1700	80	.05	60	.04
NBR	1	1700	10	.01	70	.04
SBL	1	1700	20	.01	80	.05
SBT	1	1700	100	.06*	60	.04*
SBR	2	3400	410	.12	740	.22
EBL	2	3400	390	.11*	410	.12*
EBT	4	6800	1200	.18	1460	.21
EBR	1	1700	290	.17	620	.36
WBL	2	3400	10	.00	80	.02
WBT	4	6800	1910	.28*	1510	.23*
WBR	0	0	20		50	
Right Turn Adjustment					SBR	.09*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.51**		**.68**

8. Medical Center & Crown Valley

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		280	.08*	500	.15*
NBT	1.5	5100	40	.05	40	.06
NBR	0		50		70	
SBL	0	0	10		40	
SBT	1	1700	40	.03*	60	.06*
SBR	1	1700	100	.06	120	.07
EBL	1	1700	80	.05*	100	.06
EBT	4	6800	1030	.20	1180	.22*
EBR	0	0	370	.22	340	
WBL	2	3400	160	.05	120	.04*
WBT	4	6800	1500	.22*	970	.15
WBR	0	0	20		30	
Clearance Interval				.05*		.05*
Note: Assumes N/S Split Phasing						
TOTAL CAPACITY UTILIZATION				**.43**		**.52**

9. Los Altos & Crown Valley

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		30	{.01}*	160	{.05}*
NBT	0.5	3400	10	.01	10	.05
NBR	1	1700	10	.01	60	.04
SBL	0	0	40		80	
SBT	1	1700	10	.03*	10	.05*
SBR	1	1700	10	.01	50	.03
EBL	1	1700	80	.05*	40	.02
EBT	4	6800	890	.14	1440	.22*
EBR	0	0	80		30	
WBL	1	1700	130	.08	20	.01*
WBT	4	6800	1640	.26*	790	.12
WBR	0	0	140		50	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.40**		**.38**

10. Bellogente & Crown Valley

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	20	.01*	10	.01
NBT	1	1700	10	.01	10	.01*
NBR	0	0	10		10	
SBL	1	1700	20	.01	120	.07*
SBT	1	1700	10	.01*	10	.05
SBR	0	0	10		80	
EBL	1	1700	90	.05*	60	.04
EBT	4	6800	680	.10	1460	.22*
EBR	0	0	10		20	
WBL	1	1700	20	.01	10	.01*
WBT	4	6800	1860	.30*	940	.15
WBR	0	0	150		60	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.42**		**.36**

11. Marguerite Pkwy & Crown Valley

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	50	.01*	140	.04
NBT	2	3400	480	.14	680	.20*
NBR	1	1700	220	.13	420	.25
SBL	2	3400	160	.05	410	.12*
SBT	2	3400	760	.22*	540	.16
SBR	1	1700	410	.24	230	.14
EBL	2	3400	220	.06*	520	.15
EBT	4	6800	600	.09	1480	.22*
EBR	1	1700	80	.05	150	.09
WBL	2	3400	480	.14	430	.13*
WBT	4	6800	1750	.26*	670	.10
WBR	1	1700	300	.18	240	.14
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.60**		**.72**

12. Antonio & Crown Valley

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	240	.07*	170	.05*
NBT	3	5100	780	.15	500	.10
NBR	1	1700	10	.01	10	.01
SBL	1	1700	10	.01	0	.00
SBT	3	5100	640	.13*	660	.13*
SBR	f		690		560	
EBL	2	3400	490	.14*	800	.24*
EBT	2	3400	20	.01	10	.00
EBR	1	1700	180	.11	210	.12
WBL	2	3400	10	.00	10	.00
WBT	3	5100	20	.00*	10	.00*
WBR	1	1700	10	.01	10	.01
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.39**		**.47**

15. Cabot & Oso Pkwy

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	60	.02	140	.04
NBT	2	3400	400	.12*	270	.08*
NBR	1	1700	300	.18	260	.15
SBL	2	3400	200	.06*	510	.15*
SBT	2	3400	170	.05	390	.11
SBR	1	1700	50	.03	150	.09
EBL	2	3400	110	.03	90	.03
EBT	3	5100	1010	.20*	1240	.24*
EBR	1	1700	50	.03	50	.03
WBL	2	3400	360	.11*	320	.09*
WBT	3	5100	1200	.24	970	.19
WBR	1	1700	340	.20	350	.21
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.54**		**.61**

16. Moulton Pkwy & Crown Valley

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	180	.05	140	.04*
NBT	2.5	6800	840	{.16}*	450	{.09}
NBR	1.5		320	{.13}	200	{.01}
SBL	2	3400	140	.04*	180	.05
SBT	3	5100	370	.07	920	.18*
SBR	1	1700	50	.03	70	.04
EBL	2	3400	120	.04	140	.04
EBT	3	5100	1000	.20*	790	.15*
EBR	1	1700	230	.14	190	.11
WBL	2	3400	260	.08*	510	.15*
WBT	3	5100	720	.14	940	.18
WBR	1	1700	110	.06	120	.07
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.53**		**.57**

17. Greenfield & Crown Valley

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		20		30	
NBT	1.5	3400	80	.04*	50	.03*
NBR	0		50		30	
SBL	2	3400	440	.13*	680	.20*
SBT	1	1700	20	.01	110	.06
SBR	1	1700	100	.06	360	.21
EBL	2	3400	460	.14*	290	.09*
EBT	3	5100	1100	.22	1090	.22
EBR	0	0	10		40	
WBL	1	1700	20	.01	50	.03
WBT	3	5100	890	.17*	1280	.25*
WBR	1	1700	540	.32	540	.32
Right Turn Adjustment			WBR	.02*		
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for WBR

TOTAL CAPACITY UTILIZATION **.55** **.62**

18. Cabot & Crown Valley

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	90	.05	160	.09*
NBT	2	3400	360	.11*	190	.06
NBR	1	1700	370	.22	300	.18
SBL	2	3400	90	.03*	170	.05
SBT	2	3400	150	.08	240	.13*
SBR	0	0	120		200	
EBL	2	3400	160	.05	260	.08*
EBT	3	5100	1350	.26*	1260	.25
EBR	1	1700	170	.10	110	.06
WBL	2	3400	300	.09*	290	.09
WBT	3	5100	1270	.25	1580	.31*
WBR	1	1700	240	.14	180	.11
Right Turn Adjustment			NBR	.04*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.58** **.66**

19. Forbes Rd & Crown Valley

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	40	.02*	70	.04
NBT	1	1700	10	.01	10	.01*
NBR	1	1700	60	.04	110	.06
SBL	1	1700	40	.02	120	.07*
SBT	1	1700	10	.01*	10	.01
SBR	1	1700	70	.04	130	.08
EBL	1	1700	70	.04*	90	.05*
EBT	4	6800	1820	.27	1960	.30
EBR	0	0	30		70	
WBL	1	1700	110	.06	50	.03
WBT	3	5100	1720	.34*	2180	.43*
WBR	1	1700	110	.06	40	.02
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.46** **.61**

21. Cabot & Paseo De Colinas

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3400	130	.04*	160	.05*
SBT	0	0	0		0	
SBR	2	3400	220	.06	610	.18
EBL	1	1700	620	.36*	280	.16*
EBT	2	3400	260	.08	520	.15
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	320	.15*	700	.24*
WBR	0	0	200		120	
Right Turn Adjustment					SBR	.01*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.60** **.51**

22. Cm Capistrano & Paseo Colinas

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0.5	3400	230	{.14}*	150	{.17}*
NBR	1.5		380	{.05}	670	
SBL	1	1700	40	.02*	100	.06*
SBT	1	1700	100	.06	250	.15
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1.5		720		620	
WBT	0	3400	0	.23*	0	.20*
WBR	0.5		70		60	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.44**		**.48**

23. Camino Capistrano & Avery Pkwy

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1700	200	.12*	140	.08*
NBR	1	1700	150	.09	220	.13
SBL	2	3400	750	.22*	760	.22*
SBT	1	1700	260	.15	160	.09
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	160	.09*	240	.14*
WBT	0	0	0		0	
WBR	2	3400	470	.14	820	.24
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.48**		**.49**

24. Marguerite & Avery Pkwy

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	300	.18*	300	.18*
NBT	2	3400	670	.20	280	.08
NBR	d	1700	90	.05	30	.02
SBL	1	1700	210	.12	120	.07
SBT	2	3400	630	.19*	520	.15*
SBR	1	1700	220	.13	620	.36
EBL	2	3400	600	.18	840	.25*
EBT	2	3400	620	.28*	270	.15
EBR	0	0	340		250	
WBL	1	1700	40	.02*	30	.02
WBT	2	3400	250	.07	340	.10*
WBR	d	1700	140	.08	70	.04
Right Turn Adjustment					SBR	.02*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.72**		**.75**

44. I-5 SB Ramps & Oso Pkwy

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3400	640	.19*	1230	.36*
SBT	0	0	0		0	
SBR	1	1700	290	.17	330	.19
EBL	0	0	0		0	
EBT	3	5100	1130	.22	1570	.31*
EBR	f		380		440	
WBL	0	0	0		0	
WBT	3	5100	1610	.32*	1310	.26
WBR	f		800		500	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.56**		**.72**

45. I-5 NB Ramps & Oso Pkwy

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		340	{.11}*	460	{.21}*
NBT	0	5100	0	{.11}	0	.21
NBR	1.5		430		630	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	1220	.24	2410	.47*
EBR	f		550		390	
WBL	0	0	0		0	
WBT	3	5100	2070	.41*	1350	.26
WBR	f		1290		690	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.57**		**.73**

46. I-5 SB & Crown Valley

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	3	5100	1350	.26*	1410	.28*
SBT	0	0	0		0	
SBR	2	3400	740	.22	1040	.31
EBL	0	0	0		0	
EBT	4	6800	1640	.24*	1880	.28*
EBR	1	1700	290	.17	320	.19
WBL	2	3400	390	.11*	490	.14*
WBT	3	5100	1190	.23	1280	.25
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.66**		**.75**

47. I-5 NB & Crown Valley

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		330	.19*	220	.13*
NBT	0	5100	0		0	
NBR	1.5		680	.20	450	.13
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	1940	.38*	2610	.51*
EBR	f		850		680	
WBL	0	0	0		0	
WBT	3	5100	1380	.27	1540	.30
WBR	f		1040		1180	
Right Turn Adjustment			NBR	.01*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.63**		**.69**

48. I-5 SB Ramps & Avery Pkwy

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		690		550	
SBT	0	3400	0	.28*	0	.30*
SBR	0.5		270		470	
EBL	0	0	0		0	
EBT	3	5100	620	.12	780	.15
EBR	1	1700	200	.12	190	.11
WBL	1	1700	180	.11	320	.19
WBT	1	1700	390	.23*	580	.34*
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.56**		**.69**

49. I-5 NB Ramps & Avery Pkwy

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	160	.09*	240	.14*
NBT	0	0	0		0	
NBR	1	1700	440	.26	400	.24
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1700	290	.17	360	.21*
EBT	2	3400	1060	.31*	940	.28
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	410	.12	710	.21*
WBR	f		420		650	
Right Turn Adjustment			NBR	.17*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.62** **.61**

70. Greenfield & SR-73 SB

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	950	.36*	450	.24*
NBR	0	0	290		360	
SBL	1	1700	30	.02*	20	.01*
SBT	2	3400	320	.09	510	.15
SBR	0	0	0		0	
EBL	0.5		10	.01*	20	
EBT	0	3400	0		0	{.20}*
EBR	1.5		180	{.00}	780	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.44** **.50**

71. Greenfield & SR-73 NB

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	930	.27*	380	.11*
NBT	1	1700	30	.02	100	.06
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	1	1700	50	.03*	90	.05*
SBR	1	1700	20	.01	10	.01
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	300	.18*	430	.25*
WBT	0	0	0		0	
WBR	1	1700	30	.02	0	.00
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.53** **.46**

101. Marguerite & Med Ctr/College

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	110	.06	70	.04
NBT	2	3400	630	.19*	730	.21*
NBR	d	1700	40	.02	30	.02
SBL	1	1700	510	.30*	250	.15*
SBT	2	3400	1070	.31	720	.21
SBR	d	1700	210	.12	100	.06
EBL	1	1700	60	.04	210	.12*
EBT	2	3400	300	.11*	170	.08
EBR	0	0	80		110	
WBL	1	1700	20	.01*	50	.03
WBT	1	1700	50	.03	170	.10*
WBR	1	1700	60	.04	240	.14
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.66** **.63**

102. Marguerite & College Ctr/College W

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	39	.02*	93	.05*
NBT	2	3400	734	.22	772	.23
NBR	d	1700	317	.19	281	.17
SBL	1	1700	88	.05	83	.05
SBT	2	3400	890	.26*	819	.24*
SBR	d	1700	11	.01	47	.03
EBL	1	1700	8	.00	60	.04*
EBT	1	1700	1	.01*	14	.03
EBR	0	0	8		43	
WBL	1.5		32	{.01}*	169	
WBT	0.5	3400	0	.01	8	.05*
WBR	1	1700	5	.00	49	.03
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.35**		**.43**

103. College/Plata & Avery

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	80	.05*	40	.02*
NBT	1	1700	50	.03	0	.00
NBR	0	0	0		0	
SBL	1.5		50		0	
SBT	0.5	3400	20	.02*	0	.00*
SBR	1	1700	100	.06	270	.16
EBL	1	1700	490	.29*	240	.14*
EBT	2	3400	210	.06	170	.05
EBR	d	1700	100	.06	60	.04
WBL	1	1700	0	.00	0	.00
WBT	2	3400	210	.06*	130	.04*
WBR	d	1700	30	.02	10	.01
Right Turn Adjustment					SBR	.05*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.47**		**.30**

ICU Data Set 2

Existing – Irvine Valley College

1. College Dwy. at Irvine Center Dr.

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	97	.03*	170	.05*
NBT	0	0	0		0	
NBR	1	1700	25	.01	47	.03
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	701	.14*	578	.11
EBR	1	1700	430	.25	146	.09
WBL	2	3400	172	.05*	59	.02
WBT	3	5100	606	.12	1096	.21*
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.09*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.36** **.31**

2. Jeffrey Rd. at College Dwy.

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	883	.17	1538	.30*
NBR	1	1700	130	.08	121	.07
SBL	2	3400	116	.03	99	.03*
SBT	3	5100	1565	.31*	1149	.23
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	28	.02*	114	.07*
WBT	0	0	0		0	
WBR	1	1700	7	.00	39	.02
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.38** **.45**

3. Jeffrey Rd. at College Dwy. RIRO

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	818	.16	1532	.30*
NBR	1	1700	72	.04	45	.03
SBL	0	0	0		0	
SBT	3	5100	1681	.33*	1248	.24
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	2	3400	19	.01	82	.02
Right Turn Adjustment					WBR	.02*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.38** **.37**

222. Culver Dr. at Trabuco Rd.

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	698	.14	2053	.40*
NBR	f		574		930	
SBL	1	1700	62	.04	89	.05*
SBT	3	5100	1629	.32*	1064	.21
SBR	f		550		218	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	590	.17*	535	.16*
WBT	0	0	0		0	
WBR	2	3400	287	.08	462	.14
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.54** **.66**

223. Culver Dr. at I-5 SB Ramps

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	964	.19	2058	.40*
NBR	f		279		341	
SBL	0	0	0		0	
SBT	3	5100	1743	.34*	1414	.28
SBR	f		426		252	
EBL	3	5100	335	.07*	891	.17*
EBT	0	0	0		0	
EBR	2	3400	545	.16	816	.24
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.09*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.55** **.62**

224. Culver Dr. at Walnut Av.

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	112	.03*	229	.07
NBT	3	5100	705	.14	1505	.30*
NBR	1	1700	255	.15	368	.22
SBL	2	3400	148	.04	371	.11*
SBT	3	5100	1417	.28*	1226	.24
SBR	d	1700	336	.20	256	.15
EBL	2	3400	196	.06	479	.14*
EBT	2	3400	233	.11*	416	.15
EBR	0	0	128		109	
WBL	2	3400	401	.12*	365	.11
WBT	2	3400	550	.16	474	.14*
WBR	d	1700	286	.17	226	.13
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION **.59** **.74**

226. Culver Dr. at ICD

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	231	.07*	231	.07
NBT	4	6800	658	.10	1647	.24*
NBR	f		152		308	
SBL	2	3400	116	.03	223	.07*
SBT	4	6800	1723	.25*	1233	.18
SBR	1	1700	258	.15	120	.07
EBL	2	3400	115	.03*	251	.07*
EBT	3	5100	405	.08	655	.13
EBR	f		131		151	
WBL	2	3400	269	.08	185	.05
WBT	3	5100	841	.16*	717	.14*
WBR	f		94		145	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.56** **.57**

227. Culver Dr. at Warner Av.

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	39	.02*	70	.04
NBT	3	5100	784	.15	1835	.36*
NBR	1	1700	46	.03	121	.07
SBL	1	1700	79	.05	125	.07*
SBT	3	5100	1835	.36*	1248	.24
SBR	d	1700	108	.06	171	.10
EBL	1	1700	114	.07	167	.10*
EBT	2	3400	171	.05*	166	.05
EBR	d	1700	76	.04	61	.04
WBL	1	1700	184	.11*	79	.05
WBT	2	3400	215	.06	82	.02*
WBR	d	1700	166	.10	139	.08
Right Turn Adjustment					WBR	.01*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.59** **.61**

228. Culver Dr. at Barranca Pkwy.

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	96	.03*	143	.04
NBT	3	5100	592	.12	1122	.22*
NBR	1	1700	179	.11	218	.13
SBL	2	3400	299	.09	257	.08*
SBT	3	5100	1450	.28*	1010	.20
SBR	f		146		136	
EBL	2	3400	54	.02	361	.11
EBT	2	3400	404	.12*	759	.22*
EBR	1	1700	136	.08	166	.10
WBL	2	3400	275	.08*	228	.07*
WBT	2	3400	590	.17	578	.17
WBR	d	1700	128	.08	258	.15
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.56**		**.64**

229. Culver Dr. at Alton Pkwy.

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	124	.04*	194	.06
NBT	3	5100	717	.14	1617	.32*
NBR	1	1700	184	.11	376	.22
SBL	2	3400	102	.03	191	.06*
SBT	3	5100	1613	.32*	905	.18
SBR	f		270		123	
EBL	2	3400	112	.03*	303	.09
EBT	2	3400	276	.08	781	.23*
EBR	1	1700	111	.07	194	.11
WBL	2	3400	221	.07	277	.08*
WBT	2	3400	765	.23*	517	.15
WBR	1	1700	137	.08	181	.11
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.67**		**.74**

232. Culver Dr. at I-405 NB Ramps

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1160	.23	2347	.46*
NBR	f		705		381	
SBL	0	0	0		0	
SBT	3	5100	1620	.32*	1288	.25
SBR	f		1119		521	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	360	.11*	390	.11*
WBT	0	0	0		0	
WBR	1	1700	152	.09	353	.21
Right Turn Adjustment					WBR	.10*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.48**		**.72**

233. Culver Dr. at I-405 SB Ramps

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1292	.25	1635	.32*
NBR	f		329		634	
SBL	0	0	0		0	
SBT	3	5100	1532	.30*	1332	.26
SBR	f		438		329	
EBL	1.5		587	{.19}*	1101	.32*
EBT	0	5100	0	.19	0	
EBR	1.5		374		561	{.28}
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.54**		**.69**

259. Yale Av. at Walnut Av.

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	133	.04	132	.04
NBT	2	3400	237	.10*	366	.13*
NBR	0	0	98		90	
SBL	1	1700	57	.03*	74	.04*
SBT	2	3400	206	.06	221	.07
SBR	1	1700	236	.14	210	.12
EBL	1	1700	138	.08*	329	.19*
EBT	2	3400	216	.06	398	.12
EBR	d	1700	111	.07	173	.10
WBL	1	1700	73	.04	90	.05
WBT	2	3400	304	.09*	409	.12*
WBR	d	1700	52	.03	104	.06
Clearance Interval				.05*		.05*
Note: Assumes Right-Turn Overlap for SBR						

TOTAL CAPACITY UTILIZATION **.35** **.53**

261. Yale Av. at Irvine Center Dr.

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	160	.09*	79	.05
NBT	2	3400	139	.04	186	.05*
NBR	d	1700	99	.06	52	.03
SBL	1	1700	165	.10	99	.06*
SBT	2	3400	207	.06*	157	.05
SBR	d	1700	349	.21	103	.06
EBL	2	3400	92	.03*	269	.08*
EBT	3	5100	489	.11	661	.17
EBR	0	0	84		190	
WBL	1	1700	44	.03	88	.05
WBT	3	5100	595	.12*	818	.16*
WBR	1	1700	79	.05	155	.09
Right Turn Adjustment			SBR	.13*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.48** **.40**

264. W. Yale Lp. at Barranca Pkwy.

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	197	.12*	137	.08*
NBT	2	3400	208	.06	165	.05
NBR	d	1700	186	.11	97	.06
SBL	1	1700	136	.08	85	.05
SBT	2	3400	168	.05*	89	.03*
SBR	d	1700	94	.06	70	.04
EBL	2	3400	49	.01	183	.05
EBT	2	3400	838	.25*	1237	.36*
EBR	d	1700	76	.04	45	.03
WBL	1	1700	106	.06*	39	.02*
WBT	2	3400	896	.29	882	.30
WBR	0	0	90		126	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.53** **.54**

267. E. Yale Lp. at Barranca Pkwy.

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	83	.05	97	.06
NBT	2	3400	123	.04*	244	.07*
NBR	d	1700	110	.06	154	.09
SBL	1	1700	316	.19*	123	.07*
SBT	2	3400	303	.09	168	.05
SBR	d	1700	207	.12	103	.06
EBL	1	1700	82	.05*	181	.11
EBT	2	3400	494	.15	854	.25*
EBR	d	1700	102	.06	146	.09
WBL	1	1700	129	.08	79	.05*
WBT	2	3400	710	.21*	606	.18
WBR	d	1700	136	.08	230	.14
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.54** **.49**

268. W. Yale Loop at Alton Pkwy.

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	154	.09*	98	.06*
NBT	2	3400	182	.05	151	.04
NBR	d	1700	201	.12	206	.12
SBL	1	1700	35	.02	40	.02
SBT	2	3400	98	.03*	138	.04*
SBR	d	1700	86	.05	83	.05
EBL	1	1700	68	.04*	66	.04
EBT	2	3400	582	.17	1192	.35*
EBR	d	1700	76	.04	137	.08
WBL	1	1700	94	.06	182	.11*
WBT	2	3400	923	.27*	785	.23
WBR	d	1700	61	.04	48	.03
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.48**		**.61**

271. E. Yale Lp. at Alton Pkwy.

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	195	.11*	85	.05*
NBT	2	3400	268	.08	131	.04
NBR	d	1700	449	.26	242	.14
SBL	2	3400	123	.04	165	.05
SBT	2	3400	117	.03*	128	.04*
SBR	d	1700	83	.05	57	.03
EBL	1	1700	81	.05*	170	.10
EBT	2	3400	423	.17	1008	.34*
EBR	0	0	138		136	
WBL	2	3400	200	.06	489	.14*
WBT	2	3400	792	.23*	699	.21
WBR	d	1700	101	.06	126	.07
Right Turn Adjustment			NBR	.08*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.55**		**.62**

287. Jeffrey Rd. at I-5 NB Ramps

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	394	.08	1295	.25*
NBR	f		232		395	
SBL	0	0	0		0	
SBT	3	5100	950	.19*	823	.16
SBR	f		282		176	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1.5		430	.13*	653	
WBT	0	5100	0		0	.29*
WBR	1.5		187	.11	846	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.37**		**.59**

288. Jeffrey Rd. at Walnut Av./I-5 SB Ramps

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	71	.02*	217	.06*
NBT	3	5100	476	.09	975	.19
NBR	1	1700	97	.06	152	.09
SBL	2	3400	361	.11	236	.07
SBT	3	5100	1135	.28*	674	.20*
SBR	0	0	293		544	.32
EBL	1	1700	93	.05	202	.12
EBT	1	1700	251	.15*	222	.13*
EBR	1	1700	143	.08	175	.10
WBL	2	3400	275	.08*	385	.11*
WBT	1	1700	36	.02	101	.06
WBR	1	1700	159	.09	299	.18
Right Turn Adjustment					WBR	.01*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.58**		**.56**

289. Jeffrey Rd. at ICD

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	130	.04*	169	.05
NBT	2	3400	508	.15	1102	.32*
NBR	1	1700	111	.07	150	.09
SBL	2	3400	163	.05	152	.04*
SBT	3	5100	1195	.23*	866	.17
SBR	1	1700	237	.14	180	.11
EBL	2	3400	136	.04	193	.06*
EBT	3	5100	485	.10*	488	.10
EBR	f		173		115	
WBL	2	3400	126	.04*	143	.04
WBT	3	5100	380	.07	914	.18*
WBR	1	1700	101	.06	362	.21
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.46**		**.65**

290. Jeffrey Rd. at Barranca Pkwy.

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	204	.06*	263	.08*
NBT	3	5100	733	.16	1111	.23
NBR	0	0	75		80	
SBL	2	3400	25	.01	60	.02
SBT	3	5100	1217	.31*	907	.22*
SBR	0	0	346		206	
EBL	2	3400	215	.06*	373	.11*
EBT	2	3400	454	.13	554	.16
EBR	d	1700	316	.19	271	.16
WBL	2	3400	90	.03	136	.04
WBT	2	3400	556	.16*	520	.15*
WBR	1	1700	34	.02	59	.03
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.64**		**.61**

291. Jeffrey Rd. at Alton Pkwy.

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	354	.10*	509	.15*
NBT	3	5100	546	.11	983	.19
NBR	f		148		414	
SBL	2	3400	220	.06	383	.11
SBT	3	5100	1282	.28*	957	.21*
SBR	0	0	150		122	
EBL	2	3400	134	.04	253	.07
EBT	2	3400	526	.15*	931	.27*
EBR	d	1700	534	.31	375	.22
WBL	2	3400	447	.13*	342	.10*
WBT	2	3400	799	.24	659	.19
WBR	d	1700	106	.06	116	.07
Right Turn Adjustment			EBR	.08*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.79**		**.78**

293. Jeffrey Rd. at I-405 NB Ramps

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1032	.20	1750	.34*
NBR	f		150		101	
SBL	0	0	0		0	
SBT	3	5100	1463	.29*	1209	.24
SBR	f		1615		627	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	1158	.34*	1141	.34*
WBT	0	0	0		0	
WBR	1	1700	151	.09	524	.31
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.68**		**.73**

294. University Dr. at I-405 SB Ramps

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	914	.18	1490	.29
NBR	f		889		1127	
SBL	0	0	0		0	
SBT	3	5100	2079	.41*	1812	.36*
SBR	f		573		512	
EBL	2	3400	286	.08*	374	.11*
EBT	0	0	0		0	
EBR	1	1700	107	.06	50	.03
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.54** **.52**

303. Sand Canyon. Av. at I-5 NB Ramps

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	179	.05*	684	.20*
NBT	2	3400	465	.14	1175	.35
NBR	0	0	6		14	
SBL	1	1700	2	.00	0	.00
SBT	2	3400	1383	.41*	507	.15*
SBR	1	1700	212	.12	191	.11
EBL	1.5		123	{.04}*	530	{.16}*
EBT	0.5	3400	10	.04	1	.16
EBR	1	1700	392	.23	190	.11
WBL	1	1700	2	.00	2	.00
WBT	1	1700	2	.00*	0	.00*
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.15*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.70** **.56**

304. Sand Canyon. Av. at Marine Wy.

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	574	.17	1736	.51*
NBR	1	1700	74	.04	14	.01
SBL	2	3400	55	.02	27	.01*
SBT	2	3400	1557	.46*	643	.19
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	40	.02*	46	.03*
WBT	0	0	0		0	
WBR	1	1700	32	.02	56	.03
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.53** **.60**

305. Sand Canyon. Av. at I-5 SB Ramps

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	419	.12	1498	.44*
NBR	d	1700	108	.06	320	.19
SBL	2	3400	385	.11	172	.05*
SBT	2	3400	1309	.39*	555	.16
SBR	0	0	0		0	
EBL	1.5		259	.15*	268	.08*
EBT	0	5100	9		1	
EBR	1.5		771	.23	291	{.00}
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.08*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.67** **.62**

306. Sand Canyon. Av. at Oak Cyn./Laguna Cyn. Rd._

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	74	.04*	33	.02*
NBT	3	5100	389	.08	906	.18
NBR	1	1700	20	.01	9	.01
SBL	1	1700	219	.13	39	.02
SBT	2	3400	1504	.44*	649	.19*
SBR	1	1700	317	.19	72	.04
EBL	2	3400	48	.01*	334	.10*
EBT	1	1700	7	.00	21	.01
EBR	d	1700	18	.01	75	.04
WBL	2	3400	6	.00	32	.01
WBT	1	1700	14	.01*	7	.00*
WBR	1	1700	23	.01	342	.20
Right Turn Adjustment					WBR	.18*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.55**		**.54**

307. Sand Canyon. Av. at ICD

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	147	.04*	126	.04
NBT	3	5100	330	.06	619	.12*
NBR	1	1700	109	.06	37	.02
SBL	2	3400	213	.06	148	.04*
SBT	3	5100	986	.19*	514	.10
SBR	1	1700	177	.10	174	.10
EBL	2	3400	94	.03*	161	.05*
EBT	3	5100	391	.08	324	.06
EBR	1	1700	72	.04	90	.05
WBL	2	3400	31	.01	121	.04
WBT	3	5100	347	.07*	688	.13*
WBR	1	1700	19	.01	96	.06
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.38**		**.39**

309. Sand Canyon. Av. at Barranca Pkwy.

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	72	.02*	91	.03*
NBT	3	5100	672	.13	612	.12
NBR	d	1700	77	.05	83	.05
SBL	2	3400	27	.01	45	.01
SBT	3	5100	855	.17*	798	.16*
SBR	d	1700	74	.04	138	.08
EBL	2	3400	90	.03*	92	.03
EBT	2	3400	296	.09	384	.11*
EBR	1	1700	73	.04	70	.04
WBL	2	3400	58	.02	103	.03*
WBT	2	3400	448	.13*	351	.10
WBR	1	1700	50	.03	32	.02
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.40**		**.38**

310. Sand Canyon. Av. at Alton Pkwy.

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	200	.06	227	.07*
NBT	3	5100	703	.14*	421	.08
NBR	1	1700	587	.35	174	.10
SBL	2	3400	184	.05*	85	.03
SBT	3	5100	588	.12	828	.16*
SBR	1	1700	91	.05	143	.08
EBL	2	3400	94	.03*	154	.05
EBT	3	5100	420	.08	663	.13*
EBR	1	1700	313	.18	372	.22
WBL	2	3400	370	.11	473	.14*
WBT	2	3400	631	.19*	515	.15
WBR	1	1700	59	.03	147	.09
Right Turn Adjustment			Multi	.12*	EBR	.04*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.58**		**.59**

311. Sand Canyon. Av. at I-405 NB Ramps

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	1219	.36*	519	.15
NBR	f		672		320	
SBL	0	0	0		0	
SBT	2	3400	453	.13	777	.23*
SBR	f		757		819	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0.5		76		184	.11*
WBT	0	3400	0	.10*	0	
WBR	1.5		262		283	{.11}
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.51**		**.39**

312. Sand Canyon. Av. at I-405 SB Ramps

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	146	.09	145	.09*
NBT	2	3400	984	.29*	571	.17
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	335	.10	653	.19*
SBR	f		205		367	
EBL	1.5		919	{.34}*	273	.16*
EBT	0	3400	0	.34	0	
EBR	0.5		243		351	.21
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.68**		**.49**

313. Laguna Canyon Rd. at ICD

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	31	.01*	45	.01
NBT	2	3400	55	.02	82	.02*
NBR	d	1700	26	.02	25	.01
SBL	2	3400	76	.02	36	.01*
SBT	2	3400	86	.03*	43	.01
SBR	d	1700	19	.01	53	.03
EBL	2	3400	33	.01	15	.00
EBT	3	5100	460	.09*	455	.09
EBR	d	1700	35	.02	36	.02
WBL	2	3400	21	.01*	18	.01
WBT	3	5100	418	.08	762	.15*
WBR	d	1700	40	.02	46	.03
Right Turn Adjustment					SBR	.01*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.19**		**.24**

314. Laguna Canyon Rd. at Barranca Pkwy.

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	27	.01*	42	.01*
NBT	2	3400	56	.02	68	.02
NBR	d	1700	23	.01	68	.04
SBL	2	3400	17	.01	42	.01
SBT	2	3400	73	.02*	71	.02*
SBR	d	1700	5	.00	54	.03
EBL	2	3400	18	.01*	14	.00
EBT	2	3400	342	.10	518	.15*
EBR	1	1700	53	.03	31	.02
WBL	2	3400	86	.03	31	.01*
WBT	2	3400	577	.17*	445	.13
WBR	d	1700	28	.02	79	.05
Right Turn Adjustment					NBR	.01*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.26**		**.25**

315. Laguna Canyon Rd. at Alton Pkwy.

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	93	.05*	100	.06*
NBT	2	3400	70	.02	75	.02
NBR	d	1700	59	.03	52	.03
SBL	1	1700	19	.01	28	.02
SBT	2	3400	62	.02*	105	.03*
SBR	d	1700	17	.01	48	.03
EBL	2	3400	76	.02*	31	.01
EBT	2	3400	581	.17	690	.20*
EBR	1	1700	91	.05	127	.07
WBL	2	3400	63	.02	82	.02*
WBT	2	3400	878	.26*	639	.19
WBR	1	1700	43	.03	48	.03
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.40** **.36**

318. Banting at Barranca Pkwy.

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	10	.00	9	.00
NBT	1	1700	3	.00	98	.06*
NBR	1	1700	8	.00	58	.03
SBL	2	3400	749	.22	318	.09*
SBT	2	3400	392	.23*	76	.04
SBR	0	0	485	.29	137	.08
EBL	1	1700	21	.01*	256	.15*
EBT	2	3400	318	.09	726	.21
EBR	d	1700	20	.01	20	.01
WBL	1	1700	12	.01	11	.01
WBT	2	3400	522	.15*	447	.13*
WBR	f		122		767	
Right Turn Adjustment			SBR	.05*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.49** **.48**

319. Banting at Alton Pkwy.

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	5	.00	29	.02
NBT	1	1700	2	.00	57	.03*
NBR	1	1700	25	.01	104	.06
SBL	2	3400	41	.01	37	.01*
SBT	1	1700	88	.05*	10	.01
SBR	1	1700	201	.12	24	.01
EBL	2	3400	16	.00	25	.01
EBT	2	3400	392	.12	941	.28*
EBR	d	1700	59	.03	5	.00
WBL	1	1700	73	.04	12	.01*
WBT	2	3400	1041	.31*	648	.19
WBR	d	1700	46	.03	13	.01
Right Turn Adjustment			SBR	.07*	NBR	.02*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.48** **.40**

330. Barranca Pkwy. at Pacifica

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	186	.11*	46	.03*
NBT	2	3400	689	.20	746	.22
NBR	1	1700	108	.06	368	.22
SBL	1	1700	18	.01	127	.07
SBT	2	3400	418	.12*	1122	.33*
SBR	d	1700	157	.09	15	.01
EBL	2	3400	8	.00	111	.03
EBT	2	3400	10	.01	82	.05*
EBR	0	0	25	.01	342	.20
WBL	2	3400	178	.05	178	.05*
WBT	1	1700	202	.12*	21	.01
WBR	1	1700	376	.22	65	.04
Right Turn Adjustment			WBR	.08*	EBR	.13*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.48** **.64**

350. Alton Pkwy. at Pacifica

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	28	.01*	186	.05*
NBT	3	5100	372	.07	828	.16
NBR	d	1700	38	.02	64	.04
SBL	2	3400	2	.00	9	.00
SBT	2	3400	1056	.31*	572	.17*
SBR	1	1700	73	.04	67	.04
EBL	2	3400	42	.01	53	.02*
EBT	2	3400	43	.01*	31	.01
EBR	d	1700	92	.05	37	.02
WBL	1	1700	41	.02*	32	.02
WBT	2	3400	19	.01	62	.02*
WBR	d	1700	4	.00	8	.00
Right Turn Adjustment			EBR	.03*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.43** **.31**

444. Sand Canyon Av. at Burt Rd.

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	8	.00	5	.00
NBT	2	3400	394	.13	1677	.52*
NBR	0	0	35		80	
SBL	1	1700	99	.06	79	.05*
SBT	2	3400	1977	.60*	640	.19
SBR	0	0	53		22	
EBL	1	1700	10	.01*	57	.03*
EBT	1	1700	3	.00	5	.00
EBR	d	1700	2	.00	17	.01
WBL	0	0	56		37	
WBT	1	1700	9	.04*	3	.02*
WBR	d	1700	70	.04	77	.05
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.70** **.67**

402. I-5 NB Ramps at Trabuco Rd.

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		350	.10*	670	.20*
NBT	0	5100	0		0	
NBR	1.5		30		65	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	232	.07*	619	.18*
EBR	f		448		401	
WBL	1	1700	422	.25*	173	.10*
WBT	2	3400	448	.13	317	.09
WBR	0	0	0		0	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.47** **.53**

ICU Data Set 3

2016 No-Project – Saddleback College

3. Marguerite & Oso

2016 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	409	.12*	220	.06
NBT	2	3400	801	.24	796	.23*
NBR	1	1700	54	.03	82	.05
SBL	2	3400	158	.05	289	.09*
SBT	2	3400	590	.17*	853	.25
SBR	1	1700	286	.17	234	.14
EBL	2	3400	254	.07*	284	.08
EBT	4	6800	1189	.17	1837	.27*
EBR	d	1700	184	.11	564	.33
WBL	2	3400	94	.03	132	.04*
WBT	4	6800	2098	.31*	1321	.19
WBR	d	1700	72	.04	173	.10
Right Turn Adjustment					EBR	.01*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.72** **.69**

4. Felipe & Oso

2016 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	154	.09	86	.05
NBT	2	3400	268	.08*	371	.11*
NBR	1	1700	114	.07	155	.09
SBL	1	1700	394	.23*	412	.24*
SBT	2	3400	584	.17	300	.09
SBR	d	1700	234	.14	145	.09
EBL	1	1700	174	.10*	234	.14
EBT	3	5100	1299	.25	1678	.33*
EBR	d	1700	90	.05	125	.07
WBL	1	1700	197	.12	132	.08*
WBT	3	5100	1774	.35*	1307	.26
WBR	d	1700	464	.27	282	.17
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.81** **.81**

5. Antonio & Oso

2016 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	440	.13*	425	.13*
NBT	3	5100	839	.16	802	.16
NBR	1	1700	484	.28	654	.38
SBL	2	3400	126	.04	144	.04
SBT	3	5100	886	.17*	885	.17*
SBR	f		841		954	
EBL	2	3400	694	.20*	941	.28*
EBT	3	5100	847	.17	927	.18
EBR	1	1700	370	.22	414	.24
WBL	2	3400	727	.21	648	.19
WBT	3	5100	1354	.27*	623	.12*
WBR	1	1700	304	.18	164	.10
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION **.82** **.75**

6. Marguerite & Felipe

2016 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	44	.03	30	.02
NBT	2	3400	756	.22*	864	.25*
NBR	1	1700	414	.24	589	.35
SBL	1	1700	104	.06*	369	.22*
SBT	2	3400	727	.21	904	.27
SBR	d	1700	24	.01	34	.02
EBL	1	1700	64	.04	54	.03
EBT	1	1700	48	.05*	64	.05*
EBR	0	0	30		22	
WBL	1.5		964	{.30}*	401	{.13}*
WBT	0.5	3400	54	.30	34	.13
WBR	1	1700	344	.20	124	.07
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.68** **.70**

7. Puerta Real & Crown Valley

2016 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	44	.01	524	.15*
NBT	1	1700	84	.05*	64	.04
NBR	1	1700	37	.02	183	.11
SBL	1	1700	82	.05*	127	.07
SBT	1	1700	104	.06	64	.04*
SBR	2	3400	414	.12	744	.22
EBL	2	3400	433	.13*	426	.13*
EBT	4	6800	1625	.24	2049	.30
EBR	1	1700	294	.17	624	.37
WBL	2	3400	37	.01	177	.05
WBT	4	6800	2226	.34*	1935	.30*
WBR	0	0	59		124	
Right Turn Adjustment					SBR	.08*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.62**		**.75**

8. Medical Center & Crown Valley

2016 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		284	.08*	504	.15*
NBT	1.5	5100	44	.06	44	.09
NBR	0		66		117	
SBL	0	0	18		56	
SBT	1	1700	44	.04*	64	.07*
SBR	1	1700	104	.06	139	.08
EBL	1	1700	115	.07*	108	.06
EBT	4	6800	1475	.27	1956	.34*
EBR	0	0	374		344	
WBL	2	3400	203	.06	175	.05*
WBT	4	6800	1921	.29*	1617	.25
WBR	0	0	59		53	
Clearance Interval				.05*		.05*
Note: Assumes N/S Split Phasing						
TOTAL CAPACITY UTILIZATION				**.53**		**.66**

9. Los Altos & Crown Valley

2016 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		34	{.01}*	296	{.09}*
NBT	0.5	3400	10	.01	14	.09
NBR	1	1700	41	.02	157	.09
SBL	0	0	44		131	
SBT	1	1700	14	.03*	18	.09*
SBR	1	1700	26	.02	77	.05
EBL	1	1700	111	.07*	59	.03
EBT	4	6800	1249	.21	2142	.32*
EBR	0	0	170		49	
WBL	1	1700	263	.15	78	.05*
WBT	4	6800	2131	.34*	1398	.21
WBR	0	0	202		54	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.50**		**.60**

10. Bellogente & Crown Valley

2016 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	20	.01*	10	.01
NBT	1	1700	10	.01	10	.01*
NBR	0	0	10		10	
SBL	1	1700	24	.01	124	.07*
SBT	1	1700	10	.02*	10	.06
SBR	0	0	22		88	
EBL	1	1700	98	.06*	64	.04
EBT	4	6800	1128	.17	2341	.35*
EBR	0	0	10		20	
WBL	1	1700	24	.01	10	.01*
WBT	4	6800	2554	.40*	1525	.23
WBR	0	0	154		64	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.54**		**.49**

11. Marguerite Pkwy & Crown Valley

2016 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	112	.03*	144	.04
NBT	2	3400	499	.15	688	.20*
NBR	1	1700	337	.20	514	.30
SBL	2	3400	183	.05	480	.14*
SBT	2	3400	803	.24*	552	.16
SBR	1	1700	613	.36	285	.17
EBL	2	3400	349	.10*	719	.21
EBT	4	6800	861	.13	1862	.27*
EBR	1	1700	84	.05	201	.12
WBL	2	3400	531	.16	535	.16*
WBT	4	6800	2093	.31*	1189	.17
WBR	1	1700	417	.25	240	.14
Right Turn Adjustment			SBR	.04*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.77** **.82**

12. Antonio & Crown Valley

2016 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	552	.16*	544	.16*
NBT	3	5100	1111	.22	812	.16
NBR	1	1700	14	.01	14	.01
SBL	1	1700	14	.01	0	.00
SBT	3	5100	913	.18*	945	.19*
SBR	f		846		708	
EBL	2	3400	537	.16*	913	.27*
EBT	2	3400	24	.01	14	.00
EBR	1	1700	391	.23	553	.33
WBL	2	3400	14	.00	14	.00
WBT	3	5100	24	.00*	14	.00*
WBR	1	1700	14	.01	14	.01
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.55** **.67**

15. Cabot & Oso Pkwy

2016 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	126	.04	183	.05
NBT	2	3400	552	.16*	293	.09*
NBR	1	1700	304	.18	381	.22
SBL	2	3400	235	.07*	592	.17*
SBT	2	3400	197	.06	484	.14
SBR	1	1700	50	.03	154	.09
EBL	2	3400	114	.03	106	.03
EBT	3	5100	1068	.21*	1287	.25*
EBR	1	1700	73	.04	73	.04
WBL	2	3400	364	.11*	328	.10*
WBT	3	5100	1329	.26	1071	.21
WBR	1	1700	371	.22	366	.22
Right Turn Adjustment					NBR	.05*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.60** **.71**

16. Moulton Pkwy & Crown Valley

2016 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	188	.06	183	.05*
NBT	2.5	6800	1078	{.21}*	676	{.13}
NBR	1.5		429	{.16}	258	{.02}
SBL	2	3400	144	.04*	215	.06
SBT	3	5100	522	.10	1166	.23*
SBR	1	1700	73	.04	97	.06
EBL	2	3400	147	.04	152	.04
EBT	3	5100	1129	.22*	919	.18*
EBR	1	1700	312	.18	206	.12
WBL	2	3400	393	.12*	623	.18*
WBT	3	5100	771	.15	1143	.22
WBR	1	1700	188	.11	143	.08
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.64** **.69**

17. Greenfield & Crown Valley

2016 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		32		34	
NBT	1.5	3400	84	.05*	54	.04*
NBR	0		54		34	
SBL	2	3400	553	.16*	805	.24*
SBT	1	1700	36	.02	114	.07
SBR	1	1700	162	.10	364	.21
EBL	2	3400	507	.15*	294	.09*
EBT	3	5100	1272	.25	1137	.23
EBR	0	0	18		44	
WBL	1	1700	20	.01	54	.03
WBT	3	5100	1151	.23*	1416	.28*
WBR	1	1700	696	.41	618	.36
Right Turn Adjustment			WBR	.02*		
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for WBR

TOTAL CAPACITY UTILIZATION **.66** **.70**

18. Cabot & Crown Valley

2016 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	94	.06	164	.10*
NBT	2	3400	364	.11*	194	.06
NBR	1	1700	374	.22	304	.18
SBL	2	3400	164	.05*	256	.08
SBT	2	3400	154	.09	271	.16*
SBR	0	0	155	.09	270	
EBL	2	3400	230	.07*	291	.09*
EBT	3	5100	1553	.30	1435	.28
EBR	1	1700	174	.10	126	.07
WBL	2	3400	304	.09	302	.09
WBT	3	5100	1668	.33*	1709	.34*
WBR	1	1700	256	.15	199	.12
Right Turn Adjustment			NBR	.03*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.64** **.74**

19. Forbes Rd & Crown Valley

2016 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	130	.08*	121	.07
NBT	1	1700	18	.01	26	.02*
NBR	1	1700	122	.07	118	.07
SBL	1	1700	91	.05	139	.08*
SBT	1	1700	18	.01*	22	.01
SBR	1	1700	171	.10	157	.09
EBL	1	1700	97	.06*	137	.08*
EBT	4	6800	1988	.30	1960	.30
EBR	0	0	77		74	
WBL	1	1700	114	.07	77	.05
WBT	3	5100	1860	.36*	2184	.43*
WBR	1	1700	114	.07	102	.06
Right Turn Adjustment			SBR	.04*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.60** **.66**

21. Cabot & Paseo De Colinas

2016 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3400	134	.04*	164	.05*
SBT	0	0	0		0	
SBR	2	3400	275	.08	614	.18
EBL	1	1700	624	.37*	370	.22*
EBT	2	3400	541	.16	578	.17
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	382	.17*	770	.26*
WBR	0	0	204		124	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.63** **.58**

22. Cm Capistrano & Paseo Colinas

2016 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0.5	3400	234	{.14}*	154	{.19}*
NBR	1.5		485	{.05}	779	
SBL	1	1700	40	.02*	104	.06*
SBT	1	1700	112	.07	254	.15
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1.5		966		698	
WBT	0	3400	0	.31*	0	.22*
WBR	0.5		74		64	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.52**		**.52**

23. Camino Capistrano & Avery Pkwy

2016 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1700	204	.12*	163	.10*
NBR	1	1700	158	.09	278	.16
SBL	2	3400	886	.26*	830	.24*
SBT	1	1700	264	.16	164	.10
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	250	.15*	279	.16*
WBT	0	0	0		0	
WBR	2	3400	509	.15	843	.25
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.58**		**.55**

24. Marguerite & Avery Pkwy

2016 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	378	.22*	358	.21*
NBT	2	3400	748	.22	350	.10
NBR	d	1700	121	.07	49	.03
SBL	1	1700	210	.12	124	.07
SBT	2	3400	677	.20*	653	.19*
SBR	1	1700	232	.14	678	.40
EBL	2	3400	682	.20	902	.27*
EBT	2	3400	624	.30*	274	.16
EBR	0	0	391		297	.17
WBL	1	1700	48	.03*	49	.03
WBT	2	3400	254	.07	344	.10*
WBR	d	1700	140	.08	70	.04
Right Turn Adjustment					SBR	.01*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.80**		**.83**

44. I-5 SB Ramps & Oso Pkwy

2016 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3400	687	.20*	1261	.37*
SBT	0	0	0		0	
SBR	1	1700	298	.18	388	.23
EBL	0	0	0		0	
EBT	3	5100	1134	.22	1671	.33*
EBR	f		423		588	
WBL	0	0	0		0	
WBT	3	5100	1727	.34*	1372	.27
WBR	f		804		504	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.59**		**.75**

45. I-5 NB Ramps & Oso Pkwy

2016 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		426	{.14}*	472	{.22}*
NBT	0	5100	0	{.14}	0	.22
NBR	1.5		434		634	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	1419	.28	2472	.48*
EBR	f		554		456	
WBL	0	0	0		0	
WBT	3	5100	2074	.41*	1350	.26
WBR	f		1329		717	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.60**		**.75**

46. I-5 SB & Crown Valley

2016 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	3	5100	1350	.26*	1613	.32*
SBT	0	0	0		0	
SBR	2	3400	744	.22	1243	.37
EBL	0	0	0		0	
EBT	4	6800	1745	.26*	2083	.31*
EBR	1	1700	294	.17	336	.20
WBL	2	3400	441	.13*	517	.15*
WBT	3	5100	1381	.27	1397	.27
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.70**		**.83**

47. I-5 NB & Crown Valley

2016 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		420	{.22}*	236	{.14}*
NBT	0	5100	0	.22	0	.14
NBR	1.5		688		454	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	2037	.40*	2906	.57*
EBR	f		955		785	
WBL	0	0	0		0	
WBT	3	5100	1485	.29	1673	.33
WBR	f		1212		1375	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.67**		**.76**

48. I-5 SB Ramps & Avery Pkwy

2016 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		694		554	
SBT	0	3400	0	.28*	0	.30*
SBR	0.5		274		474	
EBL	0	0	0		0	
EBT	3	5100	717	.14	866	.17
EBR	1	1700	270	.16	245	.14
WBL	1	1700	192	.11	328	.19
WBT	1	1700	507	.30*	728	.43*
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.63**		**.78**

49. I-5 NB Ramps & Avery Pkwy

2016 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	207	.12*	275	.16*
NBT	0	0	0		0	
NBR	1	1700	444	.26	470	.28
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1700	294	.17	364	.21*
EBT	2	3400	1146	.34*	1073	.32
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	496	.15	807	.24*
WBR	f		428		654	
Right Turn Adjustment			NBR	.14*	NBR	.02*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.65** **.68**

70. Greenfield & SR-73 SB

2016 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	1149	.43*	462	.25*
NBR	0	0	309		372	
SBL	1	1700	34	.02*	24	.01*
SBT	2	3400	375	.11	514	.15
SBR	0	0	0		0	
EBL	0.5		10	.01*	20	
EBT	0	3400	0		0	{.22}*
EBR	1.5		281	{.00}	866	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.51** **.53**

71. Greenfield & SR-73 NB

2016 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	1129	.33*	384	.11*
NBT	1	1700	30	.02	104	.06
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	1	1700	77	.05*	94	.06*
SBR	1	1700	28	.02	10	.01
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	316	.19*	434	.26*
WBT	0	0	0		0	
WBR	1	1700	42	.02	8	.00
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.62** **.48**

101. Marguerite & Med Ctr/College

2016 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	102	.06	70	.04
NBT	2	3400	716	.21*	796	.23*
NBR	d	1700	40	.02	26	.02
SBL	1	1700	518	.30*	269	.16*
SBT	2	3400	1027	.30	798	.23
SBR	d	1700	218	.13	112	.07
EBL	1	1700	64	.04	210	.12*
EBT	2	3400	269	.10*	143	.07
EBR	0	0	76		98	
WBL	1	1700	20	.01*	50	.03
WBT	1	1700	46	.03	166	.10*
WBR	1	1700	68	.04	256	.15
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.67** **.66**

102. Marguerite & College Ctr/College W

2016 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	39	.02	92	.05*
NBT	2	3400	912	.27*	966	.28
NBR	d	1700	318	.19	285	.17
SBL	1	1700	89	.05*	78	.05
SBT	2	3400	945	.28	1030	.30*
SBR	d	1700	11	.01	48	.03
EBL	1	1700	9	.01*	60	.04*
EBT	1	1700	1	.01	12	.03
EBR	0	0	9		42	
WBL	1.5		27		165	
WBT	0.5	3400	0	.01*	9	.05*
WBR	1	1700	7	.00	42	.02
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.39**		**.49**

103. College/Plata & Avery

2016 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	80	.05*	40	.02*
NBT	1	1700	50	.03	0	.00
NBR	0	0	0		4	
SBL	1.5		50		4	
SBT	0.5	3400	20	.02*	4	.00*
SBR	1	1700	100	.06	266	.16
EBL	1	1700	474	.28*	252	.15*
EBT	2	3400	202	.06	170	.05
EBR	d	1700	100	.06	60	.04
WBL	1	1700	4	.00	0	.00
WBT	2	3400	210	.06*	126	.04*
WBR	d	1700	30	.02	10	.01
Right Turn Adjustment					SBR	.05*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.46**		**.31**

ICU Data Set 4

2016 With-Project – Saddleback College

3. Marguerite & Oso

2016 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	399	.12*	220	.06
NBT	2	3400	801	.24	826	.24*
NBR	1	1700	54	.03	82	.05
SBL	2	3400	148	.04	289	.09*
SBT	2	3400	640	.19*	853	.25
SBR	1	1700	286	.17	234	.14
EBL	2	3400	254	.07*	284	.08
EBT	4	6800	1189	.17	1837	.27*
EBR	d	1700	184	.11	564	.33
WBL	2	3400	94	.03	132	.04*
WBT	4	6800	2078	.31*	1321	.19
WBR	d	1700	72	.04	173	.10
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.74** **.69**

4. Felipe & Oso

2016 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	154	.09	86	.05
NBT	2	3400	268	.08*	391	.12*
NBR	1	1700	114	.07	155	.09
SBL	1	1700	394	.23*	412	.24*
SBT	2	3400	614	.18	300	.09
SBR	d	1700	234	.14	145	.09
EBL	1	1700	174	.10*	234	.14
EBT	3	5100	1299	.25	1688	.33*
EBR	d	1700	90	.05	125	.07
WBL	1	1700	207	.12	132	.08*
WBT	3	5100	1754	.34*	1307	.26
WBR	d	1700	464	.27	282	.17
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.80** **.82**

5. Antonio & Oso

2016 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	430	.13*	425	.13*
NBT	3	5100	839	.16	822	.16
NBR	1	1700	484	.28	674	.40
SBL	2	3400	126	.04	144	.04
SBT	3	5100	926	.18*	885	.17*
SBR	f		851		944	
EBL	2	3400	694	.20*	951	.28*
EBT	3	5100	847	.17	927	.18
EBR	1	1700	370	.22	414	.24
WBL	2	3400	747	.22	648	.19
WBT	3	5100	1344	.26*	623	.12*
WBR	1	1700	304	.18	164	.10
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION **.82** **.75**

6. Marguerite & Felipe

2016 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	44	.03	30	.02
NBT	2	3400	766	.23*	904	.27*
NBR	1	1700	414	.24	619	.36
SBL	1	1700	104	.06*	369	.22*
SBT	2	3400	777	.23	904	.27
SBR	d	1700	24	.01	34	.02
EBL	1	1700	64	.04	54	.03
EBT	1	1700	48	.05*	64	.05*
EBR	0	0	30		22	
WBL	1.5		1004	{.31}*	401	{.13}*
WBT	0.5	3400	54	.31	34	.13
WBR	1	1700	344	.20	124	.07
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.70** **.72**

7. Puerta Real & Crown Valley

2016 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	44	.01	524	.15*
NBT	1	1700	84	.05*	64	.04
NBR	1	1700	37	.02	183	.11
SBL	1	1700	82	.05*	127	.07
SBT	1	1700	104	.06	64	.04*
SBR	2	3400	414	.12	744	.22
EBL	2	3400	433	.13*	426	.13*
EBT	4	6800	1665	.24	2039	.30
EBR	1	1700	294	.17	624	.37
WBL	2	3400	37	.01	177	.05
WBT	4	6800	2206	.33*	1955	.31*
WBR	0	0	59		124	
Right Turn Adjustment					SBR	.08*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.61**		**.76**

8. Medical Center & Crown Valley

2016 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		284	.08*	534	.16*
NBT	1.5	5100	44	.06	44	.10
NBR	0		66		127	
SBL	0	0	18		56	
SBT	1	1700	44	.04*	64	.07*
SBR	1	1700	104	.06	139	.08
EBL	1	1700	125	.07*	108	.06
EBT	4	6800	1475	.28	1946	.34*
EBR	0	0	404		354	
WBL	2	3400	213	.06	175	.05*
WBT	4	6800	1891	.29*	1607	.24
WBR	0	0	59		53	
Clearance Interval				.05*		.05*
Note: Assumes N/S Split Phasing						
TOTAL CAPACITY UTILIZATION				**.53**		**.67**

9. Los Altos & Crown Valley

2016 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		34	{.01}*	296	{.09}*
NBT	0.5	3400	10	.01	14	.09
NBR	1	1700	41	.02	147	.09
SBL	0	0	44		131	
SBT	1	1700	14	.03*	18	.09*
SBR	1	1700	36	.02	77	.05
EBL	1	1700	111	.07*	59	.03
EBT	4	6800	1239	.21	2132	.32*
EBR	0	0	170		49	
WBL	1	1700	263	.15	78	.05*
WBT	4	6800	2101	.34*	1388	.21
WBR	0	0	202		54	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.50**		**.60**

10. Bellogente & Crown Valley

2016 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	20	.01*	10	.01
NBT	1	1700	10	.01	10	.01*
NBR	0	0	10		10	
SBL	1	1700	24	.01	124	.07*
SBT	1	1700	10	.02*	10	.06
SBR	0	0	22		88	
EBL	1	1700	98	.06*	64	.04
EBT	4	6800	1128	.17	2321	.34*
EBR	0	0	10		20	
WBL	1	1700	24	.01	10	.01*
WBT	4	6800	2524	.39*	1515	.23
WBR	0	0	154		64	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.53**		**.48**

11. Marguerite Pkwy & Crown Valley

2016 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	102	.03*	134	.04
NBT	2	3400	509	.15	758	.22*
NBR	1	1700	357	.21	574	.34
SBL	2	3400	183	.05	480	.14*
SBT	2	3400	913	.27*	562	.17
SBR	1	1700	603	.35	275	.16
EBL	2	3400	339	.10*	709	.21
EBT	4	6800	861	.13	1872	.28*
EBR	1	1700	84	.05	201	.12
WBL	2	3400	621	.18	555	.16*
WBT	4	6800	2083	.31*	1189	.17
WBR	1	1700	417	.25	250	.15
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.76**		**.85**

12. Antonio & Crown Valley

2016 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	572	.17*	554	.16*
NBT	3	5100	1101	.22	812	.16
NBR	1	1700	14	.01	14	.01
SBL	1	1700	14	.01	0	.00
SBT	3	5100	903	.18*	945	.19*
SBR	f		906		708	
EBL	2	3400	537	.16*	953	.28*
EBT	2	3400	24	.01	14	.00
EBR	1	1700	401	.24	573	.34
WBL	2	3400	14	.00	14	.00
WBT	3	5100	24	.00*	14	.00*
WBR	1	1700	14	.01	14	.01
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.56**		**.68**

15. Cabot & Oso Pkwy

2016 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	126	.04	183	.05
NBT	2	3400	542	.16*	293	.09*
NBR	1	1700	294	.17	381	.22
SBL	2	3400	235	.07*	592	.17*
SBT	2	3400	197	.06	484	.14
SBR	1	1700	50	.03	154	.09
EBL	2	3400	124	.04	106	.03
EBT	3	5100	1088	.21*	1287	.25*
EBR	1	1700	73	.04	73	.04
WBL	2	3400	364	.11*	328	.10*
WBT	3	5100	1319	.26	1091	.21
WBR	1	1700	371	.22	366	.22
Right Turn Adjustment					NBR	.05*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.60**		**.71**

16. Moulton Pkwy & Crown Valley

2016 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	198	.06	193	.06*
NBT	2.5	6800	1068	{.21}*	676	{.13}
NBR	1.5		419	{.16}	258	{.02}
SBL	2	3400	154	.05*	215	.06
SBT	3	5100	522	.10	1166	.23*
SBR	1	1700	73	.04	97	.06
EBL	2	3400	147	.04	152	.04
EBT	3	5100	1139	.22*	919	.18*
EBR	1	1700	312	.18	206	.12
WBL	2	3400	393	.12*	623	.18*
WBT	3	5100	771	.15	1153	.23
WBR	1	1700	188	.11	143	.08
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.65**		**.70**

17. Greenfield & Crown Valley

2016 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		32		34	
NBT	1.5	3400	84	.05*	54	.04*
NBR	0		54		34	
SBL	2	3400	563	.17*	805	.24*
SBT	1	1700	36	.02	114	.07
SBR	1	1700	162	.10	364	.21
EBL	2	3400	507	.15*	294	.09*
EBT	3	5100	1272	.25	1137	.23
EBR	0	0	18		44	
WBL	1	1700	20	.01	54	.03
WBT	3	5100	1151	.23*	1426	.28*
WBR	1	1700	686	.40	628	.37
Clearance Interval				.05*		.05*
Note: Assumes Right-Turn Overlap for WBR						

TOTAL CAPACITY UTILIZATION **.65** **.70**

18. Cabot & Crown Valley

2016 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	94	.06	164	.10*
NBT	2	3400	364	.11*	194	.06
NBR	1	1700	374	.22	304	.18
SBL	2	3400	164	.05*	256	.08
SBT	2	3400	154	.09	271	.16*
SBR	0	0	155	.09	270	
EBL	2	3400	230	.07*	291	.09*
EBT	3	5100	1563	.31	1425	.28
EBR	1	1700	174	.10	126	.07
WBL	2	3400	304	.09	302	.09
WBT	3	5100	1658	.33*	1719	.34*
WBR	1	1700	256	.15	199	.12
Right Turn Adjustment		NBR		.04*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.65** **.74**

19. Forbes Rd & Crown Valley

2016 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	130	.08*	121	.07
NBT	1	1700	28	.02	26	.02*
NBR	1	1700	122	.07	118	.07
SBL	1	1700	91	.05	139	.08*
SBT	1	1700	18	.01*	22	.01
SBR	1	1700	171	.10	147	.09
EBL	1	1700	97	.06*	137	.08*
EBT	4	6800	1988	.30	1960	.30
EBR	0	0	77		74	
WBL	1	1700	114	.07	77	.05
WBT	3	5100	1850	.36*	2194	.43*
WBR	1	1700	114	.07	102	.06
Right Turn Adjustment		SBR		.04*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.60** **.66**

21. Cabot & Paseo De Colinas

2016 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3400	144	.04*	174	.05*
SBT	0	0	0		0	
SBR	2	3400	275	.08	614	.18
EBL	1	1700	624	.37*	370	.22*
EBT	2	3400	591	.17	588	.17
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	392	.18*	810	.27*
WBR	0	0	204		124	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.64** **.59**

22. Cm Capistrano & Paseo Colinas

2016 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0.5	3400	234	{.14}*	154	{.21}*
NBR	1.5		505	{.05}	839	
SBL	1	1700	40	.02*	104	.06*
SBT	1	1700	112	.07	254	.15
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1.5		1036		698	
WBT	0	3400	0	.33*	0	.22*
WBR	0.5		74		64	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.54**		**.54**

23. Camino Capistrano & Avery Pkwy

2016 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1700	204	.12*	153	.09*
NBR	1	1700	158	.09	278	.16
SBL	2	3400	956	.28*	840	.25*
SBT	1	1700	264	.16	164	.10
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	250	.15*	279	.16*
WBT	0	0	0		0	
WBR	2	3400	519	.15	903	.27
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.60**		**.55**

24. Marguerite & Avery Pkwy

2016 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	378	.22*	388	.23*
NBT	2	3400	738	.22	340	.10
NBR	d	1700	171	.10	59	.03
SBL	1	1700	210	.12	124	.07
SBT	2	3400	657	.19*	653	.19*
SBR	1	1700	222	.13	708	.42
EBL	2	3400	692	.20	912	.27*
EBT	2	3400	764	.34*	304	.18
EBR	0	0	401		327	.19
WBL	1	1700	48	.03*	79	.05
WBT	2	3400	294	.09	424	.12*
WBR	d	1700	140	.08	70	.04
Right Turn Adjustment					SBR	.03*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.83**		**.89**

44. I-5 SB Ramps & Oso Pkwy

2016 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3400	687	.20*	1251	.37*
SBT	0	0	0		0	
SBR	1	1700	308	.18	388	.23
EBL	0	0	0		0	
EBT	3	5100	1134	.22	1661	.33*
EBR	f		453		598	
WBL	0	0	0		0	
WBT	3	5100	1717	.34*	1392	.27
WBR	f		804		504	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.59**		**.75**

45. I-5 NB Ramps & Oso Pkwy

2016 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		426	{.14}*	492	{.22}*
NBT	0	5100	0	{.14}	0	.22
NBR	1.5		434		644	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	1419	.28	2462	.48*
EBR	f		554		456	
WBL	0	0	0		0	
WBT	3	5100	2064	.40*	1350	.26
WBR	f		1309		717	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.59**		**.75**

46. I-5 SB & Crown Valley

2016 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	3	5100	1360	.27*	1613	.32*
SBT	0	0	0		0	
SBR	2	3400	744	.22	1243	.37
EBL	0	0	0		0	
EBT	4	6800	1745	.26*	2073	.30*
EBR	1	1700	294	.17	336	.20
WBL	2	3400	441	.13*	517	.15*
WBT	3	5100	1371	.27	1407	.28
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.71**		**.82**

47. I-5 NB & Crown Valley

2016 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		420	{.22}*	236	{.14}*
NBT	0	5100	0	.22	0	.14
NBR	1.5		688		454	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	2077	.41*	2906	.57*
EBR	f		945		785	
WBL	0	0	0		0	
WBT	3	5100	1475	.29	1683	.33
WBR	f		1192		1395	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.68**		**.76**

48. I-5 SB Ramps & Avery Pkwy

2016 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		754		564	
SBT	0	3400	0	.30*	0	.31*
SBR	0.5		274		474	
EBL	0	0	0		0	
EBT	3	5100	787	.15	866	.17
EBR	1	1700	270	.16	245	.14
WBL	1	1700	192	.11	378	.22
WBT	1	1700	527	.31*	788	.46*
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.66**		**.82**

49. I-5 NB Ramps & Avery Pkwy

2016 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	217	.13*	285	.17*
NBT	0	0	0		0	
NBR	1	1700	504	.30	470	.28
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1700	294	.17	364	.21*
EBT	2	3400	1276	.38*	1093	.32
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	516	.15	907	.27*
WBR	f		438		704	
Right Turn Adjustment			NBR	.17*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.73** **.70**

70. Greenfield & SR-73 SB

2016 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	1139	.43*	472	.25*
NBR	0	0	309		372	
SBL	1	1700	34	.02*	24	.01*
SBT	2	3400	375	.11	514	.15
SBR	0	0	0		0	
EBL	0.5		10	.01*	20	
EBT	0	3400	0		0	{.22}*
EBR	1.5		281	{.00}	866	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.51** **.53**

71. Greenfield & SR-73 NB

2016 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	1129	.33*	384	.11*
NBT	1	1700	30	.02	104	.06
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	1	1700	77	.05*	94	.06*
SBR	1	1700	28	.02	10	.01
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	316	.19*	434	.26*
WBT	0	0	0		0	
WBR	1	1700	42	.02	8	.00
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.62** **.48**

101. Marguerite & Med Ctr/College

2016 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	92	.05	60	.04
NBT	2	3400	706	.21*	816	.24*
NBR	d	1700	30	.02	26	.02
SBL	1	1700	748	.44*	329	.19*
SBT	2	3400	1207	.36	798	.23
SBR	d	1700	228	.13	122	.07
EBL	1	1700	74	.04	230	.14*
EBT	2	3400	369	.13*	163	.08
EBR	0	0	66		98	
WBL	1	1700	20	.01*	70	.04
WBT	1	1700	46	.03	236	.14*
WBR	1	1700	98	.06	386	.23
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.84** **.76**

102. Marguerite & College Ctr/College W

2016 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	39	.02	92	.05*
NBT	2	3400	912	.27*	966	.28
NBR	d	1700	358	.21	285	.17
SBL	1	1700	169	.10*	98	.06
SBT	2	3400	935	.28	1010	.30*
SBR	d	1700	11	.01	48	.03
EBL	1	1700	9	.01*	60	.04*
EBT	1	1700	1	.01	12	.03
EBR	0	0	9		42	
WBL	1.5		57		235	
WBT	0.5	3400	0	.02*	9	.07*
WBR	1	1700	27	.02	112	.07
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.45**		**.51**

103. College/Plata & Avery

2016 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	80	.05*	40	.02*
NBT	1	1700	40	.02	0	.00
NBR	0	0	0		4	
SBL	1.5		40		4	
SBT	0.5	3400	20	.02*	4	.00*
SBR	1	1700	150	.09	446	.26
EBL	1	1700	664	.39*	312	.18*
EBT	2	3400	212	.06	170	.05
EBR	d	1700	100	.06	60	.04
WBL	1	1700	4	.00	0	.00
WBT	2	3400	210	.06*	136	.04*
WBR	d	1700	30	.02	10	.01
Right Turn Adjustment					SBR	.12*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.57**		**.41**

ICU Data Set 5

2015 No-Project – Irvine Valley College

1. College Dwy. at Irvine Center Dr.

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	97	.03*	170	.05*
NBT	0	0	0		0	
NBR	1	1700	25	.01	47	.03
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	1239	.24*	1124	.22
EBR	1	1700	430	.25	146	.09
WBL	2	3400	172	.05*	59	.02
WBT	3	5100	1023	.20	1864	.37*
WBR	0	0	0		0	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.37** **.47**

2. Jeffrey Rd. at College Dwy.

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1118	.22	2075	.41*
NBR	1	1700	130	.08	121	.07
SBL	2	3400	116	.03	99	.03*
SBT	3	5100	2484	.49*	1601	.31
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	28	.02*	114	.07*
WBT	0	0	0		0	
WBR	1	1700	7	.00	39	.02
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.56** **.56**

3. Jeffrey Rd. at College Dwy. RIRO

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1053	.21	2069	.41*
NBR	1	1700	72	.04	45	.03
SBL	0	0	0		0	
SBT	3	5100	2600	.51*	1700	.33
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	2	3400	19	.01	82	.02
Right Turn Adjustment					WBR	.02*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.56** **.48**

222 . Culver Dr. at Trabuco Rd.

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	719	.14*	1908	.37*
NBR	f		1035		1483	
SBL	1	1700	554	.33*	339	.20*
SBT	3	5100	2411	.47	1231	.24
SBR	f		729		179	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	649	.19*	498	.15*
WBT	0	0	0		0	
WBR	2	3400	823	.24	850	.25
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.71** **.77**

223 . Culver Dr. at I-5 SB Ramps

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1212	.24	1825	.36*
NBR	f		240		300	
SBL	0	0	0		0	
SBT	3	5100	2054	.40*	1403	.28
SBR	f		390		290	
EBL	3	5100	648	.13*	1275	.25*
EBT	0	0	0		0	
EBR	2	3400	486	.14	887	.26
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.01*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .59 .66

224 . Culver Dr. at Walnut Av.

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	167	.05*	302	.09
NBT	3	5100	788	.15	1491	.29*
NBR	1	1700	256	.15	308	.18
SBL	2	3400	249	.07	372	.11*
SBT	3	5100	1884	.37*	1364	.27
SBR	1	1700	486	.29	273	.16
EBL	2	3400	309	.09*	626	.18*
EBT	2	3400	455	.13	530	.16
EBR	1	1700	186	.11	135	.08
WBL	2	3400	429	.13	331	.10
WBT	2	3400	758	.22*	606	.18*
WBR	1	1700	303	.18	233	.14
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION .78 .81

226 . Culver Dr. at ICD

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	275	.08*	300	.09
NBT	4	6800	698	.10	1408	.21*
NBR	f		168		411	
SBL	2	3400	197	.06	300	.09*
SBT	4	6800	1887	.28*	1265	.19
SBR	1	1700	316	.19	175	.10
EBL	2	3400	192	.06*	272	.08
EBT	3	5100	715	.14	1143	.22*
EBR	f		193		175	
WBL	2	3400	420	.12	246	.07*
WBT	3	5100	1280	.25*	1049	.21
WBR	f		130		186	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .72 .64

227 . Culver Dr. at Warner Av.

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	132	.08*	207	.12
NBT	3	5100	1014	.20	1824	.36*
NBR	1	1700	66	.04	181	.11
SBL	1	1700	82	.05	94	.06*
SBT	3	5100	2275	.45*	1365	.27
SBR	d	1700	193	.11	217	.13
EBL	2	3400	212	.06	229	.07
EBT	2	3400	192	.06*	235	.07*
EBR	d	1700	195	.11	198	.12
WBL	1	1700	220	.13*	107	.06*
WBT	2	3400	375	.11	147	.04
WBR	d	1700	154	.09	127	.07
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .77 .60

228 . Culver Dr. at Barranca Pkwy.

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	125	.04*	236	.07
NBT	3	5100	699	.14	1581	.31*
NBR	1	1700	326	.19	362	.21
SBL	2	3400	358	.11	292	.09*
SBT	3	5100	2021	.40*	1150	.23
SBR	f		301		199	
EBL	2	3400	428	.13*	325	.10*
EBT	2	3400	795	.23	705	.21
EBR	1	1700	176	.10	440	.26
WBL	2	3400	362	.11	251	.07
WBT	2	3400	804	.24*	645	.19*
WBR	d	1700	154	.09	314	.18
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.86**		**.74**

229 . Culver Dr. at Alton Pkwy.

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	131	.04*	252	.07
NBT	3	5100	921	.18	1911	.37*
NBR	1	1700	240	.14	347	.20
SBL	2	3400	133	.04	196	.06*
SBT	3	5100	1977	.39*	1100	.22
SBR	f		288		205	
EBL	2	3400	109	.03*	278	.08
EBT	2	3400	438	.13	842	.25*
EBR	1	1700	154	.09	280	.16
WBL	2	3400	429	.13	315	.09*
WBT	2	3400	981	.29*	637	.19
WBR	1	1700	189	.11	219	.13
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.80**		**.82**

232 . Culver Dr. at I-405 NB Ramps

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	882	.17	1919	.38*
NBR	f		620		441	
SBL	0	0	0		0	
SBT	3	5100	1128	.22*	1170	.23
SBR	f		950		671	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	752	.22*	453	.13*
WBT	0	0	0		0	
WBR	1	1700	468	.28	786	.46
Right Turn Adjustment			WBR	.02*	WBR	.33*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.51**		**.89**

233 . Culver Dr. at I-405 SB Ramps

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1191	.23	1539	.30*
NBR	f		230		630	
SBL	0	0	0		0	
SBT	3	5100	1589	.31*	1238	.24
SBR	f		250		300	
EBL	1.5		299	{.16}*	871	{.27}*
EBT	0	5100	0	.16	0	{.27}
EBR	1.5		531		582	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.52**		**.62**

259 . Yale Av. at Walnut Av.

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	247	.07*	178	.05
NBT	2	3400	267	.12	412	.15*
NBR	0	0	127		96	
SBL	1	1700	92	.05	108	.06*
SBT	2	3400	393	.12*	275	.08
SBR	1	1700	426	.25	253	.15
EBL	1	1700	189	.11*	476	.28*
EBT	2	3400	426	.13	505	.15
EBR	d	1700	205	.12	190	.11
WBL	1	1700	106	.06	65	.04
WBT	2	3400	716	.21*	460	.14*
WBR	d	1700	57	.03	161	.09
Right Turn Adjustment			SBR	.02*		
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for SBR

TOTAL CAPACITY UTILIZATION .58 .68

261 . Yale Av. at ICD

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	200	.12*	131	.08
NBT	2	3400	124	.04	239	.07*
NBR	d	1700	171	.10	81	.05
SBL	1	1700	260	.15	159	.09*
SBT	2	3400	260	.08*	194	.06
SBR	d	1700	357	.21	138	.08
EBL	2	3400	124	.04	349	.10*
EBT	3	5100	849	.19*	1050	.26
EBR	0	0	116		257	
WBL	1	1700	133	.08*	159	.09
WBT	3	5100	983	.19	1381	.27*
WBR	1	1700	142	.08	252	.15
Right Turn Adjustment			SBR	.07*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .59 .58

264 . W. Yale Lp. at Barranca Pkwy.

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	168	.10*	164	.10*
NBT	2	3400	168	.05	213	.06
NBR	d	1700	95	.06	123	.07
SBL	1	1700	184	.11	97	.06
SBT	2	3400	291	.09*	105	.03*
SBR	d	1700	237	.14	118	.07
EBL	2	3400	66	.02*	204	.06
EBT	2	3400	881	.26	1280	.38*
EBR	d	1700	64	.04	85	.05
WBL	1	1700	94	.06	50	.03*
WBT	2	3400	1055	.33*	977	.32
WBR	0	0	55		124	
Right Turn Adjustment			SBR	.03*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .62 .59

267 . E. Yale Lp. at Barranca Pkwy.

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	132	.08	131	.08
NBT	2	3400	140	.04*	252	.07*
NBR	d	1700	168	.10	179	.11
SBL	1	1700	329	.19*	195	.11*
SBT	2	3400	246	.07	211	.06
SBR	d	1700	255	.15	135	.08
EBL	1	1700	100	.06*	178	.10
EBT	2	3400	656	.19	1095	.32*
EBR	d	1700	113	.07	141	.08
WBL	1	1700	171	.10	108	.06*
WBT	2	3400	1057	.31*	765	.23
WBR	d	1700	182	.11	310	.18
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .65 .61

268 . W. Yale Lp. at Alton Pkwy.

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	163	.10*	122	.07*
NBT	2	3400	208	.06	205	.06
NBR	d	1700	161	.09	263	.15
SBL	1	1700	128	.08	60	.04
SBT	2	3400	300	.09*	106	.03*
SBR	d	1700	123	.07	103	.06
EBL	1	1700	93	.05*	101	.06
EBT	2	3400	651	.19	1137	.33*
EBR	d	1700	128	.08	163	.10
WBL	1	1700	92	.05	201	.12*
WBT	2	3400	1134	.33*	895	.26
WBR	d	1700	139	.08	114	.07
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.62**		**.60**

271 . E. Yale Lp. at Alton Pkwy.

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	232	.14*	94	.06
NBT	2	3400	225	.07	156	.05*
NBR	d	1700	533	.31	274	.16
SBL	2	3400	206	.06	175	.05*
SBT	2	3400	109	.03*	128	.04
SBR	d	1700	144	.08	70	.04
EBL	1	1700	135	.08*	225	.13
EBT	2	3400	602	.22	1161	.38*
EBR	0	0	142		146	
WBL	2	3400	195	.06	476	.14*
WBT	2	3400	1067	.31*	866	.25
WBR	d	1700	138	.08	129	.08
Right Turn Adjustment			NBR	.07*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.68**		**.67**

287 . Jeffrey Rd. at I-5 NB Ramps

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	809	.16	2333	.46*
NBR	f		250		270	
SBL	0	0	0		0	
SBT	3	5100	2530	.50*	1455	.29
SBR	f		710		340	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1.5		440	.13*	525	
WBT	0	5100	0		0	.27*
WBR	1.5		361	{.00}	867	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.68**		**.78**

288 . Jeffrey Rd. at Walnut Av./I-5 SB Ramps

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	141	.04*	260	.08
NBT	3	5100	821	.16	1781	.35*
NBR	1	1700	98	.06	168	.10
SBL	2	3400	509	.15	268	.08*
SBT	3	5100	1885	.44*	1030	.30
SBR	0	0	335		741	.44
EBL	2	3400	126	.04	272	.08
EBT	1.5	5100	295	{.11}*	185	{.06}*
EBR	1.5		308		275	
WBL	2	3400	286	.08*	525	.15*
WBT	1	1700	96	.06	108	.06
WBR	1	1700	237	.14	207	.12
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.72**		**.69**

289 . Jeffrey Rd. at ICD

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	159	.05*	263	.08
NBT	3	5100	663	.13	1620	.32*
NBR	1	1700	238	.14	262	.15
SBL	2	3400	481	.14	288	.08*
SBT	3	5100	1846	.36*	1254	.25
SBR	1	1700	523	.31	228	.13
EBL	2	3400	154	.05	317	.09*
EBT	3	5100	950	.19*	720	.14
EBR	f		246		205	
WBL	2	3400	229	.07*	232	.07
WBT	3	5100	688	.13	1249	.24*
WBR	1	1700	203	.12	553	.33
Right Turn Adjustment					WBR	.03*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.72** **.81**

290 . Jeffrey Rd. at Barranca Pkwy.

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	184	.05*	284	.08*
NBT	3	5100	833	.19	1600	.34
NBR	0	0	138		119	
SBL	2	3400	118	.03	102	.03
SBT	3	5100	1978	.47*	1274	.30*
SBR	0	0	416		251	
EBL	2	3400	203	.06*	446	.13*
EBT	2	3400	625	.18	809	.24
EBR	d	1700	246	.14	256	.15
WBL	2	3400	176	.05	169	.05
WBT	2	3400	700	.21*	565	.17*
WBR	1	1700	115	.07	94	.06
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.84** **.73**

291 . Jeffrey Rd. at Alton Pkwy.

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	421	.12*	516	.15
NBT	3	5100	783	.15	1441	.28*
NBR	f		186		273	
SBL	2	3400	353	.10	502	.15*
SBT	3	5100	1938	.38*	1136	.22
SBR	d	1700	199	.12	182	.11
EBL	2	3400	182	.05	340	.10
EBT	2	3400	541	.16*	997	.29*
EBR	d	1700	567	.33	363	.21
WBL	2	3400	574	.17*	425	.13*
WBT	2	3400	680	.20	754	.22
WBR	d	1700	85	.05	161	.09
Right Turn Adjustment			EBR	.08*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.96** **.90**

293 . Jeffrey Rd. at I-405 NB Ramps

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1278	.25	2153	.42*
NBR	f		302		80	
SBL	0	0	0		0	
SBT	3	5100	2105	.41*	1419	.28
SBR	f		1307		550	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	829	.24*	1191	.35*
WBT	0	0	0		0	
WBR	1	1700	199	.12	387	.23
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.70** **.82**

294 . University Dr. at I-405 SB Ramps

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1096	.21	1715	.34
NBR	f		970		1120	
SBL	0	0	0		0	
SBT	3	5100	2150	.42*	2016	.40*
SBR	f		290		240	
EBL	2	3400	434	.13*	635	.19*
EBT	0	0	0		0	
EBR	1	1700	120	.07	104	.06
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.60**		**.64**

303 . Sand Canyon Av. at I-5 NB Ramps

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	139	.04*	814	.24
NBT	3	5100	898	.18	2862	.57*
NBR	0	0	7		56	
SBL	1	1700	6	.00	13	.01*
SBT	3	5100	3339	.65*	1396	.27
SBR	1	1700	339	.20	297	.17
EBL	1.5		306	{.09}*	523	{.16}*
EBT	0.5	3400	7	.09	11	.16
EBR	2	3400	510	.15	327	.10
WBL	1	1700	8	.00	7	.00
WBT	1	1700	4	.01*	8	.01*
WBR	0	0	8		5	
Right Turn Adjustment			EBR	.02*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.86**		**.80**

304 . Sand Canyon Av. at Marine Wy.

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	961	.19	3525	.69*
NBR	1	1700	156	.09	235	.14
SBL	2	3400	194	.06	95	.03*
SBT	3	5100	3639	.71*	1633	.32
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	211	.06*	230	.07*
WBT	0	0	0		0	
WBR	1	1700	69	.04	201	.12
Right Turn Adjustment					WBR	.03*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.82**		**.87**

305 . Sand Canyon Av. at I-5 SB Ramps

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	4	6800	793	.12	3244	.48*
NBR	1	1700	170	.10	359	.21
SBL	2	3400	896	.26	611	.18*
SBT	4	6800	2950	.43*	1286	.19
SBR	0	0	0		0	
EBL	2.5		377	.11*	496	.10*
EBT	0	6800	3		0	
EBR	1.5		1060	.31	274	{.00}
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.20*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.79**		**.81**

306 . Sand Canyon Av. at Oak Cyn./Laguna Cyn. Rd.

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	71	.04	163	.10
NBT	3	5100	552	.11*	1635	.32*
NBR	1	1700	148	.09	129	.08
SBL	2	3400	1401	.41*	462	.14*
SBT	3	5100	1760	.35	894	.18
SBR	d	1700	240	.14	129	.08
EBL	2	3400	78	.02	212	.06
EBT	1	1700	130	.08*	159	.09*
EBR	d	1700	103	.06	59	.03
WBL	2	3400	77	.02*	167	.05*
WBT	1.5	5100	159	{.05}	58	.03
WBR	1.5		280		1282	.38
Right Turn Adjustment					WBR	.19*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.67** **.84**

307 . Sand Canyon Av. at ICD

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	111	.03*	199	.06
NBT	3	5100	626	.12	1167	.23*
NBR	1	1700	163	.10	108	.06
SBL	2	3400	415	.12	183	.05*
SBT	3	5100	1273	.25*	656	.13
SBR	1	1700	272	.16	271	.16
EBL	2	3400	193	.06*	303	.09*
EBT	3	5100	484	.09	549	.11
EBR	1	1700	162	.10	110	.06
WBL	2	3400	79	.02	204	.06
WBT	3	5100	690	.14*	850	.17*
WBR	1	1700	82	.05	419	.25
Right Turn Adjustment					WBR	.04*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.53** **.63**

309 . Sand Canyon Av. at Barranca Pkwy.

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	139	.04*	151	.04*
NBT	3	5100	939	.18	943	.18
NBR	d	1700	119	.07	188	.11
SBL	2	3400	62	.02	112	.03
SBT	3	5100	1134	.22*	1028	.20*
SBR	d	1700	83	.05	114	.07
EBL	2	3400	70	.02*	165	.05*
EBT	2	3400	449	.13	440	.13
EBR	1	1700	91	.05	137	.08
WBL	2	3400	145	.04	205	.06
WBT	2	3400	548	.16*	525	.15*
WBR	1	1700	61	.04	112	.07
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.49** **.49**

310 . Sand Canyon Av. at Alton Pkwy.

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	188	.06	229	.07*
NBT	3	5100	1083	.21*	725	.14
NBR	1	1700	670	.39	159	.09
SBL	2	3400	301	.09*	78	.02
SBT	3	5100	913	.18	1120	.22*
SBR	1	1700	135	.08	224	.13
EBL	2	3400	164	.05*	146	.04
EBT	3	5100	552	.11	734	.14*
EBR	1	1700	263	.15	293	.17
WBL	2	3400	297	.09	697	.21*
WBT	2	3400	687	.20*	776	.23
WBR	1	1700	104	.06	219	.13
Right Turn Adjustment			NBR	.07*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.67** **.69**

311 . Sand Canyon Av. at I-405 NB Ramps

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	1553	.46*	825	.24
NBR	f		620		360	
SBL	0	0	0		0	
SBT	2	3400	399	.12	985	.29*
SBR	f		1200		1100	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0.5		51		195	
WBT	0	3400	0	.14*	0	{.13}*
WBR	1.5		427		305	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.65**		**.47**

312 . Sand Canyon Av. at I-405 SB Ramps

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	199	.12	95	.06*
NBT	2	3400	1038	.31*	737	.22
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	282	.08	772	.23*
SBR	f		161		445	
EBL	1.5		1132	{.46}*	483	{.28}*
EBT	0	3400	0	.46	0	.28
EBR	0.5		418		458	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.82**		**.62**

313 . Laguna Canyon Rd. at ICD

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	68	.02*	185	.05*
NBT	2	3400	154	.05	218	.06
NBR	d	1700	29	.02	39	.02
SBL	2	3400	74	.02	106	.03
SBT	2	3400	157	.05*	181	.05*
SBR	d	1700	48	.03	71	.04
EBL	2	3400	83	.02*	54	.02*
EBT	3	5100	731	.14	687	.13
EBR	d	1700	99	.06	60	.04
WBL	2	3400	55	.02	60	.02
WBT	3	5100	807	.16*	1058	.21*
WBR	d	1700	105	.06	79	.05
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.30**		**.38**

314 . Laguna Canyon Rd. at Barranca Pkwy.

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	47	.01*	74	.02
NBT	2	3400	153	.05	182	.05*
NBR	d	1700	39	.02	112	.07
SBL	2	3400	25	.01	47	.01*
SBT	2	3400	185	.05*	150	.04
SBR	d	1700	50	.03	107	.06
EBL	2	3400	87	.03*	60	.02*
EBT	2	3400	505	.15	581	.17
EBR	1	1700	112	.07	41	.02
WBL	2	3400	113	.03	59	.02
WBT	2	3400	783	.23*	729	.21*
WBR	d	1700	61	.04	28	.02
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.37**		**.34**

315 . Laguna Canyon Rd. at Alton Pkwy.

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	111	.07*	225	.13*
NBT	2	3400	164	.05	187	.06
NBR	d	1700	66	.04	157	.09
SBL	1	1700	57	.03	66	.04
SBT	2	3400	215	.06*	165	.05*
SBR	d	1700	39	.02	70	.04
EBL	2	3400	106	.03*	33	.01*
EBT	2	3400	677	.20	827	.24
EBR	1	1700	211	.12	84	.05
WBL	2	3400	94	.03	92	.03
WBT	2	3400	1090	.32*	925	.27*
WBR	1	1700	89	.05	100	.06
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.53** **.51**

318 . Banting at Barranca Pkwy.

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	20	.01*	32	.01
NBT	1	1700	6	.00	179	.11*
NBR	1	1700	14	.01	149	.09
SBL	2	3400	838	.25	113	.03*
SBT	2	3400	624	.37*	117	.07
SBR	0	0	664	.39	209	.12
EBL	1	1700	35	.02*	242	.14*
EBT	2	3400	518	.15	888	.26
EBR	d	1700	38	.02	39	.02
WBL	1	1700	28	.02	13	.01
WBT	2	3400	686	.20*	619	.18*
WBR	f		78		709	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.65** **.51**

319 . Banting at Alton Pkwy.

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	4	.00	39	.02
NBT	1	1700	3	.00	108	.06*
NBR	1	1700	14	.01	144	.08
SBL	2	3400	102	.03	134	.04*
SBT	1	1700	128	.08*	13	.01
SBR	1	1700	307	.18	54	.03
EBL	2	3400	8	.00	45	.01
EBT	2	3400	674	.20	1303	.38*
EBR	d	1700	32	.02	9	.01
WBL	1	1700	120	.07	8	.00
WBT	2	3400	1199	.35*	987	.29
WBR	d	1700	129	.08	67	.04
Right Turn Adjustment			SBR	.10*	NBR	.02*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.58** **.55**

330 . Barranca Pkwy. at Pacifica

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	212	.12	24	.01*
NBT	2	3400	922	.27*	583	.17
NBR	1	1700	249	.15	490	.29
SBL	1	1700	16	.01*	146	.09
SBT	2	3400	526	.15	1239	.36*
SBR	d	1700	147	.09	17	.01
EBL	2	3400	15	.00	101	.03
EBT	2	3400	15	.01	95	.06*
EBR	0	0	33	.02	393	.23
WBL	2	3400	221	.07	283	.08*
WBT	1	1700	231	.14*	29	.02
WBR	1	1700	423	.25	68	.04
Right Turn Adjustment			WBR	.10*	EBR	.16*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.57** **.72**

350 . Alton Pkwy. at Pacifica

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	103	.03*	378	.11*
NBT	3	5100	442	.09	982	.19
NBR	d	1700	204	.12	233	.14
SBL	2	3400	156	.05	102	.03
SBT	2	3400	1039	.31*	737	.22*
SBR	1	1700	85	.05	175	.10
EBL	2	3400	57	.02	127	.04
EBT	2	3400	240	.07*	255	.08*
EBR	d	1700	173	.10	200	.12
WBL	1	1700	238	.14*	163	.10*
WBT	2	3400	171	.05	347	.10
WBR	d	1700	81	.05	102	.06
Right Turn Adjustment			EBR	.01*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .61 .56

402 . I-5 NB Ramps at Trabuco Rd.

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		336	.10*	498	.15*
NBT	0	5100	0		0	
NBR	1.5		17		55	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	593	.17*	1235	.36*
EBR	f		689		473	
WBL	1	1700	441	.26*	117	.07*
WBT	2	3400	884	.26	752	.22
WBR	0	0	0		0	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .58 .63

444 . Sand Canyon Av. at Burt Rd.

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	23	.01*	24	.01
NBT	4	6800	838	.12	3042	.45*
NBR	d	1700	72	.04	94	.06
SBL	1	1700	86	.05	90	.05*
SBT	3	5100	3372	.66*	1376	.27
SBR	1	1700	110	.06	23	.01
EBL	1	1700	18	.01	77	.05*
EBT	1	1700	2	.00*	6	.00
EBR	d	1700	20	.01	47	.03
WBL	1	1700	68	.04*	47	.03
WBT	1	1700	7	.00	2	.00*
WBR	1	1700	64	.04	90	.05
Right Turn Adjustment					WBR	.01*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .76 .61

481 . Laguna Canyon Rd. at Technology Dr.

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	2	.00	1	.00
NBT	2	3400	151	.04*	301	.09*
NBR	d	1700	118	.07	117	.07
SBL	2	3400	785	.23*	463	.14*
SBT	2	3400	402	.12	175	.05
SBR	d	1700	12	.01	5	.00
EBL	1	1700	2	.00	8	.00
EBT	1	1700	17	.01*	30	.02*
EBR	0	0	1		1	
WBL	1	1700	127	.07*	94	.06*
WBT	1	1700	27	.02	24	.01
WBR	2	3400	307	.09	650	.19
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .40 .36

ICU Data Set 6

2015 With-Project – Irvine Valley College

1. College Dwy. at Irvine Center Dr.

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	98	.03*	180	.05*
NBT	0	0	0		0	
NBR	1	1700	36	.02	78	.05
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	1230	.24*	1097	.22
EBR	1	1700	449	.26	163	.10
WBL	2	3400	222	.07*	89	.03
WBT	3	5100	1004	.20	1851	.36*
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.39**		**.46**

2. Jeffrey Rd. at College Dwy.

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1119	.22	2062	.40*
NBR	1	1700	138	.08	142	.08
SBL	2	3400	142	.04	116	.03*
SBT	3	5100	2473	.48*	1584	.31
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	32	.02*	133	.08*
WBT	0	0	0		0	
WBR	1	1700	10	.01	46	.03
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.55**		**.56**

3. Jeffrey Rd. at College Dwy. RIRO

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1052	.21	2069	.41*
NBR	1	1700	77	.05	47	.03
SBL	0	0	0		0	
SBT	3	5100	2615	.51*	1700	.33
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	2	3400	20	.01	82	.02
Right Turn Adjustment					WBR	.02*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.56**		**.48**

222 . Culver Dr. at Trabuco Rd.

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	725	.14	1903	.37*
NBR	f		1030		1489	
SBL	1	1700	537	.32	341	.20*
SBT	3	5100	2427	.48*	1227	.24
SBR	f		736		180	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	671	.20*	501	.15*
WBT	0	0	0		0	
WBR	2	3400	830	.24	859	.25
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.73**		**.77**

223 . Culver Dr. at I-5 SB Ramps

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1215	.24	1828	.36*
NBR	f		240		300	
SBL	0	0	0		0	
SBT	3	5100	2058	.40*	1397	.27
SBR	f		390		290	
EBL	3	5100	645	.13*	1272	.25*
EBT	0	0	0		0	
EBR	2	3400	482	.14	893	.26
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.01*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .59 .66

224 . Culver Dr. at Walnut Av.

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	167	.05*	302	.09
NBT	3	5100	788	.15	1491	.29*
NBR	1	1700	256	.15	308	.18
SBL	2	3400	249	.07	372	.11*
SBT	3	5100	1884	.37*	1356	.27
SBR	1	1700	486	.29	272	.16
EBL	2	3400	309	.09*	626	.18*
EBT	2	3400	455	.13	530	.16
EBR	1	1700	186	.11	134	.08
WBL	2	3400	429	.13	330	.10
WBT	2	3400	758	.22*	606	.18*
WBR	1	1700	303	.18	234	.14
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION .78 .81

226 . Culver Dr. at ICD

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	276	.08*	303	.09
NBT	4	6800	698	.10	1406	.21*
NBR	f		167		411	
SBL	2	3400	194	.06	296	.09*
SBT	4	6800	1892	.28*	1260	.19
SBR	1	1700	314	.18	174	.10
EBL	2	3400	194	.06*	271	.08
EBT	3	5100	719	.14	1143	.22*
EBR	f		198		176	
WBL	2	3400	421	.12	245	.07*
WBT	3	5100	1270	.25*	1043	.20
WBR	f		129		182	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .72 .64

227 . Culver Dr. at Warner Av.

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	131	.08*	205	.12
NBT	3	5100	1015	.20	1822	.36*
NBR	1	1700	65	.04	181	.11
SBL	1	1700	83	.05	94	.06*
SBT	3	5100	2282	.45*	1363	.27
SBR	d	1700	194	.11	215	.13
EBL	2	3400	212	.06	228	.07
EBT	2	3400	192	.06*	235	.07*
EBR	d	1700	194	.11	197	.12
WBL	1	1700	219	.13*	110	.06*
WBT	2	3400	376	.11	150	.04
WBR	d	1700	155	.09	131	.08
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .77 .60

228 . Culver Dr. at Barranca Pkwy.

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	124	.04*	237	.07
NBT	3	5100	700	.14	1582	.31*
NBR	1	1700	325	.19	364	.21
SBL	2	3400	357	.11	291	.09*
SBT	3	5100	2024	.40*	1154	.23
SBR	f		300		198	
EBL	2	3400	426	.13*	324	.10*
EBT	2	3400	788	.23	705	.21
EBR	1	1700	176	.10	443	.26
WBL	2	3400	361	.11	253	.07
WBT	2	3400	796	.23*	645	.19*
WBR	d	1700	153	.09	314	.18
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.85** **.74**

229 . Culver Dr. at Alton Pkwy.

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	130	.04*	251	.07
NBT	3	5100	922	.18	1910	.37*
NBR	1	1700	243	.14	349	.21
SBL	2	3400	135	.04	196	.06*
SBT	3	5100	1980	.39*	1100	.22
SBR	f		286		204	
EBL	2	3400	109	.03*	275	.08
EBT	2	3400	441	.13	837	.25*
EBR	1	1700	152	.09	277	.16
WBL	2	3400	428	.13	315	.09*
WBT	2	3400	974	.29*	636	.19
WBR	1	1700	190	.11	218	.13
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.80** **.82**

232 . Culver Dr. at I-405 NB Ramps

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	891	.17	1919	.38*
NBR	f		610		440	
SBL	0	0	0		0	
SBT	3	5100	1129	.22*	1172	.23
SBR	f		950		670	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	741	.22*	458	.13*
WBT	0	0	0		0	
WBR	1	1700	459	.27	781	.46
Right Turn Adjustment			WBR	.01*	WBR	.33*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.50** **.89**

233 . Culver Dr. at I-405 SB Ramps

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1191	.23	1539	.30*
NBR	f		230		630	
SBL	0	0	0		0	
SBT	3	5100	1579	.31*	1238	.24
SBR	f		250		300	
EBL	1.5		299	{.16}*	871	{.27}*
EBT	0	5100	0	.16	0	{.27}
EBR	1.5		531		582	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.52** **.62**

259 . Yale Av. at Walnut Av.

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	247	.07*	178	.05
NBT	2	3400	266	.12	411	.15*
NBR	0	0	127		96	
SBL	1	1700	91	.05	107	.06*
SBT	2	3400	397	.12*	274	.08
SBR	1	1700	422	.25	253	.15
EBL	1	1700	189	.11*	479	.28*
EBT	2	3400	424	.12	507	.15
EBR	d	1700	208	.12	191	.11
WBL	1	1700	107	.06	65	.04
WBT	2	3400	715	.21*	459	.14*
WBR	d	1700	57	.03	160	.09
Right Turn Adjustment			SBR	.02*		
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for SBR

TOTAL CAPACITY UTILIZATION .58 .68

261 . Yale Av. at ICD

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	200	.12*	131	.08
NBT	2	3400	124	.04	239	.07*
NBR	d	1700	168	.10	81	.05
SBL	1	1700	259	.15	159	.09*
SBT	2	3400	262	.08*	194	.06
SBR	d	1700	363	.21	138	.08
EBL	2	3400	127	.04	349	.10*
EBT	3	5100	852	.19*	1050	.26
EBR	0	0	118		257	
WBL	1	1700	130	.08*	159	.09
WBT	3	5100	966	.19	1381	.27*
WBR	1	1700	140	.08	252	.15
Right Turn Adjustment			SBR	.07*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .59 .58

264 . W. Yale Lp. at Barranca Pkwy.

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	165	.10*	165	.10*
NBT	2	3400	169	.05	212	.06
NBR	d	1700	96	.06	123	.07
SBL	1	1700	191	.11	97	.06
SBT	2	3400	293	.09*	105	.03*
SBR	d	1700	236	.14	119	.07
EBL	2	3400	65	.02*	203	.06
EBT	2	3400	873	.26	1280	.38*
EBR	d	1700	62	.04	84	.05
WBL	1	1700	95	.06	51	.03*
WBT	2	3400	1049	.33*	987	.33
WBR	0	0	56		124	
Right Turn Adjustment			SBR	.03*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .62 .59

267 . E. Yale Lp. at Barranca Pkwy.

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	131	.08	131	.08
NBT	2	3400	139	.04*	252	.07*
NBR	d	1700	170	.10	179	.11
SBL	1	1700	332	.20*	195	.11*
SBT	2	3400	245	.07	211	.06
SBR	d	1700	253	.15	135	.08
EBL	1	1700	99	.06*	178	.10
EBT	2	3400	658	.19	1095	.32*
EBR	d	1700	113	.07	141	.08
WBL	1	1700	172	.10	108	.06*
WBT	2	3400	1056	.31*	765	.23
WBR	d	1700	182	.11	310	.18
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .66 .61

268 . W. Yale Lp. at Alton Pkwy.

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	162	.10*	124	.07*
NBT	2	3400	207	.06	206	.06
NBR	d	1700	161	.09	262	.15
SBL	1	1700	130	.08	60	.04
SBT	2	3400	295	.09*	106	.03*
SBR	d	1700	125	.07	105	.06
EBL	1	1700	94	.06*	102	.06
EBT	2	3400	660	.19	1138	.33*
EBR	d	1700	125	.07	164	.10
WBL	1	1700	89	.05	199	.12*
WBT	2	3400	1133	.33*	901	.26
WBR	d	1700	139	.08	113	.07
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.63**		**.60**

271 . E. Yale Lp. at Alton Pkwy.

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	230	.14*	94	.06
NBT	2	3400	224	.07	156	.05*
NBR	d	1700	536	.32	274	.16
SBL	2	3400	208	.06	175	.05*
SBT	2	3400	108	.03*	128	.04
SBR	d	1700	144	.08	70	.04
EBL	1	1700	134	.08*	225	.13
EBT	2	3400	604	.22	1161	.38*
EBR	0	0	142		146	
WBL	2	3400	196	.06	476	.14*
WBT	2	3400	1066	.31*	866	.25
WBR	d	1700	139	.08	129	.08
Right Turn Adjustment		NBR		.08*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.69**		**.67**

287 . Jeffrey Rd. at I-5 NB Ramps

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	806	.16	2331	.46*
NBR	f		250		270	
SBL	0	0	0		0	
SBT	3	5100	2534	.50*	1457	.29
SBR	f		710		350	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1.5		446	.13*	533	
WBT	0	5100	0		0	.27*
WBR	1.5		364	{.00}	859	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.68**		**.78**

288 . Jeffrey Rd. at Walnut Av./I-5 SB Ramps

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	140	.04*	264	.08
NBT	3	5100	821	.16	1790	.35*
NBR	1	1700	99	.06	169	.10
SBL	2	3400	508	.15	265	.08*
SBT	3	5100	1897	.44*	1040	.31
SBR	0	0	335		740	.44
EBL	2	3400	125	.04	272	.08
EBT	1.5	5100	295	{.11}*	186	{.06}*
EBR	1.5		310		281	
WBL	2	3400	289	.09*	522	.15*
WBT	1	1700	96	.06	106	.06
WBR	1	1700	235	.14	201	.12
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.73**		**.69**

289 . Jeffrey Rd. at ICD

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	162	.05*	264	.08
NBT	3	5100	669	.13	1628	.32*
NBR	1	1700	241	.14	259	.15
SBL	2	3400	479	.14	286	.08*
SBT	3	5100	1863	.37*	1262	.25
SBR	1	1700	522	.31	230	.14
EBL	2	3400	153	.05	319	.09*
EBT	3	5100	950	.19*	715	.14
EBR	f		249		206	
WBL	2	3400	227	.07*	232	.07
WBT	3	5100	677	.13	1246	.24*
WBR	1	1700	198	.12	553	.33
Right Turn Adjustment					WBR	.03*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.73** **.81**

290 . Jeffrey Rd. at Barranca Pkwy.

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	177	.05*	284	.08*
NBT	3	5100	850	.19	1609	.34
NBR	0	0	136		119	
SBL	2	3400	120	.04	103	.03
SBT	3	5100	1973	.47*	1283	.30*
SBR	0	0	412		252	
EBL	2	3400	209	.06*	447	.13*
EBT	2	3400	624	.18	808	.24
EBR	d	1700	239	.14	257	.15
WBL	2	3400	177	.05	170	.05
WBT	2	3400	700	.21*	565	.17*
WBR	1	1700	122	.07	95	.06
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.84** **.73**

291 . Jeffrey Rd. at Alton Pkwy.

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	419	.12*	515	.15
NBT	3	5100	796	.16	1446	.28*
NBR	f		185		270	
SBL	2	3400	352	.10	501	.15*
SBT	3	5100	1938	.38*	1146	.22
SBR	d	1700	200	.12	183	.11
EBL	2	3400	187	.06	344	.10
EBT	2	3400	543	.16*	991	.29*
EBR	d	1700	570	.34	364	.21
WBL	2	3400	572	.17*	424	.12*
WBT	2	3400	681	.20	754	.22
WBR	d	1700	87	.05	162	.10
Right Turn Adjustment			EBR	.09*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.97** **.89**

293 . Jeffrey Rd. at I-405 NB Ramps

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1281	.25	2155	.42*
NBR	f		300		80	
SBL	0	0	0		0	
SBT	3	5100	2109	.41*	1428	.28
SBR	f		1302		550	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	826	.24*	1182	.35*
WBT	0	0	0		0	
WBR	1	1700	201	.12	395	.23
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.70** **.82**

294 . University Dr. at I-405 SB Ramps

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1096	.21	1705	.33
NBR	f		972		1120	
SBL	0	0	0		0	
SBT	3	5100	2156	.42*	2015	.40*
SBR	f		291		240	
EBL	2	3400	437	.13*	645	.19*
EBT	0	0	0		0	
EBR	1	1700	118	.07	105	.06
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.60** **.64**

303 . Sand Canyon Av. at I-5 NB Ramps

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	141	.04*	808	.24
NBT	3	5100	897	.18	2873	.57*
NBR	0	0	7		56	
SBL	1	1700	6	.00	13	.01*
SBT	3	5100	3341	.66*	1397	.27
SBR	1	1700	347	.20	294	.17
EBL	1.5		308	{.09}*	522	{.16}*
EBT	0.5	3400	7	.09	11	.16
EBR	2	3400	508	.15	327	.10
WBL	1	1700	8	.00	7	.00
WBT	1	1700	4	.01*	8	.01*
WBR	0	0	8		5	
Right Turn Adjustment			EBR	.02*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.87** **.80**

304 . Sand Canyon Av. at Marine Wy.

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	960	.19	3531	.69*
NBR	1	1700	155	.09	244	.14
SBL	2	3400	195	.06	96	.03*
SBT	3	5100	3640	.71*	1637	.32
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	210	.06*	233	.07*
WBT	0	0	0		0	
WBR	1	1700	70	.04	199	.12
Right Turn Adjustment					WBR	.03*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.82** **.87**

305 . Sand Canyon Av. at I-5 SB Ramps

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	4	6800	793	.12	3253	.48*
NBR	1	1700	170	.10	360	.21
SBL	2	3400	898	.26	610	.18*
SBT	4	6800	2958	.44*	1287	.19
SBR	0	0	0		0	
EBL	2.5		379	.11*	497	.10*
EBT	0	6800	3		0	
EBR	1.5		1059	.31	273	{.00}
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.20*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.80** **.81**

306 . Sand Canyon Av. at Oak Cyn./Laguna Cyn. Rd.

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	71	.04	165	.10
NBT	3	5100	549	.11*	1651	.32*
NBR	1	1700	149	.09	130	.08
SBL	2	3400	1401	.41*	463	.14*
SBT	3	5100	1759	.34	895	.18
SBR	d	1700	238	.14	128	.08
EBL	2	3400	77	.02	212	.06
EBT	1	1700	130	.08*	160	.09*
EBR	d	1700	103	.06	59	.03
WBL	2	3400	78	.02*	170	.05*
WBT	1.5	5100	161	{.05}	58	.03
WBR	1.5		284		1290	.38
Right Turn Adjustment					WBR	.19*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.67** **.84**

307 . Sand Canyon Av. at ICD

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	111	.03*	198	.06
NBT	3	5100	621	.12	1167	.23*
NBR	1	1700	161	.09	109	.06
SBL	2	3400	422	.12	183	.05*
SBT	3	5100	1271	.25*	659	.13
SBR	1	1700	280	.16	269	.16
EBL	2	3400	195	.06*	311	.09*
EBT	3	5100	487	.10	567	.11
EBR	1	1700	160	.09	114	.07
WBL	2	3400	79	.02	207	.06
WBT	3	5100	709	.14*	853	.17*
WBR	1	1700	84	.05	422	.25
Right Turn Adjustment					WBR	.04*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.53** **.63**

309 . Sand Canyon Av. at Barranca Pkwy.

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	142	.04*	152	.04*
NBT	3	5100	940	.18	952	.19
NBR	d	1700	121	.07	189	.11
SBL	2	3400	62	.02	112	.03
SBT	3	5100	1132	.22*	1028	.20*
SBR	d	1700	83	.05	114	.07
EBL	2	3400	69	.02*	166	.05*
EBT	2	3400	447	.13	439	.13
EBR	1	1700	92	.05	137	.08
WBL	2	3400	147	.04	205	.06
WBT	2	3400	554	.16*	525	.15*
WBR	1	1700	60	.04	112	.07
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.49** **.49**

310 . Sand Canyon Av. at Alton Pkwy.

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	189	.06	225	.07*
NBT	3	5100	1092	.21*	729	.14
NBR	1	1700	671	.39	158	.09
SBL	2	3400	300	.09*	78	.02
SBT	3	5100	914	.18	1121	.22*
SBR	1	1700	135	.08	223	.13
EBL	2	3400	165	.05*	148	.04
EBT	3	5100	552	.11	734	.14*
EBR	1	1700	263	.15	292	.17
WBL	2	3400	297	.09	698	.21*
WBT	2	3400	687	.20*	772	.23
WBR	1	1700	105	.06	223	.13
Right Turn Adjustment			NBR	.07*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.67** **.69**

311 . Sand Canyon Av. at I-405 NB Ramps

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	1547	.46*	825	.24
NBR	f		620		360	
SBL	0	0	0		0	
SBT	2	3400	396	.12	985	.29*
SBR	f		1200		1100	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0.5		54		195	
WBT	0	3400	0	.14*	0	{.13}*
WBR	1.5		433		305	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.65**		**.47**

312 . Sand Canyon Av. at I-405 SB Ramps

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	198	.12	96	.06*
NBT	2	3400	1039	.31*	747	.22
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	281	.08	772	.23*
SBR	f		162		444	
EBL	1.5		1131	{.45}*	483	{.28}*
EBT	0	3400	0	.45	0	.28
EBR	0.5		409		458	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.81**		**.62**

313 . Laguna Canyon Rd. at ICD

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	68	.02*	187	.06*
NBT	2	3400	153	.05	216	.06
NBR	d	1700	29	.02	38	.02
SBL	2	3400	77	.02	107	.03
SBT	2	3400	154	.05*	179	.05*
SBR	d	1700	48	.03	73	.04
EBL	2	3400	81	.02*	56	.02*
EBT	3	5100	737	.14	705	.14
EBR	d	1700	94	.06	61	.04
WBL	2	3400	53	.02	60	.02
WBT	3	5100	816	.16*	1070	.21*
WBR	d	1700	106	.06	78	.05
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.30**		**.39**

314 . Laguna Canyon Rd. at Barranca Pkwy.

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	49	.01*	73	.02
NBT	2	3400	161	.05	180	.05*
NBR	d	1700	41	.02	106	.06
SBL	2	3400	24	.01	46	.01*
SBT	2	3400	180	.05*	150	.04
SBR	d	1700	48	.03	108	.06
EBL	2	3400	88	.03*	62	.02*
EBT	2	3400	505	.15	578	.17
EBR	1	1700	114	.07	42	.02
WBL	2	3400	116	.03	58	.02
WBT	2	3400	783	.23*	730	.21*
WBR	d	1700	62	.04	28	.02
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.37**		**.34**

315 . Laguna Canyon Rd. at Alton Pkwy.

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	115	.07*	225	.13*
NBT	2	3400	167	.05	187	.06
NBR	d	1700	68	.04	157	.09
SBL	1	1700	57	.03	66	.04
SBT	2	3400	214	.06*	165	.05*
SBR	d	1700	39	.02	70	.04
EBL	2	3400	105	.03*	33	.01*
EBT	2	3400	675	.20	827	.24
EBR	1	1700	211	.12	84	.05
WBL	2	3400	94	.03	92	.03
WBT	2	3400	1087	.32*	925	.27*
WBR	1	1700	88	.05	100	.06
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.53** **.51**

318 . Banting at Barranca Pkwy.

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	20	.01*	33	.01
NBT	1	1700	6	.00	180	.11*
NBR	1	1700	14	.01	149	.09
SBL	2	3400	839	.25	112	.03*
SBT	2	3400	624	.37*	117	.07
SBR	0	0	673	.40	212	.12
EBL	1	1700	35	.02*	244	.14*
EBT	2	3400	518	.15	889	.26
EBR	d	1700	38	.02	39	.02
WBL	1	1700	28	.02	13	.01
WBT	2	3400	687	.20*	626	.18*
WBR	f		78		706	
Right Turn Adjustment			SBR	.01*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.66** **.51**

319 . Banting at Alton Pkwy.

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	4	.00	39	.02
NBT	1	1700	3	.00	108	.06*
NBR	1	1700	14	.01	144	.08
SBL	2	3400	102	.03	134	.04*
SBT	1	1700	128	.08*	13	.01
SBR	1	1700	307	.18	54	.03
EBL	2	3400	8	.00	45	.01
EBT	2	3400	674	.20	1303	.38*
EBR	d	1700	32	.02	9	.01
WBL	1	1700	120	.07	8	.00
WBT	2	3400	1199	.35*	987	.29
WBR	d	1700	129	.08	67	.04
Right Turn Adjustment			SBR	.10*	NBR	.02*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.58** **.55**

330 . Barranca Pkwy. at Pacifica

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	213	.13	23	.01*
NBT	2	3400	920	.27*	583	.17
NBR	1	1700	250	.15	491	.29
SBL	1	1700	16	.01*	148	.09
SBT	2	3400	520	.15	1247	.37*
SBR	d	1700	143	.08	17	.01
EBL	2	3400	15	.00	102	.03
EBT	2	3400	15	.01	96	.06*
EBR	0	0	33	.02	393	.23
WBL	2	3400	227	.07	291	.09*
WBT	1	1700	234	.14*	30	.02
WBR	1	1700	425	.25	69	.04
Right Turn Adjustment			WBR	.10*	EBR	.16*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.57** **.74**

350 . Alton Pkwy. at Pacifica

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	103	.03*	379	.11*
NBT	3	5100	443	.09	979	.19
NBR	d	1700	204	.12	235	.14
SBL	2	3400	159	.05	103	.03
SBT	2	3400	1045	.31*	737	.22*
SBR	1	1700	86	.05	175	.10
EBL	2	3400	57	.02	120	.04
EBT	2	3400	241	.07*	253	.07*
EBR	d	1700	172	.10	199	.12
WBL	1	1700	238	.14*	164	.10*
WBT	2	3400	172	.05	347	.10
WBR	d	1700	81	.05	101	.06
Right Turn Adjustment			EBR	.01*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .61 .55

402 . I-5 NB Ramps at Trabuco Rd.

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		338	.10*	505	.15*
NBT	0	5100	0		0	
NBR	1.5		16		51	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	594	.17*	1239	.36*
EBR	f		671		480	
WBL	1	1700	419	.25*	110	.06*
WBT	2	3400	912	.27	755	.22
WBR	0	0	0		0	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .57 .62

444 . Sand Canyon Av. at Burt Rd.

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	22	.01*	24	.01
NBT	4	6800	839	.12	3052	.45*
NBR	d	1700	71	.04	94	.06
SBL	1	1700	87	.05	90	.05*
SBT	3	5100	3380	.66*	1376	.27
SBR	1	1700	110	.06	23	.01
EBL	1	1700	18	.01	77	.05*
EBT	1	1700	2	.00*	6	.00
EBR	d	1700	19	.01	47	.03
WBL	1	1700	68	.04*	47	.03
WBT	1	1700	7	.00	2	.00*
WBR	1	1700	64	.04	90	.05
Right Turn Adjustment					WBR	.01*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .76 .61

481 . Laguna Canyon Rd. at Technology Dr.

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	2	.00	1	.00
NBT	2	3400	153	.05*	301	.09*
NBR	d	1700	117	.07	117	.07
SBL	2	3400	787	.23*	463	.14*
SBT	2	3400	407	.12	175	.05
SBR	d	1700	12	.01	5	.00
EBL	1	1700	3	.00	8	.00
EBT	1	1700	17	.01*	30	.02*
EBR	0	0	1		1	
WBL	1	1700	122	.07*	94	.06*
WBT	1	1700	26	.02	24	.01
WBR	2	3400	314	.09	650	.19
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .41 .36

ICU Data Set 7

2030 No-Project – Saddleback College

3. Marguerite & Oso

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	440	.13*	220	.06*
NBT	2	3400	850	.25	900	.26
NBR	1	1700	60	.04	100	.06
SBL	2	3400	250	.07	350	.10
SBT	2	3400	700	.21*	1030	.30*
SBR	1	1700	310	.18	240	.14
EBL	2	3400	260	.08*	290	.09
EBT	4	6800	1390	.20	1910	.28*
EBR	d	1700	190	.11	570	.34
WBL	2	3400	100	.03	150	.04*
WBT	4	6800	2440	.36*	1480	.22
WBR	d	1700	90	.05	210	.12
Right Turn Adjustment					EBR	.01*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.83** **.74**

4. Felipe & Oso

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	160	.09*	110	.06
NBT	2	3400	390	.11	420	.12*
NBR	1	1700	120	.07	240	.14
SBL	2	3400	400	.12	430	.13*
SBT	2	3400	590	.17*	410	.12
SBR	d	1700	240	.14	200	.12
EBL	1	1700	180	.11*	240	.14
EBT	3	5100	1610	.32	1940	.38*
EBR	d	1700	90	.05	210	.12
WBL	1	1700	270	.16	230	.14*
WBT	3	5100	2000	.39*	1630	.32
WBR	d	1700	580	.34	380	.22
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.81** **.82**

5. Antonio & Oso

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	3	5100	830	.16*	730	.14*
NBT	3	5100	870	.17	930	.18
NBR	1	1700	630	.37	660	.39
SBL	2	3400	150	.04	150	.04
SBT	4	6800	1350	.20*	1050	.15*
SBR	f		1140		960	
EBL	2	3400	700	.21*	1020	.30
EBT	3	5100	1000	.20	1250	.25*
EBR	1	1700	620	.36	670	.39
WBL	2	3400	770	.23	770	.23*
WBT	3	5100	1360	.27*	660	.13
WBR	1	1700	310	.18	170	.10
Clearance Interval				.05*		.05*
Note: Assumes Right-Turn Overlap for NBR EBR						

TOTAL CAPACITY UTILIZATION **.89** **.82**

6. Marguerite & Felipe

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	50	.03	30	.02
NBT	2	3400	860	.25*	1010	.30*
NBR	1	1700	420	.25	790	.46
SBL	1	1700	110	.06*	400	.24*
SBT	2	3400	880	.26	910	.27
SBR	d	1700	30	.02	40	.02
EBL	1	1700	70	.04	60	.04
EBT	1	1700	60	.05*	70	.06*
EBR	0	0	30		40	
WBL	1.5		970		480	
WBT	0.5	3400	60	.30*	40	.15*
WBR	1	1700	350	.21	130	.08
Right Turn Adjustment					NBR	.05*
Clearance Interval				.05*		.05*
Note: Assumes E/W Split Phasing						

TOTAL CAPACITY UTILIZATION **.71** **.85**

7. Puerta Real & Crown Valley

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	50	.01	530	.16*
NBT	1	1700	90	.05*	70	.04
NBR	1	1700	80	.05	360	.21
SBL	1	1700	180	.11*	200	.12
SBT	1	1700	110	.06	70	.04*
SBR	2	3400	420	.12	750	.22
EBL	2	3400	500	.15*	450	.13*
EBT	4	6800	2290	.34	2970	.44
EBR	1	1700	300	.18	630	.37
WBL	2	3400	80	.02	330	.10
WBT	4	6800	2720	.42*	2600	.42*
WBR	0	0	120		240	
Right Turn Adjustment					Multi	.13*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.78**		**.93**

8. El Regateo/Medical Ctr & CVP

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		290	.09*	510	.15*
NBT	1.5	5100	50	.08	50	.14
NBR	0		90		190	
SBL	0	0	30		80	
SBT	1	1700	50	.05*	70	.09*
SBR	1	1700	110	.06	170	.10
EBL	1	1700	170	.10*	120	.07
EBT	4	6800	2170	.38	3170	.52*
EBR	0	0	380		350	
WBL	2	3400	270	.08	260	.08*
WBT	4	6800	2580	.40*	2630	.40
WBR	0	0	120		90	
Clearance Interval				.05*		.05*
Note: Assumes N/S Split Phasing						
TOTAL CAPACITY UTILIZATION				**.69**		**.89**

9. Los Altos & Crown Valley

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		40	{.01}*	510	{.16}*
NBT	0.5	3400	10	.01	20	.16
NBR	1	1700	90	.05	310	.18
SBL	0	0	50		210	
SBT	1	1700	20	.04*	30	.14*
SBR	1	1700	50	.03	120	.07
EBL	1	1700	160	.09	90	.05
EBT	4	6800	1810	.31*	3240	.49*
EBR	0	0	310		80	
WBL	1	1700	470	.28*	170	.10*
WBT	4	6800	2900	.47	2350	.35
WBR	0	0	300		60	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.69**		**.94**

10. Bellogente & Crown Valley

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	20	.01*	10	.01
NBT	1	1700	10	.01	10	.01*
NBR	0	0	10		10	
SBL	1	1700	30	.02	130	.08*
SBT	1	1700	10	.03*	10	.06
SBR	0	0	40		100	
EBL	1	1700	110	.06*	70	.04
EBT	4	6800	1830	.27	3720	.55*
EBR	0	0	10		20	
WBL	1	1700	30	.02	10	.01*
WBT	4	6800	3640	.56*	2440	.37
WBR	0	0	160		70	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.71**		**.70**

11. Marguerite & Crown Valley

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	210	.06*	150	.04
NBT	2	3400	530	.16	700	.21*
NBR	1	1700	520	.31	660	.39
SBL	2	3400	220	.06	590	.17*
SBT	1.5	5100	870	{.31}*	570	{.17}
SBR	1.5		930		370	
EBL	2	3400	550	.16*	1030	.30*
EBT	4	6800	1270	.19	2460	.36
EBR	1	1700	90	.05	280	.16
WBL	2	3400	610	.18	700	.21
WBT	4	6800	2630	.39*	2000	.29*
WBR	1	1700	600	.35	240	.14
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION **.97** **1.02**

12. Antonio & Crown Valley

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	3	5100	1040	.20*	1130	.22*
NBT	3	5100	1630	.32	1300	.25
NBR	1	1700	20	.01	20	.01
SBL	1	1700	20	.01	0	.00
SBT	3	5100	1340	.26*	1390	.27*
SBR	f		1090		940	
EBL	3	5100	610	.12*	1090	.21*
EBT	1	1700	30	.02	20	.01
EBR	2	3400	720	.21	1090	.32
WBL	2	3400	20	.01	20	.01
WBT	3	5100	30	.01*	20	.00*
WBR	1	1700	20	.01	20	.01
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.64** **.75**

15. Cabot & Oso

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	230	.07	250	.07
NBT	2	3400	790	.23*	330	.10*
NBR	1	1700	310	.18	570	.34
SBL	2	3400	290	.09*	720	.21*
SBT	2	3400	240	.07	630	.19
SBR	1	1700	50	.03	160	.09
EBL	2	3400	120	.04*	130	.04
EBT	3	5100	1160	.23	1360	.27*
EBR	1	1700	110	.06	110	.06
WBL	2	3400	370	.11	340	.10*
WBT	3	5100	1530	.30*	1230	.24
WBR	1	1700	420	.25	390	.23
Right Turn Adjustment					NBR	.16*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.71** **.89**

16. Moulton & Crown Valley

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	200	.06	250	.07*
NBT	2.5	6800	1450	{.28}*	1030	.20
NBR	1.5		600	{.22}	350	{.03}
SBL	2	3400	150	.04*	270	.08
SBT	3	5100	760	.15	1550	.30*
SBR	1	1700	110	.06	140	.08
EBL	2	3400	190	.06	170	.05
EBT	3	5100	1330	.26*	1120	.22*
EBR	1	1700	440	.26	230	.14
WBL	2	3400	600	.18*	800	.24*
WBT	3	5100	850	.17	1460	.29
WBR	1	1700	310	.18	180	.11
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.81** **.88**

17. Greenfield & Crown Valley

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		50		40	
NBT	1.5	3400	90	.06*	60	.04*
NBR	0		60		40	
SBL	2	3400	730	.21*	1000	.29*
SBT	1	1700	60	.04	120	.07
SBR	1	1700	260	.15	370	.22
EBL	2	3400	580	.17*	300	.09*
EBT	3	5100	1540	.31	1210	.25
EBR	0	0	30		50	
WBL	1	1700	20	.01	60	.04
WBT	3	5100	1560	.31*	1630	.32*
WBR	1	1700	940	.55	740	.44
Right Turn Adjustment			WBR	.08*		
Clearance Interval				.05*		.05*
Note: Assumes N/S Split Phasing						

TOTAL CAPACITY UTILIZATION **.88** **.79**

18. Cabot & Crown Valley

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	100	.06	170	.10*
NBT	2	3400	370	.11*	200	.06
NBR	1	1700	380	.22	310	.18
SBL	2	3400	280	.08*	390	.11
SBT	2	3400	160	.09	320	.19*
SBR	0	0	210	.12	380	.22
EBL	2	3400	340	.10*	340	.10*
EBT	3	5100	1870	.37	1710	.34
EBR	1	1700	180	.11	150	.09
WBL	2	3400	310	.09	320	.09
WBT	3	5100	2290	.45*	1910	.37*
WBR	1	1700	280	.16	230	.14
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.79** **.81**

19. Forbes & Crown Valley

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	270	.16*	200	.12*
NBT	1	1700	30	.02	50	.03
NBR	1	1700	220	.13	130	.08
SBL	1	1700	170	.10	170	.10
SBT	1	1700	30	.02*	40	.02*
SBR	1	1700	330	.19	200	.12
EBL	2	3400	140	.04*	210	.06*
EBT	4	6800	2250	.35	1960	.30
EBR	0	0	150		80	
WBL	1	1700	120	.07	120	.07
WBT	3	5100	2080	.41*	2190	.43*
WBR	1	1700	120	.07	200	.12
Right Turn Adjustment			SBR	.14*	SBR	.05*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.82** **.73**

21. Cabot & Paseo de Colinas

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3400	140	.04*	170	.05*
SBT	0	0	0		0	
SBR	2	3400	360	.11	620	.18
EBL	1	1700	630	.37*	510	.30*
EBT	2	3400	980	.29	670	.20
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	480	.20*	880	.30*
WBR	0	0	210		130	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.66** **.70**

22. Cm Capistrano & P. Colinas

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0.5	3400	240	{.14}*	160	{.23}*
NBR	1.5		650	{.07}	950	
SBL	1	1700	40	.02*	110	.06*
SBT	1	1700	130	.08	260	.15
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1.5		1350		820	
WBT	0	3400	0	.42*	0	.26*
WBR	0.5		80		70	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.63** **.60**

23. Cm Capistrano & Avery

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1700	210	.12*	200	.12*
NBR	1	1700	170	.10	370	.22
SBL	2	3400	1100	.32*	940	.28*
SBT	1	1700	270	.16	170	.10
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	390	.23*	340	.20*
WBT	0	0	0		0	
WBR	2	3400	570	.17	880	.26
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.72** **.65**

24. Marguerite & Avery

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	500	.29*	450	.26*
NBT	2	3400	870	.26	460	.14
NBR	d	1700	170	.10	80	.05
SBL	1	1700	210	.12	130	.08
SBT	2	3400	750	.22*	860	.25*
SBR	1	1700	250	.15	770	.45
EBL	2	3400	810	.24*	1000	.29*
EBT	2	3400	630	.19	280	.08
EBR	1	1700	470	.28	370	.22
WBL	1	1700	60	.04	80	.05
WBT	2	3400	260	.08*	350	.10*
WBR	d	1700	140	.08	70	.04
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.88** **.95**

44. I-5 SB Ramps & Oso

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3400	760	.22*	1310	.39*
SBT	0	0	0		0	
SBR	2	3400	310	.09	480	.14
EBL	0	0	0		0	
EBT	3	5100	1140	.22	1830	.36*
EBR	f		490		820	
WBL	0	0	0		0	
WBT	3	5100	1910	.37*	1470	.29
WBR	f		810		510	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.64** **.80**

45. I-5 NB Ramps & Oso

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		560	{.20}*	490	{.22}*
NBT	0	5100	0	.20	0	.22
NBR	1.5		440		640	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	1730	.34*	2570	.50*
EBR	f		560		560	
WBL	0	0	0		0	
WBT	4	6800	2080	.31	1350	.20
WBR	f		1390		760	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.59**		**.77**

46. I-5 SB Ramps & Crown Valley

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	3	5100	1350	.26*	1930	.38*
SBT	0	0	0		0	
SBR	2	3400	750	.22	1560	.46
EBL	0	0	0		0	
EBT	5	8500	1910	.22*	2400	.28*
EBR	1	1700	300	.18	360	.21
WBL	2	3400	520	.15*	560	.16*
WBT	3	5100	1680	.33	1580	.31
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.68**		**.87**

47. I-5 NB Ramps & Crown Valley

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		560	{.25}*	260	{.14}*
NBT	0	5100	0	.25	0	.14
NBR	1.5		700		460	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	4	6800	2190	.32	3370	.50*
EBR	f		1120		950	
WBL	0	0	0		0	
WBT	3	5100	1650	.32*	1880	.37
WBR	f		1480		1680	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.62**		**.69**

48. I-5 SB Ramps & Avery

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		700		560	
SBT	0.5	3400	0	.21*	0	.16*
SBR	2	3400	280	.08	480	.14
EBL	0	0	0		0	
EBT	3	5100	870	.17*	1000	.20*
EBR	1	1700	380	.22	330	.19
WBL	2	3400	210	.06*	340	.10*
WBT	3	5100	690	.14	960	.19
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.05*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.54**		**.51**

49. I-5 NB Ramps & Avery

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	280	.16*	330	.19*
NBT	0	0	0		0	
NBR	2	3400	450	.13	580	.17
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	2	3400	300	.09*	370	.11*
EBT	3	5100	1280	.25	1280	.25
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	630	.19*	960	.28*
WBR	f		440		660	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.49**		**.63**

70. Greenfield & SR-73 SB Ramps

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	1460	.53*	480	.26*
NBR	0	0	340		390	
SBL	1	1700	40	.02*	30	.02*
SBT	2	3400	460	.14	520	.15
SBR	0	0	0		0	
EBL	0.5		10	.01*	20	
EBT	0	3400	0		0	{.25}*
EBR	1.5		440	{.00}	1000	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.61**		**.58**

71. Greenfield & SR-73 NB Ramps

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	1440	.42*	390	.11*
NBT	1	1700	30	.02	110	.06
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	1	1700	120	.07*	100	.06*
SBR	1	1700	40	.02	10	.01
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	340	.20*	440	.26*
WBT	0	0	0		0	
WBR	1	1700	60	.04	20	.01
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.74**		**.48**

101. Marguerite & Med Ctr/College

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	90	.05	70	.04
NBT	2	3400	850	.25*	900	.26*
NBR	d	1700	40	.02	20	.01
SBL	1	1700	530	.31*	300	.18*
SBT	2	3400	960	.28	920	.27
SBR	d	1700	230	.14	130	.08
EBL	1	1700	70	.04	210	.12*
EBT	2	3400	220	.09*	100	.05
EBR	0	0	70		80	
WBL	1	1700	20	.01*	50	.03
WBT	1	1700	40	.02	160	.09*
WBR	1	1700	80	.05	280	.16
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.71**		**.70**

102. Marguerite & College Ctr/College W

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	40	.02	90	.05*
NBT	2	3400	1190	.35*	1270	.37
NBR	d	1700	320	.19	290	.17
SBL	1	1700	90	.05*	70	.04
SBT	2	3400	1030	.30	1360	.40*
SBR	d	1700	10	.01	50	.03
EBL	1	1700	10	.01	60	.04*
EBT	1	1700	0	.01*	10	.03
EBR	0	0	10		40	
WBL	1.5		20		160	
WBT	0.5	3400	0	.01*	10	.05*
WBR	1	1700	10	.01	30	.02
Clearance Interval				.05*		.05*

Note: Assumes E/W Split Phasing

TOTAL CAPACITY UTILIZATION **.47** **.59**

103. College/Plata & Avery

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	80	.05*	40	.02*
NBT	1	1700	50	.03	0	.01
NBR	0	0	0		10	
SBL	1	1700	50	.03	10	.01
SBT	0.5	3400	20	{.01}*	10	{.02}*
SBR	1.5		100		260	
EBL	1	1700	450	.26*	270	.16*
EBT	2	3400	190	.06	170	.05
EBR	d	1700	100	.06	60	.04
WBL	1	1700	10	.01	0	.00
WBT	2	3400	210	.06*	120	.04*
WBR	d	1700	30	.02	10	.01
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.43** **.29**

ICU Data Set 8

2030 With-Project – Saddleback College

3. Marguerite & Oso

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	430	.13*	220	.06
NBT	2	3400	850	.25	930	.27*
NBR	1	1700	60	.04	100	.06
SBL	2	3400	240	.07	350	.10*
SBT	2	3400	750	.22*	1030	.30
SBR	1	1700	310	.18	240	.14
EBL	2	3400	260	.08*	290	.09
EBT	4	6800	1390	.20	1910	.28*
EBR	d	1700	190	.11	570	.34
WBL	2	3400	100	.03	150	.04*
WBT	4	6800	2420	.36*	1480	.22
WBR	d	1700	90	.05	210	.12
Right Turn Adjustment					EBR	.01*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.84** **.75**

4. Felipe & Oso

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	160	.09*	110	.06
NBT	2	3400	390	.11	440	.13*
NBR	1	1700	120	.07	240	.14
SBL	2	3400	400	.12	430	.13*
SBT	2	3400	620	.18*	410	.12
SBR	d	1700	240	.14	200	.12
EBL	1	1700	180	.11*	240	.14
EBT	3	5100	1610	.32	1950	.38*
EBR	d	1700	90	.05	210	.12
WBL	1	1700	280	.16	230	.14*
WBT	3	5100	1980	.39*	1630	.32
WBR	d	1700	580	.34	380	.22
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.82** **.83**

5. Antonio & Oso

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	3	5100	820	.16*	730	.14*
NBT	3	5100	870	.17	950	.19
NBR	1	1700	630	.37	680	.40
SBL	2	3400	150	.04	150	.04
SBT	4	6800	1390	.20*	1050	.15*
SBR	f		1150		950	
EBL	2	3400	700	.21*	1030	.30
EBT	3	5100	1000	.20	1250	.25*
EBR	1	1700	620	.36	670	.39
WBL	2	3400	790	.23	770	.23*
WBT	3	5100	1350	.26*	660	.13
WBR	1	1700	310	.18	170	.10
Clearance Interval				.05*		.05*
Note: Assumes Right-Turn Overlap for NBR EBR						

TOTAL CAPACITY UTILIZATION **.88** **.82**

6. Marguerite & Felipe

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	50	.03	30	.02
NBT	2	3400	870	.26*	1050	.31*
NBR	1	1700	420	.25	820	.48
SBL	1	1700	110	.06*	400	.24*
SBT	2	3400	930	.27	910	.27
SBR	d	1700	30	.02	40	.02
EBL	1	1700	70	.04	60	.04
EBT	1	1700	60	.05*	70	.06*
EBR	0	0	30		40	
WBL	1.5		1010		480	
WBT	0.5	3400	60	.31*	40	.15*
WBR	1	1700	350	.21	130	.08
Right Turn Adjustment					NBR	.06*
Clearance Interval				.05*		.05*
Note: Assumes E/W Split Phasing						

TOTAL CAPACITY UTILIZATION **.73** **.87**

7. Puerta Real & Crown Valley

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	50	.01	530	.16*
NBT	1	1700	90	.05*	70	.04
NBR	1	1700	80	.05	360	.21
SBL	1	1700	180	.11*	200	.12
SBT	1	1700	110	.06	70	.04*
SBR	2	3400	420	.12	750	.22
EBL	2	3400	500	.15*	450	.13*
EBT	4	6800	2330	.34	2960	.44
EBR	1	1700	300	.18	630	.37
WBL	2	3400	80	.02	330	.10
WBT	4	6800	2700	.41*	2620	.42*
WBR	0	0	120		240	
Right Turn Adjustment					Multi	.13*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.77** **.93**

8. El Regateo/Medical Ctr & CVP

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		290	.09*	540	.16*
NBT	1.5	5100	50	.08	50	.15
NBR	0		90		200	
SBL	0	0	30		80	
SBT	1	1700	50	.05*	70	.09*
SBR	1	1700	110	.06	170	.10
EBL	1	1700	180	.11*	120	.07
EBT	4	6800	2170	.38	3160	.52*
EBR	0	0	410		360	
WBL	2	3400	280	.08	260	.08*
WBT	4	6800	2550	.39*	2620	.40
WBR	0	0	120		90	
Clearance Interval				.05*		.05*
Note: Assumes N/S Split Phasing						

TOTAL CAPACITY UTILIZATION **.69** **.90**

9. Los Altos & Crown Valley

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		40	{.01}*	510	{.16}*
NBT	0.5	3400	10	.01	20	.16
NBR	1	1700	90	.05	300	.18
SBL	0	0	50		210	
SBT	1	1700	20	.04*	30	.14*
SBR	1	1700	60	.04	120	.07
EBL	1	1700	160	.09	90	.05
EBT	4	6800	1800	.31*	3230	.49*
EBR	0	0	310		80	
WBL	1	1700	470	.28*	170	.10*
WBT	4	6800	2870	.47	2340	.35
WBR	0	0	300		60	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.69** **.94**

10. Bellogente & Crown Valley

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	20	.01*	10	.01
NBT	1	1700	10	.01	10	.01*
NBR	0	0	10		10	
SBL	1	1700	30	.02	130	.08*
SBT	1	1700	10	.03*	10	.06
SBR	0	0	40		100	
EBL	1	1700	110	.06*	70	.04
EBT	4	6800	1830	.27	3700	.55*
EBR	0	0	10		20	
WBL	1	1700	30	.02	10	.01*
WBT	4	6800	3610	.55*	2430	.37
WBR	0	0	160		70	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.70** **.70**

11. Marguerite & Crown Valley

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	200	.06*	140	.04
NBT	2	3400	540	.16	770	.23*
NBR	1	1700	540	.32	720	.42
SBL	2	3400	220	.06	590	.17*
SBT	1.5	5100	980	{.33}*	580	{.17}
SBR	1.5		920		360	
EBL	2	3400	540	.16*	1020	.30*
EBT	4	6800	1270	.19	2470	.36
EBR	1	1700	90	.05	280	.16
WBL	2	3400	700	.21	720	.21
WBT	4	6800	2620	.39*	2000	.29*
WBR	1	1700	600	.35	250	.15
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION **.99** **1.04**

12. Antonio & Crown Valley

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	3	5100	1060	.21*	1140	.22*
NBT	3	5100	1620	.32	1300	.25
NBR	1	1700	20	.01	20	.01
SBL	1	1700	20	.01	0	.00
SBT	3	5100	1330	.26*	1390	.27*
SBR	f		1150		940	
EBL	3	5100	610	.12*	1130	.22*
EBT	1	1700	30	.02	20	.01
EBR	2	3400	730	.21	1110	.33
WBL	2	3400	20	.01	20	.01
WBT	3	5100	30	.01*	20	.00*
WBR	1	1700	20	.01	20	.01
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.65** **.76**

15. Cabot & Oso

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	230	.07	250	.07
NBT	2	3400	780	.23*	330	.10*
NBR	1	1700	300	.18	570	.34
SBL	2	3400	290	.09*	720	.21*
SBT	2	3400	240	.07	630	.19
SBR	1	1700	50	.03	160	.09
EBL	2	3400	130	.04*	130	.04
EBT	3	5100	1180	.23	1360	.27*
EBR	1	1700	110	.06	110	.06
WBL	2	3400	370	.11	340	.10*
WBT	3	5100	1520	.30*	1250	.25
WBR	1	1700	420	.25	390	.23
Right Turn Adjustment					NBR	.16*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.71** **.89**

16. Moulton & Crown Valley

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	210	.06	260	.08*
NBT	2.5	6800	1440	{.28}*	1030	.20
NBR	1.5		590	{.21}	350	{.03}
SBL	2	3400	160	.05*	270	.08
SBT	3	5100	760	.15	1550	.30*
SBR	1	1700	110	.06	140	.08
EBL	2	3400	190	.06	170	.05
EBT	3	5100	1340	.26*	1120	.22*
EBR	1	1700	440	.26	230	.14
WBL	2	3400	600	.18*	800	.24*
WBT	3	5100	850	.17	1470	.29
WBR	1	1700	310	.18	180	.11
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.82** **.89**

17. Greenfield & Crown Valley

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		50		40	
NBT	1.5	3400	90	.06*	60	.04*
NBR	0		60		40	
SBL	2	3400	740	.22*	1000	.29*
SBT	1	1700	60	.04	120	.07
SBR	1	1700	260	.15	370	.22
EBL	2	3400	580	.17*	300	.09*
EBT	3	5100	1540	.31	1210	.25
EBR	0	0	30		50	
WBL	1	1700	20	.01	60	.04
WBT	3	5100	1560	.31*	1640	.32*
WBR	1	1700	930	.55	750	.44
Right Turn Adjustment			WBR	.07*		
Clearance Interval				.05*		.05*

Note: Assumes N/S Split Phasing

TOTAL CAPACITY UTILIZATION **.88** **.79**

18. Cabot & Crown Valley

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	100	.06	170	.10*
NBT	2	3400	370	.11*	200	.06
NBR	1	1700	380	.22	310	.18
SBL	2	3400	280	.08*	390	.11
SBT	2	3400	160	.09	320	.19*
SBR	0	0	210	.12	380	.22
EBL	2	3400	340	.10*	340	.10*
EBT	3	5100	1880	.37	1700	.33
EBR	1	1700	180	.11	150	.09
WBL	2	3400	310	.09	320	.09
WBT	3	5100	2280	.45*	1920	.38*
WBR	1	1700	280	.16	230	.14
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.79** **.82**

19. Forbes & Crown Valley

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	270	.16*	200	.12*
NBT	1	1700	40	.02	50	.03
NBR	1	1700	220	.13	130	.08
SBL	1	1700	170	.10	170	.10
SBT	1	1700	30	.02*	40	.02*
SBR	1	1700	330	.19	190	.11
EBL	2	3400	140	.04*	210	.06*
EBT	4	6800	2250	.35	1960	.30
EBR	0	0	150		80	
WBL	1	1700	120	.07	120	.07
WBT	3	5100	2070	.41*	2200	.43*
WBR	1	1700	120	.07	200	.12
Right Turn Adjustment			SBR	.14*	SBR	.04*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.82** **.72**

21. Cabot & Paseo de Colinas

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3400	150	.04*	180	.05*
SBT	0	0	0		0	
SBR	2	3400	360	.11	620	.18
EBL	1	1700	630	.37*	510	.30*
EBT	2	3400	1030	.30	680	.20
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	490	.21*	920	.31*
WBR	0	0	210		130	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.67** **.71**

22. Cm Capistrano & P. Colinas

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0.5	3400	240	{.14}*	160	{.25}*
NBR	1.5		670	{.06}	1010	
SBL	1	1700	40	.02*	110	.06*
SBT	1	1700	130	.08	260	.15
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1.5		1420		820	
WBT	0	3400	0	.44*	0	.26*
WBR	0.5		80		70	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.65** **.62**

23. Cm Capistrano & Avery

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1700	210	.12*	190	.11*
NBR	1	1700	170	.10	370	.22
SBL	2	3400	1170	.34*	950	.28*
SBT	1	1700	270	.16	170	.10
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	390	.23*	340	.20*
WBT	0	0	0		0	
WBR	2	3400	580	.17	940	.28
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.74** **.64**

24. Marguerite & Avery

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	500	.29*	480	.28*
NBT	2	3400	860	.25	450	.13
NBR	d	1700	220	.13	90	.05
SBL	1	1700	210	.12	130	.08
SBT	2	3400	730	.21*	860	.25*
SBR	1	1700	240	.14	800	.47
EBL	2	3400	820	.24*	1010	.30*
EBT	2	3400	770	.23	310	.09
EBR	1	1700	480	.28	400	.24
WBL	1	1700	60	.04	110	.06
WBT	2	3400	300	.09*	430	.13*
WBR	d	1700	140	.08	70	.04
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.88** **1.01**

44. I-5 SB Ramps & Oso

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3400	760	.22*	1300	.38*
SBT	0	0	0		0	
SBR	2	3400	320	.09	480	.14
EBL	0	0	0		0	
EBT	3	5100	1140	.22	1820	.36*
EBR	f		520		830	
WBL	0	0	0		0	
WBT	3	5100	1900	.37*	1490	.29
WBR	f		810		510	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.64** **.79**

45. I-5 NB Ramps & Oso

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		560	{.20}*	510	{.23}*
NBT	0	5100	0	.20	0	.23
NBR	1.5		440		650	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	1730	.34*	2560	.50*
EBR	f		560		560	
WBL	0	0	0		0	
WBT	4	6800	2070	.30	1350	.20
WBR	f		1370		760	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.59**		**.78**

46. I-5 SB Ramps & Crown Valley

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	3	5100	1360	.27*	1930	.38*
SBT	0	0	0		0	
SBR	2	3400	750	.22	1560	.46
EBL	0	0	0		0	
EBT	5	8500	1910	.22*	2390	.28*
EBR	1	1700	300	.18	360	.21
WBL	2	3400	520	.15*	560	.16*
WBT	3	5100	1670	.33	1590	.31
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.69**		**.87**

47. I-5 NB Ramps & Crown Valley

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		560	{.25}*	260	{.14}*
NBT	0	5100	0	.25	0	.14
NBR	1.5		700		460	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	4	6800	2230	.33*	3370	.50*
EBR	f		1110		950	
WBL	0	0	0		0	
WBT	3	5100	1640	.32	1890	.37
WBR	f		1460		1700	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.63**		**.69**

48. I-5 SB Ramps & Avery

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		760		570	
SBT	0.5	3400	0	.22*	0	.17*
SBR	2	3400	280	.08	480	.14
EBL	0	0	0		0	
EBT	3	5100	940	.18*	1000	.20*
EBR	1	1700	380	.22	330	.19
WBL	2	3400	210	.06*	390	.11*
WBT	3	5100	710	.14	1020	.20
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.04*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.55**		**.53**

49. I-5 NB Ramps & Avery

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	290	.17*	340	.20*
NBT	0	0	0		0	
NBR	2	3400	510	.15	580	.17
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	2	3400	300	.09*	370	.11*
EBT	3	5100	1410	.28	1300	.25
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	650	.19*	1060	.31*
WBR	f		450		710	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.50**		**.67**

70. Greenfield & SR-73 SB Ramps

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	1450	.53*	490	.26*
NBR	0	0	340		390	
SBL	1	1700	40	.02*	30	.02*
SBT	2	3400	460	.14	520	.15
SBR	0	0	0		0	
EBL	0.5		10	.01*	20	
EBT	0	3400	0		0	{.25}*
EBR	1.5		440	{.00}	1000	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.61**		**.58**

71. Greenfield & SR-73 NB Ramps

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	1440	.42*	390	.11*
NBT	1	1700	30	.02	110	.06
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	1	1700	120	.07*	100	.06*
SBR	1	1700	40	.02	10	.01
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	340	.20*	440	.26*
WBT	0	0	0		0	
WBR	1	1700	60	.04	20	.01
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.74**		**.48**

101. Marguerite & Med Ctr/College

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	80	.05	60	.04
NBT	2	3400	840	.25*	920	.27*
NBR	d	1700	30	.02	20	.01
SBL	1	1700	760	.45*	360	.21*
SBT	2	3400	1140	.34	920	.27
SBR	d	1700	240	.14	140	.08
EBL	1	1700	80	.05	230	.14*
EBT	2	3400	320	.11*	120	.06
EBR	0	0	60		80	
WBL	1	1700	20	.01*	70	.04
WBT	1	1700	40	.02	230	.14*
WBR	1	1700	110	.06	410	.24
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.87**		**.81**

102. Marguerite & College Ctr/College W

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	40	.02	90	.05*
NBT	2	3400	1190	.35*	1270	.37
NBR	d	1700	360	.21	290	.17
SBL	1	1700	170	.10*	90	.05
SBT	2	3400	1020	.30	1340	.39*
SBR	d	1700	10	.01	50	.03
EBL	1	1700	10	.01	60	.04*
EBT	1	1700	0	.01*	10	.03
EBR	0	0	10		40	
WBL	1.5		50		230	
WBT	0.5	3400	0	.01*	10	.07*
WBR	1	1700	30	.02	100	.06
Clearance Interval				.05*		.05*

Note: Assumes E/W Split Phasing

TOTAL CAPACITY UTILIZATION **.52** **.60**

103. College/Plata & Avery

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	80	.05*	40	.02*
NBT	1	1700	40	.02	0	.01
NBR	0	0	0		10	
SBL	1	1700	40	.02	10	.01
SBT	0.5	3400	20	{.01}*	10	{.06}*
SBR	1.5		150		440	
EBL	1	1700	640	.38*	330	.19*
EBT	2	3400	200	.06	170	.05
EBR	d	1700	100	.06	60	.04
WBL	1	1700	10	.01	0	.00
WBT	2	3400	210	.06*	130	.04*
WBR	d	1700	30	.02	10	.01
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.55** **.36**

ICU Data Set 9

2030 No-Project – Irvine Valley College

1. College Dwy. at Irvine Center Dr.

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	97	.03*	170	.05*
NBT	0	0	0		0	
NBR	1	1700	25	.01	47	.03
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	1713	.34*	1393	.27
EBR	1	1700	430	.25	146	.09
WBL	2	3400	172	.05*	59	.02
WBT	3	5100	1292	.25	2264	.44*
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.47**		**.54**

2. Jeffrey Rd. at College Dwy.

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1215	.24	2218	.43*
NBR	1	1700	130	.08	121	.07
SBL	2	3400	116	.03	99	.03*
SBT	3	5100	2460	.48*	1722	.34
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	28	.02*	114	.07*
WBT	0	0	0		0	
WBR	1	1700	7	.00	39	.02
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.55**		**.58**

3. Jeffrey Rd. at College Dwy. RIRO

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1150	.23	2212	.43*
NBR	1	1700	72	.04	45	.03
SBL	0	0	0		0	
SBT	3	5100	2576	.51*	1821	.36
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	2	3400	19	.01	82	.02
Right Turn Adjustment					WBR	.02*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.56**		**.50**

222 . Culver Dr. at Trabuco Rd.

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	548	.11*	1952	.38*
NBR	f		1131		1541	
SBL	1	1700	693	.41*	341	.20*
SBT	3	5100	2478	.49	1257	.25
SBR	f		724		179	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	746	.22*	523	.15*
WBT	0	0	0		0	
WBR	2	3400	805	.24	866	.25
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.79**		**.78**

223 . Culver Dr. at I-5 SB Ramps

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1183	.23	1881	.37*
NBR	f		240		300	
SBL	0	0	0		0	
SBT	3	5100	2239	.44*	1496	.29
SBR	f		350		260	
EBL	3	5100	607	.12*	1319	.26*
EBT	0	0	0		0	
EBR	2	3400	361	.11	854	.25
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.61** **.68**

224 . Culver Dr. at Walnut Av.

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	172	.05*	339	.10
NBT	3	5100	709	.14	1513	.30*
NBR	1	1700	274	.16	318	.19
SBL	2	3400	287	.08	377	.11*
SBT	3	5100	1913	.38*	1413	.28
SBR	1	1700	538	.32	301	.18
EBL	2	3400	364	.11*	657	.19*
EBT	2	3400	639	.19	566	.17
EBR	1	1700	231	.14	148	.09
WBL	2	3400	426	.13	370	.11
WBT	2	3400	821	.24*	720	.21*
WBR	1	1700	287	.17	250	.15
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION **.83** **.86**

226 . Culver Dr. at ICD

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	295	.09*	332	.10
NBT	4	6800	618	.09	1435	.21*
NBR	f		197		374	
SBL	2	3400	240	.07	340	.10*
SBT	4	6800	1907	.28*	1306	.19
SBR	1	1700	352	.21	242	.14
EBL	2	3400	241	.07	334	.10*
EBT	3	5100	1193	.23*	1251	.25
EBR	f		267		173	
WBL	2	3400	426	.13*	234	.07
WBT	3	5100	1433	.28	1332	.26*
WBR	f		120		217	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.78** **.72**

227 . Culver Dr. at Warner Av.

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	161	.09*	299	.18*
NBT	3	5100	950	.19	1820	.36
NBR	1	1700	64	.04	219	.13
SBL	1	1700	79	.05	99	.06
SBT	3	5100	2341	.46*	1332	.26*
SBR	d	1700	234	.14	271	.16
EBL	2	3400	254	.07*	226	.07
EBT	2	3400	237	.07	283	.08*
EBR	d	1700	258	.15	221	.13
WBL	1	1700	231	.14	137	.08*
WBT	2	3400	464	.14*	240	.07
WBR	d	1700	146	.09	144	.08
Right Turn Adjustment			EBR	.01*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.82** **.65**

228 . Culver Dr. at Barranca Pkwy.

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	155	.05*	287	.08
NBT	3	5100	663	.13	1670	.33*
NBR	1	1700	350	.21	385	.23
SBL	2	3400	355	.10	285	.08*
SBT	3	5100	2122	.42*	1167	.23
SBR	f		346		221	
EBL	2	3400	444	.13*	353	.10*
EBT	2	3400	935	.28	770	.23
EBR	1	1700	220	.13	500	.29
WBL	2	3400	379	.11	273	.08
WBT	2	3400	919	.27*	772	.23*
WBR	d	1700	134	.08	327	.19
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.92**		**.79**

229 . Culver Dr. at Alton Pkwy.

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	119	.04*	266	.08
NBT	3	5100	900	.18	2030	.40*
NBR	1	1700	276	.16	365	.21
SBL	2	3400	179	.05	213	.06*
SBT	3	5100	2093	.41*	1171	.23
SBR	f		307		225	
EBL	2	3400	130	.04*	292	.09
EBT	2	3400	614	.18	874	.26*
EBR	1	1700	169	.10	283	.17
WBL	2	3400	439	.13	348	.10*
WBT	2	3400	1013	.30*	730	.21
WBR	1	1700	210	.12	251	.15
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.84**		**.87**

232 . Culver Dr. at I-405 NB Ramps

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	864	.17	2142	.42*
NBR	f		680		470	
SBL	0	0	0		0	
SBT	3	5100	1296	.25*	1287	.25
SBR	f		980		710	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	934	.27*	473	.14*
WBT	0	0	0		0	
WBR	1	1700	486	.29	798	.47
Right Turn Adjustment					WBR	.33*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.57**		**.94**

233 . Culver Dr. at I-405 SB Ramps

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1250	.25	1750	.34*
NBR	f		200		621	
SBL	0	0	0		0	
SBT	3	5100	1965	.39*	1348	.26
SBR	f		250		331	
EBL	1.5		280	.16*	915	{.28}*
EBT	0	5100	0		0	{.28}
EBR	1.5		655	.19	615	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment				EBR	.03*	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.63**		**.67**

259 . Yale Av. at Walnut Av.

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	253	.07*	197	.06
NBT	2	3400	244	.11	406	.15*
NBR	0	0	143		109	
SBL	1	1700	110	.06	122	.07*
SBT	2	3400	396	.12*	268	.08
SBR	1	1700	464	.27	282	.17
EBL	1	1700	218	.13*	477	.28*
EBT	2	3400	599	.18	579	.17
EBR	d	1700	242	.14	187	.11
WBL	1	1700	102	.06	74	.04
WBT	2	3400	754	.22*	601	.18*
WBR	d	1700	54	.03	187	.11
Right Turn Adjustment			SBR	.02*		
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for SBR

TOTAL CAPACITY UTILIZATION .61 .73

261 . Yale Av. at ICD

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	182	.11	147	.09
NBT	2	3400	102	.03*	279	.08*
NBR	d	1700	205	.12	124	.07
SBL	1	1700	320	.19*	193	.11*
SBT	2	3400	265	.08	204	.06
SBR	d	1700	335	.20	122	.07
EBL	2	3400	135	.04	305	.09
EBT	3	5100	1357	.30*	1205	.29*
EBR	0	0	153		257	
WBL	1	1700	176	.10*	230	.14*
WBT	3	5100	1194	.23	1684	.33
WBR	1	1700	155	.09	319	.19
Right Turn Adjustment			NBR	.01*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .68 .67

264 . W. Yale Lp. at Barranca Pkwy.

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	152	.09*	187	.11*
NBT	2	3400	155	.05	228	.07
NBR	d	1700	94	.06	136	.08
SBL	1	1700	205	.12	99	.06
SBT	2	3400	308	.09*	106	.03*
SBR	d	1700	239	.14	125	.07
EBL	2	3400	71	.02*	209	.06
EBT	2	3400	1021	.30	1354	.40*
EBR	d	1700	71	.04	88	.05
WBL	1	1700	111	.07	55	.03*
WBT	2	3400	1179	.37*	1118	.37
WBR	0	0	63		133	
Right Turn Adjustment			SBR	.03*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .65 .62

267 . E. Yale Lp. at Barranca Pkwy.

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	135	.08	137	.08
NBT	2	3400	137	.04*	261	.08*
NBR	d	1700	190	.11	193	.11
SBL	1	1700	361	.21*	204	.12*
SBT	2	3400	237	.07	219	.06
SBR	d	1700	253	.15	137	.08
EBL	1	1700	104	.06*	181	.11
EBT	2	3400	789	.23	1153	.34*
EBR	d	1700	120	.07	147	.09
WBL	1	1700	183	.11	124	.07*
WBT	2	3400	1162	.34*	866	.25
WBR	d	1700	190	.11	349	.21
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .70 .66

268 . W. Yale Loop at Alton Pkwy.

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	158	.09*	133	.08*
NBT	2	3400	178	.05	218	.06
NBR	d	1700	162	.10	259	.15
SBL	1	1700	149	.09	60	.04
SBT	2	3400	302	.09*	105	.03*
SBR	d	1700	139	.08	115	.07
EBL	1	1700	106	.06*	115	.07
EBT	2	3400	874	.26	1197	.35*
EBR	d	1700	148	.09	168	.10
WBL	1	1700	87	.05	210	.12*
WBT	2	3400	1204	.35*	1050	.31
WBR	d	1700	130	.08	131	.08
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.64**		**.63**

271 . E. Yale Lp. at Alton Pkwy.

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	233	.14*	103	.06
NBT	2	3400	209	.06	155	.05*
NBR	d	1700	549	.32	259	.15
SBL	2	3400	212	.06	182	.05*
SBT	2	3400	95	.03*	128	.04
SBR	d	1700	144	.08	84	.05
EBL	1	1700	159	.09*	244	.14
EBT	2	3400	792	.28	1199	.40*
EBR	0	0	158		145	
WBL	2	3400	180	.05	477	.14*
WBT	2	3400	1135	.33*	1043	.31
WBR	d	1700	136	.08	141	.08
Right Turn Adjustment			NBR	.10*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.74**		**.69**

287 . Jeffrey Rd. at I-5 NB Ramps

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	769	.15	2408	.47*
NBR	f		250		270	
SBL	0	0	0		0	
SBT	3	5100	2578	.51*	1594	.31
SBR	f		740		200	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1.5		472	.14*	586	
WBT	0	5100	0		0	.28*
WBR	1.5		411	{.00}	842	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.70**		**.80**

288 . Jeffrey Rd. at Walnut Av./I-5 SB Ramps

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	175	.05*	295	.09
NBT	3	5100	837	.16	1796	.35*
NBR	1	1700	166	.10	203	.12
SBL	2	3400	633	.19	330	.10*
SBT	3	5100	1869	.43*	1051	.31
SBR	0	0	310		856	.50
EBL	2	3400	114	.03	291	.09
EBT	1.5	5100	440	{.15}*	237	{.07}*
EBR	1.5		366		292	{.07}
WBL	2	3400	314	.09*	637	.19*
WBT	1	1700	99	.06	149	.09
WBR	1	1700	197	.12	253	.15
Right Turn Adjustment					SBR	.01*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.77**		**.77**

289 . Jeffrey Rd. at ICD

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	195	.06*	327	.10*
NBT	4	6800	704	.10	1654	.24
NBR	1	1700	270	.16	313	.18
SBL	3	5100	488	.10	328	.06
SBT	4	6800	1848	.36*	1322	.23*
SBR	0	0	574		271	
EBL	2	3400	210	.06	337	.10*
EBT	3	5100	1385	.27*	898	.18
EBR	f		354		236	
WBL	2	3400	270	.08*	263	.08
WBT	4	6800	892	.13	1592	.23*
WBR	1	1700	227	.13	579	.34
Right Turn Adjustment					WBR	.04*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .82 .75

290 . Jeffrey Rd. at Barranca Pkwy.

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	276	.08*	307	.09*
NBT	3	5100	967	.24	1660	.35
NBR	0	0	247		134	
SBL	2	3400	135	.04	108	.03
SBT	3	5100	1955	.46*	1386	.32*
SBR	0	0	398		255	
EBL	2	3400	170	.05	440	.13*
EBT	2	3400	808	.24*	868	.26
EBR	d	1700	274	.16	283	.17
WBL	2	3400	191	.06*	221	.07
WBT	2	3400	735	.22	688	.20*
WBR	1	1700	93	.05	110	.06
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .89 .79

291 . Jeffrey Rd. at Alton Pkwy.

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	473	.14*	612	.18
NBT	3	5100	1069	.21	1544	.30*
NBR	1	1700	240	.14	295	.17
SBL	2	3400	402	.12	522	.15*
SBT	3	5100	1908	.37*	1278	.25
SBR	d	1700	198	.12	209	.12
EBL	2	3400	238	.07	337	.10*
EBT	3	5100	668	.13*	993	.19
EBR	d	1700	604	.36	390	.23
WBL	2	3400	567	.17*	452	.13
WBT	2	3400	679	.20	819	.24*
WBR	d	1700	104	.06	159	.09
Right Turn Adjustment			EBR	.12*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .98 .84

293 . Jeffrey Rd. at I-405 NB Ramps

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1649	.32	2296	.45*
NBR	f		350		110	
SBL	0	0	0		0	
SBT	3	5100	2094	.41*	1552	.30
SBR	f		1340		621	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	976	.29*	1332	.39*
WBT	0	0	0		0	
WBR	1	1700	271	.16	509	.30
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .75 .89

294 . University Dr. at I-405 SB Ramps

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1466	.29	1854	.36
NBR	f		1040		1190	
SBL	0	0	0		0	
SBT	3	5100	2250	.44*	2303	.45*
SBR	f		350		260	
EBL	2	3400	474	.14*	676	.20*
EBT	0	0	0		0	
EBR	1	1700	120	.07	147	.09
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.63**		**.70**

303 . Sand Canyon. Av. at I-5 NB Ramps

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	228	.07*	611	.18
NBT	4	6800	1037	.15	2631	.39*
NBR	d	1700	705	.41	890	.52
SBL	2	3400	377	.11	225	.07*
SBT	4	6800	3115	.46*	1316	.19
SBR	1	1700	356	.21	247	.15
EBL	2	3400	140	.04	370	.11*
EBT	1	1700	258	.15*	136	.08
EBR	1	1700	293	.17	214	.13
WBL	2	3400	382	.11*	563	.17
WBT	1.5	5100	185	{.05}	634	{.20}*
WBR	1.5		303		454	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.84**		**.82**

305 . Sand Canyon. Av. at I-5 SB Ramps

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	4	6800	1273	.19	3490	.51*
NBR	1	1700	90	.05	248	.15
SBL	2	3400	598	.18	473	.14*
SBT	4	6800	3084	.45*	1618	.24
SBR	0	0	0		0	
EBL	2.5		697	.21*	546	.11*
EBT	0	6800	2		0	
EBR	1.5		1006	.30	314	{.00}
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.09*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.80**		**.81**

306 . Sand Canyon. Av. at Oak Cyn./Laguna Cyn. Rd.

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	65	.04	174	.10
NBT	3	5100	789	.15*	1600	.31*
NBR	1	1700	229	.13	162	.10
SBL	2	3400	1595	.47*	601	.18*
SBT	3	5100	1739	.34	1080	.21
SBR	d	1700	162	.10	143	.08
EBL	2	3400	86	.03	184	.05
EBT	1	1700	157	.09*	177	.10*
EBR	d	1700	107	.06	61	.04
WBL	2	3400	94	.03*	229	.07*
WBT	1.5	5100	133	{.04}	73	.04
WBR	1.5		365		1466	.43
Right Turn Adjustment					WBR	.17*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.79**		**.88**

307 . Sand Canyon. Av. at ICD

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	143	.04	294	.09
NBT	3	5100	822	.16*	1221	.24*
NBR	1	1700	186	.11	117	.07
SBL	2	3400	425	.13*	195	.06*
SBT	3	5100	1228	.24	768	.15
SBR	1	1700	315	.19	396	.23
EBL	2	3400	339	.10*	327	.10*
EBT	3	5100	738	.14	609	.12
EBR	1	1700	232	.14	134	.08
WBL	2	3400	70	.02	188	.06
WBT	3	5100	732	.14*	980	.19*
WBR	1	1700	89	.05	342	.20
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.58**		**.64**

309 . Sand Canyon. Av. at Barranca Pkwy.

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	154	.05*	183	.05*
NBT	3	5100	1201	.24	1029	.20
NBR	d	1700	124	.07	196	.12
SBL	2	3400	68	.02	121	.04
SBT	3	5100	1146	.22*	1134	.22*
SBR	d	1700	97	.06	144	.08
EBL	2	3400	121	.04	186	.05*
EBT	2	3400	629	.19*	474	.14
EBR	1	1700	118	.07	149	.09
WBL	2	3400	129	.04*	208	.06
WBT	2	3400	560	.16	614	.18*
WBR	1	1700	72	.04	117	.07
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.55**		**.55**

310 . Sand Canyon. Av. at Alton Pkwy.

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	210	.06	217	.06*
NBT	3	5100	1260	.25*	809	.16
NBR	2	3400	732	.22	176	.05
SBL	2	3400	296	.09*	98	.03
SBT	3	5100	907	.18	1208	.24*
SBR	1	1700	136	.08	242	.14
EBL	2	3400	210	.06*	162	.05
EBT	3	5100	662	.13	806	.16*
EBR	1	1700	318	.19	274	.16
WBL	2	3400	295	.09	728	.21*
WBT	2	3400	693	.20*	811	.24
WBR	1	1700	110	.06	270	.16
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.65**		**.72**

311 . Sand Canyon. Av. at I-405 NB Ramps

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	1730	.51*	886	.26
NBR	f		621		380	
SBL	0	0	0		0	
SBT	2	3400	417	.12	886	.26*
SBR	f		1223		1320	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	54	.03*	184	.11*
WBT	0	0	0		0	
WBR	f		515		334	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.59**		**.42**

312 . Sand Canyon. Av. at I-405 SB Ramps

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	176	.10	100	.06*
NBT	2	3400	954	.28*	752	.22
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	275	.08	677	.20*
SBR	f		186		430	
EBL	1.5		1393	{.53}*	568	
EBT	0	3400	0	.53	0	.32*
EBR	0.5		417		503	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .86 .63

313 . Laguna Canyon Rd. at ICD

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	85	.03	232	.07*
NBT	2	3400	252	.07*	270	.08
NBR	d	1700	44	.03	59	.03
SBL	2	3400	77	.02*	132	.04
SBT	2	3400	192	.06	275	.08*
SBR	d	1700	41	.02	72	.04
EBL	2	3400	108	.03	47	.01*
EBT	3	5100	870	.17*	741	.15
EBR	d	1700	139	.08	79	.05
WBL	2	3400	79	.02*	86	.03
WBT	3	5100	805	.16	1010	.20*
WBR	d	1700	140	.08	74	.04
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .33 .41

314 . Laguna Canyon Rd. at Barranca Pkwy.

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	86	.03	99	.03*
NBT	2	3400	276	.08*	197	.06
NBR	d	1700	57	.03	90	.05
SBL	2	3400	23	.01*	38	.01
SBT	2	3400	181	.05	251	.07*
SBR	d	1700	55	.03	145	.09
EBL	2	3400	130	.04*	79	.02*
EBT	2	3400	615	.18	571	.17
EBR	1	1700	147	.09	83	.05
WBL	2	3400	95	.03	76	.02
WBT	2	3400	746	.22*	767	.23*
WBR	d	1700	57	.03	24	.01
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .40 .40

315 . Laguna Canyon Rd. at Alton Pkwy.

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	157	.09*	257	.15*
NBT	2	3400	289	.09	215	.06
NBR	d	1700	124	.07	169	.10
SBL	1	1700	64	.04	69	.04
SBT	2	3400	225	.07*	322	.09*
SBR	d	1700	32	.02	78	.05
EBL	2	3400	117	.03*	33	.01*
EBT	2	3400	802	.24	765	.23
EBR	1	1700	235	.14	144	.08
WBL	2	3400	110	.03	166	.05
WBT	2	3400	1011	.30*	959	.28*
WBR	1	1700	103	.06	104	.06
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .54 .58

318 . Banting at Barranca Pkwy.

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	18	.01*	27	.01
NBT	1	1700	7	.00	161	.09*
NBR	1	1700	15	.01	142	.08
SBL	2	3400	891	.26	156	.05*
SBT	2	3400	642	.36*	149	.09
SBR	0	0	587		258	.15
EBL	1	1700	41	.02*	234	.14*
EBT	2	3400	625	.18	912	.27
EBR	d	1700	45	.03	37	.02
WBL	1	1700	33	.02	14	.01
WBT	2	3400	704	.21*	645	.19*
WBR	f		93		775	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.65**		**.52**

319 . Banting at Alton Pkwy.

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	4	.00	51	.03
NBT	1	1700	3	.00	92	.05*
NBR	1	1700	14	.01	158	.09
SBL	2	3400	110	.03	139	.04*
SBT	1	1700	130	.08*	14	.01
SBR	1	1700	315	.19	66	.04
EBL	2	3400	10	.00	33	.01
EBT	2	3400	806	.24	1237	.36*
EBR	d	1700	36	.02	9	.01
WBL	1	1700	114	.07	7	.00
WBT	2	3400	1141	.34*	1027	.30
WBR	d	1700	128	.08	46	.03
Right Turn Adjustment			SBR	.11*	NBR	.04*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.58**		**.54**

330 . Barranca Pkwy. at Pacifica

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	247	.15*	31	.02*
NBT	2	3400	962	.28	621	.18
NBR	1	1700	289	.17	499	.29
SBL	1	1700	13	.01	165	.10
SBT	2	3400	515	.15*	1315	.39*
SBR	d	1700	124	.07	25	.01
EBL	2	3400	16	.00	118	.03
EBT	2	3400	18	.01	106	.06*
EBR	0	0	46	.03	409	.24
WBL	2	3400	299	.09	306	.09*
WBT	1	1700	269	.16*	44	.03
WBR	1	1700	442	.26	82	.05
Right Turn Adjustment			WBR	.08*	EBR	.16*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.59**		**.77**

350 . Alton Pkwy. at Pacifica

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	124	.04*	371	.11*
NBT	3	5100	574	.11	920	.18
NBR	d	1700	198	.12	247	.15
SBL	2	3400	149	.04	114	.03
SBT	2	3400	985	.29*	767	.23*
SBR	1	1700	94	.06	171	.10
EBL	2	3400	81	.02	97	.03
EBT	2	3400	253	.07*	239	.07*
EBR	d	1700	179	.11	174	.10
WBL	1	1700	236	.14*	169	.10*
WBT	2	3400	203	.06	338	.10
WBR	d	1700	105	.06	93	.05
Right Turn Adjustment			EBR	.01*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.60**		**.56**

402 . I-5 NB Ramps at Trabuco Rd.

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		333	.10*	401	.12*
NBT	0	5100	0		0	
NBR	1.5		20		62	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	810	.24*	1338	.39*
EBR	f		689		440	
WBL	1	1700	421	.25*	170	.10*
WBT	2	3400	967	.28	899	.26
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.64**		**.66**

444 . Sand Canyon Av. at Burt Rd.

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	15	.01*	9	.01
NBT	4	6800	1207	.18	3189	.47*
NBR	d	1700	78	.05	83	.05
SBL	1	1700	91	.05	104	.06*
SBT	3	5100	3477	.68*	1733	.34
SBR	1	1700	71	.04	11	.01
EBL	1	1700	16	.01	43	.03*
EBT	1	1700	1	.00*	3	.00
EBR	d	1700	13	.01	24	.01
WBL	1	1700	60	.04*	49	.03
WBT	1	1700	4	.00	1	.00*
WBR	1	1700	77	.05	100	.06
Right Turn Adjustment					WBR	.01*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.78**		**.62**

481 . Laguna Canyon Rd. at Technology Dr.

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	1	.00	1	.00
NBT	2	3400	195	.06*	336	.10*
NBR	d	1700	145	.09	143	.08
SBL	2	3400	939	.28*	540	.16*
SBT	2	3400	403	.12	245	.07
SBR	d	1700	7	.00	5	.00
EBL	1	1700	2	.00	8	.00
EBT	1	1700	17	.01*	30	.02*
EBR	0	0	1		2	
WBL	1	1700	106	.06*	145	.09*
WBT	1	1700	12	.01	23	.01
WBR	2	3400	333	.10	751	.22
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.46**		**.42**

ICU Data Set 10

2030 With-Project – Irvine Valley College

1. College Dwy. at Irvine Center Dr.

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	103	.03*	235	.07*
NBT	0	0	0		0	
NBR	1	1700	53	.03	137	.08
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	1628	.32*	1250	.25
EBR	1	1700	542	.32	244	.14
WBL	2	3400	280	.08*	143	.04
WBT	3	5100	1237	.24	2186	.43*
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.48**		**.55**

2. Jeffrey Rd. at College Dwy.

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1174	.23	2243	.44*
NBR	1	1700	113	.07	77	.05
SBL	2	3400	267	.08	121	.04*
SBT	3	5100	2429	.48*	1724	.34
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	31	.02*	110	.06*
WBT	0	0	0		0	
WBR	1	1700	25	.01	58	.03
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.55**		**.59**

3. Jeffrey Rd. at College Dwy. RIRO

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1144	.22	2263	.44*
NBR	1	1700	55	.03	38	.02
SBL	0	0	0		0	
SBT	3	5100	2696	.53*	1845	.36
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	2	3400	26	.01	58	.02
Right Turn Adjustment					WBR	.02*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.58**		**.51**

4. College Dwy. at Barranca Pkwy.

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	62	.04*	29	.02*
NBT	1	1700	0	.02	0	.00
NBR	0	0	33		7	
SBL	1	1700	36	.02	92	.05
SBT	1	1700	0	.01*	0	.04*
SBR	0	0	22		73	
EBL	1	1700	112	.07*	76	.04*
EBT	2	3400	1170	.34	1076	.32
EBR	d	1700	20	.01	45	.03
WBL	1	1700	6	.00	15	.01
WBT	2	3400	980	.29*	1014	.30*
WBR	d	1700	187	.11	95	.06
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.46**		**.45**

222 . Culver Dr. at Trabuco Rd.

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	527	.10*	1940	.38*
NBR	f		1160		1553	
SBL	1	1700	720	.42*	348	.20*
SBT	3	5100	2452	.48	1251	.25
SBR	f		727		180	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	788	.23*	526	.15*
WBT	0	0	0		0	
WBR	2	3400	832	.24	881	.26
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.80** **.78**

223 . Culver Dr. at I-5 SB Ramps

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1184	.23	1880	.37*
NBR	f		240		300	
SBL	0	0	0		0	
SBT	3	5100	2238	.44*	1487	.29
SBR	f		350		260	
EBL	3	5100	616	.12*	1320	.26*
EBT	0	0	0		0	
EBR	2	3400	362	.11	863	.25
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.61** **.68**

224 . Culver Dr. at Walnut Av.

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	169	.05*	341	.10
NBT	3	5100	707	.14	1519	.30*
NBR	1	1700	276	.16	320	.19
SBL	2	3400	289	.09	378	.11*
SBT	3	5100	1917	.38*	1422	.28
SBR	1	1700	528	.31	301	.18
EBL	2	3400	364	.11*	651	.19*
EBT	2	3400	645	.19	562	.17
EBR	1	1700	232	.14	147	.09
WBL	2	3400	431	.13	371	.11
WBT	2	3400	813	.24*	719	.21*
WBR	1	1700	288	.17	250	.15
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION **.83** **.86**

226 . Culver Dr. at ICD

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	294	.09*	335	.10
NBT	4	6800	627	.09	1435	.21*
NBR	f		202		370	
SBL	2	3400	247	.07	337	.10*
SBT	4	6800	1915	.28*	1307	.19
SBR	1	1700	353	.21	244	.14
EBL	2	3400	242	.07	331	.10*
EBT	3	5100	1210	.24*	1235	.24
EBR	f		264		172	
WBL	2	3400	421	.12*	233	.07
WBT	3	5100	1413	.28	1343	.26*
WBR	f		121		216	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.78** **.72**

227 . Culver Dr. at Warner Av.

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	161	.09*	299	.18*
NBT	3	5100	960	.19	1820	.36
NBR	1	1700	64	.04	219	.13
SBL	1	1700	79	.05	99	.06
SBT	3	5100	2334	.46*	1332	.26*
SBR	d	1700	232	.14	271	.16
EBL	2	3400	255	.08*	226	.07
EBT	2	3400	237	.07	283	.08*
EBR	d	1700	258	.15	221	.13
WBL	1	1700	228	.13	137	.08*
WBT	2	3400	457	.13*	240	.07
WBR	d	1700	146	.09	144	.08
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.81**		**.65**

228 . Culver Dr. at Barranca Pkwy.

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	158	.05*	287	.08
NBT	3	5100	670	.13	1680	.33*
NBR	1	1700	354	.21	382	.22
SBL	2	3400	354	.10	279	.08*
SBT	3	5100	2121	.42*	1171	.23
SBR	f		346		219	
EBL	2	3400	448	.13*	355	.10*
EBT	2	3400	942	.28	761	.22
EBR	1	1700	222	.13	505	.30
WBL	2	3400	377	.11	276	.08
WBT	2	3400	916	.27*	774	.23*
WBR	d	1700	133	.08	329	.19
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.92**		**.79**

229 . Culver Dr. at Alton Pkwy.

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	119	.04*	268	.08
NBT	3	5100	908	.18	2034	.40*
NBR	1	1700	278	.16	366	.22
SBL	2	3400	181	.05	215	.06*
SBT	3	5100	2087	.41*	1171	.23
SBR	f		307		228	
EBL	2	3400	132	.04*	293	.09
EBT	2	3400	621	.18	879	.26*
EBR	1	1700	169	.10	282	.17
WBL	2	3400	434	.13	347	.10*
WBT	2	3400	1004	.30*	734	.22
WBR	1	1700	210	.12	252	.15
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.84**		**.87**

232 . Culver Dr. at I-405 NB Ramps

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	870	.17	2137	.42*
NBR	f		671		470	
SBL	0	0	0		0	
SBT	3	5100	1296	.25*	1283	.25
SBR	f		972		710	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	958	.28*	477	.14*
WBT	0	0	0		0	
WBR	1	1700	483	.28	803	.47
Right Turn Adjustment					WBR	.33*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.58**		**.94**

233 . Culver Dr. at I-405 SB Ramps

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1250	.25	1746	.34*
NBR	f		200		620	
SBL	0	0	0		0	
SBT	3	5100	1985	.39*	1351	.26
SBR	f		250		330	
EBL	1.5		280	.16*	914	{.28}*
EBT	0	5100	0		0	{.28}
EBR	1.5		655	.19	609	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.03*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.63** **.67**

259 . Yale Av. at Walnut Av.

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	252	.07*	197	.06
NBT	2	3400	244	.11	408	.15*
NBR	0	0	144		107	
SBL	1	1700	109	.06	121	.07*
SBT	2	3400	401	.12*	268	.08
SBR	1	1700	459	.27	283	.17
EBL	1	1700	217	.13*	483	.28*
EBT	2	3400	604	.18	573	.17
EBR	d	1700	249	.15	188	.11
WBL	1	1700	105	.06	74	.04
WBT	2	3400	751	.22*	600	.18*
WBR	d	1700	53	.03	188	.11
Right Turn Adjustment			SBR	.02*		
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for SBR

TOTAL CAPACITY UTILIZATION **.61** **.73**

261 . Yale Av. at ICD

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	181	.11	146	.09
NBT	2	3400	102	.03*	281	.08*
NBR	d	1700	207	.12	123	.07
SBL	1	1700	332	.20*	192	.11*
SBT	2	3400	266	.08	205	.06
SBR	d	1700	341	.20	122	.07
EBL	2	3400	137	.04	306	.09*
EBT	3	5100	1377	.30*	1187	.28
EBR	0	0	150		254	
WBL	1	1700	168	.10*	232	.14
WBT	3	5100	1163	.23	1695	.33*
WBR	1	1700	154	.09	326	.19
Right Turn Adjustment			NBR	.01*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.69** **.66**

264 . W. Yale Lp. at Barranca Pkwy.

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	151	.09*	184	.11*
NBT	2	3400	155	.05	231	.07
NBR	d	1700	94	.06	136	.08
SBL	1	1700	205	.12	100	.06
SBT	2	3400	308	.09*	107	.03*
SBR	d	1700	238	.14	124	.07
EBL	2	3400	72	.02*	211	.06
EBT	2	3400	1036	.30	1344	.40*
EBR	d	1700	72	.04	87	.05
WBL	1	1700	111	.07	56	.03*
WBT	2	3400	1175	.36*	1122	.37
WBR	0	0	63		138	
Right Turn Adjustment			SBR	.03*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.64** **.62**

267 . E. Yale Lp. at Barranca Pkwy.

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	134	.08	138	.08
NBT	2	3400	135	.04*	263	.08*
NBR	d	1700	191	.11	189	.11
SBL	1	1700	371	.22*	202	.12*
SBT	2	3400	234	.07	219	.06
SBR	d	1700	255	.15	139	.08
EBL	1	1700	105	.06*	185	.11
EBT	2	3400	808	.24	1148	.34*
EBR	d	1700	118	.07	148	.09
WBL	1	1700	178	.10	123	.07*
WBT	2	3400	1161	.34*	874	.26
WBR	d	1700	190	.11	352	.21
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.71** **.66**

268 . W. Yale Loop at Alton Pkwy.

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	158	.09*	131	.08*
NBT	2	3400	178	.05	217	.06
NBR	d	1700	163	.10	262	.15
SBL	1	1700	150	.09	61	.04
SBT	2	3400	302	.09*	105	.03*
SBR	d	1700	138	.08	113	.07
EBL	1	1700	107	.06*	113	.07
EBT	2	3400	883	.26	1200	.35*
EBR	d	1700	148	.09	166	.10
WBL	1	1700	87	.05	211	.12*
WBT	2	3400	1194	.35*	1049	.31
WBR	d	1700	130	.08	131	.08
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.64** **.63**

271 . E. Yale Lp. at Alton Pkwy.

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	229	.13*	103	.06
NBT	2	3400	208	.06	154	.05*
NBR	d	1700	553	.33	257	.15
SBL	2	3400	209	.06	181	.05*
SBT	2	3400	93	.03*	128	.04
SBR	d	1700	139	.08	84	.05
EBL	1	1700	160	.09*	245	.14
EBT	2	3400	800	.28	1202	.40*
EBR	0	0	159		147	
WBL	2	3400	181	.05	475	.14*
WBT	2	3400	1123	.33*	1042	.31
WBR	d	1700	136	.08	140	.08
Right Turn Adjustment			NBR	.12*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.75** **.69**

287 . Jeffrey Rd. at I-5 NB Ramps

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	772	.15	2414	.47*
NBR	f		250		270	
SBL	0	0	0		0	
SBT	3	5100	2622	.51*	1601	.31
SBR	f		730		190	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1.5		468	.14*	589	
WBT	0	5100	0		0	.28*
WBR	1.5		418	{.00}	836	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.70** **.80**

288 . Jeffrey Rd. at Walnut Av./I-5 SB Ramps_(s0

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	176	.05*	301	.09
NBT	3	5100	836	.16	1816	.36*
NBR	1	1700	166	.10	206	.12
SBL	2	3400	628	.18	328	.10*
SBT	3	5100	1914	.44*	1066	.31
SBR	0	0	309		853	.50
EBL	2	3400	113	.03	288	.08
EBT	1.5	5100	440	{.15}*	236	{.07}*
EBR	1.5		376		297	{.06}
WBL	2	3400	318	.09*	637	.19*
WBT	1	1700	97	.06	146	.09
WBR	1	1700	194	.11	246	.14
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .78 .77

289 . Jeffrey Rd. at ICD

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	193	.06*	335	.10*
NBT	4	6800	706	.10	1685	.25
NBR	1	1700	271	.16	301	.18
SBL	3	5100	495	.10	320	.06
SBT	4	6800	1901	.36*	1347	.24*
SBR	0	0	574		281	
EBL	2	3400	213	.06	347	.10*
EBT	3	5100	1404	.28*	873	.17
EBR	f		363		240	
WBL	2	3400	266	.08*	258	.08
WBT	4	6800	853	.13	1589	.23*
WBR	1	1700	221	.13	574	.34
Right Turn Adjustment					WBR	.04*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .83 .76

290 . Jeffrey Rd. at Barranca Pkwy.

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	272	.08*	304	.09*
NBT	3	5100	978	.25	1616	.35
NBR	0	0	314		187	
SBL	2	3400	135	.04	114	.03
SBT	3	5100	1929	.46*	1370	.32*
SBR	0	0	396		238	
EBL	2	3400	155	.05	414	.12
EBT	2	3400	853	.25*	896	.26*
EBR	d	1700	275	.16	277	.16
WBL	2	3400	206	.06*	274	.08*
WBT	2	3400	753	.22	728	.21
WBR	1	1700	105	.06	114	.07
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .90 .80

291 . Jeffrey Rd. at Alton Pkwy.

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	472	.14*	619	.18
NBT	3	5100	1117	.22	1547	.30*
NBR	1	1700	243	.14	296	.17
SBL	2	3400	405	.12	527	.16*
SBT	3	5100	1909	.37*	1291	.25
SBR	d	1700	196	.12	212	.12
EBL	2	3400	247	.07	338	.10*
EBT	3	5100	675	.13*	999	.20
EBR	d	1700	608	.36	392	.23
WBL	2	3400	569	.17*	451	.13
WBT	2	3400	674	.20	822	.24*
WBR	d	1700	108	.06	157	.09
Right Turn Adjustment			EBR	.12*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .98 .85

293 . Jeffrey Rd. at I-405 NB Ramps

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1683	.33	2288	.45*
NBR	f		350		110	
SBL	0	0	0		0	
SBT	3	5100	2088	.41*	1552	.30
SBR	f		1340		630	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	952	.28*	1328	.39*
WBT	0	0	0		0	
WBR	1	1700	297	.17	522	.31
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.74**		**.89**

294 . University Dr. at I-405 SB Ramps

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1481	.29	1852	.36
NBR	f		1030		1200	
SBL	0	0	0		0	
SBT	3	5100	2226	.44*	2305	.45*
SBR	f		350		260	
EBL	2	3400	479	.14*	678	.20*
EBT	0	0	0		0	
EBR	1	1700	124	.07	145	.09
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.63**		**.70**

303 . Sand Canyon. Av. at I-5 NB Ramps

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	228	.07*	618	.18
NBT	4	6800	1037	.15	2642	.39*
NBR	d	1700	706	.42	892	.52
SBL	2	3400	381	.11	224	.07*
SBT	4	6800	3128	.46*	1316	.19
SBR	1	1700	359	.21	248	.15
EBL	2	3400	142	.04	369	.11*
EBT	1	1700	263	.15*	136	.08
EBR	1	1700	296	.17	214	.13
WBL	2	3400	376	.11*	562	.17
WBT	1.5	5100	183	{.05}	636	{.20}*
WBR	1.5		301		452	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.84**		**.82**

305 . Sand Canyon. Av. at I-5 SB Ramps

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	4	6800	1274	.19	3503	.52*
NBR	1	1700	90	.05	252	.15
SBL	2	3400	597	.18	478	.14*
SBT	4	6800	3101	.46*	1616	.24
SBR	0	0	0		0	
EBL	2.5		696	.20*	547	.11*
EBT	0	6800	2		0	
EBR	1.5		1019	.30	314	{.00}
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.10*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.81**		**.82**

306 . Sand Canyon. Av. at Oak Cyn./Laguna Cyn. R

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	67	.04	175	.10
NBT	3	5100	786	.15*	1605	.31*
NBR	1	1700	230	.14	163	.10
SBL	2	3400	1589	.47*	600	.18*
SBT	3	5100	1761	.35	1079	.21
SBR	d	1700	165	.10	142	.08
EBL	2	3400	88	.03	183	.05
EBT	1	1700	161	.09*	177	.10*
EBR	d	1700	112	.07	61	.04
WBL	2	3400	97	.03*	230	.07*
WBT	1.5	5100	138	{.04}	73	.04
WBR	1.5		367		1472	.43
Right Turn Adjustment					WBR	.17*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .79 .88

307 . Sand Canyon. Av. at ICD

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	149	.04	300	.09
NBT	3	5100	818	.16*	1223	.24*
NBR	1	1700	185	.11	121	.07
SBL	2	3400	429	.13*	196	.06*
SBT	3	5100	1239	.24	765	.15
SBR	1	1700	331	.19	390	.23
EBL	2	3400	343	.10*	337	.10*
EBT	3	5100	743	.15	653	.13
EBR	1	1700	234	.14	142	.08
WBL	2	3400	72	.02	192	.06
WBT	3	5100	795	.16*	990	.19*
WBR	1	1700	92	.05	340	.20
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .60 .64

309 . Sand Canyon. Av. at Barranca Pkwy.

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	165	.05*	185	.05*
NBT	3	5100	1201	.24	1034	.20
NBR	d	1700	122	.07	194	.11
SBL	2	3400	64	.02	122	.04
SBT	3	5100	1149	.23*	1144	.22*
SBR	d	1700	99	.06	148	.09
EBL	2	3400	124	.04	189	.06*
EBT	2	3400	635	.19*	473	.14
EBR	1	1700	127	.07	150	.09
WBL	2	3400	127	.04*	207	.06
WBT	2	3400	566	.17	618	.18*
WBR	1	1700	68	.04	118	.07
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .56 .56

310 . Sand Canyon. Av. at Alton Pkwy.

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	211	.06	215	.06*
NBT	3	5100	1267	.25*	814	.16
NBR	2	3400	732	.22	175	.05
SBL	2	3400	295	.09*	97	.03
SBT	3	5100	911	.18	1214	.24*
SBR	1	1700	137	.08	239	.14
EBL	2	3400	212	.06*	165	.05
EBT	3	5100	663	.13	808	.16*
EBR	1	1700	320	.19	281	.17
WBL	2	3400	299	.09	735	.22*
WBT	2	3400	702	.21*	805	.24
WBR	1	1700	112	.07	271	.16
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .66 .73

311 . Sand Canyon. Av. at I-405 NB Ramps

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	1729	.51*	892	.26
NBR	f		620		380	
SBL	0	0	0		0	
SBT	2	3400	423	.12	890	.26*
SBR	f		1230		1330	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	57	.03*	190	.11*
WBT	0	0	0		0	
WBR	f		511		328	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.59** **.42**

312 . Sand Canyon. Av. at I-405 SB Ramps

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	174	.10	104	.06*
NBT	2	3400	946	.28*	751	.22
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	274	.08	675	.20*
SBR	f		186		446	
EBL	1.5		1394	{.53}*	569	{.32}*
EBT	0	3400	0	.53	0	.32
EBR	0.5		416		505	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.86** **.63**

313 . Laguna Canyon Rd. at ICD

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	89	.03	232	.07*
NBT	2	3400	251	.07*	268	.08
NBR	d	1700	44	.03	61	.04
SBL	2	3400	78	.02*	138	.04
SBT	2	3400	191	.06	268	.08*
SBR	d	1700	42	.02	74	.04
EBL	2	3400	107	.03*	48	.01*
EBT	3	5100	878	.17	782	.15
EBR	d	1700	139	.08	78	.05
WBL	2	3400	80	.02	83	.02
WBT	3	5100	859	.17*	1014	.20*
WBR	d	1700	142	.08	74	.04
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.34** **.41**

314 . Laguna Canyon Rd. at Barranca Pkwy.

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	89	.03	101	.03*
NBT	2	3400	273	.08*	197	.06
NBR	d	1700	57	.03	88	.05
SBL	2	3400	22	.01*	36	.01
SBT	2	3400	180	.05	247	.07*
SBR	d	1700	58	.03	141	.08
EBL	2	3400	132	.04*	80	.02*
EBT	2	3400	620	.18	566	.17
EBR	1	1700	150	.09	87	.05
WBL	2	3400	90	.03	77	.02
WBT	2	3400	743	.22*	767	.23*
WBR	d	1700	55	.03	23	.01
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.40** **.40**

315 . Laguna Canyon Rd. at Alton Pkwy.

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	156	.09*	258	.15*
NBT	2	3400	297	.09	214	.06
NBR	d	1700	126	.07	169	.10
SBL	1	1700	64	.04	69	.04
SBT	2	3400	225	.07*	322	.09*
SBR	d	1700	32	.02	78	.05
EBL	2	3400	118	.03*	33	.01*
EBT	2	3400	802	.24	765	.23
EBR	1	1700	235	.14	144	.08
WBL	2	3400	112	.03	166	.05
WBT	2	3400	1015	.30*	968	.28*
WBR	1	1700	106	.06	104	.06
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .54 .58

318 . Banting at Barranca Pkwy.

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	18	.01*	28	.01
NBT	1	1700	7	.00	167	.10*
NBR	1	1700	15	.01	146	.09
SBL	2	3400	883	.26	160	.05*
SBT	2	3400	650	.36*	150	.09
SBR	0	0	587		262	.15
EBL	1	1700	41	.02*	233	.14*
EBT	2	3400	632	.19	904	.27
EBR	d	1700	46	.03	36	.02
WBL	1	1700	34	.02	14	.01
WBT	2	3400	704	.21*	640	.19*
WBR	f		92		780	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .65 .53

319 . Banting at Alton Pkwy.

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	4	.00	50	.03
NBT	1	1700	3	.00	96	.06*
NBR	1	1700	14	.01	155	.09
SBL	2	3400	115	.03	140	.04*
SBT	1	1700	130	.08*	14	.01
SBR	1	1700	312	.18	66	.04
EBL	2	3400	10	.00	35	.01
EBT	2	3400	811	.24	1226	.36*
EBR	d	1700	35	.02	9	.01
WBL	1	1700	115	.07	7	.00
WBT	2	3400	1144	.34*	1024	.30
WBR	d	1700	137	.08	49	.03
Right Turn Adjustment			SBR	.10*	NBR	.03*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .57 .54

330 . Barranca Pkwy. at Pacifica

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	248	.15*	31	.02*
NBT	2	3400	960	.28	620	.18
NBR	1	1700	289	.17	500	.29
SBL	1	1700	13	.01	164	.10
SBT	2	3400	508	.15*	1316	.39*
SBR	d	1700	120	.07	25	.01
EBL	2	3400	16	.00	117	.03
EBT	2	3400	18	.01	105	.06*
EBR	0	0	46	.03	410	.24
WBL	2	3400	305	.09	314	.09*
WBT	1	1700	272	.16*	44	.03
WBR	1	1700	443	.26	83	.05
Right Turn Adjustment			WBR	.08*	EBR	.16*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .59 .77

350 . Alton Pkwy. at Pacifica

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	125	.04*	375	.11*
NBT	3	5100	572	.11	905	.18
NBR	d	1700	202	.12	247	.15
SBL	2	3400	145	.04	112	.03
SBT	2	3400	984	.29*	767	.23*
SBR	1	1700	91	.05	174	.10
EBL	2	3400	76	.02	100	.03
EBT	2	3400	245	.07*	241	.07*
EBR	d	1700	180	.11	179	.11
WBL	1	1700	241	.14*	164	.10*
WBT	2	3400	205	.06	341	.10
WBR	d	1700	104	.06	95	.06
Right Turn Adjustment			EBR	.01*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.60** **.56**

402 . I-5 NB Ramps at Trabuco Rd.

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		339	.10*	404	.12*
NBT	0	5100	0		0	
NBR	1.5		17		60	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	823	.24*	1350	.40*
EBR	f		704		445	
WBL	1	1700	366	.22*	165	.10*
WBT	2	3400	1031	.30	906	.27
WBR	0	0	0		0	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.61** **.67**

444 . Sand Canyon Av. at Burt Rd.

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	15	.01*	8	.00
NBT	4	6800	1206	.18	3214	.47*
NBR	d	1700	76	.04	82	.05
SBL	1	1700	92	.05	106	.06*
SBT	3	5100	3508	.69*	1729	.34
SBR	1	1700	71	.04	11	.01
EBL	1	1700	16	.01	43	.03*
EBT	1	1700	1	.00*	3	.00
EBR	d	1700	13	.01	24	.01
WBL	1	1700	60	.04*	47	.03
WBT	1	1700	4	.00	1	.00*
WBR	1	1700	78	.05	102	.06
Right Turn Adjustment					WBR	.01*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.79** **.62**

481 . Laguna Canyon Rd. at Technology Dr.

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	1	.00	1	.00
NBT	2	3400	188	.06*	339	.10*
NBR	d	1700	142	.08	139	.08
SBL	2	3400	942	.28*	537	.16*
SBT	2	3400	400	.12	249	.07
SBR	d	1700	7	.00	5	.00
EBL	1	1700	2	.00	8	.00
EBT	1	1700	17	.01*	30	.02*
EBR	0	0	1		2	
WBL	1	1700	109	.06*	142	.08*
WBT	1	1700	12	.01	23	.01
WBR	2	3400	340	.10	753	.22
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.46** **.41**

Appendix B

HCM Intersection Analysis Worksheets

Appendix B HCM Intersection Analysis Worksheets

This appendix summarizes the Highway Capacity Manual (HCM) intersection analysis worksheets applied in the traffic study for the proposed Master Plan update for the Saddleback College campus and Irvine Valley College Campus. Intersection analysis based on the HCM methodology was conducted for the intersections along Avery Parkway in the Saddleback College Campus study area in addition to the intersection capacity utilization (ICU) methodology. Included in this appendix are AM and PM peak hour HCM analysis worksheets for the year 2030 future traffic analysis scenario analyzed in the study where the project has significant impact.



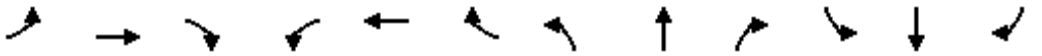
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	390	580	210	170	1170	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.88	1.00	1.00	0.97	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	2787	1863	1583	3433	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	2787	1863	1583	3433	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	411	611	221	179	1232	284
RTOR Reduction (vph)	0	151	0	0	0	0
Lane Group Flow (vph)	411	460	221	179	1232	284
Turn Type	NA	pt+ov	NA	Perm	Prot	NA
Protected Phases	8	8 1	2		1	6
Permitted Phases				2		
Actuated Green, G (s)	15.3	62.3	19.7	19.7	43.0	66.7
Effective Green, g (s)	15.3	62.3	19.7	19.7	43.0	66.7
Actuated g/C Ratio	0.17	0.69	0.22	0.22	0.48	0.74
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	584	1929	408	347	1640	1381
v/s Ratio Prot	c0.12	0.17	c0.12		c0.36	0.15
v/s Ratio Perm				0.11		
v/c Ratio	0.70	0.24	0.54	0.52	0.75	0.21
Uniform Delay, d1	35.2	5.1	31.1	31.0	19.1	3.6
Progression Factor	0.88	0.98	1.00	1.00	0.47	0.59
Incremental Delay, d2	3.7	0.1	5.1	5.4	1.9	0.3
Delay (s)	34.7	5.1	36.2	36.3	10.8	2.4
Level of Service	C	A	D	D	B	A
Approach Delay (s)	17.0		36.3			9.3
Approach LOS	B		D			A

Intersection Summary			
HCM Average Control Delay	15.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	340	940	190	370	950	170
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
Lane Util. Factor	0.97	0.88	1.00	1.00	0.97	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	2787	1863	1583	3433	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	2787	1863	1583	3433	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	358	989	200	389	1000	179
RTOR Reduction (vph)	0	436	0	0	0	0
Lane Group Flow (vph)	358	553	200	389	1000	179
Turn Type	NA	pt+ov	NA	Perm	Prot	NA
Protected Phases	8	8 1	2		1	6
Permitted Phases				2		
Actuated Green, G (s)	15.5	54.5	37.5	37.5	35.0	76.5
Effective Green, g (s)	15.5	54.5	37.5	37.5	35.0	76.5
Actuated g/C Ratio	0.16	0.54	0.38	0.38	0.35	0.76
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	532	1519	699	594	1202	1425
v/s Ratio Prot	c0.10	0.20	0.11		c0.29	0.10
v/s Ratio Perm				c0.25		
v/c Ratio	0.67	0.36	0.29	0.65	0.83	0.13
Uniform Delay, d1	39.9	12.9	21.9	25.9	29.8	3.1
Progression Factor	0.68	0.40	1.00	1.00	0.43	0.62
Incremental Delay, d2	3.1	0.1	1.0	5.6	4.7	0.2
Delay (s)	30.1	5.3	22.9	31.4	17.6	2.1
Level of Service	C	A	C	C	B	A
Approach Delay (s)	11.9		28.5			15.2
Approach LOS	B		C			B

Intersection Summary			
HCM Average Control Delay	16.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	940	380	210	710	0	0	0	0	760	0	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.86		0.97	0.91					0.95	0.95	0.88
Frt		0.96		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		6131		3433	5085					1681	1681	2787
Flt Permitted		1.00		0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		6131		3433	5085					1681	1681	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	989	400	221	747	0	0	0	0	800	0	295
RTOR Reduction (vph)	0	81	0	0	0	0	0	0	0	0	0	78
Lane Group Flow (vph)	0	1308	0	221	747	0	0	0	0	584	216	217
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		4		3	8						6	
Permitted Phases										6		6
Actuated Green, G (s)		22.9		8.8	35.7					46.3	46.3	46.3
Effective Green, g (s)		22.9		8.8	35.7					46.3	46.3	46.3
Actuated g/C Ratio		0.25		0.10	0.40					0.51	0.51	0.51
Clearance Time (s)		4.0		4.0	4.0					4.0	4.0	4.0
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1560		336	2017					865	865	1434
v/s Ratio Prot		c0.21		c0.06	0.15							
v/s Ratio Perm										c0.35	0.13	0.08
v/c Ratio		0.84		0.66	0.37					0.68	0.25	0.15
Uniform Delay, d1		31.8		39.1	19.2					16.3	12.2	11.5
Progression Factor		0.46		1.59	0.25					1.00	1.00	1.00
Incremental Delay, d2		2.8		3.9	0.1					4.2	0.7	0.2
Delay (s)		17.4		66.2	4.8					20.5	12.9	11.7
Level of Service		B		E	A					C	B	B
Approach Delay (s)		17.4			18.8			0.0			16.6	
Approach LOS		B			B			A			B	

Intersection Summary					
HCM Average Control Delay	17.6	HCM Level of Service		B	
HCM Volume to Capacity ratio	0.72				
Actuated Cycle Length (s)	90.0	Sum of lost time (s)		12.0	
Analysis Period (min)	15				
c Critical Lane Group					

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1000	330	390	1020	0	0	0	0	570	0	480
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.86		0.97	0.91					0.95	0.95	0.88
Frt		0.96		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		6170		3433	5085					1681	1681	2787
Flt Permitted		1.00		0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		6170		3433	5085					1681	1681	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1053	347	411	1074	0	0	0	0	600	0	505
RTOR Reduction (vph)	0	60	0	0	0	0	0	0	0	0	0	65
Lane Group Flow (vph)	0	1340	0	411	1074	0	0	0	0	438	162	440
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		4		3	8						6	
Permitted Phases										6		6
Actuated Green, G (s)		28.1		16.2	48.3					43.7	43.7	43.7
Effective Green, g (s)		28.1		16.2	48.3					43.7	43.7	43.7
Actuated g/C Ratio		0.28		0.16	0.48					0.44	0.44	0.44
Clearance Time (s)		4.0		4.0	4.0					4.0	4.0	4.0
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1734		556	2456					735	735	1218
v/s Ratio Prot		c0.22		c0.12	0.21							
v/s Ratio Perm										c0.26	0.10	0.16
v/c Ratio		0.77		0.74	0.44					0.60	0.22	0.36
Uniform Delay, d1		33.0		39.9	16.9					21.4	17.5	18.8
Progression Factor		0.39		0.67	0.10					1.00	1.00	1.00
Incremental Delay, d2		1.3		4.2	0.1					3.5	0.7	0.8
Delay (s)		14.3		31.0	1.7					25.0	18.2	19.7
Level of Service		B		C	A					C	B	B
Approach Delay (s)		14.3			9.8			0.0			21.6	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	300	1410	0	0	650	450	290	0	510	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0	4.0			
Lane Util. Factor	0.97	0.95			0.86	0.86		1.00	0.88			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	3433	3775			4806	1362		1770	2787			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	3433	3775			4806	1362		1770	2787			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	316	1484	0	0	684	474	305	0	537	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	363	0	0	33	0	0	0
Lane Group Flow (vph)	316	1484	0	0	684	111	0	305	504	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Actuated Green, G (s)	20.5	45.6			21.1	21.1		36.4	36.4			
Effective Green, g (s)	20.5	45.6			21.1	21.1		36.4	36.4			
Actuated g/C Ratio	0.23	0.51			0.23	0.23		0.40	0.40			
Clearance Time (s)	4.0	4.0			4.0	4.0		4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	782	1913			1127	319		716	1127			
v/s Ratio Prot	0.09	c0.39			0.14							
v/s Ratio Perm						0.08		0.17	c0.18			
v/c Ratio	0.40	0.78			0.61	0.35		0.43	0.45			
Uniform Delay, d1	29.6	18.0			30.7	28.7		19.3	19.5			
Progression Factor	0.21	0.83			1.00	1.00		1.00	1.00			
Incremental Delay, d2	0.2	1.5			0.9	0.7		1.9	1.3			
Delay (s)	6.3	16.5			31.7	29.4		21.1	20.8			
Level of Service	A	B			C	C		C	C			
Approach Delay (s)		14.7			30.7			20.9			0.0	
Approach LOS		B			C			C			A	

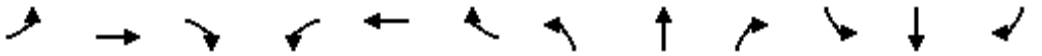
Intersection Summary			
HCM Average Control Delay	21.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	370	1300	0	0	1060	710	340	0	580	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0	4.0			
Lane Util. Factor	0.97	0.95			0.86	0.86		1.00	0.88			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	3433	3775			4806	1362		1770	2787			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	3433	3775			4806	1362		1770	2787			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	389	1368	0	0	1116	747	358	0	611	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	468	0	0	63	0	0	0
Lane Group Flow (vph)	389	1368	0	0	1116	279	0	358	548	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Actuated Green, G (s)	15.5	55.0			35.5	35.5		37.0	37.0			
Effective Green, g (s)	15.5	55.0			35.5	35.5		37.0	37.0			
Actuated g/C Ratio	0.16	0.55			0.36	0.36		0.37	0.37			
Clearance Time (s)	4.0	4.0			4.0	4.0		4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	532	2076			1706	484		655	1031			
v/s Ratio Prot	0.11	c0.36			0.23							
v/s Ratio Perm						0.20		0.20	0.20			
v/c Ratio	0.73	0.66			0.65	0.58		0.55	0.53			
Uniform Delay, d1	40.3	15.9			27.1	26.1		24.9	24.7			
Progression Factor	0.56	0.68			0.58	1.08		1.00	1.00			
Incremental Delay, d2	4.0	0.6			0.1	0.2		3.3	2.0			
Delay (s)	26.7	11.5			15.7	28.4		28.1	26.7			
Level of Service	C	B			B	C		C	C			
Approach Delay (s)		14.8			20.8			27.2			0.0	
Approach LOS		B			C			C			A	

Intersection Summary			
HCM Average Control Delay	19.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	820	770	480	60	360	140	500	860	220	210	730	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	863	811	505	63	379	147	526	905	232	221	768	253
RTOR Reduction (vph)	0	0	25	0	0	131	0	0	112	0	0	144
Lane Group Flow (vph)	863	811	480	63	379	16	526	905	120	221	768	109
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	29.8	37.0	67.0	4.8	12.0	12.0	30.0	36.0	36.0	16.2	22.2	22.2
Effective Green, g (s)	29.8	37.0	67.0	4.8	12.0	12.0	30.0	36.0	36.0	16.2	22.2	22.2
Actuated g/C Ratio	0.27	0.34	0.61	0.04	0.11	0.11	0.27	0.33	0.33	0.15	0.20	0.20
Clearance 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
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
Lane Grp Cap (vph)	930	1190	964	77	386	173	483	1158	518	261	714	319
v/s Ratio Prot	c0.25	0.23	0.14	0.04	c0.11		c0.30	0.26		0.12	c0.22	
v/s Ratio Perm			0.17			0.01			0.08			0.07
v/c Ratio	0.93	0.68	0.50	0.82	0.98	0.09	1.09	0.78	0.23	0.85	1.08	0.34
Uniform Delay, d1	39.1	31.4	12.1	52.2	48.9	44.1	40.0	33.4	26.9	45.7	43.9	37.6
Progression Factor	1.00	1.00	1.00	0.78	0.74	0.88	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.9	1.6	0.4	46.3	40.6	0.2	67.2	5.3	1.0	21.6	55.9	2.9
Delay (s)	53.9	33.1	12.5	87.0	76.9	39.1	107.2	38.7	28.0	67.3	99.8	40.5
Level of Service	D	C	B	F	E	D	F	D	C	E	F	D
Approach Delay (s)		36.6			68.5			58.9			81.9	
Approach LOS		D			E			E			F	

Intersection Summary			
HCM Average Control Delay	56.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1010	310	400	110	430	70	480	450	90	130	860	800
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	8	12	12	12	12	12	12
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
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3539	1372	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3539	1372	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1063	326	400	116	453	74	505	474	95	137	905	842
RTOR Reduction (vph)	0	0	276	0	0	62	0	0	66	0	0	368
Lane Group Flow (vph)	1063	326	124	116	453	12	505	474	29	137	905	474
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	22.4	28.5	28.5	9.5	15.6	15.6	20.0	31.0	31.0	15.0	26.0	26.0
Effective Green, g (s)	22.4	28.5	28.5	9.5	15.6	15.6	20.0	31.0	31.0	15.0	26.0	26.0
Actuated g/C Ratio	0.22	0.28	0.28	0.10	0.16	0.16	0.20	0.31	0.31	0.15	0.26	0.26
Clearance 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
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
Lane Grp Cap (vph)	769	1009	451	168	552	214	354	1097	491	266	920	412
v/s Ratio Prot	c0.31	0.09		0.07	c0.13		c0.29	0.13		0.08	0.26	
v/s Ratio Perm			0.08			0.01			0.02			c0.30
v/c Ratio	1.38	0.32	0.27	0.69	0.82	0.05	1.43	0.43	0.06	0.52	0.98	1.15
Uniform Delay, d1	38.8	28.2	27.7	43.8	40.8	35.9	40.0	27.5	24.3	39.1	36.8	37.0
Progression Factor	0.88	0.85	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	178.7	0.2	0.3	11.6	9.5	0.1	207.7	1.2	0.2	1.7	26.0	92.4
Delay (s)	212.9	24.0	27.1	55.4	50.4	36.0	247.7	28.7	24.5	40.8	62.8	129.4
Level of Service	F	C	C	E	D	D	F	C	C	D	E	F
Approach Delay (s)		136.9			49.6			131.3			91.0	
Approach LOS		F			D			F			F	

Intersection Summary			
HCM Average Control Delay	109.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	630	230	100	10	210	30	80	40	0	40	20	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	0.95	0.95
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.88	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863		1770	1565	1504
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.60	1.00		0.73	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1115	1863		1359	1565	1504
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	663	242	105	11	221	32	84	42	0	42	21	158
RTOR Reduction (vph)	0	0	23	0	0	22	0	0	0	0	63	38
Lane Group Flow (vph)	663	242	82	11	221	10	84	42	0	42	28	50
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	1	6		5	2			4			8	1
Permitted Phases			6			2	4			8		8
Actuated Green, G (s)	50.8	86.0	86.0	0.8	36.0	36.0	11.2	11.2		11.2	11.2	62.0
Effective Green, g (s)	50.8	86.0	86.0	0.8	36.0	36.0	11.2	11.2		11.2	11.2	62.0
Actuated g/C Ratio	0.46	0.78	0.78	0.01	0.33	0.33	0.10	0.10		0.10	0.10	0.56
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
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
Lane Grp Cap (vph)	817	2767	1238	13	1158	518	114	190		138	159	902
v/s Ratio Prot	c0.37	0.07		0.01	c0.06			0.02			0.02	0.03
v/s Ratio Perm			0.05			0.01	c0.08			0.03		0.01
v/c Ratio	0.81	0.09	0.07	0.85	0.19	0.02	0.74	0.22		0.30	0.18	0.05
Uniform Delay, d1	25.5	2.8	2.8	54.5	26.5	25.1	48.0	45.4		45.8	45.2	10.8
Progression Factor	0.91	0.44	0.08	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.8	0.0	0.1	166.4	0.4	0.1	21.7	0.6		1.3	0.5	0.0
Delay (s)	27.9	1.3	0.3	221.0	26.9	25.1	69.7	46.0		47.0	45.7	10.8
Level of Service	C	A	A	F	C	C	E	D		D	D	B
Approach Delay (s)		18.6			34.8			61.8			32.1	
Approach LOS		B			C			E			C	

Intersection Summary			
HCM Average Control Delay	26.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	330	170	60	0	130	10	40	0	10	10	10	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		0.95	1.00	1.00	1.00		1.00	0.95	0.95
Frt	1.00	1.00	0.85		1.00	0.85	1.00	0.85		1.00	0.86	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583		3539	1583	1770	1583		1770	1520	1504
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.47	1.00		0.75	1.00	1.00
Satd. Flow (perm)	1770	3539	1583		3539	1583	877	1583		1398	1520	1504
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	347	179	63	0	137	11	42	0	11	11	11	358
RTOR Reduction (vph)	0	0	15	0	0	6	0	10	0	0	153	112
Lane Group Flow (vph)	347	179	48	0	137	5	42	1	0	11	33	71
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	1	6		5	2			4			8	1
Permitted Phases			6			2	4			8		8
Actuated Green, G (s)	18.3	52.1	52.1		29.8	29.8	8.5	8.5		8.5	8.5	26.8
Effective Green, g (s)	18.3	52.1	52.1		29.8	29.8	8.5	8.5		8.5	8.5	26.8
Actuated g/C Ratio	0.27	0.76	0.76		0.43	0.43	0.12	0.12		0.12	0.12	0.39
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	472	2688	1202		1537	688	109	196		173	188	675
v/s Ratio Prot	c0.20	0.05			c0.04			0.00			0.02	0.03
v/s Ratio Perm			0.03			0.00	c0.05			0.01		0.02
v/c Ratio	0.74	0.07	0.04		0.09	0.01	0.39	0.01		0.06	0.17	0.11
Uniform Delay, d1	22.9	2.1	2.0		11.4	11.0	27.6	26.3		26.5	26.9	13.3
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.9	0.0	0.1		0.1	0.0	2.3	0.0		0.2	0.4	0.1
Delay (s)	28.8	2.1	2.1		11.5	11.0	29.9	26.4		26.7	27.3	13.4
Level of Service	C	A	A		B	B	C	C		C	C	B
Approach Delay (s)		17.8			11.5			29.2			20.6	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	68.6	Sum of lost time (s)	12.0
Analysis Period (min)	15		
c Critical Lane Group			

Appendix C

Air Quality Impact Analysis

41 Corporate Park, Suite 300
Irvine, CA 92606

Prepared by:

Haseeb Qureshi, MES

Prepared for:

Mr. Jeremy Krout
RGP PLANNING & DEVELOPMENT SERVICES
8921 Research Drive
Irvine, CA 92618

SOUTH ORANGE COUNTY COMMUNITY COLLEGE DISTRICT
SADDLEBACK COLLEGE AND IRVINE VALLEY COLLEGE
2011 FACILITIES MASTER PLANS
AIR QUALITY IMPACT ANALYSIS
COUNTY OF ORANGE, CALIFORNIA

November 10, 2011

JN:07318-02 AQ REPORT
HQ

TABLE OF CONTENTS

Section Page

1.0 Executive Summary 6
1.1 Project Overview 6
1.2 Summary of Findings 9
1.3 Standard Regulatory Requirements / Best Available Control Measures (BACMs) 11
1.4 Construction Activity Mitigation Measures 12
1.5 Project Design Features 12
2.0 Existing Conditions 16
2.1 South Coast Air Basin 16
2.2 Regional Climate 16
2.3 Wind Patterns and Project Location 18
2.4 Existing Air Quality 19
2.5 Regional Air Quality 22
2.6 Local Air Quality 22
2.7 Regulatory Background 30
2.7.1 Federal Regulations
2.7.2 California Regulations
2.7.3 Air Quality Management Planning
3.7.3 Air Quality Management Planning
3.0 Project Air Quality Impact 33
3.1 Introduction 33
3.2 Standards of Significance 33
3.3 Project-Related Sources of Potential Impact 34
3.4 Construction Emissions 34
3.4.1 Construction Emissions Summary
3.5 Operational Emissions 37
3.5.1 Construction Emissions Summary
4.5.2 Combustion Emissions Associated with Natural Gas and Electricity
3.5.2 Combustion Emissions Associated with Natural Gas and Electricity
3.5.3 Fugitive Dust Related to Vehicular Travel
3.5.4 Landscape Maintenance Equipment
3.5.5 Architectural Coatings
3.5.6 Operational Emissions Summary
3.6 Localized Significance – Construction Activity 41

3.7 CO Hot Spot Analysis 44
3.8 Air Quality Management Planning 45
3.9 Potential Impacts to Sensitive Receptors 47
3.10 Odors 48
4.0 Regulatory Requirements and Mitigation Measures 51
4.1 Standard Regulatory Requirements / Best Available Control Measures (BACMs) 51
4.2 Construction Activity Mitigation Measures 52
4.3 Project Design Features 52
4.4 Mitigation Reduction Summary 55
5.0 References 57

LIST OF APPENDICES

Appendix — Page

CalEEMod™ Input/Output Construction and Operational Emissions..... A

Rule 403 Regulatory Requirements and Mitigation Measure Examples ..... B

LIST OF EXHIBITS

Exhibit Page

1-1 Regional Location 7
1-2 USGS Map – Saddleback College 8
1-2 USGS Map – IVC and ATEP Campuses.....10
2-1 Wind Rose.....20

LIST OF TABLES

Table		Page
2-1	State and Federal Ambient Air Quality Standards	21
2-2	Attainment Status of Criteria Pollutants in the South Coast Air Basin (SCAB)	23
2-3	Project Area Air Quality Monitoring Summary 2007-2009	24
3-1	Maximum Daily Emissions Thresholds	34
3-2	Construction Equipment Assumptions	36
3-3	Emissions Summary of Construction Activities (Pounds Per Day) (Without Mitigation)	36
3-4	Irvine Valley College Operational Emissions Summary (Pounds Per Day) Without Mitigation	39
3-5	Saddleback College Operational Emissions Summary (Pounds Per Day) Without Mitigation	40
3-5	Screening Localized Significance Summary Construction (Without Mitigation)	43
4-1	Emissions Summary of Construction Activities (Pounds Per Day) (With Mitigation)	56
4-2	Screening Localized Significance Summary Construction (With Mitigation)	56

SOUTH ORANGE COUNTY COMMUNITY COLLEGE DISTRICT
SADDLEBACK COLLEGE & IRVINE VALLEY COLLEGE
2011 FACILITIES MASTER PLANS
AIR QUALITY IMPACT ANALYSIS
COUNTY OF ORANGE, CALIFORNIA

1.0 INTRODUCTION

This report presents the results of the air quality impact analysis (AQIA) for the proposed South Orange County Community College District (SOCCCD) 2011 Facilities Master Plans (FMPs) for the Saddleback College campus, the Irvine Valley College (IVC) campus, and the Advanced Technology & Education Park (ATEP) campus (collectively referred to as the "Project"). The 2011 FMPs for Saddleback College and Irvine Valley College/ATEP describe the needed buildings, infrastructure, vehicular and pedestrian circulation improvements, and proposed sequencing schedules required for construction and operation of instructional and support facilities through the year 2031. The SOCCCD college campus locations are each shown on Exhibit 1-1 (Regional Location).

The purpose of this AQIA is to evaluate project-related construction and operational emissions to determine air quality impacts as a result of the proposed project site.

1.1 PROJECT OVERVIEW

Saddleback College

The 200-acre Saddleback College campus is located at 28000 Marguerite Parkway, at the northeast corner of Marguerite and Avery Parkways, in the City of Mission Viejo. The campus is in Section 24 of Township 7 South, Range 8 West, San Bernardino Baseline and Meridian (SBBM), as depicted on the United States Geological Survey (USGS) San Juan Capistrano, California (1981) 7.5-minute topographic quadrangle (Exhibit 1-2). Latitude and longitude coordinates are 33°33'08" North and 117°39'39" West, respectively.

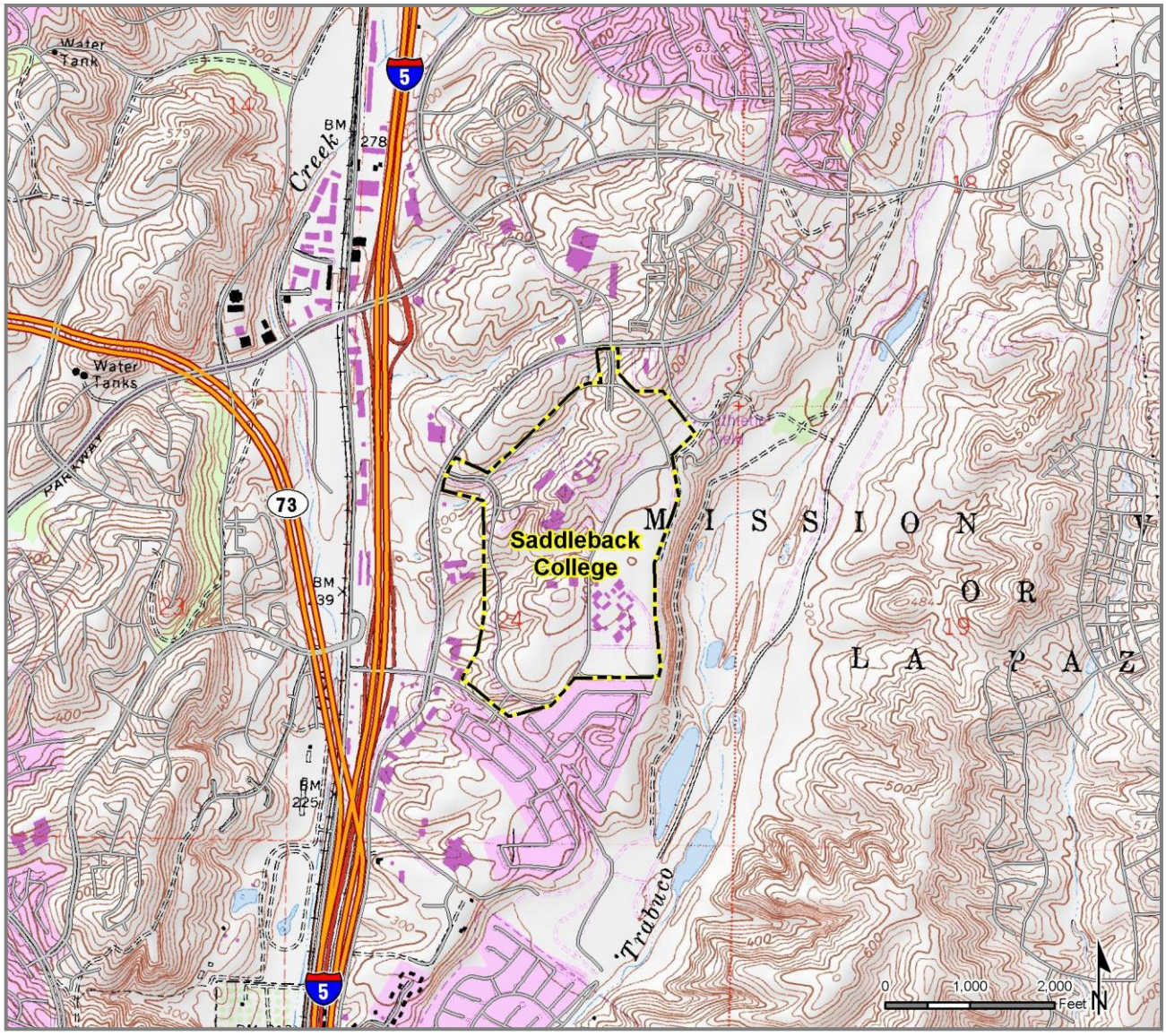
EXHIBIT 1-1

REGIONAL LOCATION



EXHIBIT 1-2

USGS MAP – SADDLEBACK COLLEGE



Basemap: USGS 7.5-minute map series, San Juan Capistrano quadrangle, rev. 1981

Irvine Valley College

The 100-acre Irvine Valley College campus is located at 5500 Irvine Valley Drive, at the southeast corner of Irvine Center Drive and Jeffrey Road, in the City of Irvine. The campus is partially in and south of Section 1 of Township 6 South, Range 9 West, SBBM, as depicted on the USGS Tustin, California (1981) 7.5-minute topographic quadrangle (Exhibit 1-3). Latitude and longitude coordinates are 33°40'34" North and 117°46' 26" West, respectively.

ATEP

The 68-acre ATEP campus is located at 15445 Lansdowne Road, east of the intersection of Red Hill Avenue and Valencia Avenue within the Tustin Legacy development (former Marine Corps Air Station Tustin) in the City of Tustin. The campus is in an unsectioned portion of Township 5 South, Range 9 West, SBBM, as also depicted on the Tustin 7.5-minute topographic quadrangle (Exhibit 1-3). Latitude and longitude coordinates are 33°42'55" North and 117°49' 43" West, respectively.

1.2 SUMMARY OF FINDINGS

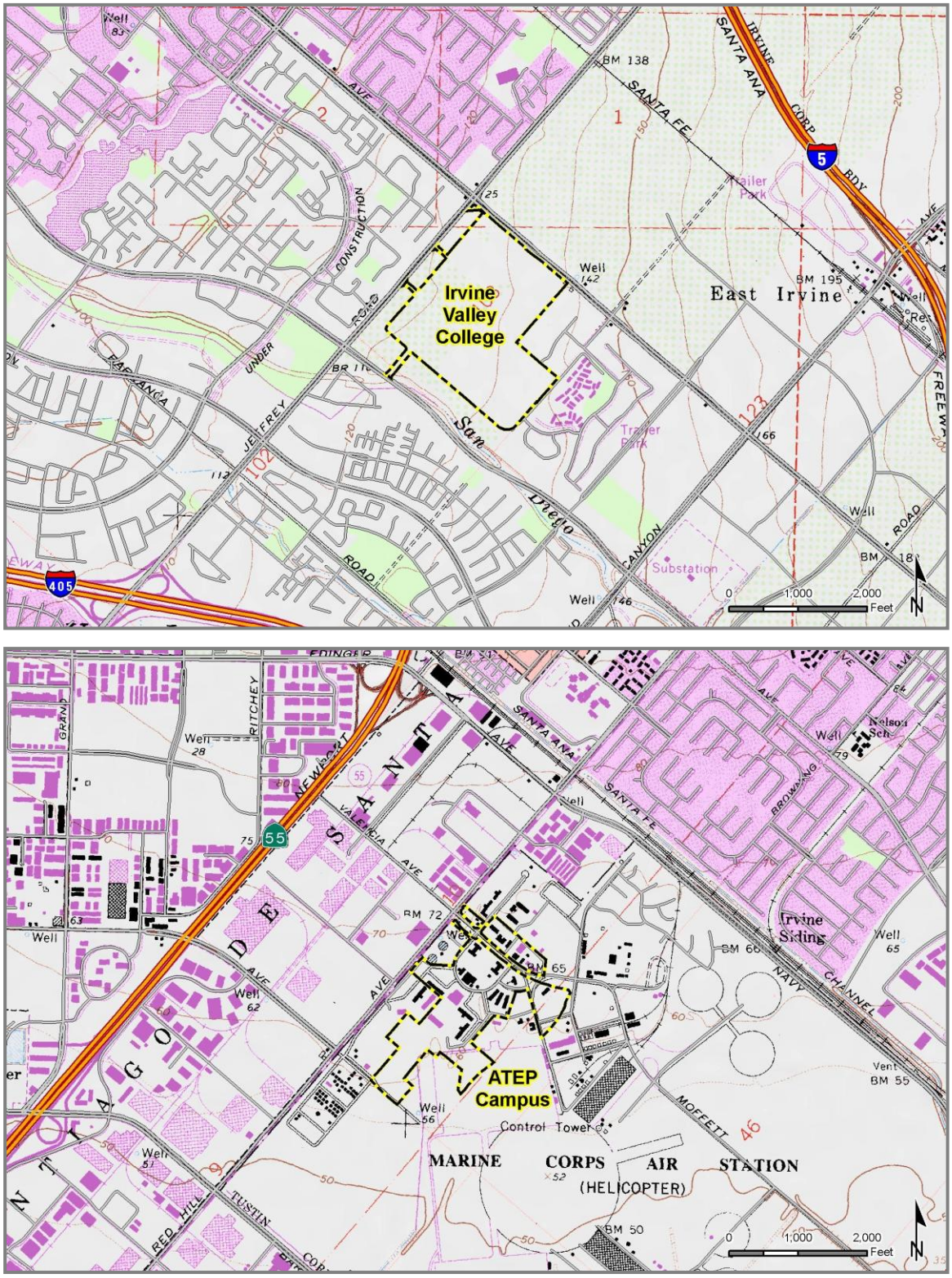
For regional emissions, after implementation of the recommended mitigation measures, construction activity emissions will not exceed any of the regional pollutant thresholds established by the SCAQMD and a less than significant impact is expected.

For localized emissions after implementation of the recommended mitigation measures, the results of the analysis indicate that emissions resulting from short-term construction activity will not exceed the SCAQMD LST thresholds and a less than significant impact is expected.

For regional emissions, after implementation of the recommended mitigation measures, operational activity emissions will not exceed any of the regional pollutant thresholds established by the SCAQMD and a less than significant impact is expected.

EXHIBIT 1-3

USGS MAP – IVC AND ATEP CAMPUSES



Source: USGS 7.5-minute map series, Tustin quadrangle, rev. 1981

The Project is consistent with and would otherwise not conflict with the applicable Air Quality Management Plan (AQMP). Section 3.8 provides a more detailed analysis of the project's consistency with the AQMP. The Project will not have a significant impact on sensitive receptors. Lastly, the project is not expected to result in a localized CO "hotspot" as a result of project traffic, nor is the project expected to result in substantial objectionable odors.

1.3 STANDARD REGULATORY REQUIREMENTS/BEST AVAILABLE CONTROL MEASURES (BACMS)

SCAQMD Rules that are currently applicable during construction activity for this Project include but are not limited to: Rule 1113 (Architectural Coatings); Rule 431.2 (Low Sulfur Fuel); Rule 403 (Fugitive Dust); and Rule 1186 / 1186.1 (Street Sweepers). In order to facilitate monitoring and compliance, applicable SCAQMD regulatory requirements are summarized below, and are restated as mitigation measures (MM AQ-#).

MM AQ-1

The following measures shall be incorporated into project plans and specifications as implementation of Rule 403:

- All clearing, grading, earth-moving, or excavation activities shall cease when winds exceed 25 mph per SCAQMD guidelines in order to limit fugitive dust emissions.

- The contractor shall ensure that all disturbed unpaved roads and disturbed areas within the Project are watered at least three times daily during dry weather. Watering, with complete coverage of disturbed areas, shall occur at least three times a day, preferably in the mid-morning, afternoon, and after work is done for the day. As shown in Table XI-A, located in Appendix "B", implementation of this measure is estimated to reduce PM_{10} and $PM_{2.5}$ fugitive dust emissions by approximately 61%.

- The contractor shall ensure that traffic speeds on unpaved roads and Project site areas are reduced to 15 miles per hour or less to reduce PM10 and PM2.5 fugitive dust haul road emissions by approximately 44%.

Additional regulatory requirements that are in effect during Project construction include the following:

MM AQ-2

The California Air Resources Board, in Title 13, Chapter 10, Section 2485, Division 3 of the of the California Code of Regulations, imposes a requirement that heavy duty trucks accessing the site shall not idle for greater than five minutes at any location. This measure is intended to apply to construction traffic. Prior to issuance of a grading permit, the grading plans shall reference that a sign shall be posted on-site stating that construction workers need to shut off engines after five minutes of idling.

1.4 CONSTRUCTION ACTIVITY MITIGATION MEASURES

In addition to the above-cited SCAQMD regulatory requirements and BACMs, the Project shall implement the following construction activity mitigation measures.

MM AQ-3

Grading plans, construction specifications and bid documents shall include notation that all Rubber Tired Dozers and Scrapers shall be CARB Tier 2 Certified or better. The City shall review grading plans, construction specifications, and bid documents for conformance with this mitigation measure prior to approval of grading plans and issuance of grading permits.

MM AQ-4

In order to reduce localized Project impacts to sensitive receptors in the Project vicinity during construction, construction equipment staging areas shall be located at least 300-feet away from sensitive receptors.

1.5 PROJECT DESIGN FEATURES

The Facilities Master Plan (FMP) contains numerous *Sustainable Principles* that will be implemented throughout development of the Project. As a conservative measure, no reduction was taken in the analysis for implementation of the project design features. The following excerpt is taken from the *Sustainable Principles* portion of the FMP:

The South Orange County Community College District is committed to an inventory of buildings and grounds that optimize sustainable principles for energy consumption, impact upon the natural environment and people friendly places. To address this commitment, new projects on Irvine Valley College campus will meet at a minimum established code requirements and seek to exceed requirements to achieve the benefits of a "Green Campus". Currently, project in the State of California must meet energy efficiency code compliance as describe by Title 24, and the CalGreen Building Code. In addition, optional measure of sustainable design measurement, such as LEED, is an expected objective for any new building of campus infrastructure project. Current standards of design should exceed Title 24 by 15% minimum, divert 75% of construction waste and meet USGBC LEED Silver compliance; and incorporate utility provider incentive programs such as "Savings by Design".

During the projected lifespan of this Facilities Master Plan document numerous modifications and upgrades to building code compliance and energy standards will occur, and it is impossible to set specific criteria for projects to be accomplished in a long range planning context. However, an outline of Sustainability Principles can define a commitment for sustainable development, and reference to current standards may establish expectations that evolve as codes compliance changes and technology advances. The following outline of basic design principles offer criteria for initial projects within the Master Plan, and offer a basis for future evolution of criteria over time. These principles utilize current LEED-NC definitions for sustainable design and environmental sensitivity.

***Sustainable Sites**: This guideline defines the importance of site design and impacts of construction on water treatment, heat gain and pollution. Elements to be considered include:*

- *Orientation of building form to reduce heat gain and energy consumption*
- *Access to mass transit options to reduce vehicle use impacts*
- *Provisions for bicycle access and storage*
- *Enhancement of open space to improve environmental quality*
- *Storm water reduction and construction pollution*
- *Landscape and paving design to minimize heat island effects*
- *Landscape design to enhance passive cooling*
- *Lighting design to reduce energy consumption and light pollution*

***Water Efficiency**: This guideline defines the importance of site and building design to reduce water use and wastewater production. Elements to be considered include:*

- *Native and adaptive landscape planting to minimize water requirements*
- *Irrigation system minimization and efficiency*
- *Captured rainwater when possible*
- *Reclaimed water for non-potable uses*
- *Water conserving plumbing fixtures*
- *Incorporation of bioswales to reduce water run-off*
- *Sensors to control fixture operation*

***Energy and Atmosphere**: This guideline defines the importance of site and building design to energy consumption and air pollutants. Elements to be considered include:*

- *Building commissioning to ensure systems efficiency*
- *Energy Star certified high efficiency equipment specifications*
- *High efficiency lighting*
- *Occupancy sensors to minimize artificial lighting use*
- *Incorporation of appropriate natural day-lighting*
- *Use of natural refrigerants*
- *Roof surfaces to reflect solar radiation; such as "cool roofs"*
- *High efficiency building insulation*
- *High efficiency glazing and glazing systems*
- *Incorporation of renewable energy and/or "green power"*

***Materials and Resources**: This guideline defines the importance of recycled materials use and local materials use. Elements to be considered include:*

- *Re-utilization of existing building or site materials and construction waste*
- *Regional materials specification*
- *Rapidly renewable materials specification*
- *Operation of a materials recycling program*
- *Utilization of low maintenance, durable materials*
- *Specification of materials and systems to minimize life-cycle cost impacts*

- *Utilization of products free of unsafe chemicals or resins*
- *Design of flexible environments to minimize secondary construction*

***Indoor Environmental Quality**: This guideline defines the importance of materials use and space design to ensure occupant health and well-being. Elements to be considered include:*

- *Provision for adequate ventilation*
- *Provision for optimal day-lighting*
- *Specification of materials, products and adhesives with low levels of contaminants*
- *Individual lighting controls and task lighting*
- *Glazing or interior shading to reduce glare*
- *Individual space thermal comfort control*
- *Construction controls to minimize contamination*

***Innovation in Design**: This guideline defines the importance of research and best practices beyond direct impacts of a given project. Elements to be considered include:*

- *Design consultant commitment to materials and methods research*
- *Construction professionals on-site methods to reduce energy consumption and waste*
- *Consultants business model to work efficiently and environmentally aware*
- *Innovative uses of energy savings, waste control and environmental impact*
- *Utilization of Building Information Modeling to improve process efficiency and reduce waste*
- *Utilization of integrated delivery methods to reduce schedules and delivery*
- *Utilization of energy modeling technology to anticipate design impacts*
- *Inclusion of building performance management systems*

Sustainable principles defined in the Facilities Master Plan should be reviewed and updated in each 5 year Master Plan cycle to address new parameters for energy efficient and environmentally sensitive design. The result with reduce negative impacts of building construction and use upon nature and provide effective results for optimized campus energy and maintenance costs and operational expenses.

2.0 EXISTING CONDITIONS

This section provides an overview of the existing air quality conditions in the project area and region.

2.1 SOUTH COAST AIR BASIN

The project site is located in the SCAB within the jurisdiction of SCAQMD. The SCAQMD was created by the 1977 Lewis-Presley Air Quality Management Act, which merged four county air pollution control bodies into one regional district. Under the Act, the SCAQMD is responsible for bringing air quality in areas under its jurisdiction into conformity with federal and state air quality standards. As discussed above, the project site is located within the South Coast Air Basin, a 6,745-squaremile subregion of the South Coast Air Quality Management District, which includes portions of Los Angeles, Riverside, and San Bernardino Counties, and all of Orange County.

The SCAB is bound by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The Los Angeles County portion of the Mojave Desert Air Basin is bound by the San Gabriel Mountains to the south and west, the Los Angeles / Kern County border to the north, and the Los Angeles / San Bernardino County border to the east. The Riverside County portion of the Salton Sea Air Basin is bound by the San Jacinto Mountains in the west and spans eastward up to the Palo Verde Valley.

2.2 REGIONAL CLIMATE

The regional climate significantly influences the air quality in the SCAB. In addition, the temperature, wind, humidity, precipitation, and amount of sunshine influence the air quality.

The annual average temperatures throughout the South Coast Air Basin vary from the low to middle 60s (degrees Fahrenheit). Due to a decreased marine influence, the eastern portion of the SCAB shows greater variability in average annual minimum and maximum temperatures. January is the coldest month throughout the SCAB, with average minimum temperatures of 47°F in downtown Los Angeles and 36°F in San Bernardino. All portions of the SCAB have recorded maximum temperatures above 100°F.

Although the climate of the SCAB can be characterized as semi-arid, the air near the land surface is quite moist on most days because of the presence of a marine layer. This shallow layer of sea air is an important modifier of SCAB climate. Humidity restricts visibility in the SCAB, and the conversion of sulfur dioxide to sulfates is heightened in air with high relative humidity. The marine layer provides an environment for that conversion process, especially during the spring and summer months. The annual average relative humidity within the SCAB is 71 percent along the coast and 59 percent inland. Since the ocean effect is dominant, periods of heavy early morning fog are frequent and low stratus clouds are a characteristic feature. It should be noted that these effects decrease with distance from the coast.

More than 90 percent of the SCAB's rainfall occurs from November through April. The annual average rainfall varies from approximately nine inches in Riverside to fourteen inches in downtown Los Angeles. Monthly and yearly rainfall totals are extremely variable. Summer rainfall usually consists of widely scattered thunderstorms near the coast and slightly heavier shower activity in the eastern portion of the SCAB with frequency being higher near the coast.

Due to its generally clear weather, about three-quarters of available sunshine is received in the SCAB. The remaining one-quarter is absorbed by clouds. The ultraviolet portion of this abundant radiation is a key factor in photochemical reactions. On the shortest day of the year there are approximately 10 hours of possible sunshine, and on the longest day of the year there are approximately 14-1/2 hours of possible sunshine.

The importance of wind to air pollution is considerable. The direction and speed of the wind determines the horizontal dispersion and transport of the air pollutants. During the late autumn to early spring rainy season, the SCAB is subjected to wind flows associated with the traveling storms moving through the region from the northwest. This period also brings five to ten periods of strong, dry offshore winds, locally termed "Santa Anas" each year. During the dry season, which coincides with the months of maximum photochemical smog concentrations, the wind flow is bimodal, typified by a daytime onshore sea breeze and a nighttime offshore drainage wind. Summer wind flows are created by the pressure differences between the relatively cold ocean and the unevenly heated and cooled land surfaces that modify the general northwesterly wind circulation over southern California. Nighttime drainage begins with the radiational cooling of the mountain slopes. Heavy, cool air descends the slopes and flows through the mountain passes and canyons as it follows the lowering terrain toward the ocean. Another characteristic wind regime in the SCAB is the "Catalina

Eddy," a low level cyclonic (counterclockwise) flow centered over Santa Catalina Island which results in an offshore flow to the southwest. On most spring and summer days, some indication of an eddy is apparent in coastal sections.

In the SCAB, there are two distinct temperature inversion structures that control vertical mixing of air pollution. During the summer, warm high-pressure descending (subsiding) air is undercut by a shallow layer of cool marine air. The boundary between these two layers of air is a persistent marine subsidence/inversion. This boundary prevents vertical mixing which effectively acts as an impervious lid to pollutants over the entire SCAB. The mixing height for the inversion structure is normally situated 1,000 to 1,500 feet above mean sea level.

A second inversion-type forms in conjunction with the drainage of cool air off the surrounding mountains at night followed by the seaward drift of this pool of cool air. The top of this layer forms a sharp boundary with the warmer air aloft and creates nocturnal radiation inversions. These inversions occur primarily in the winter, when nights are longer and onshore flow is weakest. They are typically only a few hundred feet above mean sea level. These inversions effectively trap pollutants, such as NO_X and CO from vehicles, as the pool of cool air drifts seaward. Winter is therefore a period of high levels of primary pollutants along the coastline.

2.3 WIND PATTERNS AND PROJECT LOCATION

The distinctive climate of the project area and the SCAB is determined by its terrain and geographical location. The Basin is located in a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean in the southwest quadrant with high mountains forming the remainder of the perimeter.

Wind patterns across the south coastal region are characterized by westerly and southwesterly on-shore winds during the day and easterly or northeasterly breezes at night. Winds are characteristically light although the speed is somewhat greater during the dry summer months than during the rainy winter season.

The prevailing winds in the project area move predominately from northwest to southeast with an average wind speed of 1.61 meters per second (m/s). A Windrose exhibit is included as follows on Exhibit 2-1 and shows prevailing wind patterns and average speed in the project area.

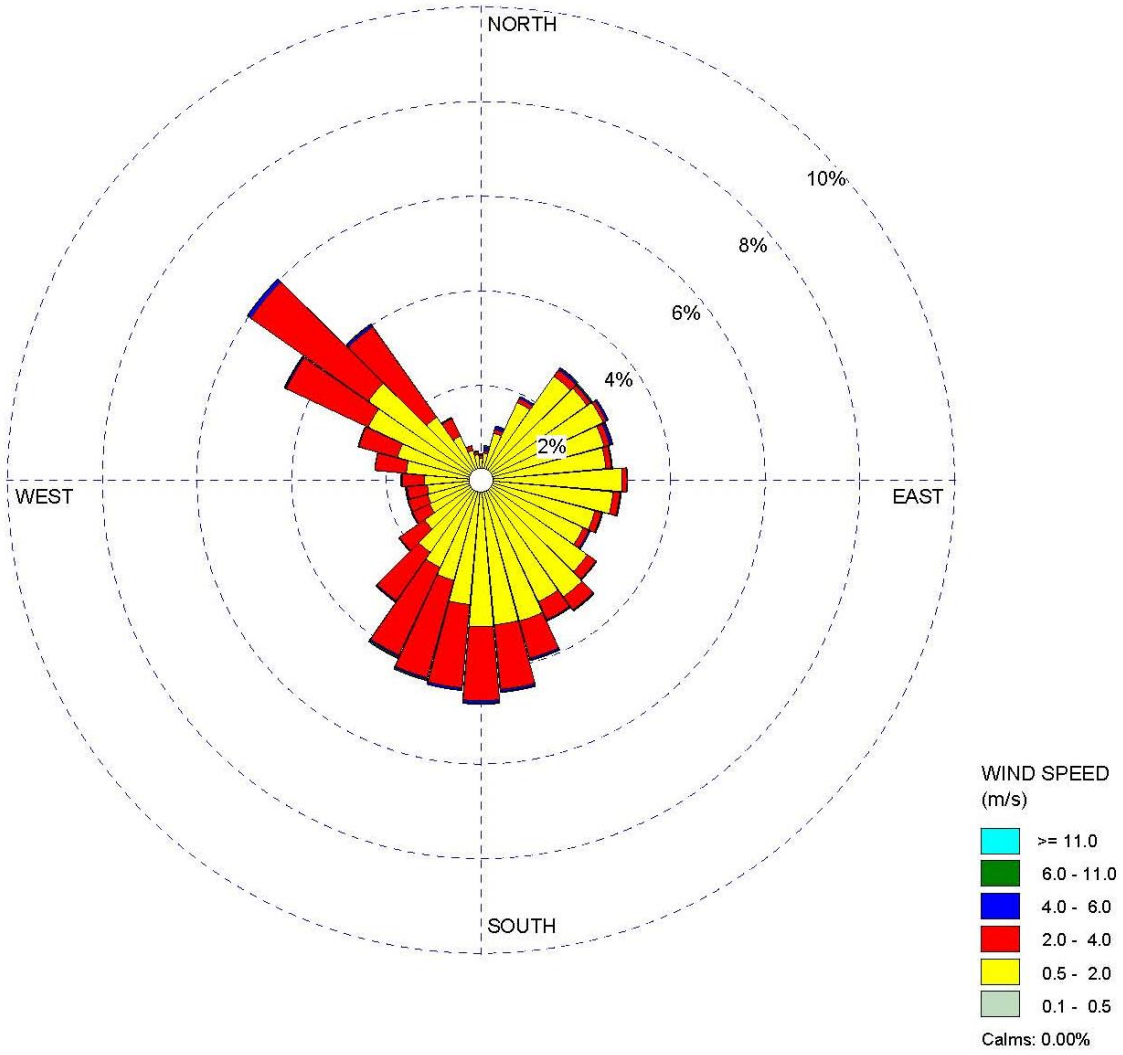
Meteorological data from the SCAQMD's Mission Viejo monitoring station at 26081 Via Para was used to be representative of the project area. Meteorological data was available for use by the SCAQMD on their website: (http://www.aqmd.gov/smog/metdata/AERMOD_Table1.html).

2.4 EXISTING AIR QUALITY

Existing air quality is measured based upon ambient air quality standards. These standards are the levels of air quality that are considered safe, with an adequate margin of safety, to protect the public health and welfare. National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) currently in effect, as well health effects of each pollutant regulated under these standards are shown in Table 2-1.

The determination of whether a region's air quality is healthful or unhealthful is determined by comparing contaminant levels in ambient air samples to the state and federal standards presented in Table 2-1. The air quality in a region is considered to be in attainment by the state if the measured ambient air pollutant levels for O_3, CO, SO_2, NO_2, PM_{10}, and $PM_{2.5}$ are not equaled or exceeded at any time in any consecutive three-year period; and the federal standards (other than O_3, PM_{10}, $PM_{2.5}$, and those based on annual averages or arithmetic mean) are not exceeded more than once per year. The O_3 standard is attained when the fourth highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when 99 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.

WIND ROSE PLOT:	DISPLAY:
msvj	**Wind Speed** **Direction (blowing from)**



COMMENTS:	DATA PERIOD:	COMPANY NAME:	
	2005-2007 **Jan 1 - Dec 31** **00:00 - 23:00**	MODELER:	
	CALM WINDS: **0.00%**	TOTAL COUNT: **26146 hrs.**	
	AVG. WIND SPEED: **1.61 m/s**	DATE: **1/28/2009**	PROJECT NO.:

WRPLOT View - Lakes Environmental Software

TABLE 2-1

STATE AND NATIONAL CRITERIA POLLUTANT STANDARDS, EFFECTS, AND SOURCES

Pollutant	Averaging Time	State Standard	National Standard	Health and Atmospheric Effects	Major Sources
Ozone	1 hour 8 hours	0.09 ppm 0.07 ppm1	--- 0.075 ppm	High concentrations can directly affect lungs, causing irritation. Long-term exposure may cause damage to lung tissue.	Formed when reactive organic gases (ROG) and nitrogen oxides (NOx) react in the presence of sunlight. Major sources include on-road motor vehicles, solvent evaporation, and commercial / industrial mobile equipment.
Carbon Monoxide	1 hour 8 hours	20 ppm 9.0 ppm	35 ppm 9 ppm	Classified as a chemical asphyxiant, carbon monoxide interferes with the transfer of fresh oxygen to the blood and deprives sensitive tissues of oxygen.	Internal combustion engines, primarily gasoline-powered motor vehicles.
Nitrogen Dioxide	1 hour Annual Avg.	0.18 ppm 0.030	--- 0.053 ppm	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown.	Motor vehicles, petroleum refining operations, industrial sources, aircraft, ships, and railroads.
Sulfur Dioxide	1 hour 3 hours 24 hours	0.25 ppm --- 0.04 ppm	75 ppb --- ---	Irritates upper respiratory tract; injurious to lung tissue. Can yellow the leaves of plants, destructive to marble, iron, and steel. Limits visibility and reduces sunlight.	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
Inhalable Particulate Matter (PM-10)	24 hours Annual Avg.	50 µg/m3 20 µg/m3	150 µg/m3 ---	May irritate eyes and respiratory tract, decreases in lung capacity, cancer and increased mortality. Produces haze and limits visibility.	Dust and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
Fine Particulate Matter (PM-2.5)	24 hours Annual Avg.	--- 12 µg/m3	35 µg/m3 15 µg/m3	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and results in surface soiling.	Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning; Also, formed from photochemical reactions of other pollutants, including NOx, sulfur oxides, and organics.
Lead	Monthly Ave. Quarterly Rolling 3-Month Avg.	1.5 µg/m3 --- ---	--- 1.5 µg/m3 0.15 µg/m3	Disturbs gastrointestinal system, and causes anemia, kidney disease, and neuromuscular and neurological dysfunction.	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
Hydrogen Sulfide	1 hour	0.03 ppm	No National Standard	Nuisance odor (rotten egg smell), headache and breathing difficulties (higher concentrations)	Geothermal Power Plants, Petroleum Production and refining
Sulfates	24 hour	25 µg/m3	No National Standard	Breathing difficulties, aggravates asthma, reduced visibility	Produced by the reaction in the air of SO2.
Visibility Reducing Particles	8 hour	Light extinction of 0.23/km; visibility of 10 miles or more	No National Standard	Reduces visibility, reduced airport safety, lower real estate value, discourages tourism.	See PM10/PM2.5.

NOTE: ppm = parts per million; µg/m^3 = micrograms per cubic meter.

[1] This concentration was approved by the Air Resources Board on April 28, 2005 and became effective May 17, 2006.

SOURCE: California Air Resources Board, 09/08/2010 (http://www.arb.ca.gov/research/aaqs/aaqs2.pdf). *Ambient Air Quality Standards,* available at http://www.arb.ca.gov/research/aaqs/aaqs2.pdf Standards last updated November 17, 2008. California Air Resources Board, 2001. *CARB Fact Sheet: Air Pollution Sources, Effects and Control,* http://www.arb.ca.gov/research/health/fs/fs2/fs2.htm, page last updated December 2005.

2.5 REGIONAL AIR QUALITY

The SCAQMD monitors levels of various criteria pollutants at 30 monitoring stations throughout the air district. In 2009, the federal and state standards were exceeded on one or more days for ozone, PM_{10}, and $PM_{2.5}$ at most monitoring locations. No areas of the SCAB exceeded federal or state standards for NO_2, SO_2, CO, sulfates or lead. See Table 3-2 for attainment designations for the SCAB.

2.6 LOCAL AIR QUALITY

The nearest long-term air quality monitoring site in relation to the project for Carbon Monoxide (CO), Ozone (O_3), Inhalable Particulates (PM_{10}), and Ultra-Fine Particulates ($PM_{2.5}$), is carried out by the South Coast Air Quality Management District (SCAQMD) at the Mission Viejo Monitoring Station at 26081 Via Para. The 3 years of data in Table 2-3 shows the number of days standards were exceeded for the study area, which was chosen to be representative of the local air quality at the project site. Additionally, data for Nitrogen Dioxide (NO_2) and Sulfur Dioxide (SO_2) has been omitted as attainment is regularly met in the South Coast Air Basin and few monitoring stations measure SO_2 concentrations.

Criteria pollutants are pollutants that are regulated through the development of human health based and/or environmentally based criteria for setting permissible levels. Examples of sources and effects of the criteria pollutants are identified below:

- Carbon Monoxide (CO): Is a colorless, odorless gas produced by the incomplete combustion of carbon-containing fuels, such as gasoline or wood. CO concentrations tend to be the highest during the winter morning, when little to no wind and surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion engines, unlike ozone, motor vehicles operating at slow speeds are the primary source of CO in the Basin. The highest ambient CO concentrations are generally found near congested transportation corridors and intersections.

TABLE 2-2

ATTAINMENT STATUS OF CRITERIA POLLUTANTS IN THE SOUTH COAST AIR BASIN (SCAB)

Criteria Pollutant	State Designation	Federal Designation
Ozone - 1hour standard	Nonattainment	No Standard
Ozone - 8 hour standard	Nonattainment	Extreme Nonattainment[1]
PM_{10}	Nonattainment	Serious Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
Carbon Monoxide	Attainment	Attainment/Maintenance
Nitrogen Dioxide	Nonattainment[2]	Attainment/Maintenance
Sulfur Dioxide	Attainment	Attainment
Lead	Attainment/Nonattainment[3]	Attainment/Nonattainment[4]
All others	Attainment/Unclassified	Attainment/Unclassified

Source: California Air Resources Board 2010 (http://www.arb.ca.gov/regact/2010/area10/area10.htm, http://www.arb.ca.gov/desig/feddesig.htm)

[1] The USEPA approved redesignation from Severe 17 to Extreme Nonattainment on May 5, 2010 to be effective June 4, 2010.

[2] The SCAB was reclassified from attainment to nonattainment for nitrogen dioxide on March 25, 2010.

[3] Los Angeles County was reclassified from attainment to nonattainment for lead on March 25, 2010; the remainder of the SCAB is in attainment of the State Standard.

[4] The Los Angeles County portion of the SCAB is classified as nonattainment; the remainder of the SCAB is in attainment of the State Standard.

TABLE 2-3 PROJECT AREA AIR QUALITY MONITORING SUMMARY 2007-2009[a]

POLLUTANT	STANDARD	YEAR		
		2007	2008	2009
Ozone (O_3)				
Maximum 1-Hour Concentration (ppm)		0.108	0.118	0.121
Maximum 8-Hour Concentration (ppm)		0.089	0.104	0.095
Number of Days Exceeding State 1-Hour Standard	> 0.09 ppm	5	9	7
Number of Days Exceeding State 8-Hour Standard	> 0.07 ppm	10	25	14
Number of Days Exceeding Federal 8-Hour Standard	> 0.075 ppm	10	15	10
Number of Days Exceeding Health Advisory	≥ 0.15 ppm	0	0	0
Carbon Monoxide (CO)				
Maximum 1-Hour Concentration (ppm)		3	2	2
Maximum 8-Hour Concentration (ppm)		2.1	1.1	1.0
Number of Days Exceeding Federal / State 8-Hour Standard	> 9.0 ppm	0	0	0
Number of Days Exceeding State 1-Hour Standard	> 20 ppm	0	0	0
Number of Days Exceeding Federal 1-Hour Standard	> 35 ppm	0	0	0
Inhalable Particulates (PM_{10})				
Maximum 24-Hour Concentration ($\mu g/m^3$)		74	42	41
Number of Samples		58	55	59
Number of Samples Exceeding State Standard	> 50 $\mu g/m^3$	3	0	0
Number of Samples Exceeding Federal Standard	> 150 $\mu g/m^3$	0	0	0
Ultra-Fine Particulates ($PM_{2.5}$)				
Maximum 24-Hour Concentration ($\mu g/m^3$)		47	32	39
Number of Samples		98	120	122
Number of Samples Exceeding Federal 24-Hour Standard	> 35 $\mu g/m^3$	2	0	1

[a] Mission Viejo Monitoring Station utilized

Source: South Coast AQMD (www.aqmd.gov) and www.arb.ca.gov/adam

ppm = parts per million, $\mu g/m^3$ = micrograms per cubic meter

- Sulfur Dioxide (SO_2): Is a colorless, extremely irritating gas or liquid. It enters the atmosphere as a pollutant mainly as a result of burning high sulfur-content fuel oils and coal and from chemical processes occurring at chemical plants and refineries. When SO2 oxidizes in the atmosphere, it forms sulfates (SO4). Collectively, these pollutants are referred to as sulfur oxides (SOX).

- Nitrogen Oxides (Oxides of Nitrogen, or NO_x): Nitrogen oxides (NO_x) consist of nitric oxide (NO), nitrogen dioxide (NO_2) and nitrous oxide (N_2O) and are formed when nitrogen (N_2) combines with oxygen (O_2). Their lifespan in the atmosphere ranges from one to seven days for nitric oxide and nitrogen dioxide, to 170 years for nitrous oxide. Nitrogen oxides are typically created during combustion processes, and are major contributors to smog formation and acid deposition. NO_2 is a criteria air pollutant, and may result in numerous adverse health effects; it absorbs blue light, resulting in a brownish-red cast to the atmosphere and reduced visibility. Of the seven types of nitrogen oxide compounds, NO2 is the most abundant in the atmosphere. As ambient concentrations of NO2 are related to traffic density, commuters in heavy traffic may be exposed to higher concentrations of NO2 than those indicated by regional monitors.

- Ozone (O_3): Is a highly reactive and unstable gas that is formed when volatile organic compounds (VOCs) and nitrogen oxides (NOX), both byproducts of internal combustion engine exhaust, undergo slow photochemical reactions in the presence of sunlight. Ozone concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable to the formation of this pollutant.

- PM_{10} (Particulate Matter less than 10 microns): A major air pollutant consisting of tiny solid or liquid particles of soot, dust, smoke, fumes, and aerosols. The size of the particles (10 microns or smaller, about 0.0004 inches or less) allows them to easily enter the lungs where they may be deposited, resulting in adverse health effects. PM_{10} also causes visibility reduction and is a criteria air pollutant.

- $PM_{2.5}$ (Particulate Matter less than 2.5 microns): A similar air pollutant consisting of tiny solid or liquid particles which are 2.5 microns or smaller (which is often referred to as fine particles). These particles are formed in the atmosphere from primary gaseous emissions that include sulfates formed from SO_2 release from power plants and

industrial facilities and nitrates that are formed from NO_X release from power plants, automobiles and other types of combustion sources. The chemical composition of fine particles highly depends on location, time of year, and weather conditions. $PM_{2.5}$ is a criteria air pollutant.

- Volatile Organic Compounds (VOC): Volatile organic compounds are hydrocarbon compounds (any compound containing various combinations of hydrogen and carbon atoms) that exist in the ambient air. VOCs contribute to the formation of smog through atmospheric photochemical reactions and/or may be toxic. Compounds of carbon (also known as organic compounds) have different levels of reactivity; that is, they do not react at the same speed or do not form ozone to the same extent when exposed to photochemical processes. VOCs often have an odor, and some examples include gasoline, alcohol, and the solvents used in paints. Exceptions to the VOC designation include: carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate. VOCs are a criteria pollutant since they are a precursor to O_3, which is a criteria pollutant.

- Reactive Organic Gasses (ROG): Similar to VOC, Reactive Organic Gasses (ROG) are also precursors in forming ozone and consist of compounds containing methane, ethane, propane, butane, and longer chain hydrocarbons, which are typically the result of some type of combustion/decomposition process. Smog is formed when ROG and nitrogen oxides react in the presence of sunlight. ROGs are a criteria pollutant since they are a precursor to O_3, which is a criteria pollutant.

- Lead (Pb): Lead is a heavy metal that is highly persistent in the environment. In the past, the primary source of lead in the air was emissions from vehicles burning leaded gasoline. As a result of the removal of lead from gasoline, there have been no violations at any of the SCAQMD's regular air monitoring stations since 1982. Currently, emissions of lead are largely limited to stationary sources such as lead smelters. It should be noted that the proposed project is not anticipated to generate a quantifiable amount of lead emissions. Lead is a criteria air pollutant.

Health Effects of Air Pollutants

Ozone

Individuals exercising outdoors, children, and people with preexisting lung disease, such as asthma and chronic pulmonary lung disease, are considered to be the most susceptible sub-groups for ozone effects. Short-term exposure (lasting for a few hours) to ozone at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. Elevated ozone levels are associated with increased school absences. In recent years, a correlation between elevated ambient ozone levels and increases in daily hospital admission rates, as well as mortality, has also been reported. An increased risk for asthma has been found in children who participate in multiple sports and live in communities with high ozone levels.

Ozone exposure under exercising conditions is known to increase the severity of the responses described above. Animal studies suggest that exposure to a combination of pollutants that includes ozone may be more toxic than exposure to ozone alone. Although lung volume and resistance changes observed after a single exposure diminish with repeated exposures, biochemical and cellular changes appear to persist, which can lead to subsequent lung structural changes.

Carbon Monoxide

Individuals with a deficient blood supply to the heart are the most susceptible to the adverse effects of CO exposure. The effects observed include earlier onset of chest pain with exercise, and electrocardiograph changes indicative of decreased oxygen supply to the heart. Inhaled CO has no direct toxic effect on the lungs, but exerts its effect on tissues by interfering with oxygen transport and competing with oxygen to combine with hemoglobin present in the blood to form carboxyhemoglobin (COHb). Hence, conditions with an increased demand for oxygen supply can be adversely affected by exposure to CO. Individuals most at risk include fetuses, patients with diseases involving heart and blood vessels, and patients with chronic hypoxemia (oxygen deficiency) as seen at high altitudes.

Reduction in birth weight and impaired neurobehavioral development have been observed in animals chronically exposed to CO, resulting in COHb levels similar to those observed in smokers. Recent studies have found increased risks for adverse birth outcomes with exposure to elevated CO levels; these include pre-term births and heart abnormalities.

Particulate Matter

A consistent correlation between elevated ambient fine particulate matter (PM10 and PM2.5) levels and an increase in mortality rates, respiratory infections, number and severity of asthma attacks and the number of hospital admissions has been observed in different parts of the United States and various areas around the world. In recent years, some studies have reported an association between long-term exposure to air pollution dominated by fine particles and increased mortality, reduction in life-span, and an increased mortality from lung cancer.

Daily fluctuations in PM2.5 concentration levels have also been related to hospital admissions for acute respiratory conditions in children, to school and kindergarten absences, to a decrease in respiratory lung volumes in normal children, and to increased medication use in children and adults with asthma. Recent studies show lung function growth in children is reduced with longterm exposure to particulate matter.

The elderly, people with pre-existing respiratory or cardiovascular disease, and children appear to be more susceptible to the effects of high levels of PM10 and PM2.5.

Nitrogen Dioxide

Population-based studies suggest that an increase in acute respiratory illness, including infections and respiratory symptoms in children (not infants), is associated with long-term exposure to NO2 at levels found in homes with gas stoves, which are higher than ambient levels found in Southern California. Increase in resistance to air flow and airway contraction is observed after short-term exposure to NO2 in healthy subjects. Larger decreases in lung functions are observed in individuals with asthma or chronic obstructive pulmonary disease (e.g., chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these sub-groups.

In animals, exposure to levels of NO2 considerably higher than ambient concentrations results in increased susceptibility to infections, possibly due to the observed changes in cells involved

in maintaining immune functions. The severity of lung tissue damage associated with high levels of ozone exposure increases when animals are exposed to a combination of ozone and NO2.

Sulfur Dioxide

A few minutes of exposure to low levels of SO2 can result in airway constriction in some asthmatics, all of whom are sensitive to its effects. In asthmatics, increase in resistance to air flow, as well as reduction in breathing capacity leading to severe breathing difficulties, are observed after acute exposure to SO2. In contrast, healthy individuals do not exhibit similar acute responses even after exposure to higher concentrations of SO2.

Animal studies suggest that despite SO2 being a respiratory irritant, it does not cause substantial lung injury at ambient concentrations. However, very high levels of exposure can cause lung edema (fluid accumulation), lung tissue damage, and sloughing off of cells lining the respiratory tract.

Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient SO2 levels. In these studies, efforts to separate the effects of SO2 from those of fine particles have not been successful. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor.

Lead

Fetuses, infants, and children are more sensitive than others to the adverse effects of Pb exposure. Exposure to low levels of Pb can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased Pb levels are associated with increased blood pressure.

Pb poisoning can cause anemia, lethargy, seizures, and death; although it appears that there are no direct effects of Pb on the respiratory system. Pb can be stored in the bone from early age environmental exposure, and elevated blood Pb levels can occur due to breakdown of bone tissue during pregnancy, hyperthyroidism (increased secretion of hormones from the thyroid gland) and osteoporosis (breakdown of bony tissue). Fetuses and breast-fed babies can be exposed to higher levels of Pb because of previous environmental Pb exposure of their mothers.

Odors

The science of odor as a health concern is still new. Merely identifying the hundreds of VOCs that cause odors poses a big challenge. Offensive odors can potentially affect human health in several ways. First, odorant compounds can irritate the eye, nose, and throat, which can reduce respiratory volume. Second, the VOCs that cause odors can stimulate sensory nerves to cause neurochemical changes that might influence health, for instance, by compromising the immune system. Finally, unpleasant odors can trigger memories or attitudes linked to unpleasant odors, causing cognitive and emotional effects such as stress.

2.7 REGULATORY BACKGROUND

2.7.1 FEDERAL REGULATIONS

The U.S. EPA is responsible for setting and enforcing the NAAQS for O_3, CO, NO_x, SO_2, PM_{10}, and lead. The U.S. EPA has jurisdiction over emissions sources that are under the authority of the federal government including aircraft, locomotives, and emissions sources outside state waters (Outer Continental Shelf). The U.S. EPA also establishes emission standards for vehicles sold in states other than California. Automobiles sold in California must meet the stricter emission requirements of the CARB.

The Federal Clean Air Act (CAA) was first enacted in 1955, and has been amended numerous times in subsequent years (1963, 1965, 1967, 1970, 1977, and 1990). The CAA establishes the federal air quality standards, the NAAQS, and specifies future dates for achieving compliance. The CAA also mandates that states submit and implement State Implementation Plans (SIPs) for local areas not meeting these standards. These plans must include pollution control measures that demonstrate how the standards will be met.

The 1990 amendments to the CAA that identify specific emission reduction goals for areas not meeting the NAAQS require a demonstration of reasonable further progress toward attainment and incorporate additional sanctions for failure to attain or to meet interim milestones. The sections of the CAA most directly applicable to the development of the project site include Title I (Non-Attainment Provisions) and Title II (Mobile Source Provisions).

Title I provisions were established with the goal of attaining the NAAQS for the following criteria pollutants O_3, NO_2, SO_2, PM_{10}, CO, $PM_{2.5}$, and lead. The NAAQS were amended in July 1997 to

include an additional standard for O_3 and to adopt a NAAQS for $PM_{2.5}$. Table 3-1 (previously presented) provides the NAAQS within the basin.

Mobile source emissions are regulated in accordance with Title II provisions. These provisions require the use of cleaner burning gasoline and other cleaner burning fuels such as methanol and natural gas. Automobile manufacturers are also required to reduce tailpipe emissions of hydrocarbons and nitrogen oxides (NO_x). NO_x is a collective term that includes all forms of nitrogen oxides (NO, NO_2, NO_3) which are emitted as byproducts of the combustion process.

2.7.2 CALIFORNIA REGULATIONS

The CARB, which became part of the California EPA in 1991, is responsible for ensuring implementation of the California Clean Air Act (AB 2595), responding to the federal CAA, and for regulating emissions from consumer products and motor vehicles. The California CAA mandates achievement of the maximum degree of emissions reductions possible from vehicular and other mobile sources in order to attain the state ambient air quality standards by the earliest practical date. The CARB established the CAAQS for all pollutants for which the federal government has NAAQS and, in addition, establishes standards for sulfates, visibility, hydrogen sulfide, and vinyl chloride. However at this time, hydrogen sulfide and vinyl chloride are not measured at any monitoring stations in the SCAB because they are not considered to be a regional air quality problem. Generally, the CAAQS are more stringent than the NAAQS.

Local air quality management districts, such as the SCAQMD, regulate air emissions from commercial and light industrial facilities. All air pollution control districts have been formally designated as attainment or non-attainment for each CAAQS.

Serious non-attainment areas are required to prepare air quality management plans that include specified emission reduction strategies in an effort to meet clean air goals. These plans are required to include:

- Application of Best Available Retrofit Control Technology to existing sources;
- Developing control programs for area sources (e.g., architectural coatings and solvents) and indirect sources (e.g. motor vehicle use generated by residential and commercial development);

- A District permitting system designed to allow no net increase in emissions from any new or modified permitted sources of emissions;
- Implementing reasonably available transportation control measures and assuring a substantial reduction in growth rate of vehicle trips and miles traveled;
- Significant use of low emissions vehicles by fleet operators;
- Sufficient control strategies to achieve a five percent or more annual reduction in emissions or 15 percent or more in a period of three years for ROGs, NO_x, CO and PM_{10}. However, air basins may use alternative emission reduction strategy that achieves a reduction of less than five percent per year under certain circumstances.

2.7.3 AIR QUALITY MANAGEMENT PLANNING

Currently, the NAAQS and CAAQS are exceeded in most parts of the SCAB. In response, the SCAQMD has adopted a series of Air Quality Management Plans (AQMPs) to meet the state and federal ambient air quality standards. AQMPs are updated regularly in order to more effectively reduce emissions, accommodate growth, and to minimize any negative fiscal impacts of air pollution control on the economy. A detailed discussion on the AQMP and project consistency with the AQMP is provided in Section 3.7.

3.0 PROJECT AIR QUALITY IMPACT

3.1 INTRODUCTION

The project has been evaluated to determine if it will violate an air quality standard or contribute to an existing or projected air quality violation. Additionally, the proposed project has been evaluated to determine if it will result in a cumulatively considerable net increase of a criteria pollutant for which the SCAB is non-attainment under an applicable federal or state ambient air quality standard. The significance of these potential impacts is described in the following section.

3.2 STANDARDS OF SIGNIFICANCE

The criteria used to determine the significance of potential project-related air quality impacts are taken from the Initial Study Checklist in Appendix G of the State CEQA Guidelines (14 California Code of Regulations §§15000, et seq.). Based on these thresholds, a project would result in a significant impact related to air quality if it would:

(1) Conflict with or obstruct implementation of the applicable air quality plan.

(2) Violate any air quality standard or contribute to an existing or projected air quality violation.

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

(4) Expose sensitive receptors to substantial pollutant concentrations.

(5) Create objectionable odors affecting a substantial number of people.

Within the context of the above threshold considerations, based on the SCAQMD's CEQA Air Quality Handbook (1993), project impacts would be significant if they exceed the following California standards for localized CO concentrations:

- 1-hour CO standard of 20.0 parts per million (ppm)
- 8-hour CO standard of 9.0 ppm.

The SCAQMD has also developed regional and localized significance thresholds for other regulated pollutants, as summarized at Table 3-1. The SCAQMD's CEQA Air Quality Significance Thresholds (March 2009) indicate that any projects in the SCAB with daily emissions that exceed any of the indicated thresholds should be considered as having an individually and cumulatively significant air quality impact.

TABLE 3-1

MAXIMUM DAILY EMISSIONS THRESHOLDS (REGIONAL THRESHOLDS)		
Pollutant	**Construction**	**Operational**
NO_x	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM_{10}	150 lbs/day	150 lbs/day
$PM_{2.5}$	55 lbs/day	55 lbs/day
SO_x	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day

3.3 PROJECT-RELATED SOURCES OF POTENTIAL IMPACT

Land uses such as the proposed project impact air quality through emissions associated with short-term construction, and long-term operational activity.

On February 3, 2011, the SCAQMD released the California Emissions Estimator Model™ (CalEEMod™). The purpose of this new model is to more accurately calculate air quality and greenhouse gas (GHG) emissions from direct and indirect sources and quantify applicable air quality and GHG reductions achieved from mitigation measures. As such, the latest version of CalEEMod™ has been used for this project to determine construction and operational air quality impacts. Output from the model runs for both construction and operational activity are provided in Appendix "A".

3.4 CONSTRUCTION EMISSIONS

Construction activities associated with the proposed project will result in emissions of CO, VOCs, NO_x, SO_x, PM_{10}, and $PM_{2.5}$. Construction related emissions are expected from the following construction activities:

- Demolition
- Site Preparation
- Grading

- Paving
- Building Construction
- Architectural Coatings (Painting)
- Construction Workers Commuting

Since site-specific construction activities are not known with a great deal of certainty, and only approximate construction scheduling is known, the approximate construction scheduling for the "worst-case" phase of construction was input into the CalEEMod™ model and defaults for all other assumptions were utilized. This "worst-case" phase of construction illustrates the theoretical maximum impact at any of the construction sites anticipated for the South Orange County Community College District.

Please refer to specific detailed modeling inputs/outputs contained in Appendix "A" of this Analysis. A detailed summary of construction equipment assumptions by phase is provided on Table 3-2. Equipment estimates were derived from discussion with the project team as well as model defaults in the CalEEMod™ model.

Dust is typically a major concern during rough grading activities. Because such emissions are not amenable to collection and discharge through a controlled source, they are called "fugitive emissions". Emissions rates vary as a function of many parameters (soil silt, soil moisture, wind speed, area disturbed, number of vehicles, depth of disturbance or excavation, etc.). The CalEEMod™ model was utilized to calculate fugitive dust emissions resulting from this phase of activity. Additionally, based on discussion with the project team it is anticipated that the site will balance, and no import or export of soil will be required.

Construction emissions for construction worker vehicles traveling to and from the project site, as well as vendor trips (construction materials delivered to the project site) were estimated using the CalEEMod™ model.

3.4.1 CONSTRUCTION EMISSIONS SUMMARY

Assuming a "worst-case" scenario for construction activity, the estimated maximum daily construction emissions are summarized on Table 3-3. Detailed construction model outputs are presented in Appendix "A". Under the assumed "worst-case" conditions, emissions resulting from project construction will exceed criteria pollutant thresholds established by the SCAQMD for emissions of NO_x only. Section 4.0 of this report provides mitigation measures to NO_x emissions to less than significant levels.

TABLE 3-2 CONSTRUCTION EQUIPMENT ASSUMPTIONS

Operation	Construction Equipment													
	Concrete Industrial Saws	Scraper	Grader	Rubber Tired Dozer	Tractor / Loader / Backhoe	Excavator	Pavers	Paving Equipment	Air Compressor	Forklift	Cranes	Rollers	Generator Set	Welder
Worst-Case Phase of Construction Activity														
Demolition	1			2		3								
Site Preparation				3	4									
Grading		2	1	1	2	2								
Building Construction					3					3	1		1	1
Paving							2	2				2		
Painting									1					

TABLE 3-3 EMISSIONS SUMMARY OF OVERALL CONSTRUCTION

(MAXIMUM DAILY EMISSIONS POUNDS PER DAY) (WITHOUT MITIGATION)

Year	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Worst-Case Phase of Construction Activity						
Maximum Daily Emissions (lbs/day)	**33.03**	**110.91**	**59.29**	**0.10**	**22.92**	**14.56**
SCAQMD Regional Threshold (lbs/day)	75	100	550	150	150	55
Significant?	**NO**	**YES**	**NO**	**NO**	**NO**	**NO**

Note: Please refer to Appendix A for the CalEEMod™ output files and additional hand calculations for the estimated emissions.

3.5 OPERATIONAL EMISSIONS

Operational activities associated with the proposed project will result in emissions of ROG, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$. Operational emissions would be expected from the following primary sources:

- Vehicles
- Combustion Emissions Associated with Natural Gas and Electricity
- Fugitive dust related to vehicular travel
- Landscape maintenance equipment
- Architectural coatings

3.5.1 VEHICLES

Project operational (vehicular) impacts are dependent on both overall daily vehicle trip generation and the effect of the project on peak hour traffic volumes and traffic operations in the vicinity of the project. The project related operational air quality impact centers primarily on the vehicle trips generated by the project. Trip characteristics available from the report, SOCCCD Traffic Impact Analysis (Stantec, 2011) were utilized in this analysis. The estimated emissions resulting from vehicle operations are summarized in Tables 3-4 and 3-5 for the two campus locations. The impacts are centered on the new students anticipated with growth related to both campuses.

3.5.2 COMBUSTION EMISSIONS ASSOCIATED WITH NATURAL GAS AND ELECTRICITY

Electricity and natural gas are used by almost every project. Criteria pollutant emissions are emitted through the generation of electricity and consumption of natural gas. However, because electrical generating facilities for the project area are located either outside the region (state) or offset through the use of pollution credits (RECLAIM) for generation within the SCAB, criteria pollutant emissions from offsite generation of electricity is generally excluded from the evaluation of significance and only natural gas use is considered. The emissions associated with natural gas use were calculated using the CalEEMod™ model. The estimated combustion emissions are provided in Table 3-4 (presented later in this report. Detailed emission calculations are provided in Appendix "A").

3.5.3 FUGITIVE DUST RELATED TO VEHICULAR TRAVEL

Vehicles traveling on paved roads would be a source of fugitive emissions due to the generation of road dust. The emissions estimates for travel on paved roads were calculated using the CalEEMod™ model. The estimated PM_{10} and $PM_{2.5}$ emissions from vehicles for fugitive dust are summarized in Tables 3-4 and 3-5 details are provided in Appendix "A".

3.5.4 LANDSCAPE MAINTENANCE EQUIPMENT

Landscape maintenance equipment would generate emissions from fuel combustion and evaporation of unburned fuel. Equipment in this category would include lawnmowers, shedders/grinders, blowers, trimmers, chain saws, and hedge trimmers used to maintain the landscaping of the project. The emissions associated with landscape maintenance equipment were calculated based on assumptions provided in the CalEEMod™ model. The estimated landscape maintenance emissions are provided in Tables 3-4 and 3-5, and detailed model outputs are presented in Appendix "A".

3.5.5 ARCHITECTURAL COATINGS

Over a period of time the buildings that are part of this project will be subject to emissions resulting from the evaporation of solvents contained in paints, varnishes, primers, and other surface coatings as part of project maintenance. The emissions associated with architectural coatings were calculated using the CalEEMod™ model. The estimated architectural coating emissions are provided in Tables 3-4 and 3-5, and detailed model outputs are presented in Appendix "A".

3.5.6 OPERATIONAL EMISSIONS SUMMARY

The project-related operations emissions burdens, along with a comparison of SCAQMD recommended significance thresholds, are shown in Tables 3-4 and 3-5.

Results of the analysis indicate that the Project will not exceed any of the allowable regional thresholds during operational activity for the Irvine Valley College and Saddleback College campuses. Therefore operational impacts are less than significant and no mitigation is required.

TABLE 3-4

IRVINE VALLEY COLLEGE OPERATIONAL EMISSIONS SUMMARY

(MAXIMUM DAILY EMISSIONS POUNDS PER DAY) WITHOUT MITIGATION

Summer Operational Activities	**VOC**	**NO_x**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Area Source Emissions [a]	3.06	0	0	0	0	0
Energy Source Emissions [b]	0.10	0.90	0.75	0.01	0.07	0.07
Mobile Emissions [c]	11.83	28.39	105.02	0.44	48.32	2.61
Maximum Daily Emissions (lbs/day)	**14.99**	**29.29**	**105.77**	**0.45**	**48.39**	**2.68**
SCAQMD Regional Threshold (lbs/day)	55	55	550	150	150	55
Significant?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

Winter Operational Activities	**VOC**	**NO_x**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Area Source Emissions [a]	3.06	0	0	0	0	0
Energy Source Emissions [b]	0.10	0.90	0.75	0.01	0.07	0.07
Mobile Emissions [c]	12.58	29.19	99.72	0.40	48.33	2.61
Maximum Daily Emissions (lbs/day)	**15.74**	**30.09**	**100.47**	**0.41**	**48.40**	**2.68**
SCAQMD Regional Threshold (lbs/day)	55	55	550	150	150	55
Significant?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

Note: Please refer to Appendix B for the CalEEMod™ output files and additional supporting information for the estimated emissions.

[a] Includes emissions of landscape maintenance equipment and architectural coatings emissions

[b] Includes emissions of natural gas consumption

[c] Includes emissions of vehicle emissions and fugitive dust related to vehicular travel

TABLE 3-5

SADDLEBACK COLLEGE OPERATIONAL EMISSIONS SUMMARY

(MAXIMUM DAILY EMISSIONS POUNDS PER DAY) WITHOUT MITIGATION

Summer Operational Activities	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Area Source Emissions [a]	4.88	0	0	0	0	0
Energy Source Emissions [b]	0.16	1.43	1.20	0.01	0.11	0.11
Mobile Emissions [c]	18.86	45.26	167.43	0.70	77.04	4.15
Maximum Daily Emissions (lbs/day)	**23.90**	**46.69**	**168.63**	**0.71**	**77.15**	**4.26**
SCAQMD Regional Threshold (lbs/day)	55	55	550	150	150	55
Significant?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

Winter Operational Activities	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Area Source Emissions [a]	4.88	0	0	0	0	0
Energy Source Emissions [b]	0.16	1.43	1.20	0.01	0.11	0.11
Mobile Emissions [c]	20.06	46.54	158.98	0.64	77.05	4.16
Maximum Daily Emissions (lbs/day)	**25.10**	**47.97**	**160.18**	**0.65**	**77.16**	**4.27**
SCAQMD Regional Threshold (lbs/day)	55	55	550	150	150	55
Significant?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

Note: Please refer to Appendix B for the CalEEMod™ output files and additional supporting information for the estimated emissions.

[a] Includes emissions of landscape maintenance equipment and architectural coatings emissions

[b] Includes emissions of natural gas consumption

[c] Includes emissions of vehicle emissions and fugitive dust related to vehicular travel

3.6 LOCALIZED SIGNIFICANCE – CONSTRUCTION ACTIVITY

The analysis makes use of methodology included in the SCAQMD *Final Localized Significance Threshold Methodology* (Methodology) (SCAQMD, June 2003). As previously discussed, the SCAQMD has established that impacts to air quality are significant if there is a potential to contribute or cause localized exceedances of the federal and/or state ambient air quality standards (NAAQS/CAAQS). Collectively, these are referred to as Localized Significance Thresholds (LSTs).

The significance of localized emissions impacts depends on whether ambient levels in the vicinity of the project are above or below State standards. In the case of CO and NO_2, if ambient levels are below the standards, a project is considered to have a significant impact if project emissions result in an exceedance of one or more of these standards. If ambient levels already exceed a state or federal standard, then project emissions are considered significant if they increase ambient concentrations by a measurable amount. This would apply to PM_{10} and $PM_{2.5}$; both of which are non-attainment pollutants.

The SCAQMD established LSTs in response to the SCAQMD Governing Board's Environmental Justice Initiative I-4. LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard at the nearest residence or sensitive receptor. The SCAQMD states that lead agencies can use the LSTs as another indicator of significance in its air quality impact analyses.

LSTs were developed in response to environmental justice and health concerns raised by the public regarding exposure of individuals to criteria pollutants in local communities. To address the issue of localized significance, the SCAQMD adopted LSTs that show whether a project would cause or contribute to localized air quality impacts and thereby cause or contribute to potential localized adverse health effects.

For this project, the appropriate Source Receptor Area (SRA) for the LST is the Saddleback Valley area (SRA 19). LSTs apply to carbon monoxide (CO), nitrogen dioxide (NO_2), particulate matter ≤ 10 microns (PM_{10}), and particulate matter ≤ 2.5 microns ($PM_{2.5}$). The SCAQMD produced look-up tables for projects less than or equal to 5 acres in size; however, they can be used as screening criteria for larger projects to determine whether or not dispersion modeling may be required.

The analysis makes use of methodology included in the SCAQMD *Final Localized Significance Threshold Methodology* (Methodology) (SCAQMD, June 2003).

Currently the nearest existing sensitive receptors may be located adjacent to proposed construction activities, as such receptors are assumed to be located at approximately 50 meters from disturbed areas.

For purposes of this analysis LSTs have been evaluated only for construction of the proposed project and would not apply to emissions during operational activity as localized concentration cannot be properly quantified during operations due to the variable locations of mobile sources, which make up the largest source of criteria air pollutants under operational activity of the proposed project[1], and since the majority of mobile source emissions would occur off-site which is not within the purview of LSTs. Only CO concentrations at roadway intersection with an adverse LOS may be quantified as evaluated in Section 3.9 of this report.

The SCAQMD has issued guidance on applying CalEEMod™ to LSTs. Since CalEEMod™ calculates construction emissions based on the number of equipment hours and the maximum daily soil disturbance activity possible for each piece of equipment, the following table should be used to determine the maximum daily disturbed-acreage for comparison to LSTs.

Equipment Type	Acres/8-hr-day
Crawler Tractors	0.5
Graders	0.5
Rubber Tired Dozers	0.5
Scrapers	1

Based on this table, the proposed Project will result in a maximum of 3.0 acres disturbed during peak construction activity (grading) (2 Scrapers x 1 + 1 Rubber Tired Dozers x 0.5 + 1 Grader x 0.5 = 3.0 acres disturbed).

In order to determine if dispersion modeling was required, the project construction emissions were compared to LSTs for a three acre site as a conservative measure. Per LST guidance, only on-site construction activity is considered in the LST analysis. Table 3-5 presents the results of comparing project construction activity to the three acre LSTs; as shown emissions will not exceed any of the localized thresholds for construction activity (before mitigation) with the exception of PM2.5 emissions. Mitigation measures to reduce PM2.5 impacts to less than significant levels are presented in Section 4.0 of this report.

[1] Personal communication with Dan Garcia, Air Quality Specialist CEQA Division at SCAQMD on 05/11/11

TABLE 3-5

SCREENING LOCALIZED SIGNIFICANCE SUMMARY CONSTRUCTION (WITHOUT MITIGATION) POUNDS PER DAY

Activity	NO_x	CO	PM_{10}	$PM_{2.5}$
On-Site Demolition	79.87	45.95	4.10	4.10
On-Site Site Preparation	89.73	50.45	22.68	14.54
On-Site Grading	110.77	57.70	14.10	8.74
On-Site Building Construction	40.22	24.03	2.80	2.80
On-Site Paving	35.62	21.08	3.13	3.13
On-Site Architectural Coating	3.37	1.98	0.31	0.31
Maximum Daily Emissions (lbs/day)	**110.77**	**57.70**	**22.68**	**14.54**
SCAQMD Localized Threshold (lbs/day)	148	1,518.67	24.33	7.67
Significant?	**NO**	**NO**	**NO**	**YES**

NOTE: PLEASE REFER TO ATTACHMENT "A" FOR CALEEMOD™ OUTPUT FILES FOR THE ESTIMATED EMISSIONS.

3.7 CO "HOT SPOT" ANALYSIS

A carbon monoxide (CO) "hot spots" analysis is not needed to determine whether the change in the level of service (LOS) of an intersection due to the Project would have the potential to result in exceedances of the California or National Ambient Air Quality Standards (CAAQS or NAAQS).

It has long been recognized that CO exceedances are caused by vehicular emissions, primarily when idling at intersections. Vehicle emissions standards have become increasingly more stringent in the last twenty years. Currently, the CO standard in California is a maximum of 3.4 grams/mile for passenger cars (there are requirements for certain vehicles that are more stringent). With the turnover of older vehicles, introduction of cleaner fuels and implementation of control technology on industrial facilities, CO concentrations in the project vicinity have steadily declined, as shown based on historical data from the Saddleback Valley (SRA 19) monitoring station for the period from 2000 to 2009.

Accordingly, with the steadily decreasing CO emissions from vehicles, even very busy intersections do not result in exceedances of the CO standard.

The analysis prepared for CO attainment in the SoCAB by the SCAQMD can be used to assist in evaluating the potential for CO exceedances in the South Coast Air Basin. CO attainment was thoroughly analyzed as part of the SCAQMD's 2003 Air Quality Management Plan (2003 AQMP) and the 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan). As discussed in the 1992 CO Plan, peak carbon monoxide concentrations in the South Coast Air Basin are due to unusual meteorological and topographical conditions, and not due to the impact of particular intersections. Considering the region's unique meteorological conditions and the increasingly stringent CO emissions standards, CO modeling was performed as part of 1992 CO Plan and subsequent plan updates and air quality management plans.

In the 1992 CO Plan, a CO hot spot analysis was conducted for four busy intersections in Los Angeles at the peak morning and afternoon time periods. The intersections evaluated included: Long Beach Blvd. and Imperial Highway (Lynwood); Wilshire Blvd. and Veteran Ave. (Westwood); Sunset Blvd. and Highland Ave. (Hollywood); and La Cienega Blvd. and Century Blvd. (Inglewood). These analyses did not predict a violation of CO standards. The busiest intersection evaluated was that at Wilshire Blvd. and Veteran Ave., which has a daily traffic volume of approximately 100,000 vehicles per day. The Los Angeles County Metropolitan Transportation Authority evaluated the LOS in the vicinity of the Wilshire Blvd. /Veteran Ave. intersection and found it to be Level E at peak morning traffic and Level F at peak afternoon traffic.

The highest number of average daily trips would be 64,000 for Jeffrey between Interstate 5 and Roosevelt (for IVC) and 84,000 for Crown Valley Parkway Interstate 5 and Margurite (for Saddleback), which is lower than the values studied in the 1992 CO Plan. Consequently at Project Buildout, according to the Traffic Impact Analysis, none of the intersections in the vicinity of the Proposed Project Site would have peak hourly traffic volumes exceeding those at the intersections modeled in the 2003 AQMP, nor would there be any reason unique to project area meteorology to conclude that this intersection would yield higher CO concentrations if modeled in detail. As a result, the South Coast Air Basin has been designated as attainment for CO since 2007 (SCAQMD 2007) and even very busy intersections do not result in exceedances of the CO standard.

3.8 AIR QUALITY MANAGEMENT PLANNING

The project site is located within the SCAB, which is characterized by relatively poor air quality. The SCAQMD has jurisdiction over an approximately 12,000 square-mile area consisting of the four-county Basin and the Los Angeles County and Riverside County portions of what use to be referred to as the Southeast Desert Air Basin. In these areas, the SCAQMD is principally responsible for air pollution control, and works directly with the Southern California Association of Governments (SCAG), county transportation commissions, local governments, as well as state and federal agencies to reduce emissions from stationary, mobile, and indirect sources to meet state and federal ambient air quality standards.

Currently, these state and federal air quality standards are exceeded in most parts of the Basin. In response, the SCAQMD has adopted a series of Air Quality Management Plans (AQMPs) to meet the state and federal ambient air quality standards. AQMPs are updated regularly in order to more effectively reduce emissions, accommodate growth, and to minimize any negative fiscal impacts of air pollution control on the economy.

SCAQMD 2007 AQMP

The SCAQMD has published the Draft Final 2007 AQMP, which was adopted by the SCAQMD Governing Board on June 1, 2007. In September 2007, the CARB Board adopted the SCAQMD 2007 AQMP as part of the SIP. The purpose of the 2007 AQMP for the SCAB (and those portions of the Salton Sea Air Basin under the SCAQMD's jurisdiction) is to set forth a comprehensive program that will lead these areas into compliance with federal and state air quality planning requirements for ozone and PM2.5. On September 27, 2007, the CARB Board adopted the State Strategy for the 2007 State Implementation Plan and the

2007 South Coast Air Quality Management Plan as part of the (SIP). Additionally, the 2007 AQMP has been submitted to the U.S. EPA for approval, no timeline on the approval is available at this time.

As part of the 2007 AQMP, the SCAQMD requested, and the U.S. EPA's subsequently approved a "bump-up" to the "extreme" nonattainment classification for ozone in the SCAB, which extends the attainment date to 2024 and allow for the attainment demonstration to rely on emission reductions from measures that anticipate the development of new technologies or improvement of existing control technologies. Although $PM_{2.5}$ plans for nonattainment areas were due in April 2008, the 2007 AQMP also focuses on attainment strategies for the $PM_{2.5}$ standard through stricter control of sulfur oxides, directly-emitted $PM_{2.5}$, NO_X, and VOCs. The need to commence $PM_{2.5}$ control strategies before April 2008 is due to the attainment date for $PM_{2.5}$ (2015) being much earlier than that for ozone (2021 for the current designation of severe-17 or 2024 for the extreme designation). However, it should be noted that the PM2.5 plans are still in the process of being submitted. Control measures and strategies for $PM_{2.5}$ will also help control ozone generation in the region because $PM_{2.5}$ and ozone share similar precursors (e.g., NO_X). The SCAQMD has integrated $PM_{2.5}$ and ozone reduction control measures and strategies in the 2007 AQMP. In addition, the AQMP focuses on reducing VOC emissions, which have not been reduced at the same rate as NO_X emissions in the past. Hence, the SCAB has not achieved the reductions in ozone as were expected in previous plans.

The 2007 AQMP was based on assumptions provided by both CARB and SCAG in the new EMFAC2007 model for the most recent motor vehicle and demographics information, respectively. The air quality levels projected in the 2007 AQMP are based on several assumptions. For example, the 2007 AQMP has assumed that development associated with general plans, specific plans, residential projects, and wastewater facilities will be constructed in accordance with population growth projections identified by SCAG in its 2004 RTP. The 2007 AQMP also has assumed that such development projects will implement strategies to reduce emissions generated during the construction and operational phases of development. The project's consistency with the 2007 AQMP is discussed as follows:

Criteria for determining consistency with the AQMP are defined in Chapter 12, Section 12.2 and Section 12.3 of the SCAQMD's CEQA Air Quality Handbook (1993). These indicators are discussed below:

- Consistency Criterion No. 1: The proposed project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP.

The violations that Consistency Criterion No. 1 refers to are the CAAQS and NAAQS. As evaluated as part of the Project LST analysis (previously presented), the Project will not exceed the short-term construction standards for localized emissions (after mitigation) and a less than significant impact is expected.

Additionally operational emissions will not exceed the SCAQMD's regional threshold criteria. On the basis of the preceding discussion, the Project is determined to be consistent with the first criterion.

- Consistency Criterion No. 2: The proposed project will not exceed the assumptions in the AQMP in 2011 or increments based on the years of project build-out phase.

Assumptions of the AQMP used in projecting future emissions levels are based in part on land use data provided by lead agency general plan documentation. Projects that propose general plan amendments and changes of zone may increase the intensity of use and/or result in higher traffic volumes, thereby resulting in increased stationary area source emissions and/or vehicle source emissions when compared to the AQMP assumptions. If however, a project does not exceed the growth projections in the applicable local General Plan, then the project is considered to be consistent with the growth assumptions in the AQMP.

Although the Project is proposing a new Specific Plan, the proposed project is not planning to substantially increase land use intensities and the purpose of the Project is to accommodate future growth associated with the Project. As such, the proposed project is in compliance with Consistency Criterion No. 2.

Since the project satisfies both of the two aforementioned criterion for determining consistency, the project is deemed consistent with the AQMP and a less than significant impact is expected.

3.9 POTENTIAL IMPACTS TO SENSITIVE RECEPTORS

The potential impact of the project air pollutant emissions at sensitive receptors has also been considered. Sensitive receptors can include uses such as long term health care facilities, rehabilitation centers, and retirement homes. Residences, schools, playgrounds, child care centers, and athletic facilities can also be considered as sensitive receptors.

Potential sensitive receptors in the project vicinity include existing residences located in close proximity to the project site.

As discussed in the LST analysis previously presented in this report, for conservative analysis purposes, sensitive receptors were placed at a distance of 50 meters from potential construction activity. Results of the LST analysis indicate that the proposed project will not exceed the SCAQMD localized significance thresholds during construction activity. Therefore sensitive receptors would not be subject to a significant air quality impact during project construction.

The proposed project would not result in a significant CO "hotspot" as a result of project related traffic during ongoing operations, thus a less than significant impact to sensitive receptors during operational activity is expected.

3.10 ODORS

The potential for the project to generate objectionable odors has also been considered. Land uses generally associated with odor complaints include:

- Agricultural uses (livestock and farming)
- Wastewater treatment plants
- Food processing plants
- Chemical plants
- Composting operations
- Refineries
- Landfills
- Dairies
- Fiberglass molding facilities

The project does not contain land uses typically associated with emitting objectionable odors. Potential odor sources associated with the proposed project may result from construction equipment exhaust and the application of asphalt and architectural coatings during construction activities, and the temporary storage of typical solid waste (refuse) associated with the proposed project's (long-term operational) uses. Standard construction requirements would minimize odor impacts resulting from construction activity. It

should be noted that any construction odor emissions generated would be temporary, short-term, and intermittent in nature and would cease upon completion of the respective phase of construction activity and is thus considered less than significant. It is expected that project-generated refuse would be stored in covered containers and removed at regular intervals in compliance with the applicable agencies solid waste regulations. The proposed project would also be required to comply with SCAQMD Rule 402 to prevent occurrences of public nuisances. Therefore, odors associated with the proposed project construction and operations would be less than significant and no mitigation is required.

THIS PAGE INTENTIONALLY LEFT BLANK

4.0 REGULATORY REQUIREMENTS AND MITIGATION MEASURES

4.1 STANDARD REGULATORY REQUIREMENTS/BEST AVAILABLE CONTROL MEASURES (BACMS)

SCAQMD Rules that are currently applicable during construction activity for this Project include but are not limited to: Rule 1113 (Architectural Coatings); Rule 431.2 (Low Sulfur Fuel); Rule 403 (Fugitive Dust); and Rule 1186 / 1186.1 (Street Sweepers). In order to facilitate monitoring and compliance, applicable SCAQMD regulatory requirements are summarized below, and are restated as mitigation measures (MM AQ-#).

MM AQ-1

The following measures shall be incorporated into project plans and specifications as implementation of Rule 403:

- All clearing, grading, earth-moving, or excavation activities shall cease when winds exceed 25 mph per SCAQMD guidelines in order to limit fugitive dust emissions.

- The contractor shall ensure that all disturbed unpaved roads and disturbed areas within the Project are watered at least three times daily during dry weather. Watering, with complete coverage of disturbed areas, shall occur at least three times a day, preferably in the mid-morning, afternoon, and after work is done for the day. As shown in Table XI-A, located in Appendix "B", implementation of this measure is estimated to reduce PM_{10} and $PM_{2.5}$ fugitive dust emissions by approximately 61%.

- The contractor shall ensure that traffic speeds on unpaved roads and Project site areas are reduced to 15 miles per hour or less to reduce PM10 and PM2.5 fugitive dust haul road emissions by approximately 44%.

Additional regulatory requirements that are in effect during Project construction include the following:

MM AQ-2

The California Air Resources Board, in Title 13, Chapter 10, Section 2485, Division 3 of the of the California Code of Regulations, imposes a requirement that heavy duty trucks accessing the site shall not

idle for greater than five minutes at any location. This measure is intended to apply to construction traffic. Prior to issuance of a grading permit, the grading plans shall reference that a sign shall be posted on-site stating that construction workers need to shut off engines after five minutes of idling.

4.2 CONSTRUCTION ACTIVITY MITIGATION MEASURES

In addition to the above-cited SCAQMD regulatory requirements and BACMs, the Project shall implement the following construction activity mitigation measures.

MM AQ-3

Grading plans, construction specifications and bid documents shall include notation that all Rubber Tired Dozers and Scrapers shall be CARB Tier 2 Certified or better. The City shall review grading plans, construction specifications, and bid documents for conformance with this mitigation measure prior to approval of grading plans and issuance of grading permits.

MM AQ-4

In order to reduce localized Project impacts to sensitive receptors in the Project vicinity during construction, construction equipment staging areas shall be located at least 300-feet away from sensitive receptors.

4.3 PROJECT DESIGN FEATURES

The Facilities Master Plan (FMP) contains numerous *Sustainable Principles* that will be implemented throughout development of the Project. The following excerpt is taken from the *Sustainable Principles* portion of the FMP:

The South Orange County Community College District is committed to an inventory of buildings and grounds that optimize sustainable principles for energy consumption, impact upon the natural environment and people friendly places. To address this commitment, new projects on Irvine Valley College campus will meet at a minimum established code requirements and seek to exceed requirements to achieve the benefits of a "Green Campus". Currently, project in the State of California must meet energy efficiency code compliance as describe by Title 24, and the CalGreen Building Code. In addition, optional measure of sustainable design measurement, such as LEED, is an expected objective for any new building of campus infrastructure project. Current standards of design should

exceed Title 24 by 15% minimum, divert 75% of construction waste and meet USGBC LEED Silver compliance; and incorporate utility provider incentive programs such as "Savings by Design".

During the projected lifespan of this Facilities Master Plan document numerous modifications and upgrades to building code compliance and energy standards will occur, and it is impossible to set specific criteria for projects to be accomplished in a long range planning context. However, an outline of Sustainability Principles can define a commitment for sustainable development, and reference to current standards may establish expectations that evolve as codes compliance changes and technology advances. The following outline of basic design principles offer criteria for initial projects within the Master Plan, and offer a basis for future evolution of criteria over time. These principles utilize current LEED-NC definitions for sustainable design and environmental sensitivity.

***Sustainable Sites**: This guideline defines the importance of site design and impacts of construction on water treatment, heat gain and pollution. Elements to be considered include:*

- *Orientation of building form to reduce heat gain and energy consumption*
- *Access to mass transit options to reduce vehicle use impacts*
- *Provisions for bicycle access and storage*
- *Enhancement of open space to improve environmental quality*
- *Storm water reduction and construction pollution*
- *Landscape and paving design to minimize heat island effects*
- *Landscape design to enhance passive cooling*
- *Lighting design to reduce energy consumption and light pollution*

***Water Efficiency**: This guideline defines the importance of site and building design to reduce water use and wastewater production. Elements to be considered include:*

- *Native and adaptive landscape planting to minimize water requirements*
- *Irrigation system minimization and efficiency*
- *Captured rainwater when possible*
- *Reclaimed water for non-potable uses*
- *Water conserving plumbing fixtures*
- *Incorporation of bioswales to reduce water run-off*
- *Sensors to control fixture operation*

***Energy and Atmosphere**: This guideline defines the importance of site and building design to energy consumption and air pollutants. Elements to be considered include:*

- *Building commissioning to ensure systems efficiency*
- *Energy Star certified high efficiency equipment specifications*
- *High efficiency lighting*
- *Occupancy sensors to minimize artificial lighting use*
- *Incorporation of appropriate natural day-lighting*
- *Use of natural refrigerants*
- *Roof surfaces to reflect solar radiation; such as "cool roofs"*
- *High efficiency building insulation*
- *High efficiency glazing and glazing systems*
- *Incorporation of renewable energy and/or "green power"*

***Materials and Resources**: This guideline defines the importance of recycled materials use and local materials use. Elements to be considered include:*

- *Re-utilization of existing building or site materials and construction waste*
- *Regional materials specification*
- *Rapidly renewable materials specification*
- *Operation of a materials recycling program*
- *Utilization of low maintenance, durable materials*
- *Specification of materials and systems to minimize life-cycle cost impacts*
- *Utilization of products free of unsafe chemicals or resins*
- *Design of flexible environments to minimize secondary construction*

***Indoor Environmental Quality**: This guideline defines the importance of materials use and space design to ensure occupant health and well-being. Elements to be considered include:*

- *Provision for adequate ventilation*
- *Provision for optimal day-lighting*
- *Specification of materials, products and adhesives with low levels of contaminants*
- *Individual lighting controls and task lighting*
- *Glazing or interior shading to reduce glare*

- *Individual space thermal comfort control*
- *Construction controls to minimize contamination*

Innovation in Design*: This guideline defines the importance of research and best practices beyond direct impacts of a given project. Elements to be considered include:*

- *Design consultant commitment to materials and methods research*
- *Construction professionals on-site methods to reduce energy consumption and waste*
- *Consultants business model to work efficiently and environmentally aware*
- *Innovative uses of energy savings, waste control and environmental impact*
- *Utilization of Building Information Modeling to improve process efficiency and reduce waste*
- *Utilization of integrated delivery methods to reduce schedules and delivery*
- *Utilization of energy modeling technology to anticipate design impacts*
- *Inclusion of building performance management systems*

Sustainable principles defined in the Facilities Master Plan should be reviewed and updated in each 5 year Master Plan cycle to address new parameters for energy efficient and environmentally sensitive design. The result with reduce negative impacts of building construction and use upon nature and provide effective results for optimized campus energy and maintenance costs and operational expenses.

4.4 MITIGATION REDUCTION SUMMARY

The Project-related short-term construction emissions summary after mitigation, along with a comparison of SCAQMD recommended significance thresholds, are shown in Tables 4-1 (regional) and 4-2 (localized).

For regional emissions, after implementation of the recommended mitigation measures, construction activity emissions will not exceed the numerical thresholds established by the SCAQMD and a less than significant impact is expected.

For localized emissions after implementation of the recommended mitigation measures, the results of the analysis indicate that emissions resulting from short-term construction activity will not exceed the SCAQMD LST thresholds and a less than significant impact is expected.

TABLE 4-1 EMISSIONS SUMMARY OF OVERALL CONSTRUCTION

(MAXIMUM DAILY EMISSIONS POUNDS PER DAY) (WITH MITIGATION)

Year	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Worst-Case Phase of Construction Activity						
Maximum Daily Emissions (lbs/day)	**33.03**	**88.86**	**57.07**	**0.10**	**10.49**	**7.09**
SCAQMD Regional Threshold (lbs/day)	75	100	550	150	150	55
Significant?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

Note: Please refer to Appendix A for the CalEEMod™ output files and additional hand calculations for the estimated emissions.

TABLE 4-2

SCREENING LOCALIZED SIGNIFICANCE SUMMARY CONSTRUCTION (WITH MITIGATION) POUNDS PER DAY

Activity	NO_x	CO	PM_{10}	$PM_{2.5}$
On-Site Demolition	79.87	45.95	4.10	4.10
On-Site Site Preparation	63.78	40.49	10.25	7.07
On-Site Grading	88.73	55.47	7.65	5.56
On-Site Building Construction	40.22	24.03	2.80	2.80
On-Site Paving	35.62	21.08	3.13	3.13
On-Site Architectural Coating	3.37	1.98	0.31	0.31
Maximum Daily Emissions (lbs/day)	**88.73**	**55.47**	**10.25**	**7.07**
SCAQMD Localized Threshold (lbs/day)	148	1,518.67	24.33	7.67
Significant?	**NO**	**NO**	**NO**	**NO**

NOTE: PLEASE REFER TO ATTACHMENT "A" FOR CALEEMOD™ OUTPUT FILES FOR THE ESTIMATED EMISSIONS.

5.0 REFERENCES

1. California Air Resources Board, 2007. *California Air Resources Board Almanac.*

2. California Air Resources Board, 2007. *EMFAC 2007.*

3. Stantec, 2011. *SOCCCD Traffic Impact Analysis.*

4. South Coast Air Quality Management District (SCAQMD), 1993. *CEQA Air Quality Handbook.*

5. South Coast Air Quality Management District (SCAQMD), 2011. *California Emissions Estimator Model (CalEEMod™).*

6. South Coast Air Quality Management District (SCAQMD), March 2009. *CEQA Air Quality Significance Thresholds.*

7. South Coast Air Quality Management District (SCAQMD), 2003. *Final Localized Significance Threshold Methodology.*

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX A

CalEEMod™ Input/Output
Construction and Operational Emissions

SOCCCD

South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Junior College (2Yr)	6963	Student
Parking Structure	60	1000sqft

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	9	**Precipitation Freq (Days)**	31		

1.3 User Entered Comments

Project Characteristics - 20% Renewables

Land Use - Project site acreage

Construction Phase - Max daily scenario

Off-road Equipment -

Off-road Equipment -

Vehicle Trips - Weekday Trip Rate from Project Traffic Study

Energy Use -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Energy Mitigation -

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2011	13.31	110.90	59.23	0.10	18.30	5.44	22.92	9.93	5.44	14.55	0.00	11,080.65	0.00	1.19	0.00	11,105.72
2012	28.54	50.46	42.84	0.08	2.86	3.04	5.90	0.05	3.00	3.04	0.00	7,747.56	0.00	0.67	0.00	7,761.70
2013	28.49	33.89	21.85	0.03	0.44	2.94	3.13	0.01	2.94	2.94	0.00	3,078.83	0.00	0.50	0.00	3,089.43
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2011	33.03	88.86	57.00	0.10	7.28	4.28	10.49	3.88	4.28	7.08	0.00	11,080.65	0.00	1.19	0.00	11,105.72
2012	28.54	50.46	42.84	0.08	2.86	3.04	5.90	0.05	3.00	3.04	0.00	7,747.56	0.00	0.67	0.00	7,761.70
2013	28.49	33.89	21.85	0.03	0.44	2.94	3.13	0.01	2.94	2.94	0.00	3,078.83	0.00	0.50	0.00	3,089.43
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	10.68	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.32	2.94	2.47	0.02		0.00	0.22		0.00	0.22		3,527.44		0.07	0.06	3,548.90
Mobile	41.28	95.44	451.64	1.13	120.14	5.63	125.77	1.71	5.41	7.12		94,802.57		3.74		94,881.19
Total	**52.28**	**98.38**	**454.11**	**1.15**	**120.14**	**5.63**	**125.99**	**1.71**	**5.41**	**7.34**		**98,330.01**		**3.81**	**0.06**	**98,430.09**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	10.68	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.28	2.51	2.11	0.02		0.00	0.19		0.00	0.19		3,009.29		0.06	0.06	3,027.60
Mobile	36.13	82.95	380.72	0.93	98.97	4.67	103.65	1.41	4.49	5.90		78,473.24		3.13		78,538.90
Total	**47.09**	**85.46**	**382.83**	**0.95**	**98.97**	**4.67**	**103.84**	**1.41**	**4.49**	**6.09**		**81,482.53**		**3.19**	**0.06**	**81,566.50**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	9.84	79.87	45.95	0.07		4.10	4.10		4.10	4.10		7,510.82		0.88		7,529.33
Total	**9.84**	**79.87**	**45.95**	**0.07**		**4.10**	**4.10**		**4.10**	**4.10**		**7,510.82**		**0.88**		**7,529.33**

3.2 Demolition - 2011

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.10	0.10	1.15	0.00	0.20	0.01	0.20	0.00	0.01	0.01		167.99		0.01		168.22
Total	**0.10**	**0.10**	**1.15**	**0.00**	**0.20**	**0.01**	**0.20**	**0.00**	**0.01**	**0.01**		**167.99**		**0.01**		**168.22**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	20.66	62.57	39.31	0.07		3.16	3.16		3.16	3.16	0.00	7,510.82		0.88		7,529.33
Total	**20.66**	**62.57**	**39.31**	**0.07**		**3.16**	**3.16**		**3.16**	**3.16**	**0.00**	**7,510.82**		**0.88**		**7,529.33**

3.2 Demolition - 2011

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.10	0.10	1.15	0.00	0.20	0.01	0.20	0.00	0.01	0.01		167.99		0.01		168.22
Total	**0.10**	**0.10**	**1.15**	**0.00**	**0.20**	**0.01**	**0.20**	**0.00**	**0.01**	**0.01**		**167.99**		**0.01**		**168.22**

3.3 Site Preparation - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.07	0.00	18.07	9.93	0.00	9.93						0.00
Off-Road	10.99	89.73	50.45	0.07		4.61	4.61		4.61	4.61		7,997.70		0.99		8,018.42
Total	**10.99**	**89.73**	**50.45**	**0.07**	**18.07**	**4.61**	**22.68**	**9.93**	**4.61**	**14.54**		**7,997.70**		**0.99**		**8,018.42**

3.3 Site Preparation - 2011

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.12	0.12	1.38	0.00	0.23	0.01	0.24	0.00	0.01	0.01		201.59		0.01		201.87
Total	**0.12**	**0.12**	**1.38**	**0.00**	**0.23**	**0.01**	**0.24**	**0.00**	**0.01**	**0.01**		**201.59**		**0.01**		**201.87**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.05	0.00	7.05	3.87	0.00	3.87						0.00
Off-Road	27.22	63.78	40.49	0.07		3.20	3.20		3.20	3.20	0.00	7,997.70		0.99		8,018.42
Total	**27.22**	**63.78**	**40.49**	**0.07**	**7.05**	**3.20**	**10.25**	**3.87**	**3.20**	**7.07**	**0.00**	**7,997.70**		**0.99**		**8,018.42**

3.3 Site Preparation - 2011

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.12	0.12	1.38	0.00	0.23	0.01	0.24	0.00	0.01	0.01		201.59		0.01		201.87
Total	**0.12**	**0.12**	**1.38**	**0.00**	**0.23**	**0.01**	**0.24**	**0.00**	**0.01**	**0.01**		**201.59**		**0.01**		**201.87**

3.4 Grading - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.67	0.00	8.67	3.31	0.00	3.31						0.00
Off-Road	13.18	110.77	57.70	0.10		5.43	5.43		5.43	5.43		10,856.66		1.18		10,881.42
Total	**13.18**	**110.77**	**57.70**	**0.10**	**8.67**	**5.43**	**14.10**	**3.31**	**5.43**	**8.74**		**10,856.66**		**1.18**		**10,881.42**

3.4 Grading - 2011

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.13	0.13	1.53	0.00	0.26	0.01	0.27	0.00	0.01	0.01		223.99		0.01		224.30
Total	**0.13**	**0.13**	**1.53**	**0.00**	**0.26**	**0.01**	**0.27**	**0.00**	**0.01**	**0.01**		**223.99**		**0.01**		**224.30**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.38	0.00	3.38	1.29	0.00	1.29						0.00
Off-Road	32.90	88.73	55.47	0.10		4.27	4.27		4.27	4.27	0.00	10,856.66		1.18		10,881.42
Total	**32.90**	**88.73**	**55.47**	**0.10**	**3.38**	**4.27**	**7.65**	**1.29**	**4.27**	**5.56**	**0.00**	**10,856.66**		**1.18**		**10,881.42**

3.4 Grading - 2011

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.13	0.13	1.53	0.00	0.26	0.01	0.27	0.00	0.01	0.01		223.99		0.01		224.30
Total	**0.13**	**0.13**	**1.53**	**0.00**	**0.26**	**0.01**	**0.27**	**0.00**	**0.01**	**0.01**		**223.99**		**0.01**		**224.30**

3.5 Building Construction - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	6.11	40.22	24.03	0.04		2.80	2.80		2.80	2.80		4,040.62		0.55		4,052.11
Total	**6.11**	**40.22**	**24.03**	**0.04**		**2.80**	**2.80**		**2.80**	**2.80**		**4,040.62**		**0.55**		**4,052.11**

3.5 Building Construction - 2011

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	1.17	13.16	7.78	0.02	0.62	0.46	1.08	0.02	0.43	0.44		1,816.15		0.06		1,817.37
Worker	1.13	1.14	13.16	0.02	2.24	0.07	2.32	0.03	0.07	0.10		1,926.34		0.12		1,928.94
Total	**2.30**	**14.30**	**20.94**	**0.04**	**2.86**	**0.53**	**3.40**	**0.05**	**0.50**	**0.54**		**3,742.49**		**0.18**		**3,746.31**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	6.11	40.22	24.03	0.04		2.80	2.80		2.80	2.80	0.00	4,040.62		0.55		4,052.11
Total	**6.11**	**40.22**	**24.03**	**0.04**		**2.80**	**2.80**		**2.80**	**2.80**	**0.00**	**4,040.62**		**0.55**		**4,052.11**

3.5 Building Construction - 2011

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	1.17	13.16	7.78	0.02	0.62	0.46	1.08	0.02	0.43	0.44		1,816.15		0.06		1,817.37
Worker	1.13	1.14	13.16	0.02	2.24	0.07	2.32	0.03	0.07	0.10		1,926.34		0.12		1,928.94
Total	**2.30**	**14.30**	**20.94**	**0.04**	**2.86**	**0.53**	**3.40**	**0.05**	**0.50**	**0.54**		**3,742.49**		**0.18**		**3,746.31**

3.5 Building Construction - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.63	37.37	23.73	0.04		2.54	2.54		2.54	2.54		4,040.62		0.51		4,051.23
Total	**5.63**	**37.37**	**23.73**	**0.04**		**2.54**	**2.54**		**2.54**	**2.54**		**4,040.62**		**0.51**		**4,051.23**

3.5 Building Construction - 2012

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	1.06	12.05	7.04	0.02	0.62	0.42	1.04	0.02	0.39	0.40		1,820.18		0.05		1,821.28
Worker	1.04	1.04	12.08	0.02	2.24	0.07	2.32	0.03	0.07	0.10		1,886.77		0.12		1,889.19
Total	**2.10**	**13.09**	**19.12**	**0.04**	**2.86**	**0.49**	**3.36**	**0.05**	**0.46**	**0.50**		**3,706.95**		**0.17**		**3,710.47**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.63	37.37	23.73	0.04		2.54	2.54		2.54	2.54	0.00	4,040.62		0.51		4,051.23
Total	**5.63**	**37.37**	**23.73**	**0.04**		**2.54**	**2.54**		**2.54**	**2.54**	**0.00**	**4,040.62**		**0.51**		**4,051.23**

3.5 Building Construction - 2012

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	1.06	12.05	7.04	0.02	0.62	0.42	1.04	0.02	0.39	0.40		1,820.18		0.05		1,821.28
Worker	1.04	1.04	12.08	0.02	2.24	0.07	2.32	0.03	0.07	0.10		1,886.77		0.12		1,889.19
Total	**2.10**	**13.09**	**19.12**	**0.04**	**2.86**	**0.49**	**3.36**	**0.05**	**0.46**	**0.50**		**3,706.95**		**0.17**		**3,710.47**

3.6 Architectural Coating - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	27.81					0.00	0.00		0.00	0.00						0.00
Off-Road	0.52	3.16	1.96	0.00		0.29	0.29		0.29	0.29		281.19		0.05		282.18
Total	**28.33**	**3.16**	**1.96**	**0.00**		**0.29**	**0.29**		**0.29**	**0.29**		**281.19**		**0.05**		**282.18**

3.6 Architectural Coating - 2012

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.21	0.21	2.39	0.00	0.44	0.01	0.46	0.01	0.01	0.02		372.97		0.02		373.44
Total	**0.21**	**0.21**	**2.39**	**0.00**	**0.44**	**0.01**	**0.46**	**0.01**	**0.01**	**0.02**		**372.97**		**0.02**		**373.44**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	27.81					0.00	0.00		0.00	0.00						0.00
Off-Road	0.52	3.16	1.96	0.00		0.29	0.29		0.29	0.29	0.00	281.19		0.05		282.18
Total	**28.33**	**3.16**	**1.96**	**0.00**		**0.29**	**0.29**		**0.29**	**0.29**	**0.00**	**281.19**		**0.05**		**282.18**

3.6 Architectural Coating - 2012

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.21	0.21	2.39	0.00	0.44	0.01	0.46	0.01	0.01	0.02		372.97		0.02		373.44
Total	**0.21**	**0.21**	**2.39**	**0.00**	**0.44**	**0.01**	**0.46**	**0.01**	**0.01**	**0.02**		**372.97**		**0.02**		**373.44**

3.6 Architectural Coating - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	27.81					0.00	0.00		0.00	0.00						0.00
Off-Road	0.49	2.96	1.94	0.00		0.27	0.27		0.27	0.27		281.19		0.04		282.10
Total	**28.30**	**2.96**	**1.94**	**0.00**		**0.27**	**0.27**		**0.27**	**0.27**		**281.19**		**0.04**		**282.10**

3.6 Architectural Coating - 2013

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.19	0.19	2.19	0.00	0.44	0.01	0.46	0.01	0.01	0.02		365.36		0.02		365.80
Total	**0.19**	**0.19**	**2.19**	**0.00**	**0.44**	**0.01**	**0.46**	**0.01**	**0.01**	**0.02**		**365.36**		**0.02**		**365.80**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	27.81					0.00	0.00		0.00	0.00						0.00
Off-Road	0.49	2.96	1.94	0.00		0.27	0.27		0.27	0.27	0.00	281.19		0.04		282.10
Total	**28.30**	**2.96**	**1.94**	**0.00**		**0.27**	**0.27**		**0.27**	**0.27**	**0.00**	**281.19**		**0.04**		**282.10**

3.6 Architectural Coating - 2013

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.19	0.19	2.19	0.00	0.44	0.01	0.46	0.01	0.01	0.02		365.36		0.02		365.80
Total	**0.19**	**0.19**	**2.19**	**0.00**	**0.44**	**0.01**	**0.46**	**0.01**	**0.01**	**0.02**		**365.36**		**0.02**		**365.80**

3.7 Paving - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.53	33.81	20.89	0.03		2.93	2.93		2.93	2.93		2,917.64		0.50		2,928.05
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**5.53**	**33.81**	**20.89**	**0.03**		**2.93**	**2.93**		**2.93**	**2.93**		**2,917.64**		**0.50**		**2,928.05**

3.7 Paving - 2013

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.08	0.08	0.97	0.00	0.20	0.01	0.20	0.00	0.01	0.01		161.19		0.01		161.38
Total	**0.08**	**0.08**	**0.97**	**0.00**	**0.20**	**0.01**	**0.20**	**0.00**	**0.01**	**0.01**		**161.19**		**0.01**		**161.38**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.53	33.81	20.89	0.03		2.93	2.93		2.93	2.93	0.00	2,917.64		0.50		2,928.05
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**5.53**	**33.81**	**20.89**	**0.03**		**2.93**	**2.93**		**2.93**	**2.93**	**0.00**	**2,917.64**		**0.50**		**2,928.05**

3.7 Paving - 2013

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.08	0.08	0.97	0.00	0.20	0.01	0.20	0.00	0.01	0.01		161.19		0.01		161.38
Total	**0.08**	**0.08**	**0.97**	**0.00**	**0.20**	**0.01**	**0.20**	**0.00**	**0.01**	**0.01**		**161.19**		**0.01**		**161.38**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

Increase Transit Accessibility

Improve Pedestrian Network

Provide Riade Sharing Program

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	36.13	82.95	380.72	0.93	98.97	4.67	103.65	1.41	4.49	5.90		78,473.24		3.13		78,538.90
Unmitigated	41.28	95.44	451.64	1.13	120.14	5.63	125.77	1.71	5.41	7.12		94,802.57		3.74		94,881.19
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Parking Structure	0.00	0.00	0.00		
Junior College (2Yr)	8,355.60	2,924.46	278.52	27,902,500	22,986,301
Total	8,355.60	2,924.46	278.52	27,902,500	22,986,301

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00
Junior College (2Yr)	8.90	13.30	7.40	6.40	88.60	5.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.28	2.51	2.11	0.02		0.00	0.19		0.00	0.19		3,009.29		0.06	0.06	3,027.60
NaturalGas Unmitigated	0.32	2.94	2.47	0.02		0.00	0.22		0.00	0.22		3,527.44		0.07	0.06	3,548.90
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Junior College (2Yr)	29983.2	0.32	2.94	2.47	0.02		0.00	0.22		0.00	0.22		3,527.44		0.07	0.06	3,548.90
Parking Structure	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.32**	**2.94**	**2.47**	**0.02**		**0.00**	**0.22**		**0.00**	**0.22**		**3,527.44**		**0.07**	**0.06**	**3,548.90**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Junior College (2Yr)	25.5789	0.28	2.51	2.11	0.02		0.00	0.19		0.00	0.19		3,009.29		0.06	0.06	3,027.60
Parking Structure	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.28**	**2.51**	**2.11**	**0.02**		**0.00**	**0.19**		**0.00**	**0.19**		**3,009.29**		**0.06**	**0.06**	**3,027.60**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	10.68	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	10.68	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.59					0.00	0.00		0.00	0.00						0.00
Consumer Products	8.09					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**10.68**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.59					0.00	0.00		0.00	0.00						0.00
Consumer Products	8.09					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**10.68**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

IVC

South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Junior College (2Yr)	2684	Student

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	9	**Precipitation Freq (Days)**	31		

1.3 User Entered Comments

Project Characteristics -

Land Use -

Construction Phase - construction in separate run

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.06	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.10	0.90	0.75	0.01		0.00	0.07		0.00	0.07		1,075.14		0.02	0.02	1,081.68
Mobile	11.83	28.39	105.02	0.44	46.33	2.00	48.32	0.66	1.94	2.61		34,968.21		0.92		34,987.61
Total	**14.99**	**29.29**	**105.77**	**0.45**	**46.33**	**2.00**	**48.39**	**0.66**	**1.94**	**2.68**		**36,043.35**		**0.94**	**0.02**	**36,069.29**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.06	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.10	0.90	0.75	0.01		0.00	0.07		0.00	0.07		1,075.14		0.02	0.02	1,081.68
Mobile	11.83	28.39	105.02	0.44	46.33	2.00	48.32	0.66	1.94	2.61		34,968.21		0.92		34,987.61
Total	**14.99**	**29.29**	**105.77**	**0.45**	**46.33**	**2.00**	**48.39**	**0.66**	**1.94**	**2.68**		**36,043.35**		**0.94**	**0.02**	**36,069.29**

3.0 Construction Detail

3.1 Mitigation Measures Construction

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	11.83	28.39	105.02	0.44	46.33	2.00	48.32	0.66	1.94	2.61		34,968.21		0.92		34,987.61
Unmitigated	11.83	28.39	105.02	0.44	46.33	2.00	48.32	0.66	1.94	2.61		34,968.21		0.92		34,987.61
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Junior College (2Yr)	3,220.80	1,127.28	107.36	10,755,466	10,755,466
Total	3,220.80	1,127.28	107.36	10,755,466	10,755,466

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Junior College (2Yr)	8.90	13.30	7.40	6.40	88.60	5.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.10	0.90	0.75	0.01		0.00	0.07		0.00	0.07		1,075.14		0.02	0.02	1,081.68
NaturalGas Unmitigated	0.10	0.90	0.75	0.01		0.00	0.07		0.00	0.07		1,075.14		0.02	0.02	1,081.68
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Junior College (2Yr)	9138.68	0.10	0.90	0.75	0.01		0.00	0.07		0.00	0.07		1,075.14		0.02	0.02	1,081.68
Total		**0.10**	**0.90**	**0.75**	**0.01**		**0.00**	**0.07**		**0.00**	**0.07**		**1,075.14**		**0.02**	**0.02**	**1,081.68**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Junior College (2Yr)	9.13868	0.10	0.90	0.75	0.01		0.00	0.07		0.00	0.07		1,075.14		0.02	0.02	1,081.68
Total		**0.10**	**0.90**	**0.75**	**0.01**		**0.00**	**0.07**		**0.00**	**0.07**		**1,075.14**		**0.02**	**0.02**	**1,081.68**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.06	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	3.06	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.74					0.00	0.00		0.00	0.00						0.00
Consumer Products	2.32					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**3.06**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.74					0.00	0.00		0.00	0.00						0.00
Consumer Products	2.32					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**3.06**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

IVC

South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Junior College (2Yr)	2684	Student

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	9	**Precipitation Freq (Days)**	31		

1.3 User Entered Comments

Project Characteristics -

Land Use -

Construction Phase - construction in separate run

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.06	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.10	0.90	0.75	0.01		0.00	0.07		0.00	0.07		1,075.14		0.02	0.02	1,081.68
Mobile	12.58	29.19	99.72	0.40	46.33	2.00	48.33	0.66	1.95	2.61		32,591.03		0.89		32,609.81
Total	**15.74**	**30.09**	**100.47**	**0.41**	**46.33**	**2.00**	**48.40**	**0.66**	**1.95**	**2.68**		**33,666.17**		**0.91**	**0.02**	**33,691.49**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.06	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.10	0.90	0.75	0.01		0.00	0.07		0.00	0.07		1,075.14		0.02	0.02	1,081.68
Mobile	12.58	29.19	99.72	0.40	46.33	2.00	48.33	0.66	1.95	2.61		32,591.03		0.89		32,609.81
Total	**15.74**	**30.09**	**100.47**	**0.41**	**46.33**	**2.00**	**48.40**	**0.66**	**1.95**	**2.68**		**33,666.17**		**0.91**	**0.02**	**33,691.49**

3.0 Construction Detail

3.1 Mitigation Measures Construction

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	12.58	29.19	99.72	0.40	46.33	2.00	48.33	0.66	1.95	2.61		32,591.03		0.89		32,609.81
Unmitigated	12.58	29.19	99.72	0.40	46.33	2.00	48.33	0.66	1.95	2.61		32,591.03		0.89		32,609.81
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Junior College (2Yr)	3,220.80	1,127.28	107.36	10,755,466	10,755,466
Total	3,220.80	1,127.28	107.36	10,755,466	10,755,466

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Junior College (2Yr)	8.90	13.30	7.40	6.40	88.60	5.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.10	0.90	0.75	0.01		0.00	0.07		0.00	0.07		1,075.14		0.02	0.02	1,081.68
NaturalGas Unmitigated	0.10	0.90	0.75	0.01		0.00	0.07		0.00	0.07		1,075.14		0.02	0.02	1,081.68
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Junior College (2Yr)	9138.68	0.10	0.90	0.75	0.01		0.00	0.07		0.00	0.07		1,075.14		0.02	0.02	1,081.68
Total		**0.10**	**0.90**	**0.75**	**0.01**		**0.00**	**0.07**		**0.00**	**0.07**		**1,075.14**		**0.02**	**0.02**	**1,081.68**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Junior College (2Yr)	9.13868	0.10	0.90	0.75	0.01		0.00	0.07		0.00	0.07		1,075.14		0.02	0.02	1,081.68
Total		**0.10**	**0.90**	**0.75**	**0.01**		**0.00**	**0.07**		**0.00**	**0.07**		**1,075.14**		**0.02**	**0.02**	**1,081.68**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.06	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	3.06	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.74					0.00	0.00		0.00	0.00						0.00
Consumer Products	2.32					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**3.06**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.74					0.00	0.00		0.00	0.00						0.00
Consumer Products	2.32					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**3.06**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

Saddleback Campus

South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Junior College (2Yr)	4279	Student

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	9	**Precipitation Freq (Days)**	31		

1.3 User Entered Comments

Project Characteristics -

Land Use -

Construction Phase - construction in separate run

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.88	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.16	1.43	1.20	0.01		0.00	0.11		0.00	0.11		1,714.05		0.03	0.03	1,724.49
Mobile	18.86	45.26	167.43	0.70	73.86	3.18	77.04	1.06	3.09	4.15		55,748.50		1.47		55,779.42
Total	**23.90**	**46.69**	**168.63**	**0.71**	**73.86**	**3.18**	**77.15**	**1.06**	**3.09**	**4.26**		**57,462.55**		**1.50**	**0.03**	**57,503.91**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.88	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.16	1.43	1.20	0.01		0.00	0.11		0.00	0.11		1,714.05		0.03	0.03	1,724.49
Mobile	18.86	45.26	167.43	0.70	73.86	3.18	77.04	1.06	3.09	4.15		55,748.50		1.47		55,779.42
Total	**23.90**	**46.69**	**168.63**	**0.71**	**73.86**	**3.18**	**77.15**	**1.06**	**3.09**	**4.26**		**57,462.55**		**1.50**	**0.03**	**57,503.91**

3.0 Construction Detail

3.1 Mitigation Measures Construction

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	18.86	45.26	167.43	0.70	73.86	3.18	77.04	1.06	3.09	4.15		55,748.50		1.47		55,779.42
Unmitigated	18.86	45.26	167.43	0.70	73.86	3.18	77.04	1.06	3.09	4.15		55,748.50		1.47		55,779.42
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Junior College (2Yr)	5,134.80	1,797.18	171.16	17,147,034	17,147,034
Total	5,134.80	1,797.18	171.16	17,147,034	17,147,034

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Junior College (2Yr)	8.90	13.30	7.40	6.40	88.60	5.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.16	1.43	1.20	0.01		0.00	0.11		0.00	0.11		1,714.05		0.03	0.03	1,724.49
NaturalGas Unmitigated	0.16	1.43	1.20	0.01		0.00	0.11		0.00	0.11		1,714.05		0.03	0.03	1,724.49
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Junior College (2Yr)	14569.5	0.16	1.43	1.20	0.01		0.00	0.11		0.00	0.11		1,714.05		0.03	0.03	1,724.49
Total		**0.16**	**1.43**	**1.20**	**0.01**		**0.00**	**0.11**		**0.00**	**0.11**		**1,714.05**		**0.03**	**0.03**	**1,724.49**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Junior College (2Yr)	14.5695	0.16	1.43	1.20	0.01		0.00	0.11		0.00	0.11		1,714.05		0.03	0.03	1,724.49
Total		**0.16**	**1.43**	**1.20**	**0.01**		**0.00**	**0.11**		**0.00**	**0.11**		**1,714.05**		**0.03**	**0.03**	**1,724.49**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.88	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	4.88	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.18					0.00	0.00		0.00	0.00						0.00
Consumer Products	3.70					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**4.88**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.18					0.00	0.00		0.00	0.00						0.00
Consumer Products	3.70					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**4.88**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

Saddleback Campus

South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Junior College (2Yr)	4279	Student

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	9	**Precipitation Freq (Days)**	31		

1.3 User Entered Comments

Project Characteristics -

Land Use -

Construction Phase - construction in separate run

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.88	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.16	1.43	1.20	0.01		0.00	0.11		0.00	0.11		1,714.05		0.03	0.03	1,724.49
Mobile	20.06	46.54	158.98	0.64	73.86	3.19	77.05	1.06	3.10	4.16		51,958.65		1.43		51,988.60
Total	**25.10**	**47.97**	**160.18**	**0.65**	**73.86**	**3.19**	**77.16**	**1.06**	**3.10**	**4.27**		**53,672.70**		**1.46**	**0.03**	**53,713.09**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.88	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.16	1.43	1.20	0.01		0.00	0.11		0.00	0.11		1,714.05		0.03	0.03	1,724.49
Mobile	20.06	46.54	158.98	0.64	73.86	3.19	77.05	1.06	3.10	4.16		51,958.65		1.43		51,988.60
Total	**25.10**	**47.97**	**160.18**	**0.65**	**73.86**	**3.19**	**77.16**	**1.06**	**3.10**	**4.27**		**53,672.70**		**1.46**	**0.03**	**53,713.09**

3.0 Construction Detail

3.1 Mitigation Measures Construction

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	20.06	46.54	158.98	0.64	73.86	3.19	77.05	1.06	3.10	4.16		51,958.65		1.43		51,988.60
Unmitigated	20.06	46.54	158.98	0.64	73.86	3.19	77.05	1.06	3.10	4.16		51,958.65		1.43		51,988.60
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Junior College (2Yr)	5,134.80	1,797.18	171.16	17,147,034	17,147,034
Total	5,134.80	1,797.18	171.16	17,147,034	17,147,034

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Junior College (2Yr)	8.90	13.30	7.40	6.40	88.60	5.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.16	1.43	1.20	0.01		0.00	0.11		0.00	0.11		1,714.05		0.03	0.03	1,724.49
NaturalGas Unmitigated	0.16	1.43	1.20	0.01		0.00	0.11		0.00	0.11		1,714.05		0.03	0.03	1,724.49
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Junior College (2Yr)	14569.5	0.16	1.43	1.20	0.01		0.00	0.11		0.00	0.11		1,714.05		0.03	0.03	1,724.49
Total		**0.16**	**1.43**	**1.20**	**0.01**		**0.00**	**0.11**		**0.00**	**0.11**		**1,714.05**		**0.03**	**0.03**	**1,724.49**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Junior College (2Yr)	14.5695	0.16	1.43	1.20	0.01		0.00	0.11		0.00	0.11		1,714.05		0.03	0.03	1,724.49
Total		**0.16**	**1.43**	**1.20**	**0.01**		**0.00**	**0.11**		**0.00**	**0.11**		**1,714.05**		**0.03**	**0.03**	**1,724.49**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.88	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	4.88	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.18					0.00	0.00		0.00	0.00						0.00
Consumer Products	3.70					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**4.88**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.18					0.00	0.00		0.00	0.00						0.00
Consumer Products	3.70					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**4.88**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

APPENDIX B

Rule 403 Regulatory Requirements and Mitigation Measure Example

Table 1
Fugitive Dust Best Available Control Measure
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Backfilling	01-1 Stabilize backfill material when not actively handling; and 01-2 Stabilize backfill material during handling; and 01-3 Stabilize soil at completion of activity.	• Mix backfill soil with water prior to moving. • Dedicate water truck or high capacity hose to backfilling equipment. • Empty loader bucket slowly so that no dust plumes are generated. • Minimize drop height from loader bucket.
Clearing and grubbing	02-1 Maintain stability of soil through pre-watering of site prior to clearing and grubbing; and 02-2 Stabilize soil during clearing and grubbing activities; and 02-3 Stabilize soil immediately after clearing and grubbing activities.	• Maintain live perennial vegetation where possible. • Apply water in sufficient quantity to prevent generation of dust plumes.
Clearing forms	03-1 Use water spray to clear forms; or 03-2 Use sweeping and water spray to clear forms; or 03-3 Use vacuum system to clear forms.	• Use of high-pressure air to clear forms may cause exceedance of Rule requirements.
Crushing	04-1 Stabilize surface soils prior to operation of support equipment; and 04-2 Stabilize material after crushing.	• Follow permit conditions for crushing equipment. • Prewater material prior to loading into crusher. • Monitor crusher emissions opacity. • Apply water to crushed material to prevent dust plumes
Cut and fill	05-1 Prewater soils prior to cut and fill activities; and 05-2 Stabilize soil during and after cut and fill activities.	• For large site, prewater with sprinklers or water trucks and allow time for penetration. • Use water trucks/pull to water soils to depth of cut prior to subsequent cuts.

Demolition—mechanical/ manual	06-1 Stabilize wind erodible surfaces to reduce dust; and 06-2 Stabilize surface soil where support equipment and vehicles will operate; and 06-3 Stabilize loose soil and demolition debris; and 06-4 Comply with AQMD Rule 1403.	• Apply water in sufficient quantities to prevent the generation of visible dust plumes.
Disturbed soil	07-1 Stabilize disturbed soil throughout the construction site; and 07-2 Stabilize disturbed soil between structures.	• Limit vehicular traffic and disturbances on soils where possible. • If interior block walls are planned, install as early as possible. • Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes.
Earth-moving activities	08-1 Preapply water to depth of proposed cuts; and 08-2 Reapply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 feet in any direction; and 08-3 Stabilize soils once earth moving activities are complete	• Grade each project phase separately, times to coincide with construction phase. • Upwind fencing can prevent material movement on-site. • Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes.
Importing/ exporting of bulk materials	09-1 Stabilize material while loading to reduce fugitive dust emissions; and 09-2 Maintain at least six inches of freeboard on haul vehicles; and 09-3 Stabilize material while transporting to reduce fugitive dust emissions; and 09-4 Stabilize material while unloading to reduce fugitive dust emissions; and 09-5 Comply with Vehicle Code Section 23114.	• Use tarps or other suitable enclosures on haul trucks. • Check belly-dump truck seals regularly and remove and trapped rocks to prevent spillage. • Comply with track-out prevention/ Mitigation requirements. • Provide water while loading and unloading to reduce visible dust plumes.

Landscaping	10-1 Stabilize soils, materials, slopes.	• Apply water to materials to stabilize. • Maintain materials in a crusted condition. • Maintain effective cover over materials. • Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes. • Hydroseed prior to rain season.
Road shoulder maintenance	11-1 Apply water to unpaved shoulders prior to clearing; and 11-2 Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance.	• Installation of curbing and/or paving road shoulders can reduce recurring maintenance costs. • Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs.
Screening	12-1 Prewater material prior to screening; and 12-2 Limit fugitive dust emissions to opacity and plum length standards; and 12-3 Stabilize material immediately after screening.	• Dedicate water truck or high capacity hose to screening operation. • Drop material through the screen slowly and minimize drop height. • Install wind barrier with a porosity of no more than 50% upwind of screen to the height of the drop point.
Staging areas	13-1 Stabilize staging areas during use; and 13-2 Stabilize staging area soils at project completion.	• Limit size of staging area. • Limit vehicle speeds of 15 miles per hour • Limit number and size of staging area entrances/exits.
Stockpiles/ Bulk Material Handling	14-1 Stabilize stockpiled materials. 14-2 Stockpiles within 100 yards of off-site occupied buildings must not be greater than eight feet in height; or must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage.	• Add or remove material from the downwind portion of the storage pile. • Maintain storage piles to avoid steep sides or faces.

Traffic Areas for Contruction	15-1 Stabilize all off-road traffic and parking areas; and 15-2 Stabilize all haul routes; and 15-3 Direct construction traffic over established haul routes.	• Apply gravel/paving to all haul routes as soon as possible to all future roadway areas. • Barriers can be used to ensure vehicles are only used on established parking areas/haul routes.
Trenching	16-1 Stabilize surface soils where trencher or excavator and support equipment will operate; and 16-2 Stabilize soils at the completion of trenching activities.	• Pre-watering of soils prior to trenching is an effective preventive measure. For deep trenching activities, pre-trench to 18-inches soak soils via the pre-trench and resuming trenching. • Washing mud and soils from equipment at the conclusion of trenching activities can prevent crusting and drying of soil on equipment.
Truck loading	17-1 Prewater material prior to loading; and 17-2 Ensure that freeboard exceeds six inches (CVC 23114).	• Empty loader bucket such that no visible dust plumes are created. • Ensure that the loader bucket is closer to the truck to minimize drop height while loading.
Turf Overseeding	18-1 Apply sufficient water immediately prior to conducting turf vacuuming activities to meet opacity and plum length standards; and 18-2 Cover haul vehicles prior to exiting the site.	• Haul waste material immediately off site.
Unpaved roads/ parking lots	19-1 Stabilize soils to meet the applicable performance standards; and 19-2 Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots.	• Restricting vehicular access to established unpaved travel path and parking lots can reduce stabilization requirements.
Vacant land	20-1 In instances where vacant lots are 0.10 acre or larger and have a cumulative area of 500 square feet or more that are driven over and/or used by	

	motor vehicles and/or off-road vehicles, prevent motor vehicles and/or off-road vehicle trespassing, parking and/or access by installing barriers curbs, fences, gates, posts, signs, shrubs, trees, or other effective control measures.	

Table 2
Dust Control Measures for Large Operations

Fugitive Dust Source Category	Control Actions
Earth-moving (except construction cutting and filling area, and mining operations)	1a Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or equivalent method approved by the Executive Officer, CARB, and the USEPA. Two soil moisture evaluations must be conducted during the first three hours or active operations during a calendar day, and two such evaluations each subsequent four-hour period of active operations; or 1a-1 For any earth-moving 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.
Earth-moving: Construction fill areas	1b Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. For areas which have an optimum moisture content for compaction of less than 12 percent, as determined by ASTM Method 1557 or other equivalent method approved by the Executive Officer and the California Air Resources Board and the U.S. EPA, complete the compaction process as expeditiously as possible after achieving at least 70 percent of the optimum soil moisture content. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations during each subsequent four hour period of active operations
Earth-moving: Construction cut areas and mining operations:	1c Conduct watering as necessary to prevent visible emissions from extending more than 100 feet beyond the active cut or mining area unless the area is inaccessible to watering vehicles due to slope conditions or other safety factors.
Disturbed surface areas (except completed grading areas)	2a/b Apply dust suppression in sufficient quantity and frequency to maintain a stabilized surface. Any areas which cannot be stabilized, as evidenced by wind-driven fugitive dust, must have an application of water at least twice per day to at least 80 percent of the unstabilized area.
Disturbed surface areas: Completed grading areas	2c Apply chemical stabilizers within five working days of grading completion; 2d Take actions (3a) or (3c) specified for inactive disturbed surface areas.

Inactive disturbed surface areas	3a 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 which are inaccessible to watering vehicles due to excessive slope or other safety conditions; or 3b Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; or 3c Establish a vegetative ground cover within 21 days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; or 3d Utilize any combination of control actions (3a), (3b), and (3c) such that, in total, these actions apply to all inactive disturbed surface areas.
Unpaved Roads	4a Water all roads used for any vehicular traffic at least once per every two hours of active operations [3 times per normal 8 hour work day]; or 4b Water all roads used for any vehicular traffic once daily and restrict vehicle speeds to 15 miles per hour; or 4c Apply a chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface.
Open storage piles	5a Apply chemical stabilizers; or 5b Apply water to at least 80 percent of the surface area of all open storage piles on a daily basis when there is evidence of wind driven fugitive dust; or 5c Install temporary coverings; or 5d Install a three-sided enclosure with walls with no more than 50 percent porosity which extend, at a minimum, to the top of the pile. This option may only be used at aggregate-related plants or at cement manufacturing facilities.
All Categories	6a Any other control measures approved by the Executive Officer and the USEPA as equivalent to the methods specified in this Table may be used.

Table 3
Contingency Control Measures for Large Operations

Fugitive Dust Source Category	Control Measures
Earth-moving	1A Cease all active operations; or 2A Apply water to soil not more than 15 minutes prior to moving such soil.
Disturbed surface areas	0B On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; or 1B Apply chemical stabilizers prior to wind event; or 2B Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind-driven fugitive dust, watering frequency is increased to a minimum of four times per day; or 3B Take the actions specified in this Table, Item (3c); or 4B Utilize any combination of control actions (1B), (2B), and (3B) such that, in total, these actions apply to all disturbed surface areas.
Unpaved roads	1C Apply chemical stabilizers prior to wind event; or 2C Apply water twice per hour during active operation; or 3C Stop all vehicular traffic.
Open storage piles	1D Apply water twice per hour; or 2D Install temporary coverings.
Paved road track-out	1E Cover all haul vehicles; or 2E Comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for both public and private roads.
All Categories	1F Any other control measures approved by the Executive Officer and the USEPA as equivalent to the methods specified in this Table may be used.

TABLE XI-A
MITIGATION MEASURE EXAMPLES:
FUGITIVE DUST FROM CONSTRUCTION & DEMOLITION

Source Activity	Mitigation Measure[1]	PM10 Control Efficiency	Comments	Estimated Cost[2]
Active demolition and debris removal	Apply water every 4 hours to the area within 100 feet of a structure being demolished, to reduce vehicle trackout.	36%		ND
Trackout	Use a gravel apron, 25 feet long by road width, to reduce mud/dirt trackout from unpaved truck exit routes.	46%		$1,360/year (gravel apron dimensions: 50' x 30' x 3" thick)
Post-demolition stabilization	Apply dust suppressants (e.g., polymer emulsion) to disturbed areas upon completion of demolition.	84%	For actively disturbed areas.	$5,340/acre-year (Useful life of 1 year)
Demolition Activities	Apply water to disturbed soils after demolition is completed or at the end of each day of cleanup.	10%	14-hour watering interval.	$68-$81/acre-day
Demolition Activities	Prohibit demolition activities when wind speeds exceed 25 mph.	98%	Estimated for high wind days in absence of soil disturbance activities. Demolition of 1,000 ft^2 structure on 1.2 acres.	$1.36 per 8 hour day idled
Construction Activities	Apply water every 3 hours to disturbed areas within a construction site.	61%	3.2-hour watering interval.	ND
Scraper loading and unloading	Require minimum soil moisture of 12% for earthmoving by use of a moveable sprinkler system or a water truck. Moisture content can be verified by lab sample or moisture probe.	69%	AP-42 emission factor equation for materials handling due to increasing soil moisture from 1.4% to 12%.	$138/acre (sprinkler system to maintain minimum soil moisture of 12%)
Construction traffic	Limit on-site vehicle speeds (on unpaved roads) to 15 mph by radar enforcement.	57%	Assume linear relationship between PM10 emissions and uncontrolled vehicle speed of 35 mph.	$22/inspection $180/sign

[1]Unless otherwise noted, information presented in this table is from the following reference: *WRAP Fugitive Dust Handbook*, September 7, 2006 (http://www.wrapair.org/forums/dejf/fdh/content/FDHandbook_Rev_06.pdf). ND = No Data.
[2]2003 dollars.

TABLE XI-A
MITIGATION MEASURE EXAMPLES:
FUGITIVE DUST FROM CONSTRUCTION & DEMOLITION

Source Component	Mitigation Measure[1]	PM10 Control Efficiency	References & Assumptions	Estimated Cost[2]
Grading	Replace ground cover in disturbed areas as quickly as possible.	5%[3]	EPA, "Control of Fugitive Dust Sources" EPA-450/3-88-008, September 1988	ND
Grading	All trucks hauling dirt, sand, soil, or other loose materials are to be tarped with a fabric cover and maintain a freeboard height of 12 inches.	91%	Arizona Department of Transportation Construction Analysis Services, "Final Field Study Report - PM10 Control Management Study for ADOT Construction Projects, June 1994	ND

[1]Unless otherwise noted, information presented in this table is from the following reference: *WRAP Fugitive Dust Handbook*, September 7, 2006 (http://www.wrapair.org/forums/dejf/fdh/content/FDHandbook_Rev_06.pdf). ND = No Data.

[2] 2003 dollars.

[3] Higher than 5% control efficiency may be used. However, please provide the supporting analysis and data in the environmental documentation.

Appendix D

Greenhouse Gas Analysis

41 Corporate Park, Suite 300
Irvine, CA 92606

Prepared by:

Haseeb Qureshi, MES
Aric Evatt

Prepared for:

Mr. Jeremy Krout
RGP PLANNING & DEVELOPMENT SERVICES
8921 Research Drive
Irvine, CA 92618

SOUTH ORANGE COUNTY COMMUNITY COLLEGE DISTRICT
SADDLEBACK COLLEGE AND IRVINE VALLEY COLLEGE
2011 FACILITIES MASTER PLANS
GREENHOUSE GAS ANALYSIS
COUNTY OF ORANGE, CALIFORNIA

November 10, 2011

JN:07318-02 GHG REPORT
HQ:AE

TABLE OF CONTENTS

Section Page

1.0 Executive Summary 5
- 1.1 Introduction 5
- 1.2 Project Overview 5
- 1.3 Existing Regulations and Standard Conditions 8
- 1.4 Summary of Findings 9
- 1.5 Construction Activity Mitigation Measures 9
- 1.6 Operational Activity Mitigation Measures 9
- 1.7 Project Design Features 10

2.0 Global Climate Change Analysis 13
- 2.1 Introduction to Global Climate Change 13
- 2.2 Greenhouse Gas Emissions Inventories 14
- 2.3 Global Climate Change 15
- 2.4 Global Climate Change Gases 16
- 2.5 Effects of Climate Change in California 21
- 2.6 Human Health Effects 24
- 2.7 GCC Regulatory Setting 26
- 2.8 Discussion on Establishment of Significance Thresholds 38
- 2.9 Project-Related GHG Emissions Under Business as Usual Conditions 40
- 2.10 Analysis of Greenhouse Gas Impact 42

3.0 References 50

LIST OF APPENDICES

Appendix Page

GHG Emissions Calculations..... A

LIST OF EXHIBITS

Exhibit Page

1-1 Regional Location 6
1-2 USGS Map – Saddleback College 7

LIST OF TABLES

Table		Page
2-1	Top GHG Producer Countries and the European Union	14
2-2	Global Warming Potentials and Atmospheric Lifetime of Select GHGs	17
2-3	Scoping Plan GHG Reduction Measures toward 2020 Target	34
2-4	Irvine Valley College Campus Total Greenhouse Gas Emissions (Annual) (Metric Tons Per Year) Without Mitigation	41
2-5	Saddleback College Campus Total Greenhouse Gas Emissions (Annual) (Metric Tons Per Year) Without Mitigation	41
2-6	Recommended Actions for Climate Change Proposed Scoping Plan	44

SOUTH ORANGE COUNTY COMMUNITY COLLEGE DISTRICT
SADDLEBACK COLLEGE & IRVINE VALLEY COLLEGE
2011 FACILITIES MASTER PLANS
GREENHOUSE GAS ANALYSIS
COUNTY OF ORANGE, CALIFORNIA

1.0 EXECUTIVE SUMMARY

1.1 Introduction

This report presents the results of the greenhouse gas analysis (GHGA) for the proposed South Orange County Community College District (SOCCCD) 2011 Facilities Master Plans (FMPs) for the Saddleback College campus, the Irvine Valley College (IVC) campus, and the Advanced Technology & Education Park (ATEP) campus (collectively referred to as the "Project"). The 2011 FMPs for Saddleback College and Irvine Valley College/ATEP describe the needed buildings, infrastructure, vehicular and pedestrian circulation improvements, and proposed sequencing schedules required for construction and operation of instructional and support facilities through the year 2031. The SOCCCD college campus locations are each shown on Exhibit 1-1 (Regional Location).

The purpose of this GHGA is to evaluate project-related construction and operational emissions to determine greenhouse gas (GHG) impacts as a result of the proposed project site.

1.2 Project Overview

Saddleback College

The 200-acre Saddleback College campus is located at 28000 Marguerite Parkway, at the northeast corner of Marguerite and Avery Parkways, in the City of Mission Viejo. The campus is in Section 24 of Township 7 South, Range 8 West, San Bernardino Baseline and Meridian (SBBM), as depicted on the United States Geological Survey (USGS) San Juan Capistrano, California (1981) 7.5-minute topographic quadrangle (Exhibit 1-2). Latitude and longitude coordinates are 33°33'08" North and 117°39'39" West, respectively.

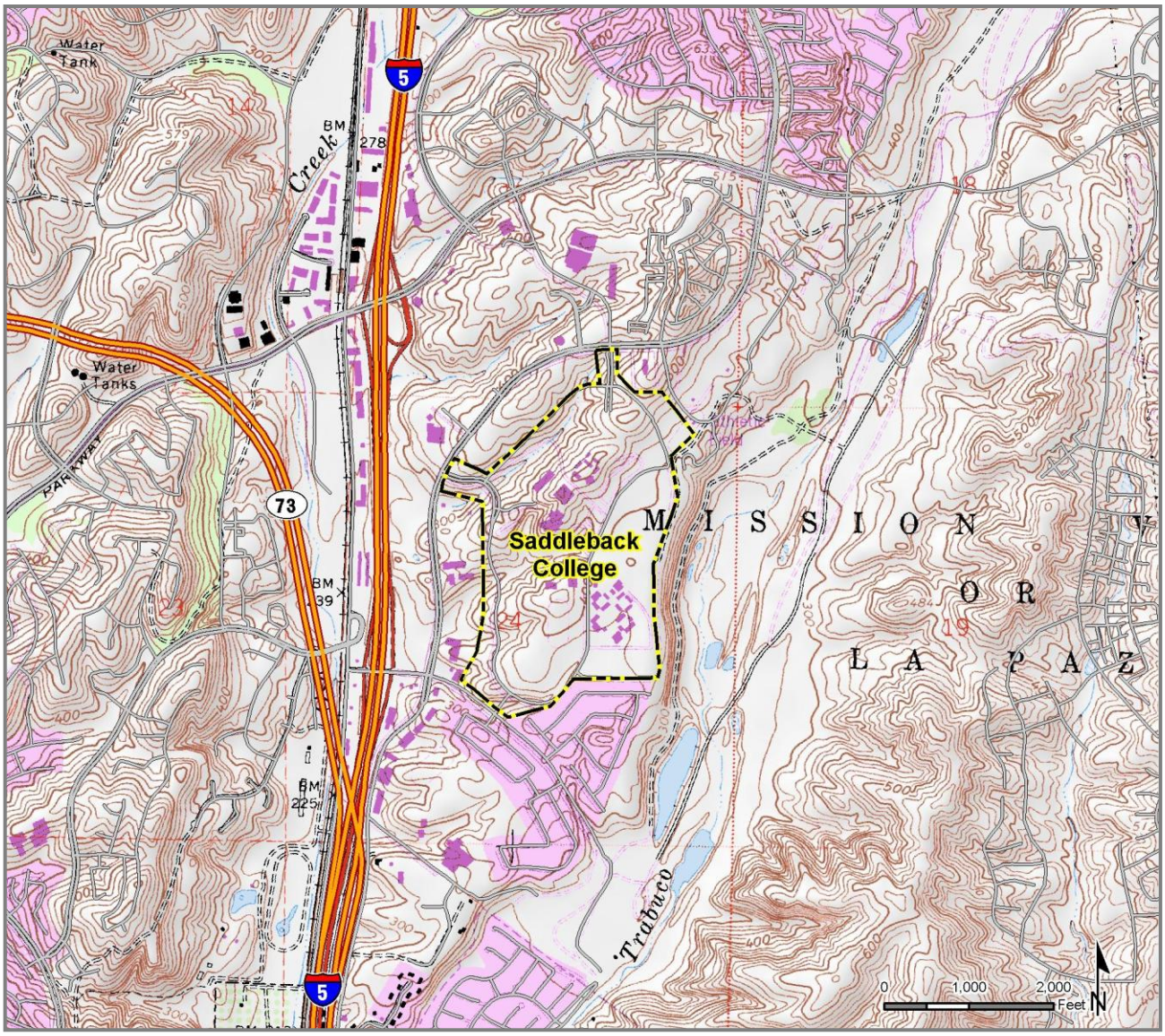
EXHIBIT 1-1

REGIONAL LOCATION



EXHIBIT 1-2

USGS MAP – SADDLEBACK COLLEGE



Basemap: USGS 7.5-minute map series, San Juan Capistrano quadrangle, rev. 1981

Irvine Valley College

The 100-acre Irvine Valley College campus is located at 5500 Irvine Valley Drive, at the southeast corner of Irvine Center Drive and Jeffrey Road, in the City of Irvine. The campus is partially in and south of Section 1 of Township 6 South, Range 9 West, SBBM, as depicted on the USGS Tustin, California (1981) 7.5-minute topographic quadrangle (Exhibit 1-3). Latitude and longitude coordinates are 33°40'34" North and 117°46' 26" West, respectively.

ATEP

The 68-acre ATEP campus is located at 15445 Lansdowne Road, east of the intersection of Red Hill Avenue and Valencia Avenue within the Tustin Legacy development (former Marine Corps Air Station Tustin) in the City of Tustin. The campus is in an unsectioned portion of Township 5 South, Range 9 West, SBBM, as also depicted on the Tustin 7.5-minute topographic quadrangle (Exhibit 1-3). Latitude and longitude coordinates are 33°42'55" North and 117°49' 43" West, respectively.

1.3 Existing Regulations and Standard Conditions

- Global Warming Solutions Act of 2006 (AB32)
- Regional GHG Emissions Reduction Targets/Sustainable Communities Strategies (SB 375)
- Pavely Fuel Efficiency Standards (AB1493). Establishes fuel efficiency ratings for new vehicles.
- Title 24 California Code of Regulations (California Building Code). Establishes energy efficiency requirements for new construction.
- Title 20 California Code of Regulations (Appliance Energy Efficiency Standards). Establishes energy efficiency requirements for appliances.
- Title 17 California Code of Regulations (Low Carbon Fuel Standard). Requires carbon content of fuel sold in California to be 10% less by 2020.
- California Water Conservation in Landscaping Act of 2006 (AB1881). Requires local agencies to adopt the Department of Water Resources updated Water Efficient Landscape Ordinance or equivalent by January 1, 2010 to ensure efficient landscapes in new development and reduced water waste in existing landscapes.
- Statewide Retail Provider Emissions Performance Standards (SB 1368). Requires energy generators to achieve performance standards for GHG emissions.

- Renewable Portfolio Standards (SB 1078). Requires electric corporations to increase the amount of energy obtained from eligible renewable energy resources to 20 percent by 2010 and 33 percent by 2020.

1.4 Summary of Findings

Results of the analysis indicate that the Project would generate GHG emission that may have a significant impact on the environment. However, the Project is consistent with, or otherwise not in conflict with (1) recommended measures and actions in the California Air Resources Board (CARB) December 2008 Scoping Plan (CARB Scoping Plan) setting forth strategies and measures to implement in order to achieve the GHG reductions goals set forth in the Global Warming Solutions Act of 2006 (AB 32); and (2) the GHG emission reduction strategies set forth in the 2006 Climate Action Team (CAT) Report, prepared in response to Executive Order S-3-05, which established total GHG emission targets for the State.

The Irvine Valley College Campus will result in approximately 6,497.49 MT/yr CO2e and 2.42 MT CO2e/Service Population (SP)/Yr.

The Saddleback College Campus will result in approximately 9,511.46 MT/yr CO2e and 2.22 MT CO2e/Service Population (SP)/Yr.

The proposed Project would therefore not exceed the threshold of 6.6 MT CO2e/SP/Yr for the Irvine Valley College Campus or the Saddleback College Campus. As such, the Project GHG emissions are not cumulatively considerable.

1.5 Construction Activity Mitigation Measures

No significant impacts were identified and no mitigation measures are required.

1.6 Operational Activity Mitigation Measures

No significant impacts were required and although no mitigation is required.

1.7 Project Design Features

Although the Project will not result in a significant impact, and thus no mitigation is required, the applicant has agreed to incorporate the following Project Design Features (PDF's) in good faith in an effort to further promote GHG reduction.

The Facilities Master Plan (FMP) contains numerous *Sustainable Principles* that will be implemented throughout development of the Project. The following excerpt is taken from the *Sustainable Principles* portion of the FMP:

The South Orange County Community College District is committed to an inventory of buildings and grounds that optimize sustainable principles for energy consumption, impact upon the natural environment and people friendly places. To address this commitment, new projects on Irvine Valley College campus will meet at a minimum established code requirements and seek to exceed requirements to achieve the benefits of a "Green Campus". Currently, project in the State of California must meet energy efficiency code compliance as describe by Title 24, and the CalGreen Building Code. In addition, optional measure of sustainable design measurement, such as LEED, is an expected objective for any new building of campus infrastructure project. Current standards of design should exceed Title 24 by 15% minimum, divert 75% of construction waste and meet USGBC LEED Silver compliance; and incorporate utility provider incentive programs such as "Savings by Design".

During the projected lifespan of this Facilities Master Plan document numerous modifications and upgrades to building code compliance and energy standards will occur, and it is impossible to set specific criteria for projects to be accomplished in a long range planning context. However, an outline of Sustainability Principles can define a commitment for sustainable development, and reference to current standards may establish expectations that evolve as codes compliance changes and technology advances. The following outline of basic design principles offer criteria for initial projects within the Master Plan, and offer a basis for future evolution of criteria over time. These principles utilize current LEED-NC definitions for sustainable design and environmental sensitivity.

***Sustainable Sites**: This guideline defines the importance of site design and impacts of construction on water treatment, heat gain and pollution. Elements to be considered include:*

- *Orientation of building form to reduce heat gain and energy consumption*
- *Access to mass transit options to reduce vehicle use impacts*
- *Provisions for bicycle access and storage*
- *Enhancement of open space to improve environmental quality*
- *Storm water reduction and construction pollution*
- *Landscape and paving design to minimize heat island effects*
- *Landscape design to enhance passive cooling*
- *Lighting design to reduce energy consumption and light pollution*

***Water Efficiency**: This guideline defines the importance of site and building design to reduce water use and wastewater production. Elements to be considered include:*

- *Native and adaptive landscape planting to minimize water requirements*
- *Irrigation system minimization and efficiency*
- *Captured rainwater when possible*
- *Reclaimed water for non-potable uses*
- *Water conserving plumbing fixtures*
- *Incorporation of bioswales to reduce water run-off*
- *Sensors to control fixture operation*

***Energy and Atmosphere**: This guideline defines the importance of site and building design to energy consumption and air pollutants. Elements to be considered include:*

- *Building commissioning to ensure systems efficiency*
- *Energy Star certified high efficiency equipment specifications*
- *High efficiency lighting*
- *Occupancy sensors to minimize artificial lighting use*
- *Incorporation of appropriate natural day-lighting*
- *Use of natural refrigerants*
- *Roof surfaces to reflect solar radiation; such as "cool roofs"*
- *High efficiency building insulation*
- *High efficiency glazing and glazing systems*
- *Incorporation of renewable energy and/or "green power"*

***Materials and Resources**: This guideline defines the importance of recycled materials use and local materials use. Elements to be considered include:*

- *Re-utilization of existing building or site materials and construction waste*
- *Regional materials specification*
- *Rapidly renewable materials specification*
- *Operation of a materials recycling program*
- *Utilization of low maintenance, durable materials*
- *Specification of materials and systems to minimize life-cycle cost impacts*
- *Utilization of products free of unsafe chemicals or resins*
- *Design of flexible environments to minimize secondary construction*

***Indoor Environmental Quality**: This guideline defines the importance of materials use and space design to ensure occupant health and well-being. Elements to be considered include:*

- *Provision for adequate ventilation*
- *Provision for optimal day-lighting*
- *Specification of materials, products and adhesives with low levels of contaminants*
- *Individual lighting controls and task lighting*
- *Glazing or interior shading to reduce glare*
- *Individual space thermal comfort control*
- *Construction controls to minimize contamination*

***Innovation in Design**: This guideline defines the importance of research and best practices beyond direct impacts of a given project. Elements to be considered include:*

- *Design consultant commitment to materials and methods research*
- *Construction professionals on-site methods to reduce energy consumption and waste*
- *Consultants business model to work efficiently and environmentally aware*
- *Innovative uses of energy savings, waste control and environmental impact*
- *Utilization of Building Information Modeling to improve process efficiency and reduce waste*
- *Utilization of integrated delivery methods to reduce schedules and delivery*
- *Utilization of energy modeling technology to anticipate design impacts*
- *Inclusion of building performance management systems*

Sustainable principles defined in the Facilities Master Plan should be reviewed and updated in each 5 year Master Plan cycle to address new parameters for energy efficient and environmentally sensitive design. The result with reduce negative impacts of building construction and use upon nature and provide effective results for optimized campus energy and maintenance costs and operational expenses.

2.0 GLOBAL CLIMATE CHANGE ANALYSIS

2.1 Introduction to Global Climate Change

Global Climate Change (GCC) is defined as the change in average meteorological conditions on the earth with respect to temperature, precipitation, and storms. GCC is currently one of the most controversial environmental issues in the United States, and much debate exists within the scientific community about whether or not GCC is occurring naturally or as a result of human activity. Some data suggests that GCC has occurred in the past over the course of thousands or millions of years. These historical changes to the Earth's climate have occurred naturally without human influence, as in the case of an ice age. However, many scientists believe that the climate shift taking place since the industrial revolution (1900) is occurring at a quicker rate and magnitude than in the past. Scientific evidence suggests that GCC is the result of increased concentrations of greenhouse gases in the earth's atmosphere, including carbon dioxide, methane, nitrous oxide, and fluorinated gases. Many scientists believe that this increased rate of climate change is the result of greenhouse gases resulting from human activity and industrialization over the past 200 years.

An individual project like the proposed March Business Center evaluated in this GHGA cannot generate enough greenhouse gas emissions to effect a discernible change in global climate. However, the proposed Project may participate in the potential for GCC by its incremental contribution of greenhouse gasses combined with the cumulative increase of all other sources of greenhouse gases, which when taken together constitute potential influences on GCC. Because these changes may have serious environmental consequences, Section 3.0 will evaluate the potential for the proposed Project to have a significant effect upon the environment as a result of its potential contribution to the greenhouse effect.

2.2 Greenhouse Gas Emissions Inventories

Global

Worldwide anthropogenic (man-made) GHG emissions are tracked by the Intergovernmental Panel on Climate Change for industrialized nations (referred to as Annex I) and developing nations (referred to as Non-Annex I). Man-made GHG emissions data for Annex I nations are available through 2009. Man-made GHG emissions data for Non-Annex I nations are available through 2007. For the Year 2009 the sum of these emissions totaled approximately 40,084 MMTCO2e.[1] Emissions from the top five countries and the European Union accounted for approximately 65 percent of the total global GHG emissions, according to the most recently available data (see Table 2-1, Top GHG Producer Countries and the European Union). The GHG emissions in more recent years may differ from the inventories presented in Table 2-1; however, the data is representative of currently available inventory data.

United States

As noted in Table 2-1, the United States was the number two producer of GHG emissions in 2009. The primary greenhouse gas emitted by human activities in the United States was CO2, representing approximately 83 percent of total greenhouse gas emissions.[2] Carbon dioxide from fossil fuel combustion, the largest source of US greenhouse gas emissions, accounted for approximately 78 percent of the GHG emissions.[3]

TABLE 2-1

TOP GHG PRODUCER COUNTRIES AND THE EUROPEAN UNION[4]

Emitting Countries	GHG Emissions (Million Metric Tons CO2e/yr)
China	6,703
United States	6,608
European Union	8,338

[1] The global emissions are the sum of Annex I and non-Annex I countries, without counting Land-Use, Land-Use Change and Forestry (LULUCF). For countries without 2005 data, the UNFCCC data for the most recent year were used. United Nations Framework Convention on Climate Change, "Annex I Parties – GHG total without LULUCF," http://unfccc.int/ghg_emissions_data/ghg_data_from_unfccc/time_series_annex_i/items/3841.php and "Flexible GHG Data Queries" with selections for total GHG emissions excluding LULUCF/LUCF, all years, and non-Annex I countries, http://unfccc.int/di/FlexibleQueries/Event.do?event= showProjection. n.d.

[2] US Environmental Protection Agency, "Inventory of US Greenhouse Gas Emissions and Sinks 1990–2009," http://www.epa.gov/climatechange/emissions/usgginventory.html. 2011.

[3] *ibid*

[4] World Resources Institute, " Climate Analysis Indicator Tool (CAIT) Excludes emissions and removals from land use, land-use change and forestry (LULUCF) Emissions Inventory," http://cait.wri.org

Russian Federation	2,159
India	1,410
Japan	1,209
Total	**26,427**

State of California

CARB compiles GHG inventories for the State of California. Based upon the 2008 GHG inventory data (i.e., the latest year for which data are available) for the 2000-2008 greenhouse gas emissions inventory, California emitted 474 MMTCO2e ***including*** emissions resulting from imported electrical power in 2008.[5] Based on the CARB inventory data and GHG inventories compiled by the World Resources Institute[6], California's total statewide GHG emissions rank second in the United States (Texas is number one) with emissions of 417 MMTCO2e ***excluding*** emissions related to imported power.

2.3 Global Climate Change

Global Climate Change (GCC) refers to the change in average meteorological conditions on the earth with respect to temperature, wind patterns, precipitation and storms. Global temperatures are regulated by naturally occurring atmospheric gases such as water vapor, CO_2 (Carbon Dioxide), N_2O (Nitrous Oxide), CH_4 (Methane), hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride. These particular gases are important due to their residence time (duration they stay) in the atmosphere, which ranges from 10 years to more than 100 years. These gases allow solar radiation into the Earth's atmosphere, but prevent radioactive heat from escaping, thus warming the Earth's atmosphere. GCC can occur naturally as it has in the past with the previous ice ages. According to the California Air Resources Board (CARB), the climate change that is currently in effect differs from previous climate changes in both rate and magnitude (CARB, 2004, Technical Support document for Staff Proposal Regarding Reduction of Greenhouse Gas Emissions from Motor Vehicles).

Gases that trap heat in the atmosphere are often referred to as greenhouse gases. Greenhouse gases are released into the atmosphere by both natural and anthropogenic (human) activity.

[5] California Air Resources Board, "California Greenhouse Gas 2000-2008 Inventory by Scoping Plan Category - Summary," http://www.arb.ca.gov/cc/inventory/data/data.htm. 2010.
[6] World Resources Institute, " Climate Analysis Indicator Tool (CAIT)-US – Yearly Emissions Inventory," http://cait.wri.org

Without the natural greenhouse gas effect, the Earth's average temperature would be approximately 61° Fahrenheit (F) cooler than it is currently. The cumulative accumulation of these gases in the earth's atmosphere is considered to be the cause for the observed increase in the earth's temperature.

Although California's rate of growth of greenhouse gas emissions is slowing, the state is still a substantial contributor. In 2004, the state is estimated to have produced 492 million gross metric tons of carbon dioxide equivalent greenhouse gas emissions. Despite a population increase of 16 percent between 1990 and 2004, California has significantly slowed the rate of growth of greenhouse gas emissions due to the implementation of energy efficiency programs as well as adoption of strict emission controls.

2.4 Global Climate Change Gases

For the purposes of this analysis, emissions of carbon dioxide, methane, and nitrous oxide were evaluated. Although other substances such as fluorinated gases also contribute to global climate change, sources of fluorinated gases are not well defined and no accepted emissions factors or methodology exist to accurately calculate these gases. The potential for fluorinated gases to result from operation of the proposed project is primarily a concern for HCFC emissions associated with project air conditioning leakage.

Greenhouse gases have varying global warming potential (GWP) values; GWP values represent the potential of a gas to trap heat in the atmosphere. Carbon dioxide is utilized as the reference gas for GWP, and thus has a GWP of 1.

The atmospheric lifetime and GWP of selected greenhouse gases are summarized in the following Table. As shown in the table below, GWP range from 1 for carbon dioxide to 23,900 for sulfur hexafluoride.

TABLE 2-2 GLOBAL WARMING POTENTIALS AND ATMOSPHERIC LIFETIME OF SELECT GHGS		
Gas	**Atmospheric Lifetime (years)**	**Global Warming Potential (100 year time horizon)**
Carbon Dioxide	50-200	1
Methane	12 ± 3	21
Nitrous Oxide	120	310
HFC-23	264	11,700
HFC-134a	14.6	1,300
HFC-152a	1.5	140
PFC: Tetrafluoromethane (CH4)	50,000	6,500
PFC: Hexafluoroethane (C2F6)	10,000	9,200
Sulfur Hexafluoride (SF6)	3,200	23,900
Source: EPA 2006 (URL: http://www.epa.gov/nonco2/econ-inv/table.html)		

Water Vapor: Water vapor (H_20) is the most abundant, important, and variable greenhouse gas in the atmosphere. Water vapor is not considered a pollutant; in the atmosphere it maintains a climate necessary for life. Changes in its concentration are primarily considered to be a result of climate feedbacks related to the warming of the atmosphere rather than a direct result of industrialization. A climate feedback is an indirect, or secondary, change, either positive or negative, that occurs within the climate system in response to a forcing mechanism. The feedback loop in which water is involved is critically important to projecting future climate change.

As the temperature of the atmosphere rises, more water is evaporated from ground storage (rivers, oceans, reservoirs, soil). Because the air is warmer, the relative humidity can be higher (in essence, the air is able to 'hold' more water when it is warmer), leading to more water vapor in the atmosphere. As a GHG, the higher concentration of water vapor is then able to absorb more thermal indirect energy radiated from the Earth, thus further warming the atmosphere. The warmer atmosphere can then hold more water vapor and so on and so on. This is referred to as a "positive feedback loop." The extent to which this positive feedback loop will continue is unknown as there are also dynamics that hold the positive feedback loop in check. As an example, when water vapor increases in the atmosphere, more of it will eventually also

condense into clouds, which are more able to reflect incoming solar radiation (thus allowing less energy to reach the Earth's surface and heat it up).

There are no human health effects from water vapor itself; however, when some pollutants come in contact with water vapor, they can dissolve and the water vapor can then act as a pollutant-carrying agent. The main source of water vapor is evaporation from the oceans (approximately 85 percent).[7] Other sources include: evaporation from other water bodies, sublimation (change from solid to gas) from sea ice and snow, and transpiration from plant leaves.

Carbon Dioxide: Carbon dioxide (CO_2) is an odorless and colorless GHG. Outdoor levels of carbon dioxide are not high enough to result in negative health effects. Carbon dioxide is emitted from natural and manmade sources. Natural sources include: the decomposition of dead organic matter; respiration of bacteria, plants, animals and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources include: the burning of coal, oil, natural gas, and wood. Carbon dioxide is naturally removed from the air by photosynthesis, dissolution into ocean water, transfer to soils and ice caps, and chemical weathering of carbonate rocks[8].

Since the industrial revolution began in the mid-1700s, the sort of human activity that increases GHG emissions has increased dramatically in scale and distribution. Data from the past 50 years suggests a corollary increase in levels and concentrations. As an example, prior to the industrial revolution, CO_2 concentrations were fairly stable at 280 parts per million (ppm). Today, they are around 370 ppm, an increase of more than 30 percent. Left unchecked, the concentration of carbon dioxide in the atmosphere is projected to increase to a minimum of 540 ppm by 2100 as a direct result of anthropogenic sources.[9]

Methane: Methane (CH_4) is an extremely effective absorber of radiation, though its atmospheric concentration is less than carbon dioxide and its lifetime in the atmosphere is brief (10-12

[7] ibid.
[8] On awarmer Earth, chemical weathering is promoted by more vigorous cycling of water through the atmosphere and higher temperatures. "More chemical weathering removes more CO2 from the atmosphere as carbonic acid reacts with silicate minerals, producing bicarbonate ion." *Carbon Cycle and Climate Change* – J Bret Bennington, Hofstra University.
http://www.cengage.com/custom/enrichment_modules/data/Carbon_Cycle_0495738557_LowRes.pdf
[9] International Panel on Climate Change 2007, "Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report,"
http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_wg1_report_the_physical_science_basis.htm

years), compared to other GHGs. No health effects are known to occur from exposure to methane.

Methane has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production (at the roots of the plants). Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of methane. Other anthropocentric sources include fossil-fuel combustion and biomass burning. [10]

Nitrous Oxide: Nitrous oxide (N_2O), also known as laughing gas, is a colorless greenhouse gas. Nitrous oxide can cause dizziness, euphoria, and sometimes slight hallucinations. In small doses, it is considered harmless. However, in some cases, heavy and extended use can cause Olney's Lesions (brain damage)[11].

Concentrations of nitrous oxide also began to rise at the beginning of the industrial revolution. In 1998, the global concentration was 314 parts per billion (ppb).[12] Nitrous oxide is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. It is used as an aerosol spray propellant, i.e., in whipped cream bottles. It is also used in potato chip bags to keep chips fresh. It is used in rocket engines and in race cars. Nitrous oxide can be transported into the stratosphere, be deposited on the Earth's surface, and be converted to other compounds by chemical reaction

Chlorofluorocarbons: Chlorofluorocarbons (CFCs) are gases formed synthetically by replacing all hydrogen atoms in methane or ethane (C_2H_6) with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble and chemically unreactive in the troposphere (the level of air at the Earth's surface). CFCs are no longer being used; therefore, it is not likely that health effects would be experienced. Nonetheless, in confined indoor locations, working with CFC-113 or other CFCs is thought to result in death by cardiac arrhythmia (heart frequency too high or too low) or asphyxiation.

[10] ibid.
[11] U.S. Department of Labor. Occupational Safety and Health Guideline for Nitrous Oxide. http://www.osha.gov/SLTC/healthguidelines/nitrousoxide/recognition.html
[12] ibid.

CFCs have no natural source, but were first synthesized in 1928. They were used for refrigerants, aerosol propellants and cleaning solvents. Due to 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 steady or declining. However, their long atmospheric lifetimes mean that some of the CFCs will remain in the atmosphere for over 100 years.

Hydrofluorocarbons: Hydrofluorocarbons (HFCs) are synthetic, man-made chemicals that are used as a substitute for CFCs. Out of all the greenhouse gases, they are one of three groups with the highest global warming potential. The HFCs with the largest measured atmospheric abundances are (in order), HFC-23 (CHF_3), HFC-134a (CF_3CH_2F), and HFC-152a (CH_3CHF_2). Prior to 1990, the only significant emissions were of HFC-23. HFC-134a emissions are increasing due to its use as a refrigerant. The U.S. EPA estimates that concentrations of HFC-23 and HFC-134a are now about 10 parts per trillion (ppt) each; and that concentrations of HFC-152a are about 1 ppt.[13] No health effects are known to result from exposure to HFCs, which are manmade for applications such as automobile air conditioners and refrigerants.

Perfluorocarbons: Perfluorocarbons (PFCs) have stable molecular structures and do not break down through chemical processes in the lower atmosphere. High-energy ultraviolet rays, which occur about 60 kilometers above Earth's surface, are able to destroy the compounds. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane (CF_4) and hexafluoroethane (C_2F_6). The U.S. EPA estimates that concentrations of CF_4 in the atmosphere are over 70 ppt.[14]

No health effects are known to result from exposure to PFCs. The two main sources of PFCs are primary aluminum production and semiconductor manufacture.

Sulfur Hexafluoride: Sulfur hexafluoride (SF_6) is an inorganic, odorless, colorless, nontoxic, nonflammable gas. It also has the highest GWP of any gas evaluated (23,900). The U.S. EPA indicates that concentrations in the 1990s were about 4 ppt.[15] In high concentrations in confined areas, the gas presents the hazard of suffocation because it displaces the oxygen needed for breathing.

[13] U.S. EPA. High Global Warming Potential (GWP) Gases. http://www.epa.gov/highgwp/scientific.html
[14] ibid.
[15] ibid.

Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

2.5 Effects of Climate Change in California

The California Environmental Protection Agency (CalEPA) published a report titled "Scenarios of Climate Change in California: An Overview" (Climate Scenarios report) in February 2006 (California Climate Change Center 2006), that while not adequate for a CEQA project-specific or cumulative analysis, is generally instructive about the statewide impacts of global warming.

The Climate Scenarios report uses a range of emissions scenarios developed by the Intergovernmental Panel on Climate Change (IPCC) to project a series of potential warming ranges (i.e., temperature increases) that may occur in California during the 21st century: lower warming range (3.0-5.5°F); medium warming range (5.5-8.0°F); and higher warming range (8.0-10.5°F). The Climate Scenarios report then presents an analysis of future climate in California under each warming range, that while uncertain, present a picture of the impacts of global climate change trends in California.

In addition, most recently on August 5, 2009, the State's Natural Resources Agency released a public review draft of its "California Climate Adaptation Strategy" report that details many vulnerabilities arising from climate change with respect to matters such as temperature extremes, sea level rise, wildfires, floods and droughts and precipitation changes. This report responds to the Governor's Executive Order S-13-2008 that called on state agencies to develop California's strategy to identify and prepare for expected climate impacts

According to the reports, substantial temperature increases arising from increased GHG emissions potentially could result in a variety of impacts to the people, economy, and environment of California associated with a projected increase in extreme conditions, with the severity of the impacts depending upon actual future emissions of GHGs and associated

warming. Under the emissions scenarios of the Climate Scenarios report, the impacts of global warming in California have the potential to include, but are not limited to, the following areas:

Public Health

According to Cal EPA, higher temperatures may increase the frequency, duration, and intensity of conditions conducive to air pollution formation. For example, days with weather conducive to ozone formation could increase from 25 to 35 percent under the lower warming range to 75 to 85 percent under the medium warming range. In addition, if global background ozone levels increase as predicted in some scenarios, it may become difficult to meet local air quality standards. Air quality could be further compromised by increases in wildfires, which emit fine particulate matter that can travel long distances, depending on wind conditions. The Climate Scenarios report indicates that large wildfires could become more frequent if GHG emissions are not significantly reduced.

In addition, under the higher warming range scenario, there could be up to 100 more days per year with temperatures above 90^{o}F in Los Angeles and 95^{o}F in Sacramento by 2100. This is a large increase over historical patterns and approximately twice the increase projected if temperatures remain within or below the lower warming range. Rising temperatures could increase the risk of death from dehydration, heat stroke/exhaustion, heart attack, stroke, and respiratory distress caused by extreme heat.

Water Resources

A vast network of man-made reservoirs and aqueducts captures and transports water throughout the state from northern California rivers and the Colorado River. The current distribution system relies on Sierra Nevada snowpack to supply water during the dry spring and summer months. Rising temperatures, potentially compounded by decreases in precipitation, could severely reduce spring snowpack, increasing the risk of summer water shortages.

If temperatures continue to increase, more precipitation could fall as rain instead of snow, and the snow that does fall could melt earlier, reducing the Sierra Nevada spring snowpack by as much as 70 to 90 percent. Under the lower warming range scenario, snowpack losses could be only half as large as those possible if temperatures were to rise to the higher warming range. How much snowpack could be lost depends in part on future precipitation patterns, the

projections for which remain uncertain. However, even under the wetter climate projections, the loss of snowpack could pose challenges to water managers and hamper hydropower generation. It could also adversely affect winter tourism. Under the lower warming range, the ski season at lower elevations could be reduced by as much as a month. If temperatures reach the higher warming range and precipitation declines, there might be many years with insufficient snow for skiing and snowboarding.

The State's water supplies are also at risk from rising sea levels. An influx of saltwater could degrade California's estuaries, wetlands, and groundwater aquifers. Saltwater intrusion caused by rising sea levels is a major threat to the quality and reliability of water within the southern edge of the Sacramento/San Joaquin River Delta – a major fresh water supply.

Agriculture

Increased temperatures could cause widespread changes to the agriculture industry reducing the quantity and quality of agricultural products statewide. First, California farmers could possibly lose as much as 25 percent of the water supply they need. Although higher CO_2 levels can stimulate plant production and increase plant water-use efficiency, California's farmers could face greater water demand for crops and a less reliable water supply as temperatures rise. Crop growth and development could change, as could the intensity and frequency of pest and disease outbreaks. Rising temperatures could aggravate O_3 pollution, which makes plants more susceptible to disease and pests and interferes with plant growth.

Plant growth tends to be slow at low temperatures, increasing with rising temperatures up to a threshold. However, faster growth can result in less-than-optimal development for many crops, so rising temperatures could worsen the quantity and quality of yield for a number of California's agricultural products. Products likely to be most affected include wine grapes, fruits and nuts.

In addition, continued global climate change could shift the ranges of existing invasive plants and weeds and alter competition patterns with native plants. Range expansion could occur in many species while range contractions may be less likely in rapidly evolving species with significant populations already established. Should range contractions occur, new or different weed species could fill the emerging gaps. Continued global climate change could alter the

abundance and types of many pests, lengthen pests' breeding season, and increase pathogen growth rates.

Forests and Landscapes

Global climate change has the potential to intensify the current threat to forests and landscapes by increasing the risk of wildfire and altering the distribution and character of natural vegetation. If temperatures rise into the medium warming range, the risk of large wildfires in California could increase by as much as 55 percent, which is almost twice the increase expected if temperatures stay in the lower warming range. However, since wildfire risk is determined by a combination of factors, including precipitation, winds, temperature, and landscape and vegetation conditions, future risks will not be uniform throughout the state. In contrast, wildfires in northern California could increase by up to 90 percent due to decreased precipitation.

Moreover, continued global climate change has the potential to alter natural ecosystems and biological diversity within the state. For example, alpine and subalpine ecosystems could decline by as much as 60 to 80 percent by the end of the century as a result of increasing temperatures. The productivity of the state's forests has the potential to decrease as a result of global climate change.

Rising Sea Levels

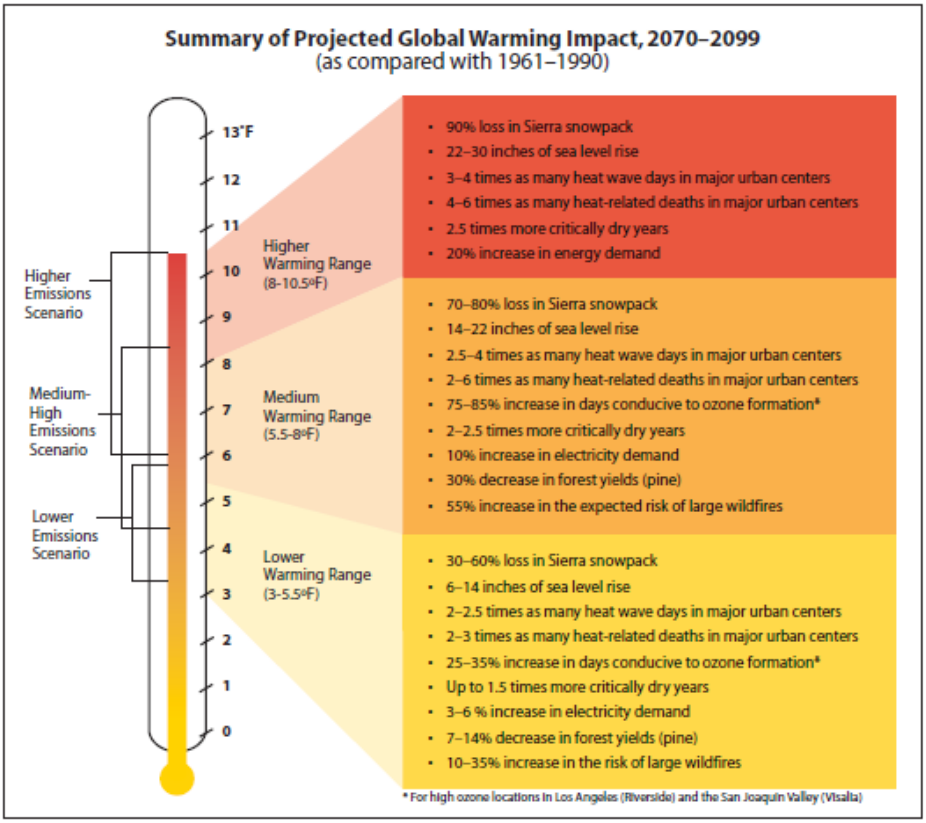
Rising sea levels, more intense coastal storms, and warmer water temperatures could increasingly threaten the state's coastal regions. Under the higher warming range scenario, sea level is anticipated to rise 22 to 35 inches by 2100. Elevations of this magnitude would inundate low-lying coastal areas with salt water, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats. Under the lower warming range scenario, sea level could rise 12-14 inches.

2.6 Human Health Effects

The potential health effects related directly to the emissions of carbon dioxide, methane, and nitrous oxide as they relate to development projects such as the proposed Project are still being debated in the scientific community. Their cumulative effects to global climate change have the potential to cause adverse effects to human health. Increases in Earth's ambient temperatures

would result in more intense heat waves, causing more heat-related deaths. Scientists also purport that higher ambient temperatures would increase disease survival rates and result in more widespread disease. Climate change will likely cause shifts in weather patterns, potentially resulting in devastating droughts and food shortages in some areas (American Lung Association, 2004). Figure 1 presents the potential impacts of global warming.

Figure 1



Source: California Energy Commission, 2006. Our Changing Climate, Assessing the Risks to California, 2006 Biennial Report.

Specific health effects associated with directly emitted GHG emissions are as follows:

Water Vapor: There are no known direct health effects related to water vapor at this time. It should be noted however that when some pollutants react with water vapor, the reaction forms a transport mechanism for some of these pollutants to enter the human body through water vapor.

Carbon Dioxide: According to the National Institute for Occupational Safety and Health (NIOSH) high concentrations of carbon dioxide can result in health effects such as: headaches, dizziness, restlessness, difficulty breathing, sweating, increased heart rate, increased cardiac output, increased blood pressure, coma, asphyxia, and/or convulsions. It should be noted that current concentrations of carbon dioxide in the earth's atmosphere are estimated to be approximately 370 parts per million (ppm), the actual reference exposure level (level at which adverse health effects typically occur) is at exposure levels of 5,000 ppm averaged over 10 hours in a 40-hour workweek and short-term reference exposure levels of 30,000 ppm averaged over a 15 minute period (NIOSH 2005).

Methane: Methane is extremely reactive with oxidizers, halogens, and other halogen-containing compounds. Methane is also an asphyxiant and may displace oxygen in an enclosed space (OSHA 2003).

Nitrous Oxide: Nitrous Oxide is often referred to as laughing gas; it is a colorless greenhouse gas. The health effects associated with exposure to elevated concentrations of nitrous oxide include dizziness, euphoria, slight hallucinations, and in extreme cases of elevated concentrations nitrous oxide can also cause brain damage (OSHA 1999).

Fluorinated Gases: High concentrations of fluorinated gases can also result in adverse health effects such as asphyxiation, dizziness, headache, cardiovascular disease, cardiac disorders, and in extreme cases, increased mortality (NIOSH 1989, 1997).

Aerosols: The health effects of aerosols are similar to that of other fine particulate matter. Thus aerosols can cause elevated respiratory and cardiovascular diseases as well as increased mortality (NASA 2002).

2.7 GCC Regulatory Setting

International Regulation and the Kyoto Protocol:

In 1988, the United Nations established the Intergovernmental Panel on Climate Change to evaluate the impacts of global warming and to develop strategies that nations could implement

to curtail global climate change. In 1992, the United States joined other countries around the world in signing the United Nations' Framework Convention on Climate Change (UNFCCC) agreement with the goal of controlling greenhouse gas emissions. As a result, the Climate Change Action Plan was developed to address the reduction of GHGs in the United States. The Plan currently consists of more than 50 voluntary programs.

The Kyoto protocol is a treaty made under the UNFCCC and was the first international agreement to regulate GHG emissions. Some have estimated that if the commitments outlined in the Kyoto protocol are met, global GHG emissions could be reduced an estimated five percent from 1990 levels during the first commitment period of 2008-2012. Notably, while the United States is a signatory to the Kyoto protocol, Congress has not ratified the Protocol and the United States is not bound by the Protocol's commitments. In December 2009, international leaders from 192 nations met in Copenhagen to address the future of international climate change commitments post-Kyoto.

Federal Regulation and the Clean Air Act:

Coinciding with the opening of Copenhagen, on December 7, 2009, the U.S. Environmental Protection Agency (EPA) issued an Endangerment Finding under Section 202(a) of the Clean Air Act, opening the door to federal regulation of GHGs. The Endangerment Finding notes that GHGs threaten public health and welfare and are subject to regulation under the Clean Air Act. To date, the EPA has not promulgated regulations on GHG emissions, but it has already begun to develop them.

Previously the EPA had not regulated GHGs under the Clean Air Act because it asserted that the Act did not authorize it to issue mandatory regulations to address global climate change and that such regulation would be unwise without an unequivocally established causal link between GHGs and the increase in global surface air temperatures. In *Massachusetts v. Environmental Protection Agency et al.* (127 S. Ct. 1438 (2007), however, the U.S. Supreme Court held that GHGs are pollutants under the Clean Air Act and directed the EPA to decide whether the gases endangered public health or welfare. The EPA had also not moved aggressively to regulate GHGs because it expected Congress to make progress on GHG legislation, primarily from the standpoint of a cap-and-trade system. However, proposals circulated in both the House of Representative and Senate have been controversial and it may be some time before Congress

adopts major climate change legislation. The EPA's Endangerment Finding paves the way for federal regulation of GHGs with or without Congress.

Although global climate change did not become an international concern until the 1980s, efforts to reduce energy consumption began in California in response to the oil crisis in the 1970s, resulting in the unintended reduction of greenhouse gas emissions. In order to manage the state's energy needs and promote energy efficiency, AB 1575 created the California Energy Commission (CEC) in 1975.

Title 24 Energy Standards:

The California Energy Commission (CEC) first adopted Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations, Title 24, Part 6) in 1978 in response to a legislative mandate to reduce energy consumption in the state. Although not originally intended to reduce GHG emissions, increased energy efficiency, and reduced consumption of electricity, natural gas, and other fuels would result in fewer GHG emissions from residential and nonresidential buildings subject to the standard. The standards are updated periodically to allow for the consideration and inclusion of new energy efficiency technologies and methods. The latest revisions were adopted in 2008 and became effective on January 1, 2010.

Part 11 of the Title 24 Building Standards Code is referred to as the California Green Building Standards Code (CALGreen Code). The purpose of the CALGreen Code is to "improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices in the following categories: (1) Planning and design; (2) Energy efficiency; (3) Water efficiency and conservation; (4) Material conservation and resource efficiency; and (5) Environmental air quality."[16] The CALGreen Code is not intended to substitute or be identified as meeting the certification requirements of any green building program that is not established and adopted by the California Building Standards Commission (CBSC). The CBSC has released a *2010 Draft California Green Building Standards Code* on its Web site.[17] It is anticipated the this update to Part 11 of the Title 24 Building Standards Code

[16] California Building Standards Commission, 2008 California Green Building Standards Code, (2009) 3.
[17] "CALGreen," http://www.bsc.ca.gov/CALGreen/default.htm. 2010

will be effective on January 1, 2011. Unless otherwise noted in the regulation, all newly constructed buildings in California are subject of the requirements of the CALGreen Code.

California Assembly Bill No. 1493 (AB 1493):

AB 1493 requires CARB to develop and adopt the nation's first greenhouse gas emission standards for automobiles. The Legislature declared in AB 1493 that global warming was a matter of increasing concern for public health and environment in the state. It citied several risks that California faces from climate change, including reduction in the state's water supply, increased air pollution creation by higher temperatures, harm to agriculture, an increase in wildfires, damage to the coastline, and economic losses caused by higher food, water energy, and insurance prices. Further, the legislature stated that technological solutions to reduce greenhouse gas emissions would stimulate the California economy and provide jobs.

To meet the requirements of AB 1493, ARB approved amendments to the California Code of Regulations (CCR) adding GHG emission standards to California's existing motor vehicle emission standards in 2004. Amendments to CCR Title 13 Sections 1900 (CCR 13 1900) and 1961 (CCR 13 1961) and adoption of Section 1961.1 (CCR 13 1961.1) require automobile manufacturers to meet fleet average GHG emission limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty passenger vehicle weight classes beginning with the 2009 model year. Emission limits are further reduced each model year through 2016.

In December 2004 a group of car dealerships, automobile manufacturers, and trade groups representing automobile manufacturers filed suit against ARB to prevent enforcement of CCR 13 1900 and CCR 13 1961 as amended by AB 1493 and CCR 13 1961.1 (*Central Valley Chrysler-Jeep et al. v. Catherine E. Witherspoon*, in her official capacity as Executive Director of the California Air Resources Board, et al.). The suit, heard in the U.S. District Court for the Eastern District of California, contended that California's implementation of regulations that in effect regulate vehicle fuel economy violates various federal laws, regulations, and policies. In January 2007, the judge hearing the case accepted a request from the State Attorney General's office that the trial be postponed until a decision is reached by the U.S. Supreme Court on a separate case addressing GHGs. In the Supreme Court Case, *Massachusetts vs. EPA*, the primary issue in question is whether the federal CAA provides authority for USEPA to regulate CO2 emissions. In April 2007, the U.S. Supreme Court ruled in Massachusetts' favor, holding

that GHGs are air pollutants under the CAA. On December 11, 2007, the judge in the *Central Valley Chrysler-Jeep* case rejected each plaintiff's arguments and ruled in California's favor. On December 19, 2007, the USEPA denied California's waiver request. California filed a petition with the Ninth Circuit Court of Appeals challenging USEPA's denial on January 2, 2008.

The Obama administration subsequently directed the USEPA to re-examine their decision. On May 19, 2009, challenging parties, automakers, the State of California, and the federal government reached an agreement on a series of actions that would resolve these current and potential future disputes over the standards through model year 2016. In summary, the USEPA and the U.S. Department of Transportation agreed to adopt a federal program to reduce GHGs and improve fuel economy, respectively, from passenger vehicles in order to achieve equivalent or greater greenhouse gas benefits as the AB 1493 regulations for the 2012–2016 model years. Manufacturers agreed to ultimately drop current and forego similar future legal challenges, including challenging a waiver grant, which occurred on June 30, 2009. The State of California committed to (1) revise its standards to allow manufacturers to demonstrate compliance with the fleet-average GHG emission standard by "pooling" California and specified State vehicle sales; (2) revise its standards for 2012–2016 model year vehicles so that compliance with USEPA-adopted GHG standards would also comply with California's standards; and (3) revise its standards, as necessary, to allow manufacturers to use emissions data from the federal CAFE program to demonstrate compliance with the AB 1493 regulations (CARB 2009, http://www.arb.ca.gov/regact/2009/ghgpv09/ghgpvisor.pdf).

Executive Order S-3-05:

Executive Order S-3-05, which was signed by Governor Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra's snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the Executive Order established total greenhouse gas emission targets. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80% below the 1990 level by 2050. The Executive Order directed the Secretary of the California Environmental Protection Agency (CalEPA) to coordinate a multi-agency effort to reduce greenhouse gas emissions to the target levels. The Secretary will also submit biannual reports to the Governor and state Legislature describing: (1) progress made toward reaching the emission targets; (2) impacts of global warming on California's resources; and (3) mitigation and adaptation plans to combat

these impacts. To comply with the Executive Order, the Secretary of the CalEPA created a Climate Action Team (CAT) made up of members from various state agencies and commission. CAT released its first report in March 2006. The report proposed to achieve the targets by building on voluntary actions of California businesses, local government and community actions, as well as through state incentive and regulatory programs.

California Assembly Bill 32 (AB 32):

In September 2006, Governor Arnold Schwarzenegger signed AB 32, the California Climate Solutions Act of 2006. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by the year 2020. This reduction will be accomplished through an enforceable statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs CARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires that CARB adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrives at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the state achieves reductions in GHG emissions necessary to meet the cap. AB 32 also includes guidance to institute emissions reductions in an economically efficient manner and conditions to ensure that businesses and consumers are not unfairly affected by the reductions.

In November 2007, CARB completed its estimates of 1990 GHG levels. Net emission 1990 levels were estimated at 427 MMTs (emission sources by sector were: transportation – 35 percent; electricity generation – 26 percent; industrial – 24 percent; residential – 7 percent; agriculture – 5 percent; and commercial – 3 percent)[18]. Accordingly, 427 MMTs of CO2 equivalent was established as the emissions limit for 2020. For comparison, CARB's estimate for baseline GHG emissions was 473 MMT for 2000 and 532 MMT for 2010. "Business as usual" conditions (without the 30 percent reduction to be implemented by CARB regulations) for 2020 were projected to be 596 MMTs.

[18] On a national level, the EPA's Endangerment Finding stated that electricity generation is the largest emitting sector (34%), followed by transportation (28%), and industry (19%).

In December 2007, CARB approved a regulation for mandatory reporting and verification of GHG emissions for major sources. This regulation covered major stationary sources such as cement plans, oil refineries, electric generating facilities/providers, and co-generation facilities, which comprise 94 percent of the point source CO2 emissions in the State.

On December 11, 2008, CARB adopted a scoping plan to reduce GHG emissions to 1990 levels. The Scoping Plan's recommendations for reducing GHG emissions to 1990 levels by 2020 include emission reduction measures, including a cap-and-trade program linked to Western Climate Initiative partner jurisdictions, green building strategies, recycling and waste-related measures, as well as Voluntary Early Actions and Reductions. CARB has until January 1, 2011, to adopt the necessary regulations to implement that plan. Implementation of individual measures must begin no later than January 1, 2012, so that the emissions reduction target can be fully achieved by 2020. CARB is currently drafting regulations to implement the plan.

Table 2-3 shows the proposed reductions from regulations and programs outlined in the Scoping Plan. While local government operations were not accounted for in achieving the 2020 emissions reduction, local land use changes are estimated to result in a reduction of 5 MMTons of CO2e, which is approximately 3 percent of the 2020 GHG emissions reduction goal. In recognition of the critical role local governments will play in successful implementation of AB 32, CARB is recommending GHG reduction goals of 15 percent of today's levels by 2020 to ensure that municipal and community-wide emissions match the state's reduction target. Measures that local governments take to support shifts in land use patterns are anticipated to emphasize compact, low-impact growth over development in greenfields, resulting in fewer vehicle miles traveled. According to the Measure Documentation Supplement to the Scoping Plan, local government actions and targets are anticipated to reduce vehicle miles by approximately 2 percent through land use planning, resulting in a potential GHG reduction of 2 MMTons tons of CO2e (or approximately 1.2 percent of the GHG reduction target).

California Senate Bill No. 1368 (SB 1368):

In 2006, the State Legislature adopted Senate Bill 1368 ("SB 1368"), which was subsequently signed into law by the Governor. SB 1368 directs the California Public Utilities Commission ("CPUC") to adopt a greenhouse gas emission performance standard ("EPS") for the future power purchases of California utilities. SB 1368 seeks to limit carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy

longer than five years from resources that exceed the emissions of a relatively clean, combined cycle natural gas power plant. Due to the carbon content of its fuel source, a coal-fired plant cannot meet this standard because such plants emit roughly twice as much carbon as natural gas, combined cycle plants. Accordingly, the new law will effectively prevent California's utilities from investing in, otherwise financially supporting, or purchasing power from new coal plants located in or out of the State. Thus, SB 1368 will lead to dramatically lower greenhouse gas emissions associated with California energy demand, as SB 1368 will effectively prohibit California utilities from purchasing power from out of state producers that cannot satisfy the EPS standard required by SB 1368.

Senate Bill 97 (SB 97):

Pursuant to the direction of SB 97, OPR released preliminary draft CEQA Guideline amendments for greenhouse gas emissions on January 8, 2009, and submitted its final proposed guidelines to the Secretary for Natural Resources on April 13, 2009. The Natural Resources Agency adopted the Guideline amendments and they became effective on March 18, 2010.

Of note, the new guidelines state that a lead agency shall have discretion to determine whether to use a quantitative model or methodology, or in the alternative, rely on a qualitative analysis or performance based standards. CEQA Guideline § 15064.4(a)"A lead agency shall have discretion to determine, in the context of a particular project, whether to: (1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use . . .; or (2) Rely on a qualitative analysis or performance based standards."

CEQA emphasizes that the effects of greenhouse gas emissions are cumulative, and should be analyzed in the context of CEQA's requirements for cumulative impacts analysis. (See CEQA Guidelines Section 15130(f)).

Section 15064.4(b) of the CEQA Guidelines provides direction for lead agencies for assessing the significance of impacts of greenhouse gas emissions:

1. The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;

2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; or

TABLE 2-3

SCOPING PLAN GHG REDUCTION MEASURES TOWARD 2020 TARGET

Recommended Reduction Measures	***Reductions Counted toward 2020 Target of 169 MMT CO2e***	***Percentage of Statewide 2020 Target***
Cap and Trade Program and Associated Measures		
California Light-Duty Vehicle GHG Standards	31.7	19%
Energy Efficiency	26.3	16%
Renewable Portfolio Standard (33 percent by 2020)	21.3	13%
Low Carbon Fuel Standard	15	9%
Regional Transportation-Related GHG Targets1	5	3%
Vehicle Efficiency Measures	4.5	3%
Goods Movement	3.7	2%
Million Solar Roofs	2.1	1%
Medium/Heavy Duty Vehicles	1.4	1%
High Speed Rail	1.0	1%
Industrial Measures	0.3	0%
Additional Reduction Necessary to Achieve Cap	34.4	20%
Total Cap and Trade Program Reductions	**146.7**	**87%**
Uncapped Sources/Sectors Measures		
High Global Warming Potential Gas Measures	20.2	12%
Sustainable Forests	5	3%
Industrial Measures (for sources not covered under cap and trade program)	1.1	1%
Recycling and Waste (landfill methane capture)	1	1%
Total Uncapped Sources/Sectors Reductions	**27.3**	**16%**
Total Reductions Counted toward 2020 Target	**174**	**100%**
Other Recommended Measures – Not Counted toward 2020 Target		
State Government Operations	1.0 to 2.0	1%
Local Government Operations	To Be Determined2	NA
Green Buildings	26	15%
Recycling and Waste	9	5%
Water Sector Measures	4.8	3%
Methane Capture at Large Dairies	1	1%
Total Other Recommended Measures – Not Counted toward 2020 Target	**42.8**	**NA**

Source: CARB. 2008, MMTons CO2e: million metric tons of CO2e 1 Reductions represent an estimate of what may be achieved from local land use changes. It is not the SB 375 regional target. 2 According to the Measure Documentation Supplement to the Scoping Plan, local government actions and targets are anticipated to reduce vehicle miles by approximately 2 percent through land use planning, resulting in a potential GHG reduction of 2 million metric tons of CO2e (or approximately 1.2 percent of the GHG reduction target). However, these reductions were not included in the Scoping Plan reductions to achieve the 2020 Target

3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

The CEQA Guideline amendments do not identify a threshold of significance for greenhouse gas emissions, nor do they prescribe assessment methodologies or specific mitigation measures. Instead, they call for a "good-faith effort, based on available information, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project." The amendments encourage lead agencies to consider many factors in performing a CEQA analysis and preserve lead agencies' discretion to make their own determinations based upon substantial evidence. The amendments also encourage public agencies to make use of programmatic mitigation plans and programs from which to tier when they perform individual project analyses. Specific GHG language incorporated in the Guidelines' suggested Environmental Checklist (Guidelines Appendix G) is as follows:

VII. GREENHOUSE GAS EMISSIONS

Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Executive Order S-01-07:

On January 18, 2007 California Governor Arnold Schwarzenegger, through Executive Order S-01-07, mandated a statewide goal to reduce the carbon intensity of California's transportation

fuel by at least ten percent by 2020. The order also requires that a California specific Low Carbon Fuel Standard be established for transportation fuels.

Senate Bills 1078 and 107 and Executive Order S-14-08:

SB 1078 (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20% of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010. In November 2008 Governor Schwarzenegger signed Executive Order S-14-08, which expands the state's Renewable Energy Standard to 33% renewable power by 2020.

Senate Bill 375:

SB 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires metropolitan planning organizations (MPOs) to adopt a sustainable communities strategy (SCS) or alternative planning strategy (APS) that will prescribe land use allocation in that MPO's regional transportation plan. ARB, in consultation with MPOs, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every 8 years but can be updated every 4 years if advancements in emissions technologies affect the reduction strategies to achieve the targets. ARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, transportation projects will not be eligible for funding programmed after January 1, 2012.

This law also extends the minimum time period for the regional housing needs allocation cycle from 5 years to 8 years for local governments located within an MPO that meets certain requirements. City or county land use policies (including general plans) are not required to be consistent with the regional transportation plan (and associated SCS or APS). However, new provisions of CEQA would incentivize (through streamlining and other provisions) qualified projects that are consistent with an approved SCS or APS, categorized as "transit priority projects."

CARB's Preliminary Draft Staff Proposal for Interim Significance Thresholds:

Separate from its Scoping Plan approved in December of 2008, CARB issued a Staff Proposal in October 2008, as its first step toward developing recommended statewide interim thresholds of significance for GHGs that may be adopted by local agencies for their own use. CARB staff's objective in this proposal is to develop a threshold of significance that will result in the vast majority (approximately 90 percent statewide) of GHG emissions from new industrial projects being subject to CEQA's requirement to impose feasible mitigation. The proposal does not attempt to address every type of project that may be subject to CEQA, but instead focuses on common project types that, collectively, are responsible for substantial GHG emissions – specifically, industrial, residential, and commercial projects. CARB is developing these thresholds in these sectors to advance climate objectives, streamline project review, and encourage consistency and uniformity in the CEQA analysis of GHG emissions throughout the state. These draft thresholds are under revision in response to comments. There is currently no timetable for finalized thresholds at this time.

As currently proposed by CARB, the threshold consists of a quantitative threshold of 7,000 metric tons (MT) of CO2e per year for operational emissions (excluding transportation), and performance standards for construction and transportation emissions. These performance standards have not yet been developed.

However, CARB's proposal is not yet final, and thus cannot be applied to the Project. Further, CARB's proposal sets forth draft thresholds for industrial projects that have high operational stationary GHG emissions, such as manufacturing plants, or uses that utilize combustion engines. Thus, mobile source emissions are not addressed. This Project's GHG emissions are mostly from mobile sources, and as such, the CARB proposal is not applicable to the Project.[19]

South Coast Air Quality Management District Recommendations for Significance Thresholds:

In April 2008, the South Coast Air Quality Management District (SCAQMD), in order to provide guidance to local lead agencies on determining the significance of GHG emissions identified in CEQA documents, convened a "GHG CEQA Significance Threshold Working Group."[20] The goal of the working group is to develop and reach consensus on an acceptable CEQA significance threshold for GHG emissions that would be utilized on an interim basis until CARB

[19] http://www.arb.ca.gov/cc/localgov/ceqa/meetings/102708/prelimdraftproposal102408.pdf
[20] For more information visit: http://www.aqmd.gov/ceqa/handbook/GHG/GHG.html.

(or some other state agency) develops statewide guidance on assessing the significance of GHG emissions under CEQA.

Initially, SCAQMD staff presented the working group with a significance threshold that could be applied to various types of projects—residential; non-residential; industrial; etc. However, the threshold is still under development. In December 2008, staff presented the SCAQMD Governing Board with a significance threshold for stationary source projects where it is the lead agency. This threshold uses a tiered approach to determine a project's significance, with 10,000 metric tons of carbon dioxide equivalent (MTCO2e) as a screening numerical threshold for stationary sources.

In September 2010, the Working Group released additional revisions which recommended a threshold of 3,500 MTCO2e for residential projects, 1,400 MTCO2e for commercial projects, and 3,000 MTCO2e for mixed use projects, additionally the working group identified project-level efficiency target of 4.8 MTCO2e per service population as a 2020 target and 3.0 MTCO2e per service population as a 2035 target. The recommended plan-level target for 2020 was 6.6 MTCO2e and the plan level target for 2035 was 4.1 MTCO2e. The SCAQMD has not announced when staff is expecting to present a finalized version of these thresholds to the Governing Board. The SCAQMD has also adopted Rules 2700, 2701, and 2702 that address GHG reductions; however, these rules are currently applicable to boilers and process heaters, forestry, and manure management projects.

2.8 Discussion on Establishment of Significance Thresholds

In order to assess the significance of a proposed project's environmental impacts it is necessary to identify quantitative or qualitative thresholds which, if exceeded, would constitute a finding of significance. As discussed above, while project-related GHG emissions can be estimated, the direct impacts of such emissions on climate change and global warming cannot be determined on the basis of available science. There is no evidence at this time that would indicate that the emissions from a project the size of the proposed project would directly affect global climate change. The SCAQMD has adopted a quantitative GHG emission significance thresholds to assess direct impacts from industrial projects for which the SCAQMD is the lead agency. The SCAQMD and other air quality agencies concur that GHG and climate change should be evaluated as a potentially significant cumulative rather than project-specific impact. The

SCAQMD is also considering adoption of a numeric plan-level efficiency target of 6.6 MTCO2e per service population.

AB 32 states, in part, that "[g]lobal warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California." Because global warming is the result of GHG emissions, and GHGs are emitted by innumerable sources worldwide, global climate change is considered to be a significant cumulative impact. GHG emissions from the project would contribute to cumulative GHG emissions in California and to the potential adverse environmental impacts of climate change.

As previously discussed, the new CEQA guidelines indicate that a project would result in a significant impact on climate change if a project were to: a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. Or b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Since AB 32 is the primary plan, policy or regulation adopted to reduce GHG emissions ,, a project would have a significant impact if it did not comply with the applicable Scoping Plan Measures.

Currently, there is no adopted threshold of significance for determining the cumulative significance of a project's GHG emissions on global climate change. In the most recent 2007 IPCC assessment report (IPPC 2007b, Synthesis Report), the IPCC acknowledges that anthropogenic warming and sea level rise would continue for centuries due to the time scales associated with climate processes and feedbacks even if GHG concentrations were to be stabilized. The IPCC further found that both past and future anthropogenic CO_2 emissions will continue to contribute to warming and sea level rise for more than a millennium, due to the time scales required for the removal of this gas from the atmosphere. (IPPC 2007b, Synthesis Report) Further, the IPCC assessment noted that defining what is dangerous anthropogenic interference with the climate system and, consequently, the limits to be set for policy purposes are complex tasks that can only be partially based on science, as such definitions inherently involve normative judgments. (IPCC 2007b – Working Group III)

Based on all the above, for the purposes of this analysis, implementation of the proposed project may have a significant adverse impact on GHG emissions if it would result in any of the following:

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, based on any applicable threshold of significance.

    a. A potentially significant impact would occur if the project exceeds the proposed SCAQMD's threshold of 6.6 MT CO2e/SP/Yr.

2. Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

    a. Fail to show consistency with AB 32's Scoping Plan and related measures.

2.9 Project-Related GHG Emissions

CEQA Guidelines 15064.4 (b) (1) states that a lead agency may use a model or methodology to quantify greenhouse gas emissions associated with a project.

On February 3, 2011, the SCAQMD released the California Emissions Estimator Model (CALEEMOD) Emissions Inventory Model™. The purpose of this new model is to more accurately calculate air quality and greenhouse gas (GHG) emissions from direct and indirect sources and quantify applicable air quality and GHG reductions achieved from mitigation measures. As such, the latest version of CALEEMOD™ was used for this project. The CalEEMod™ model includes GHG emissions from the following source categories: construction, area, energy, mobile, waste, water.

A summary of the project's GHG emissions are presented on Tables 2-4 and 2-5 as follows for the two campuses.

TABLE 2-4

IRVINE VALLEY COLLEGE CAMPUS TOTAL PROJECT GREENHOUSE GAS EMISSIONS (ANNUAL) (METRIC TONS PER YEAR) WITHOUT MITIGATION

	Emissions (metric tons per year)			
Emission Source	**CO_2**	**CH_4**	**N_2O**	**Total CO_2E**
Annual construction-related emissions	1,422.72	0.14	--	1,425.68
Energy	558.32	0.02	0.01	561.79
Mobile Sources	4,228.55	0.11	--	4,230.96
Waste	99.43	5.88	--	222.83
Water Usage	50.88	0.18	0.01	56.23
Total CO_2E (All Sources)			**6,497.49**	
Service Population			**2,684**	
MT CO_2E/Service Population (SP)/Yr			**2.42**	
Threshold MT CO_2E/SP/Yr			**6.6**	
Significant?			**NO**	

Source: CalEEMod™ model output, See Appendix "A" for detailed model outputs.
Note: Totals obtained from CalEEMod™ and may not total 100% due to rounding
MT = Metric Tons

TABLE 2-5

SADDLEBACK COLLEGE CAMPUS TOTAL PROJECT GREENHOUSE GAS EMISSIONS (ANNUAL) (METRIC TONS PER YEAR) WITHOUT MITIGATION

	Emissions (metric tons per year)			
Emission Source	**CO_2**	**CH_4 (CO_2E)**	**N_2O(CO_2E)**	**Total CO_2E**
Annual construction-related emissions	1,422.72	0.14	--	1,425.68
Energy	890.12	0.03	0.02	2,386.07
Mobile Sources	6,741.42	0.18	--	6,745.25
Waste	158.52	9.37	--	355.25
Water Usage	81.11	0.28	0.01	89.64
Total CO_2E (All Sources)			**9,511.46**	
Service Population			**4,279**	
MT CO_2E/Service Population (SP)/Yr			**2.22**	
Threshold MT CO_2E/SP/Yr			**6.6**	
Significant?			**NO**	

Source: CalEEMod™ model output, See Appendix "A" for detailed model outputs.
Note: Totals obtained from CalEEMod™ and may not total 100% due to rounding
MT = Metric Tons

2.10 Analysis of Greenhouse Gas Impact

FACTOR NO. 1: The extent to which the project may generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, based on any applicable threshold of significance.

As shown on Table 2-4, the Irvine Valley College Campus will result in approximately 6,497.49 MT/yr CO2e and 2.42 MT CO2e/Service Population (SP)/Yr.

As shown on Table 2-5, the Saddleback College Campus will result in approximately 9,511.46 MT/yr CO2e and 2.22 MT CO2e/Service Population (SP)/Yr.

The proposed Project would therefore not exceed the threshold of 6.6 MT CO2e/SP/Yr for the Irvine Valley College Campus or the Saddleback College Campus. As such, the Project GHG emissions are not cumulatively considerable.

FACTOR NO. 2: The extent to which the project may conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

Consistency with the CARB Scoping Plan

AB 32 requires California to reduce its GHG emissions by approximately 29% below business as usual. CARB identified reduction measures to achieve this goal as set forth in the CARB Scoping Plan. Thus, projects that are consistent with the CARB Scoping Plan are also consistent with the 29% reduction below business as usual required by AB 32.

The proposed project would generate GHG emissions from a variety of sources which would all emit CO_2, CH_4 and N_2O. GHGs could also be indirectly generated by incremental electricity consumption and waste generation from the proposed project.

Table 2-6 below, presents the 39 Recommended Actions (qualitative measures) identified to date by CARB in its Climate Change Proposed Scoping Plan. Of the 39 measures identified, those that would be considered to be applicable to the Project would primarily be those actions related to transportation, electricity and natural gas use, green building design and industrial

uses. Consistency of the Project with these measures is evaluated by each source-type measure below. Table 2-6 identifies which CARB Recommended Actions applies to the Project, and of those, whether the Project is consistent therewith. A discussion of how the Project is consistent with each applicable CARB Recommended Action is set forth after Table 2-5.

Additionally, the project plans to incorporate various project design features that will further promote sustainability and reduce GHG emissions. The applicable project design features are outlined in Section 1.7 of this report.

TABLE 2-6

RECOMMENDED ACTIONS FOR CLIMATE CHANGE PROPOSED SCOPING PLAN

ID #	Sector	Strategy Name	Applicable to Project?	Will Project Conflict With Implementation?
T-1	Transportation	Pavley I and II – Light-Duty Vehicle GHG Standards	YES	NO
T-2	Transportation	Low Carbon Fuel Standard (Discrete Early Action)	YES	NO
T-3	Transportation	Regional Transportation-Related GHG Targets	YES	NO
T-4	Transportation	Vehicle Efficiency Measures	YES	NO
T-5	Transportation	Ship Electrification at Ports (Discrete Early Action)	NO	NO
T-6	Transportation	Goods-movement Efficiency Measures	NO	NO
T-7	Transportation	Heavy Duty Vehicle Greenhouse Gas Emission Reduction Measure – Aerodynamic Efficiency (Discrete Early Action)	NO	NO
T-8	Transportation	Medium and Heavy-Duty Vehicle Hybridization	NO	NO
T-9	Transportation	High Speed Rail	NO	NO
E-1	Electricity and Natural Gas	Increased Utility Energy efficiency programs More stringent Building and Appliance Standards	YES	NO
E-2	Electricity and Natural Gas	Increase Combined Heat and Power Use by 30,000GWh	NO	NO
E-3	Electricity and Natural Gas	Renewable Portfolio Standard	NO	NO
E-4	Electricity and Natural Gas	Million Solar Roofs	NO	NO
CR-1	Electricity and Natural Gas	Energy Efficiency	NO	NO
CR-2	Electricity and Natural Gas	Solar Water Heating	NO	NO
GB-1	Green Buildings	Green Buildings	YES	NO
W-1	Water	Water Use Efficiency	YES	NO
W-2	Water	Water Recycling	NO	NO
W-3	Water	Water System Energy Efficiency	NO	NO
W-4	Water	Reuse Urban Runoff	NO	NO
W-5	Water	Increase Renewable Energy Production	NO	NO
W-6	Water	Public Goods Charge (Water)	NO	NO
I-1	Industry	Energy Efficiency and Co-benefits Audits for Large Industrial Sources	NO	NO
I-2	Industry	Oil and Gas Extraction GHG Emission Reduction	NO	NO
I-3	Industry	GHG Leak Reduction from Oil and Gas Transmission	NO	NO
I-4	Industry	Refinery Flare Recovery Process Improvements	NO	NO
I-5	Industry	Removal of Methane Exemption from Existing Refinery Regulations	NO	NO
RW-1	Recycling and Waste Management	Landfill Methane Control (Discrete Early Action)	NO	NO
RW-2	Recycling and Waste Management	Additional Reductions in Landfill Methane – Capture Improvements	NO	NO
RW-3	Recycling and Waste Management	High Recycling/Zero Waste	NO	NO
F-1	Forestry	Sustainable Forest Target	NO	NO
H-1	High Global Warming Potential Gases	Motor Vehicle Air Conditioning Systems (Discrete Early Action)	NO	NO
H-2	High Global Warming Potential Gases	SF_6 Limits in Non-Utility and Non-Semiconductor Applications (Discrete Early Action)	NO	NO
H-3	High Global Warming Potential Gases	Reduction in Perflourocarbons in Semiconductor Manufacturing (Discrete Early Action)	NO	NO
H-4	High Global Warming Potential Gases	Limit High GWP Use in Consumer Products (Discrete Early Action, Adopted June 2008)	NO	NO
H-5	High Global Warming Potential Gases	High GWP Reductions from Mobile Sources	NO	NO
H-6	High Global Warming Potential Gases	High GWP Reductions from Stationary Sources	NO	NO
H-7	High Global Warming Potential Gases	Mitigation Fee on High GWP Gases	NO	NO
A-1	Agriculture	Methane Capture at Large Dairies	NO	NO

SOURCE: CARB, 2008.

A detailed discussion of the applicability of each measure and if the project conflicts with its implementation is as follows:

Transportation

CARB's Scoping Plan identifies nine transportation-related recommended actions. Action T-1 concerns improvements to light-duty vehicle technology for the purposes of reducing GHG emissions. This action focuses on legislating improved controls for vehicle manufacturers and would not generally be considered applicable to the proposed project. Vehicles utilized by the proposed project would be subject to the Pavley standards, as applicable, and would be consistent with and not conflict with this recommended action.

Action T-2 concerns implementation of a low carbon fuel standard. To reduce the carbon intensity of transportation fuels, CARB is developing a Low Carbon Fuel Standard (LCFS), which would reduce the carbon intensity of California's transportation fuels by at least ten percent by 2020 as called for by Governor Schwarzenegger in Executive Order S-01-07. LCFS will incorporate compliance mechanisms that provide flexibility to fuel providers in how they meet the requirements to reduce greenhouse gas emissions.

While implementation of such a standard is not within the purview of a development project, a land use such the proposed project would be a substantial consumer of fuels for transportation purposes. Projects such as the proposed project would be required to participate with the use of low carbon fuels as they are made available through purchase of fuels for its vehicle fleet. Therefore, the proposed project would not conflict with measures concerning the use of low carbon fuels.

Action T-3 addressees regional transportation targets for reducing GHG emissions. SB 375 requires CARB to develop, in consultation with metropolitan planning organizations (MPOs), passenger vehicle greenhouse gas emissions reduction targets for 2020 and 2035 by September 30, 2010. It sets forth a collaborative process to establish these targets, including the appointment by CARB of a Regional Targets Advisory Committee to recommend factors to be considered and methodologies for setting greenhouse gas emissions reduction targets. SB 375 also provides incentives – relief from certain California Environmental Quality Act (CEQA) requirements for development projects that are consistent with regional plans that achieve the targets. The proposed project is not expected to conflict with the SB 375 targets.

Action T-4 is concerned with vehicle efficiency measures. The California Integrated Waste Management Board (CIWMB) with various partners continues to conduct a public awareness campaign to promote sustainable tire practices. CARB is pursuing a regulation to ensure that tires are properly inflated when vehicles are serviced. In addition, CEC in consultation with CIWMB is developing an efficient tire program focusing first on data gathering and outreach, then on potential adoption of minimum fuel-efficient tire standards, and lastly on the development of consumer information requirements for replacing tires. CARB is also pursuing ways to reduce engine load via lower friction oil and reducing the need for air conditioner use. ARB is actively engaged in the regulatory development process for the tire inflation component of this measure. While implementation of such a standard in not within the purview of a development project, a land use such as that proposed would generate VMT and be subject to any applicable adopted standards and would therefore not conflict with the recommended measure.

Action T-5 addresses electrification of ships at ports and is not applicable to the proposed project. Therefore, the proposed project would not conflict with this measure.

Action T-6 also primarily addresses port operations and is not applicable to the proposed project. Therefore, the proposed project would not conflict with this measure.

Action T-7 requires existing trucks/trailers to be retrofitted with the best available technology and/or CARB-approved technology. Implementation of such a standard is not within the purview of the proposed project since various trucks may access the site. Therefore, the proposed project would not conflict with this measure.

Action T-8 focuses on hybridization of medium- and heavy-duty vehicles. The implementation approach to Action T-8 is to adopt a regulation and/or incentive program that reduces GHG emissions by encouraging hybrid technology as applied to vocational applications that have significant urban, stop-and-go driving, idling, and power take-off operations in their duty cycle. Such applications include parcel delivery trucks and vans. Implementation of such a standard is not within the purview of the proposed project since various trucks may access the site. Therefore, the proposed project would not conflict with this measure.

Action T-9 concerns implementation of a high speed rail system. A high speed rail (HSR) system is part of the statewide strategy to provide more mobility choice and reduce greenhouse gas emissions. This measure supports implementation of plans to construct and operate a HSR system between northern and southern California. As planned, the HSR is a 700-mile-long rail system capable of speeds in excess of 200 miles per hour on dedicated, fully-grade separated tracks with state-of-the-art safety, signaling and automated rail control systems. The system would serve the major metropolitan centers of California in 2030 and is projected to displace between 86 and 117 million riders from other travel modes in 2030. The proposed project would not conflict with implementation of a HSR system.

Electricity and Natural Gas

Action E-1, together with Action GB-1 (Green Building), aims to reduce electricity demand by increased efficiency of Utility Energy Programs and adoption of more stringent building and appliance standards. Elements of this action include encouraging construction of zero net energy (ZNE) buildings and implementation of passive solar design. In addition to employing on-site electricity generation, a ZNE building must either replace natural gas with renewable energy for space and water heating, or compensate for natural gas use by generating surplus electricity for sale on the state's electricity grid. The proposed project is required to comply with the 2008 Title 24 Energy Efficiency Standards and applicable Green Building Standards. Therefore, the proposed project would not conflict with this measure.

Action E-2 encourages an increase in the use of combined heat and power (CHP) use, or co-generation, facilities. California has supported CHP for many years, but market and other barriers continue to keep CHP from reaching its full market potential. Increasing the deployment of efficient CHP will require a multi-pronged approach that includes addressing significant barriers and instituting incentives or mandates where appropriate. Implementation of such a standard is not within the purview of the proposed project; therefore, the proposed project would not conflict with this measure.

Action E-3 concerns Renewable Portfolio Standards for utilities and does not apply directly to development projects, therefore, the proposed project would not conflict with the recommended measure.

Action E-4 strives to promote solar generated electricity. The Million Solar Roofs initiative is not within the purview of any one individual project. Therefore, the proposed project would not conflict with this measure.

Water Use

Implementation of all but two of the Recommended Actions related to water use are not within the purview of the proposed project. The two that apply W-1 (Water Use Efficiency) and W-3 (Water System Energy Efficiency). Because the proposed project would not exceed the audit threshold, as set forth in the preceding impact analysis, the proposed project is consistent with and would not obstruct the recommended actions.

Industrial Use

The proposed project is not an industrial use and therefore these measures do not apply to the project.

Conclusion

Results of the analysis indicate that the proposed project will not exceed the proposed SCAQMD quantitative thresholds. Therefore a less than significant impact is expected.

Lastly, the Project is consistent with, or otherwise not in conflict with the CARB Scoping Plan recommended measures and actions. As such, a qualitative assessment of the Project impacts based upon consistency with the CARB Scoping Plan supports the conclusion that the Project GHG emissions are not cumulatively considerable.

THIS PAGE INTENTIONALLY LEFT BLANK

3.0 REFERENCES

1. California Air Resources Board, 2007. *California Air Resources Board Almanac.*

2. California Air Resources Board, 2007. *EMFAC 2007.*

3. California Air Resources Board, 2010. *California Greenhouse Gas 2000-2008 Inventory by Scoping Plan Category - Summary.*

4. California Building Standards Commission, 2010. 2008 *California Green Building Standards Code.*

5. California Energy Commission, 2005. *Inventory of California Greenhouse Gas Emissions and Sinks.*

6. California Integrated Waste Management Board, 2011. *Estimated Solid Waste Generation Rates for Industrial Establishments:* http://www.calrecycle.ca.gov/wastechar/WasteGenRates/Industrial.htm

7. International Panel on Climate Change, 2007. *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report.*

8. South Coast Air Quality Management District (SCAQMD), 1993. *CEQA Air Quality Handbook.*

9. South Coast Air Quality Management District (SCAQMD), 2011. *California Emissions Estimator Model (CalEEMod™).*

10. Stantec, 2011. *SOCCCD Traffic Impact Analysis.*

11. United States Department of Labor, 2011. *Occupational Safety and Health Guideline for Nitrous Oxide.*

12. United States Environmental Protection Agency, 2011. *Inventory of US Greenhouse Gas Emissions and Sinks 1990-2011.*

13. United States Environmental Protection Agency, 2010. *High Global Warming Potential (GWP) Gases.*

14. World Resources Institute, 2011. *Climate Analysis Indicator Tool (CAIT) – US – Yearly Emissions Inventory.*

APPENDIX A

GHG Emissions Calculations

SOCCCD

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Junior College (2Yr)	6963	Student
Parking Structure	60	1000sqft

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	9	**Precipitation Freq (Days)**	31		

1.3 User Entered Comments

Project Characteristics - 20% Renewables

Land Use - Project site acreage

Construction Phase - Max daily scenario

Off-road Equipment -

Off-road Equipment -

Vehicle Trips - Weekday Trip Rate from Project Traffic Study

Energy Use -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Energy Mitigation -

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2011	1.20	8.36	6.12	0.01	0.49	0.48	0.96	0.11	0.48	0.58	0.00	952.15	952.15	0.09	0.00	954.15
2012	2.68	2.79	2.49	0.00	0.16	0.18	0.34	0.00	0.17	0.18	0.00	392.05	392.05	0.04	0.00	392.80
2013	2.61	0.62	0.58	0.00	0.04	0.05	0.09	0.00	0.05	0.06	0.00	78.52	78.52	0.01	0.00	78.73
Total	**6.49**	**11.77**	**9.19**	**0.01**	**0.69**	**0.71**	**1.39**	**0.11**	**0.70**	**0.82**	**0.00**	**1,422.72**	**1,422.72**	**0.14**	**0.00**	**1,425.68**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2011	1.68	7.73	5.97	0.01	0.35	0.45	0.80	0.05	0.44	0.49	0.00	952.15	952.15	0.09	0.00	954.15
2012	2.68	2.79	2.49	0.00	0.16	0.18	0.34	0.00	0.17	0.18	0.00	392.05	392.05	0.04	0.00	392.80
2013	2.61	0.62	0.58	0.00	0.04	0.05	0.09	0.00	0.05	0.06	0.00	78.52	78.52	0.01	0.00	78.73
Total	**6.97**	**11.14**	**9.04**	**0.01**	**0.55**	**0.68**	**1.23**	**0.05**	**0.66**	**0.73**	**0.00**	**1,422.72**	**1,422.72**	**0.14**	**0.00**	**1,425.68**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.95	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.06	0.54	0.45	0.00		0.00	0.04		0.00	0.04	0.00	1,831.81	1,831.81	0.07	0.03	1,843.19
Mobile	5.37	13.35	58.89	0.15	15.16	0.79	15.95	0.24	0.76	1.00	0.00	11,303.49	11,303.49	0.41	0.00	11,312.14
Waste						0.00	0.00		0.00	0.00	257.95	0.00	257.95	15.24	0.00	578.08
Water						0.00	0.00		0.00	0.00	0.00	131.99	131.99	0.46	0.01	145.87
Total	**7.38**	**13.89**	**59.34**	**0.15**	**15.16**	**0.79**	**15.99**	**0.24**	**0.76**	**1.04**	**257.95**	**13,267.29**	**13,525.24**	**16.18**	**0.04**	**13,879.28**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.95	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.05	0.46	0.38	0.00		0.00	0.03		0.00	0.03	0.00	1,683.81	1,683.81	0.06	0.03	1,694.27
Mobile	4.67	11.60	50.06	0.12	12.49	0.66	13.15	0.20	0.63	0.83	0.00	9,358.21	9,358.21	0.35	0.00	9,365.46
Waste						0.00	0.00		0.00	0.00	257.95	0.00	257.95	15.24	0.00	578.08
Water						0.00	0.00		0.00	0.00	0.00	131.99	131.99	0.46	0.01	145.87
Total	**6.67**	**12.06**	**50.44**	**0.12**	**12.49**	**0.66**	**13.18**	**0.20**	**0.63**	**0.86**	**257.95**	**11,174.01**	**11,431.96**	**16.11**	**0.04**	**11,783.68**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.10	0.80	0.46	0.00		0.04	0.04		0.04	0.04	0.00	68.12	68.12	0.01	0.00	68.29
Total	**0.10**	**0.80**	**0.46**	**0.00**		**0.04**	**0.04**		**0.04**	**0.04**	**0.00**	**68.12**	**68.12**	**0.01**	**0.00**	**68.29**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.43	1.43	0.00	0.00	1.43
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.43**	**1.43**	**0.00**	**0.00**	**1.43**

3.2 Demolition - 2011

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.21	0.63	0.39	0.00		0.03	0.03		0.03	0.03	0.00	68.12	68.12	0.01	0.00	68.29
Total	**0.21**	**0.63**	**0.39**	**0.00**		**0.03**	**0.03**		**0.03**	**0.03**	**0.00**	**68.12**	**68.12**	**0.01**	**0.00**	**68.29**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.43	1.43	0.00	0.00	1.43
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.43**	**1.43**	**0.00**	**0.00**	**1.43**

3.3 Site Preparation - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.09	0.00	0.09	0.05	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.05	0.45	0.25	0.00		0.02	0.02		0.02	0.02	0.00	36.27	36.27	0.00	0.00	36.36
Total	**0.05**	**0.45**	**0.25**	**0.00**	**0.09**	**0.02**	**0.11**	**0.05**	**0.02**	**0.07**	**0.00**	**36.27**	**36.27**	**0.00**	**0.00**	**36.36**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86	0.86	0.00	0.00	0.86
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.86**	**0.86**	**0.00**	**0.00**	**0.86**

3.3 Site Preparation - 2011

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.04	0.00	0.04	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.14	0.32	0.20	0.00		0.02	0.02		0.02	0.02	0.00	36.27	36.27	0.00	0.00	36.36
Total	**0.14**	**0.32**	**0.20**	**0.00**	**0.04**	**0.02**	**0.06**	**0.02**	**0.02**	**0.04**	**0.00**	**36.27**	**36.27**	**0.00**	**0.00**	**36.36**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86	0.86	0.00	0.00	0.86
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.86**	**0.86**	**0.00**	**0.00**	**0.86**

3.4 Grading - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.13	0.00	0.13	0.05	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.20	1.66	0.87	0.00		0.08	0.08		0.08	0.08	0.00	147.69	147.69	0.02	0.00	148.03
Total	**0.20**	**1.66**	**0.87**	**0.00**	**0.13**	**0.08**	**0.21**	**0.05**	**0.08**	**0.13**	**0.00**	**147.69**	**147.69**	**0.02**	**0.00**	**148.03**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.86	2.86	0.00	0.00	2.87
Total	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.86**	**2.86**	**0.00**	**0.00**	**2.87**

3.4 Grading - 2011

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.05	0.00	0.05	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.49	1.33	0.83	0.00		0.06	0.06		0.06	0.06	0.00	147.69	147.69	0.02	0.00	148.03
Total	**0.49**	**1.33**	**0.83**	**0.00**	**0.05**	**0.06**	**0.11**	**0.02**	**0.06**	**0.08**	**0.00**	**147.69**	**147.69**	**0.02**	**0.00**	**148.03**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.86	2.86	0.00	0.00	2.87
Total	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.86**	**2.86**	**0.00**	**0.00**	**2.87**

3.5 Building Construction - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.61	4.02	2.40	0.00		0.28	0.28		0.28	0.28	0.00	366.46	366.46	0.05	0.00	367.50
Total	**0.61**	**4.02**	**2.40**	**0.00**		**0.28**	**0.28**		**0.28**	**0.28**	**0.00**	**366.46**	**366.46**	**0.05**	**0.00**	**367.50**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.12	1.31	0.83	0.00	0.06	0.05	0.10	0.00	0.04	0.04	0.00	164.24	164.24	0.01	0.00	164.36
Worker	0.11	0.12	1.26	0.00	0.20	0.01	0.21	0.00	0.01	0.01	0.00	164.22	164.22	0.01	0.00	164.45
Total	**0.23**	**1.43**	**2.09**	**0.00**	**0.26**	**0.06**	**0.31**	**0.00**	**0.05**	**0.05**	**0.00**	**328.46**	**328.46**	**0.02**	**0.00**	**328.81**

3.5 Building Construction - 2011

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.61	4.02	2.40	0.00		0.28	0.28		0.28	0.28	0.00	366.46	366.46	0.05	0.00	367.50
Total	**0.61**	**4.02**	**2.40**	**0.00**		**0.28**	**0.28**		**0.28**	**0.28**	**0.00**	**366.46**	**366.46**	**0.05**	**0.00**	**367.50**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.12	1.31	0.83	0.00	0.06	0.05	0.10	0.00	0.04	0.04	0.00	164.24	164.24	0.01	0.00	164.36
Worker	0.11	0.12	1.26	0.00	0.20	0.01	0.21	0.00	0.01	0.01	0.00	164.22	164.22	0.01	0.00	164.45
Total	**0.23**	**1.43**	**2.09**	**0.00**	**0.26**	**0.06**	**0.31**	**0.00**	**0.05**	**0.05**	**0.00**	**328.46**	**328.46**	**0.02**	**0.00**	**328.81**

3.5 Building Construction - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.28	1.87	1.19	0.00		0.13	0.13		0.13	0.13	0.00	183.23	183.23	0.02	0.00	183.71
Total	**0.28**	**1.87**	**1.19**	**0.00**		**0.13**	**0.13**		**0.13**	**0.13**	**0.00**	**183.23**	**183.23**	**0.02**	**0.00**	**183.71**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.05	0.60	0.38	0.00	0.03	0.02	0.05	0.00	0.02	0.02	0.00	82.30	82.30	0.00	0.00	82.35
Worker	0.05	0.05	0.58	0.00	0.10	0.00	0.10	0.00	0.00	0.00	0.00	80.41	80.41	0.01	0.00	80.51
Total	**0.10**	**0.65**	**0.96**	**0.00**	**0.13**	**0.02**	**0.15**	**0.00**	**0.02**	**0.02**	**0.00**	**162.71**	**162.71**	**0.01**	**0.00**	**162.86**

3.5 Building Construction - 2012

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.28	1.87	1.19	0.00		0.13	0.13		0.13	0.13	0.00	183.23	183.23	0.02	0.00	183.71
Total	**0.28**	**1.87**	**1.19**	**0.00**		**0.13**	**0.13**		**0.13**	**0.13**	**0.00**	**183.23**	**183.23**	**0.02**	**0.00**	**183.71**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.05	0.60	0.38	0.00	0.03	0.02	0.05	0.00	0.02	0.02	0.00	82.30	82.30	0.00	0.00	82.35
Worker	0.05	0.05	0.58	0.00	0.10	0.00	0.10	0.00	0.00	0.00	0.00	80.41	80.41	0.01	0.00	80.51
Total	**0.10**	**0.65**	**0.96**	**0.00**	**0.13**	**0.02**	**0.15**	**0.00**	**0.02**	**0.02**	**0.00**	**162.71**	**162.71**	**0.01**	**0.00**	**162.86**

3.6 Architectural Coating - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.24					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.25	0.16	0.00		0.02	0.02		0.02	0.02	0.00	20.53	20.53	0.00	0.00	20.60
Total	**2.28**	**0.25**	**0.16**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**20.53**	**20.53**	**0.00**	**0.00**	**20.60**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.02	0.02	0.18	0.00	0.03	0.00	0.03	0.00	0.00	0.00	0.00	25.59	25.59	0.00	0.00	25.62
Total	**0.02**	**0.02**	**0.18**	**0.00**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**25.59**	**25.59**	**0.00**	**0.00**	**25.62**

3.6 Architectural Coating - 2012

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.24					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.25	0.16	0.00		0.02	0.02		0.02	0.02	0.00	20.53	20.53	0.00	0.00	20.60
Total	**2.28**	**0.25**	**0.16**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**20.53**	**20.53**	**0.00**	**0.00**	**20.60**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.02	0.02	0.18	0.00	0.03	0.00	0.03	0.00	0.00	0.00	0.00	25.59	25.59	0.00	0.00	25.62
Total	**0.02**	**0.02**	**0.18**	**0.00**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**25.59**	**25.59**	**0.00**	**0.00**	**25.62**

3.6 Architectural Coating - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.49					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.26	0.17	0.00		0.02	0.02		0.02	0.02	0.00	22.82	22.82	0.00	0.00	22.90
Total	**2.53**	**0.26**	**0.17**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**22.82**	**22.82**	**0.00**	**0.00**	**22.90**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.02	0.02	0.19	0.00	0.04	0.00	0.04	0.00	0.00	0.00	0.00	27.87	27.87	0.00	0.00	27.90
Total	**0.02**	**0.02**	**0.19**	**0.00**	**0.04**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**27.87**	**27.87**	**0.00**	**0.00**	**27.90**

3.6 Architectural Coating - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.49					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.26	0.17	0.00		0.02	0.02		0.02	0.02	0.00	22.82	22.82	0.00	0.00	22.90
Total	**2.53**	**0.26**	**0.17**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**22.82**	**22.82**	**0.00**	**0.00**	**22.90**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.02	0.02	0.19	0.00	0.04	0.00	0.04	0.00	0.00	0.00	0.00	27.87	27.87	0.00	0.00	27.90
Total	**0.02**	**0.02**	**0.19**	**0.00**	**0.04**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**27.87**	**27.87**	**0.00**	**0.00**	**27.90**

3.7 Paving - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.06	0.34	0.21	0.00		0.03	0.03		0.03	0.03	0.00	26.46	26.46	0.00	0.00	26.56
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.06**	**0.34**	**0.21**	**0.00**		**0.03**	**0.03**		**0.03**	**0.03**	**0.00**	**26.46**	**26.46**	**0.00**	**0.00**	**26.56**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.37	1.37	0.00	0.00	1.38
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.37**	**1.37**	**0.00**	**0.00**	**1.38**

3.7 Paving - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.06	0.34	0.21	0.00		0.03	0.03		0.03	0.03	0.00	26.46	26.46	0.00	0.00	26.56
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.06**	**0.34**	**0.21**	**0.00**		**0.03**	**0.03**		**0.03**	**0.03**	**0.00**	**26.46**	**26.46**	**0.00**	**0.00**	**26.56**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.37	1.37	0.00	0.00	1.38
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.37**	**1.37**	**0.00**	**0.00**	**1.38**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

Increase Transit Accessibility

Improve Pedestrian Network

Provide Riade Sharing Program

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.67	11.60	50.06	0.12	12.49	0.66	13.15	0.20	0.63	0.83	0.00	9,358.21	9,358.21	0.35	0.00	9,365.46
Unmitigated	5.37	13.35	58.89	0.15	15.16	0.79	15.95	0.24	0.76	1.00	0.00	11,303.49	11,303.49	0.41	0.00	11,312.14
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Junior College (2Yr)	8,355.60	2,924.46	278.52	27,902,500	22,986,301
Parking Structure	0.00	0.00	0.00		
Total	8,355.60	2,924.46	278.52	27,902,500	22,986,301

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Junior College (2Yr)	8.90	13.30	7.40	6.40	88.60	5.00
Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.00	0.00		0.00	0.00	0.00	1,185.58	1,185.58	0.05	0.02	1,193.01
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	1,247.81	1,247.81	0.06	0.02	1,255.63
NaturalGas Mitigated	0.05	0.46	0.38	0.00		0.00	0.03		0.00	0.03	0.00	498.22	498.22	0.01	0.01	501.25
NaturalGas Unmitigated	0.06	0.54	0.45	0.00		0.00	0.04		0.00	0.04	0.00	584.01	584.01	0.01	0.01	587.56
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Junior College (2Yr)	1.09439e+007	0.06	0.54	0.45	0.00		0.00	0.04		0.00	0.04	0.00	584.01	584.01	0.01	0.01	587.56
Parking Structure	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		**0.06**	**0.54**	**0.45**	**0.00**		**0.00**	**0.04**		**0.00**	**0.04**	**0.00**	**584.01**	**584.01**	**0.01**	**0.01**	**587.56**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Junior College (2Yr)	9.33631e+006	0.05	0.46	0.38	0.00		0.00	0.03		0.00	0.03	0.00	498.22	498.22	0.01	0.01	501.25
Parking Structure	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		**0.05**	**0.46**	**0.38**	**0.00**		**0.00**	**0.03**		**0.00**	**0.03**	**0.00**	**498.22**	**498.22**	**0.01**	**0.01**	**501.25**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Junior College (2Yr)	4.2899e+006					1,247.81	0.06	0.02	1,255.63
Parking Structure	0					0.00	0.00	0.00	0.00
Total						**1,247.81**	**0.06**	**0.02**	**1,255.63**

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Junior College (2Yr)	4.07599e+006					1,185.58	0.05	0.02	1,193.01
Parking Structure	0					0.00	0.00	0.00	0.00
Total						**1,185.58**	**0.05**	**0.02**	**1,193.01**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.95	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unmitigated	1.95	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.47					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	1.48					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**1.95**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.47					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	1.48					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**1.95**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					131.99	0.46	0.01	145.87
Unmitigated					131.99	0.46	0.01	145.87
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Junior College (2Yr)	14.9085 / 23.3184					131.99	0.46	0.01	145.87
Parking Structure	0 / 0					0.00	0.00	0.00	0.00
Total						**131.99**	**0.46**	**0.01**	**145.87**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Junior College (2Yr)	14.9085 / 23.3184					131.99	0.46	0.01	145.87
Parking Structure	0 / 0					0.00	0.00	0.00	0.00
Total						**131.99**	**0.46**	**0.01**	**145.87**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					257.95	15.24	0.00	578.08
Unmitigated					257.95	15.24	0.00	578.08
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Junior College (2Yr)	1270.75					257.95	15.24	0.00	578.08
Parking Structure	0					0.00	0.00	0.00	0.00
Total						**257.95**	**15.24**	**0.00**	**578.08**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Junior College (2Yr)	1270.75					257.95	15.24	0.00	578.08
Parking Structure	0					0.00	0.00	0.00	0.00
Total						**257.95**	**15.24**	**0.00**	**578.08**

9.0 Vegetation

IVC

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Junior College (2Yr)	2684	Student

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	9	**Precipitation Freq (Days)**	31		

1.3 User Entered Comments

Project Characteristics -

Land Use -

Construction Phase - construction in separate run

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.56	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.02	0.16	0.14	0.00		0.00	0.01		0.00	0.01	0.00	558.32	558.32	0.02	0.01	561.79
Mobile	1.63	3.95	14.11	0.06	5.85	0.28	6.13	0.09	0.27	0.36	0.00	4,228.55	4,228.55	0.11	0.00	4,230.96
Waste						0.00	0.00		0.00	0.00	99.43	0.00	99.43	5.88	0.00	222.83
Water						0.00	0.00		0.00	0.00	0.00	50.88	50.88	0.18	0.01	56.23
Total	**2.21**	**4.11**	**14.25**	**0.06**	**5.85**	**0.28**	**6.14**	**0.09**	**0.27**	**0.37**	**99.43**	**4,837.75**	**4,937.18**	**6.19**	**0.02**	**5,071.81**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.56	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.02	0.16	0.14	0.00		0.00	0.01		0.00	0.01	0.00	558.32	558.32	0.02	0.01	561.79
Mobile	1.63	3.95	14.11	0.06	5.85	0.28	6.13	0.09	0.27	0.36	0.00	4,228.55	4,228.55	0.11	0.00	4,230.96
Waste						0.00	0.00		0.00	0.00	99.43	0.00	99.43	5.88	0.00	222.83
Water						0.00	0.00		0.00	0.00	0.00	50.88	50.88	0.18	0.01	56.23
Total	**2.21**	**4.11**	**14.25**	**0.06**	**5.85**	**0.28**	**6.14**	**0.09**	**0.27**	**0.37**	**99.43**	**4,837.75**	**4,937.18**	**6.19**	**0.02**	**5,071.81**

3.0 Construction Detail

3.1 Mitigation Measures Construction

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.63	3.95	14.11	0.06	5.85	0.28	6.13	0.09	0.27	0.36	0.00	4,228.55	4,228.55	0.11	0.00	4,230.96
Unmitigated	1.63	3.95	14.11	0.06	5.85	0.28	6.13	0.09	0.27	0.36	0.00	4,228.55	4,228.55	0.11	0.00	4,230.96
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Junior College (2Yr)	3,220.80	1,127.28	107.36	10,755,466	10,755,466
Total	3,220.80	1,127.28	107.36	10,755,466	10,755,466

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Junior College (2Yr)	8.90	13.30	7.40	6.40	88.60	5.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.00	0.00		0.00	0.00	0.00	380.32	380.32	0.02	0.01	382.71
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	380.32	380.32	0.02	0.01	382.71
NaturalGas Mitigated	0.02	0.16	0.14	0.00		0.00	0.01		0.00	0.01	0.00	178.00	178.00	0.00	0.00	179.08
NaturalGas Unmitigated	0.02	0.16	0.14	0.00		0.00	0.01		0.00	0.01	0.00	178.00	178.00	0.00	0.00	179.08
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Junior College (2Yr)	3.33562e+006	0.02	0.16	0.14	0.00		0.00	0.01		0.00	0.01	0.00	178.00	178.00	0.00	0.00	179.08
Total		**0.02**	**0.16**	**0.14**	**0.00**		**0.00**	**0.01**		**0.00**	**0.01**	**0.00**	**178.00**	**178.00**	**0.00**	**0.00**	**179.08**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Junior College (2Yr)	3.33562e+006	0.02	0.16	0.14	0.00		0.00	0.01		0.00	0.01	0.00	178.00	178.00	0.00	0.00	179.08
Total		**0.02**	**0.16**	**0.14**	**0.00**		**0.00**	**0.01**		**0.00**	**0.01**	**0.00**	**178.00**	**178.00**	**0.00**	**0.00**	**179.08**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Junior College (2Yr)	1.30753e+006					380.32	0.02	0.01	382.71
Total						**380.32**	**0.02**	**0.01**	**382.71**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Junior College (2Yr)	1.30753e+006					380.32	0.02	0.01	382.71
Total						**380.32**	**0.02**	**0.01**	**382.71**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.56	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unmitigated	0.56	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.14					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.42					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.56**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.14					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.42					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.56**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					50.88	0.18	0.01	56.23
Unmitigated					50.88	0.18	0.01	56.23
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Junior College (2Yr)	5.74671 / 8.98845					50.88	0.18	0.01	56.23
Total						**50.88**	**0.18**	**0.01**	**56.23**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Junior College (2Yr)	5.74671 / 8.98845					50.88	0.18	0.01	56.23
Total						**50.88**	**0.18**	**0.01**	**56.23**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					99.43	5.88	0.00	222.83
Unmitigated					99.43	5.88	0.00	222.83
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Junior College (2Yr)	489.83					99.43	5.88	0.00	222.83
Total						**99.43**	**5.88**	**0.00**	**222.83**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Junior College (2Yr)	489.83					99.43	5.88	0.00	222.83
Total						**99.43**	**5.88**	**0.00**	**222.83**

9.0 Vegetation

Saddleback Campus

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Junior College (2Yr)	4279	Student

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	9	**Precipitation Freq (Days)**	31		

1.3 User Entered Comments

Project Characteristics -

Land Use -

Construction Phase - construction in separate run

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.89	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.03	0.26	0.22	0.00		0.00	0.02		0.00	0.02	0.00	890.12	890.12	0.03	0.02	895.64
Mobile	2.60	6.30	22.50	0.09	9.32	0.45	9.77	0.15	0.43	0.58	0.00	6,741.42	6,741.42	0.18	0.00	6,745.25
Waste						0.00	0.00		0.00	0.00	158.52	0.00	158.52	9.37	0.00	355.25
Water						0.00	0.00		0.00	0.00	0.00	81.11	81.11	0.28	0.01	89.64
Total	**3.52**	**6.56**	**22.72**	**0.09**	**9.32**	**0.45**	**9.79**	**0.15**	**0.43**	**0.60**	**158.52**	**7,712.65**	**7,871.17**	**9.86**	**0.03**	**8,085.78**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.89	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.03	0.26	0.22	0.00		0.00	0.02		0.00	0.02	0.00	890.12	890.12	0.03	0.02	895.64
Mobile	2.60	6.30	22.50	0.09	9.32	0.45	9.77	0.15	0.43	0.58	0.00	6,741.42	6,741.42	0.18	0.00	6,745.25
Waste						0.00	0.00		0.00	0.00	158.52	0.00	158.52	9.37	0.00	355.25
Water						0.00	0.00		0.00	0.00	0.00	81.11	81.11	0.28	0.01	89.64
Total	**3.52**	**6.56**	**22.72**	**0.09**	**9.32**	**0.45**	**9.79**	**0.15**	**0.43**	**0.60**	**158.52**	**7,712.65**	**7,871.17**	**9.86**	**0.03**	**8,085.78**

3.0 Construction Detail

3.1 Mitigation Measures Construction

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.60	6.30	22.50	0.09	9.32	0.45	9.77	0.15	0.43	0.58	0.00	6,741.42	6,741.42	0.18	0.00	6,745.25
Unmitigated	2.60	6.30	22.50	0.09	9.32	0.45	9.77	0.15	0.43	0.58	0.00	6,741.42	6,741.42	0.18	0.00	6,745.25
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Junior College (2Yr)	5,134.80	1,797.18	171.16	17,147,034	17,147,034
Total	5,134.80	1,797.18	171.16	17,147,034	17,147,034

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Junior College (2Yr)	8.90	13.30	7.40	6.40	88.60	5.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.00	0.00		0.00	0.00	0.00	606.34	606.34	0.03	0.01	610.14
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	606.34	606.34	0.03	0.01	610.14
NaturalGas Mitigated	0.03	0.26	0.22	0.00		0.00	0.02		0.00	0.02	0.00	283.78	283.78	0.01	0.01	285.51
NaturalGas Unmitigated	0.03	0.26	0.22	0.00		0.00	0.02		0.00	0.02	0.00	283.78	283.78	0.01	0.01	285.51
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Junior College (2Yr)	5.31785e+006	0.03	0.26	0.22	0.00		0.00	0.02		0.00	0.02	0.00	283.78	283.78	0.01	0.01	285.51
Total		**0.03**	**0.26**	**0.22**	**0.00**		**0.00**	**0.02**		**0.00**	**0.02**	**0.00**	**283.78**	**283.78**	**0.01**	**0.01**	**285.51**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Junior College (2Yr)	5.31785e+006	0.03	0.26	0.22	0.00		0.00	0.02		0.00	0.02	0.00	283.78	283.78	0.01	0.01	285.51
Total		**0.03**	**0.26**	**0.22**	**0.00**		**0.00**	**0.02**		**0.00**	**0.02**	**0.00**	**283.78**	**283.78**	**0.01**	**0.01**	**285.51**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Junior College (2Yr)	2.08455e+006					606.34	0.03	0.01	610.14
Total						**606.34**	**0.03**	**0.01**	**610.14**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Junior College (2Yr)	2.08455e+006					606.34	0.03	0.01	610.14
Total						**606.34**	**0.03**	**0.01**	**610.14**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.89	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unmitigated	0.89	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.22					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.67					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.89**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.22					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.67					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.89**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					81.11	0.28	0.01	89.64
Unmitigated					81.11	0.28	0.01	89.64
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Junior College (2Yr)	9.16177 / 14.3299					81.11	0.28	0.01	89.64
Total						**81.11**	**0.28**	**0.01**	**89.64**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Junior College (2Yr)	9.16177 / 14.3299					81.11	0.28	0.01	89.64
Total						**81.11**	**0.28**	**0.01**	**89.64**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					158.52	9.37	0.00	355.25
Unmitigated					158.52	9.37	0.00	355.25
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Junior College (2Yr)	780.92					158.52	9.37	0.00	355.25
Total						**158.52**	**9.37**	**0.00**	**355.25**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Junior College (2Yr)	780.92					158.52	9.37	0.00	355.25
Total						**158.52**	**9.37**	**0.00**	**355.25**

9.0 Vegetation

Appendix E

Noise Impact Analysis

NOISE IMPACT ANALYSIS

SOUTH ORANGE COUNTY COMMUNITY COLLEGE DISTRICT FACILITIES MASTER PLAN

CITIES OF MISSION VIEJO AND IRVINE, CALIFORNIA

Prepared for:

RGP Planning & Development Services
Attn: Jeremy Krout
8921 Research Drive
Irvine, CA 92618

Date:

January 24, 2012

Giroux & Associates
1820 E. Garry St. #211
Santa Ana, CA 92705
Project No.: P11-047 N

TABLE OF CONTENTS

BACKGROUND 1
Noise Fundamentals 1
Regulatory Framework 3
Federal 3
State of California Noise Requirements 3
Local Standards 4
City of Irvine 4
City of Mission Viejo 5
Vibration 7
Vibration Fundamentals 7
NOISE IMPACTS 9
Impact Significance Criteria 9
Background Noise Levels 11
Irvine Valley College 11
Saddleback Campus 14
Construction Noise Impacts 17
Vibration Impacts 21
Off-Site Vehicular Noise Impacts 23
Operational Noise Impact 29
Parking Activities 29
Athletic Activities 31
HVAC Noise 32
SUMMARY 34

TABLES

Table 1 Representative Environmental Noise Levels……..1
Table 2 Irvine Noise Standards……4
Table 3 Mission Viejo Noise Standards……...6
Table 4 Ground borne Vibration and Noise Impact Criteria……...8
Table 5 IVC Noise Monitoring Results……12
Table 6 Saddleback Noise Monitoring Results……..15
Table 7 Distances to Nearest Sensitive Receptor ……19
Table 8 IVC Traffic Noise Impact Analysis……..24
Table 9 Saddleback Traffic Noise Impact Analysis……..27

FIGURES

Figure 1 IVC Noise Meter Locations……13
Figure 2 Saddleback Noise Meter Locations……16
Figure 3 Typical Construction Equipment Noise Levels……...……18

BACKGROUND

NOISE FUNDAMENTALS

Sound is created when vibrating objects produce pressure variations that move rapidly outward into the surrounding air, and it is technically described in terms of amplitude (loudness) and frequency (pitch). The standard unit of sound amplitude measurement is the decibel (dB). The decibel scale is a logarithmic scale that describes the physical intensity of the pressure vibrations that make up any sound. The pitch of the sound is related to the frequency of the pressure vibration. Because the human ear is not equally sensitive to a given sound level at all frequencies, a special frequency-dependent rating scale, called the A-weighted decibel scale (dBA), has been devised to relate noise to human sensitivity. The dBA is most widely used for environmental noise assessments. Typical A-weighted noise levels for various types of sound sources are summarized in **Table 1**.

Table 1
Representative Environmental Noise Levels

Common Outdoor Activities	Noise Level dBA	Common Indoor Activities
	110	Rock Band
Jet Fly-over at 300 m (1,000 ft.)		
	100	
Gas Lawn Mower at 1 m (3 ft.)		
	90	
Diesel Truck at 15 m (50 ft.), at 50 mph		Food Blender at 1 m (3 ft.)
	80	Garbage Disposal at 1 m (3 ft.)
Noisy Urban Area, Daytime		
Gas Lawn Mower, 30 m (100 ft.)	**70**	Vacuum Cleaner at 3 m (10 ft.)
Commercial Area		Normal Speech at 1 m (2 ft.)
Heavy Traffic at 90 m (300 ft.)	**60**	
		Large Business Office
Quiet Urban Daytime	**50**	Dishwasher Next Room
		Theater, Large Conference Room
Quiet Urban Nighttime	**40**	(Background)
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (Background)
	20	
		Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	**0**	Lowest Threshold of Human Hearing

Source: California Department of Transportation, *Technical Noise Supplement*, October 1998,

Noise is defined as unwanted, intrusive, or unpleasant sound. A typical noise environment consists of a base of steady "background" noise that is the sum of many distant and indistinguishable noise sources. Superimposed on this background, noise is the sound from individual local sources. These can vary from the occasional aircraft or train passing by to virtually continuous noise from traffic on a major highway.

Several measures are used to analyze the adverse effect of community noise on people. Because environmental noise fluctuates over time, these scales consider that the effect of noise upon people is largely dependent upon the total acoustical energy content of the noise, as well as the time of day when the noise occurs. They include the following:

- L_{eq}, the equivalent energy noise level, is the average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.

- L_{dn}, the Day-Night Average Level, is a 24-hour average L_{eq} with a 10 dBA "weighting" added to the noise during the hours of 10:00 PM to 7 AM to account for noise sensitivity in the nighttime. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.4 L_{dn}.

- *CNEL*, the Community Noise Equivalent Level, is a 24-hour average L_{eq} with a 5 dBA "weighting" during the hours of 7 PM to 10 PM and a 10 dBA "weighting" added to noise during the hours of 10 PM to 7 AM to account for noise sensitivity in the evening and nighttime, respectively. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.7 dBA CNEL.

- L_{min} is the minimum instantaneous noise level experienced during a given period of time.

- L_{max} is the maximum instantaneous noise level experienced during a given period of time.

- L_{50} is the level exceeded 50% of the measurement period of thirty minutes in an hour. Many noise ordinance limits are stated in terms of a 30-minute limit with allowable deviations from this 50^{th} percentile standard.

Noise environments and consequences of human activities are usually well represented by average noise levels during the day or night, or over a 24-hour period. Environmental noise levels are generally considered low when the CNEL is below 60 dBA, moderate in the 60 to 70 dBA range, and high above 70 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of low to moderate-level noise environments are urban residential or semi-commercial areas (typically 55 to 60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most will accept the higher noise levels associated with more noisy urban residential or residential-commercial area (60 to 75 dBA).

When evaluating changes in 24-hour community noise levels, a difference of 3 dBA is the minimum increase that is perceptible to most people. A 5 dBA increase is readily noticeable, while a difference of 10 dBA would be perceived as a doubling of loudness.

Noise levels from a particular source decline as the distance to the receptor increases. Other factors, such as weather and reflecting or shielding, also help to lower intensity or reduce noise levels at any given location. A commonly used rule of thumb for roadway noise is that for every doubling of distance from the source, the noise level is reduced by about 3 dBA acoustically at "hard" locations (i.e., the area between the noise source and the receptor is nearly complete asphalt, concrete, hard-packed soil, or other solid materials) and 4.5 dBA at acoustically "soft" locations (i.e., the area between the source and receptor is normal earth or has vegetation, including grass). Noise from stationary or point sources is reduced by about 6 to 7.5 dBA for every doubling of distance at acoustically hard and soft locations, respectively. Noise levels may also be reduced by intervening structures; generally a single row of buildings between the receptor and the noise source reduces the noise level by about 5 dBA, while a solid wall or berm reduces noise levels by 5 to 10 dBA. The exterior-to-interior reduction of noise for newer residential units is generally 20 dBA or more.

Noise-sensitive land uses are generally defined as locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Noise-sensitive land uses typically include residences, hospitals, schools, guest lodging, libraries, and certain types of recreational uses.

REGULATORY FRAMEWORK

Federal

There are no federal noise standards that directly regulate environmental noise related to the construction or operation of the proposed project. With regard to noise exposure and workers, the Office of Safety and Health Administration (OSHA) regulations safeguard the hearing of workers exposed to occupational noise. These regulations are essentially implemented by California (Cal/OSHA) regulations.

State of California Noise Requirements

The State of California regulates vehicle noise, sets standards for sound transmission, provides occupational noise control criteria, identifies noise insulation standards and provides guidance for local land use compatibility. State law requires that each county and city adopt a General Plan that includes a Noise Element which is to be prepared according to guidelines adopted by the Governor's Office of Planning and Research. The purpose of the Noise Element is to "limit the exposure of the community to excessive noise levels."

In addition, CEQA requires that all known environmental effects of a project be analyzed, including environmental noise impacts. Under CEQA, a project has a significant impact if the project exposes people to noise levels in excess of thresholds, which can include standards established in the local general plan or noise ordinance.

LOCAL STANDARDS

To control transportation related noise, the General Plan of local jurisdictions establishes guidelines for acceptable community noise levels. The policies and goals in the General Plan pertain to desired noise levels for various land uses located within each City or County. For this project, desirable noise levels for schools and classroom use should be met.

Implementation of the proposed SOCCCD may affect off-site land uses within Mission Viejo and Irvine. For "stationary" noise sources, municipalities have legal authority to establish noise performance standards designed to not adversely impact adjoining residential uses. These standards are articulated in the jurisdictional Municipal Code. These standards recognize the varying noise sensitivity of both transmitting and receiving land uses. The property line noise performance standards are normally structured according to land use and time of-day.

City of Irvine

Table F-1 of the Irvine General Plan Noise Element contains numerical noise compatibility guidelines for various land uses. For school classroom use, 65 dB CNEL is stated to be considered "clearly compatible" for classroom use. Noise levels of up to 70 dB are considered "normally compatible" but should be undertaken only after a detailed noise analysis of reduction measures are required. Table F-1 of the General Plan also states that interior classroom noise levels should not exceed 45 dBA CNEL.

The City's Noise Ordinance (Irvine Municipal Code, Title 6 [Public Works], Division 8 [Pollution], Chapter 2 [Noise]) (adopted in 1975 and revised in February 2005) establishes the maximum permissible noise level from a stationary source that may intrude into adjoining property. These standards are presented in an L_{50} designation and shall not be exceeded for more than 30 minutes in any hour. For events with shorter duration, these levels are adjusted upwards as seen in **Table 2**. For residential properties adjacent to this project, the noise level shall not exceed 55 dB L_{50} during daytime hours and 50 dB L_{50} during the nighttime hours.

Table 2 Irvine Noise Standards (dB)
Noise Levels for a Period Not Exceeding (minutes/hour)

Noise Zone	Time Interval	L50	L25	L8	L2	Lmax
Zone 1:hospitals, churches, schools, and residential properties	7:00 a.m.-10:00 p.m.	**55**	**60**	**65**	**70**	**75**
	10:00 p.m.-7:00 a.m.	**50**	**55**	**60**	**65**	**70**
Zone 2: professional office and public institutional	Anytime	**55**	**60**	**65**	**70**	**75**
Zone 3: commercial, excluding professional office	Anytime	**60**	**65**	**70**	**75**	**80**
Zone 4: industries	Anytime	**70**	**75**	**80**	**85**	**90**

Source: City of Irvine Municipal Code, Title 6, Division 8. Chapter 2, Noise

Noise standards shall be reduced by five dB for impact, or predominant tone noise or for noises consisting of speech or music. In the event that the noise source and the affected property are within different noise zones, the noise standards of the affected property shall apply.

City of Irvine Construction Noise Standards

According to the Irvine Municipal Code, Section 6-8-205A, construction activities may occur between the hours of 7:00 a.m. – 7:00 p.m. Monday through Friday and 9:00 a.m. – 6:00 p.m. on Saturdays. No construction shall be permitted outside of these hours or on Sundays and federal holidays without a temporary waiver. Trucks, vehicles, and equipment that are making or involved with deliveries, loading, or transfer of materials for any construction project are also subject to these provisions.

City of Irvine Noise Standard Exemptions

The City's Noise Ordinance also determines what specific activities are exempt from the noise provisions. Section 6-8-205D of the Municipal Code states that activities lawfully conducted on public parks, public playgrounds, and public or private school grounds are exempt from the Noise Ordinance provisions. In addition, school athletic and entertainment events that are conducted on school property are also exempt.

City of Mission Viejo

The Mission Viejo General Plan Noise Element comparability guidelines are based on those established by the office California. Table N-3 in the Mission Viejo General Plan Noise Element provides land use compatibility guidelines based on the state of California Guidelines. For school classroom use, exterior noise levels of up to 60 dB are considered "normally acceptable" and levels up to 70 dB are considered "conditionally" acceptable". Conditionally acceptable requires that a detailed analysis of noise reduction be undertaken.

The Mission Viejo Municipal Code, sections 6.35.040 and 9.22.025 describe the allowable noise standards and are presented in **Table 3**. These standards apply to all residential areas adjacent to the proposed project. These noise standards are expressed in terms of a mean (50^{th} percentile) noise level, which is the noise level allowed for up to 30 minutes. Some short-term noise levels may exceed the 50^{th} percentile standard, up to a maximum of 20 dB above the allowable mean. For this project, an L_{50} daytime standard of 55 dB and L_{50} nighttime of 50 dB is required.

Table 3 (dB) City of Mission Viejo
Stationary Noise Standards

	7 a.m. to 10 p.m.	10 p.m. to 7 a.m.
Not to be exceeded:		
30 minutes (L_{50})	55	50
15 minutes (L_{25})	60	55
5 minutes (L_8)	65	60
1 minute (L_2)	70	65
At any time (Lmax)	75	70

If ambient baseline noise conditions already exceed any of these thresholds, the standard is adjusted upward to equal the ambient level. No project is thus held to a standard that is more stringent than the ambient level.

Mission Viejo Construction Noise Standards

Since construction noise is of a temporary nature, the City of Mission Viejo does not require compliance with any numerical standards as stated in Section 9.22.035(d) of the City's Development Code. However, this noise code and standard conditions on grading permits do require operational considerations (i.e., hours of construction, mufflers on construction equipment, etc.) to minimize noise impacts during the construction process as follows:

> Permissible Hours of Equipment or Material Delivery
> Sec. 6.35.070. of the Municipal Code addresses delivery of equipment and material at a construction site and states "Onsite building operations and the delivery of any materials, supplies, or construction equipment located within one-half mile of a structure for human occupancy shall be prohibited between the hours of 8:00 p.m. to 7:00 a.m. on weekdays and Saturdays, or at any time on Sunday or a city holiday."
>
> Permissible Hours of Grading or Construction
> Sec. 8.10.540. of the Municipal Code addresses the permissible hours of grading operations and states that "grading and equipment operations within one-half mile of a structure for human occupancy shall not be conducted between the hours of 8:00 p.m. and 7:00 a.m. nor on Sundays and federal holidays."

City of Mission Viejo Noise Standard Exemptions

Sec. 9.22.035 of the Mission Viejo Municipal Code, (Special Provisions) exempts activities conducted on the grounds of any public college from any numerical noise standards. However, the noise ordinance standards were used as a guideline of possible noise impact significance even if they do not legally apply to the proposed project.

VIBRATION

Vibration Fundamentals

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration is normally associated with activities such as railroads or vibration-intensive stationary sources, but can also be associated with construction equipment such as jackhammers, pile drivers, and hydraulic hammers. Vibration displacement is the distance that a point on a surface moves away from its original static position. The instantaneous speed that a point on a surface moves is described as the velocity and the rate of change of the speed is described as the acceleration. Each of these descriptors can be used to correlate vibration to building damage, and acceptable equipment vibration levels. During construction of a development project, the operation of construction equipment can cause groundborne vibration. During the operational phase of a project, receptors may experience annoyance due to noise generated from vibration of a structure or items within a structure. This type of vibration is best measured in velocity and acceleration. The three main wave types of concern in the propagation of groundborne vibrations are surface or Rayleigh waves, compression or P-waves, and shear or S-waves.

- Surface or Rayleigh waves travel along the ground surface. They carry most of their energy along an expanding cylindrical wave front, similar to the ripples produced by throwing a rock into a lake. The particle motion is more or less perpendicular to the direction of propagation (known as retrograde elliptical).

- Compression or P-waves are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal, in a push-pull motion. P-waves are analogous to airborne sound waves.

- Shear or S-waves are also body waves, carrying their energy along an expanding spherical wave front. Unlike P-waves, however, the particle motion is transverse, or perpendicular to the direction of propagation.

The peak particle velocity ("PPV") or the root mean square ("RMS") velocity is usually used to describe vibration amplitudes. PPV is defined as the maximum instantaneous peak of the vibration signal and RMS is defined as the square root of the average of the squared amplitude of the signal. PPV is more appropriate for evaluating potential building damage. The units for PPV velocity is normally inches per second (in/sec). Often, vibration is presented and discussed in dB units in order to compress the range of numbers required to describe the vibration. In this study, all PPV and RMS velocity levels are in in/sec and all vibration levels are in dB relative to one microinch per second (abbreviated as VdB). Typically, groundborne vibration generated by human activities attenuates rapidly with distance from the source of the vibration. Even the more persistent Rayleigh waves decrease relatively quickly as they move away from the source of the vibration. Human-made vibration problems are, therefore, usually confined to short distances (500 feet or less) from the source. Construction operations generally include a wide range of activities that can generate groundborne vibration.

The level at which groundborne vibration is strong enough to cause structural damage has not been determined conclusively. The most conservative estimates are reflected in the Federal Transit Administration (FTA) standards shown in **Table 4**. Vibration related problems generally

occur due to resonances in the structural components of a building because structures amplify groundborne vibration. Wood-framed buildings, such as typical residential structures, are more easily excited by ground vibration than heavier buildings. According to Caltans Transportation Related Earthborne Vibration (2006), extreme care must be taken when sustained pile driving occurs within 25 feet of any building; the threshold at which there is a risk of architectural damage to normal houses with plastered walls and ceilings is 0.2 inches per second.

Table 4
Groundborne Vibration and Noise Impact Criteria, Structural Damage

Building Category	PPV (in/sec)	VdB
Reinforced concrete, steel or timber	0.5	102
Engineered concrete and masonry (no plaster)	0.3	98
Nonengineered timber and masonry buildings	0.2	94
Buildings extremely susceptible to vibration damage	0.12	90

Source: FTA 2006.

NOISE IMPACTS

IMPACT SIGNIFICANCE CRITERIA

Based on Appendix G of the CEQA Guidelines, the City of Irvine or Mission Viejo can determine that a project would normally have a significant effect on the environment if the project would 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 groundbourne noise levels.
- ✓ A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- ✓ A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
- ✓ 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.
- ✓ 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.

The IVC campus is more than 4 miles from the closest runway at the John Wayne Orange County airport and the Saddleback campus is more than13 miles from the airport. Airport noise is not an issue.

A "substantial" noise increase is not defined in any guidelines. The accuracy of sound level meters and of sound propagation computer models is no better than ±1 dB. This is also the human loudness difference discrimination level under ideal laboratory conditions. Most people cannot distinguish a change in the noise environment that differs by less than 3 dB between the pre- and post-project exposure if the change occurs under ambient conditions. For the purposes of this analysis, an increase of 3 dB in off-site traffic noise would be considered a significant degradation of noise quality. This "measurable" significance criteria applies to on-road traffic noise. On-site noise generation is regulated by the ordinance limits.

Three characteristic noise sources are typically identified with land use intensification such as that proposed for the South Orange County Community College Facilities Master Plan (SOCCCP) project. Construction activities, especially heavy equipment, will create short-term noise increases near the project site. Such impacts may be important for nearby noise-sensitive receptors such as any existing residential uses. Upon completion, project-related traffic will cause an incremental increase in area-wide noise levels throughout the project area. Traffic noise impacts are analyzed to insure that the project does not adversely impact the acoustic environment of the surrounding community. This project will cause an increase in area wide traffic but the increase will likely be small relative to the overall traffic volumes. Finally,

stationary noise associated with the new parking areas and buildings as well as facilities use changes must be examined to ensure that surrounding sensitive land uses are not adversely impacted.

Therefore, this project would result in a significant impact if:

- Project related off-site traffic noise were to increase by + 3 dB CNEL or more at any off-site sensitive land use and exceed noise compatibility guidelines.

- Project related stationary noise sources (such as parking lot noise or HVAC equipment or noise generated from new sporting events) would result in an off-site noise levels exceeding those stated in the respective Municipal Code Noise Standards. For both Irvine and Mission Viejo the off-site noise level in residential areas shall not exceed a 30 minute (L_{50}) average of 55 dB daytime or 50 dB L_{50} nighttime.

- The project would result in a significant construction or vibration noise impact if construction activity were to occur outside of the hours permitted by the respective City's noise ordinance. Permissible hours of construction are as follows:
  - For Irvine between the hours of 7 a.m. to 7 p.m. on weekdays, 9 a.m. to 6 p.m. on Saturdays.
  - For Mission Viejo between the hours of 7 a.m. to 8 p.m. on weekdays and Saturday.

A significant noise impact is also presumed to occur if any proposed facilities would be constructed in noise environments exceeding the colleges' exterior noise/land use compatibility criteria previously shown to be between 65 and 70 dB CNEL. That impact would, however, result from the constraints placed upon facilities construction by the ambient acoustic environment. Recent CEQA case law suggests that such impacts are only considered significant if the project contribution to the baseline is cumulatively significant.

Based on the FTA vibration criteria, vibration that is strong enough to cause structural damage would be considered a significant impact.

BACKGROUND NOISE LEVELS

Irvine Valley College

Short term on-site noise measurements were made in order to document existing baseline levels in the project area. These help to serve as a basis for projecting future noise exposure from the project upon the surrounding community. Noise monitoring at IVC was conducted on Monday, January 5, 2012, from 1:00 p.m. – 2:30 p.m., at 7 locations and on Tuesday, January 10th at 9 locations. Measurement locations are shown in **Figure 1** and summarized in **Table 5.**

Monitoring experience shows that 24-hour weighted CNEL's can be reasonably well estimated from mid-afternoon noise readings. CNEL's are approximately equal to mid-afternoon Leq plus 3 dB (Caltrans Technical Noise Supplement, 2009). Homes along Jeffrey Road currently experience Leqs in the mid-50s which would equate to CNEL's of 55-59 dB CNEL. These residences are substantially shielded by noise walls/berms with only a minor opening onto Jeffrey Road. On campus, across from Jeffrey, in the location of the proposed parking structure noise levels are slightly higher. Measured Leq of 62 dB would equate to a CNEL of 65 dB.

Residential areas along the eastern project perimeter currently experience low ambient noise levels with Leq's of 50 dB or less. Homes along the eastern boundary would expect to experience some short term construction noise associated with the proposed Life Sciences Building.

Table 5
IVC Short Term Measured Noise Levels (dBA)

Site No.	Leq	Lmax	Lmin	L10	L33	L50	L90
1	61.5	73.0	46.5	65.5	61.5	58.5	51.5
2	49.9	59.5	45.5	52.0	50.0	49.0	47.0
3	50.3	57.5	45.0	52.5	50.5	49.5	46.5
4	51.9	64.5	46.0	53.5	51.0	50.0	48.0
5	52.5	67.5	42.5	55.5	51.5	49.5	44.5
6	56.4	74.0	42.0	55.0	52.5	51.0	46.0
7	52.0	65.5	39.5	55.5	52.0	49.5	43.5
8	48.4	63.0	41.5	51.0	48.5	46.5	43.5
9	46.1	61.5	40.0	49.5	43.5	42.5	41.0

Meter 1: Opposite of Woodbridge Meadows Apartments, at the proposed parking structure, approximately 100 feet to Jeffrey Road Centerline.

Meter 2: Southeast corner of campus behind baseball diamond centerfield wall.

Meter 3: Onsite, campus southern property line overlooking wildlife area, near entrance to extra parking lot on south near softball fields.

Meter 4: Onsite, visitor parking area - In front of entrance to Child Care building.

Meter 5: Offsite, Woodbridge Meadows Apartments. In-line with walkway to Jeffrey. Meter placed at front door setback of apts 57 & 59 (Closest apt to walkway).

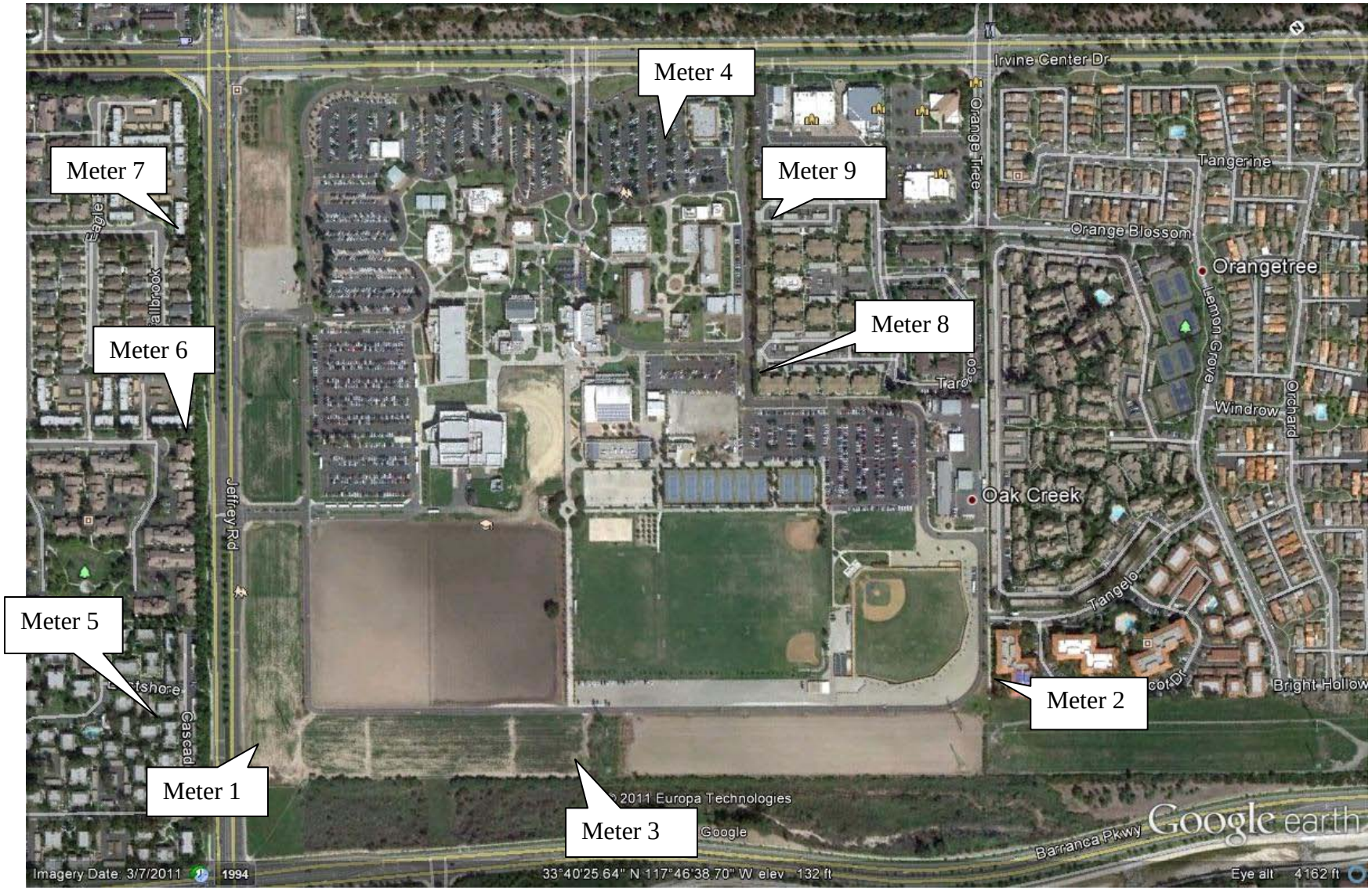
Meter 6: Offsite, eastern terminus of Briarwood St. Meter placed between townhome and apartments. No visual of Jeffrey due to sound wall.

Meter 7: Offsite / Eastern Terminus of Fallbrook / Meter placed in walkway between homes that connects Fallbrook & Jeffrey

Meter 8: Offsite / Condo complex on eastern perimeter of IVC / Across from Chem Lab annex. Building under construction. Complex located immediately south of Pacific Church of Irvine. Western terminus of south parking lot below 233 Tarocco

Meter 9: Condo complex on eastern perimeter of IVC / Across from Chem Lab annex / Building under construction. Complex located immediately south of Pacific Church of Irvine. Western terminus of north parking lot below 65 Tarocco.

Figure 1 Irvine Valley College Noise Meter Locations



Saddleback Campus

Noise readings at the Saddleback Campus were obtained on Wednesday, January 11, 2012. Measurement results are shown in **Table 6** and monitor locations are shown in **Figure 2**. Noise meters 1 and 2 are in the southeastern portion of the campus and represent noise levels currently experienced by homes along Las Tunas Drive. These homes are in the vicinity of the proposed renovated Athletic Stadium. Existing noise levels are between 59-65 dB Leq.

Meters 3 and 4 are in the western side of campus. These multi-family residences will be impacted by the construction of the parking structure at Parking Lot 10. Existing noise levels at these units ranges from 57 dB Leq with a direct view of the campus and 47 dB, towards the interior of the complex where the berm and height variance provide a some noise attenuation.

Table 6

Saddleback College Short Term Measured Noise Levels (dBA)

Site No.	Leq	Lmax	Lmin	L10	L33	L50	L90
1	59.2	84.5	39.0	58.0	49.0	45.0	40.0
2	64.6	73.0	54.5	67.0	64.5	63.0	59.5
3	57.0	73.5	43.5	58.5	52.0	49.5	45.5
4	47.9	54.0	42.0	50.0	48.0	46.5	44.0

Meter 1: South edge of campus along Security Rd next to parking lot.

Meter 2: South edge of campus, south side of College Dr East. Meter placed directly across from southern edge of parking lot 1A and driving range.

Meter 3: West site perimeter. Meter placed on top of berm next to closest residence across from parking lot 10 residences ("The Promenade") apartments.

Meter 4: Within Promenade Apartment complex, next to bldg. 28008. Parking lot 9 is closest part of site. No line-of-sight to campus due to berm.

Figure 2 Saddleback College Noise Meter Locations



CONSTRUCTION NOISE IMPACTS

Temporary construction noise impacts vary markedly because the noise strength of construction equipment ranges widely as a function of the equipment used and its activity level. Noise from construction activity is generated by a broad array of powered noise producing mechanical equipment ranging from handheld pneumatic tools to scrapers, bulldozers and dump trucks. Short-term construction noise impacts tend to occur in discrete phases dominated by large, earth-moving and/or demolition equipment sources. Construction activities are treated separately in various community noise ordinances because they do not represent a chronic, permanent noise source.

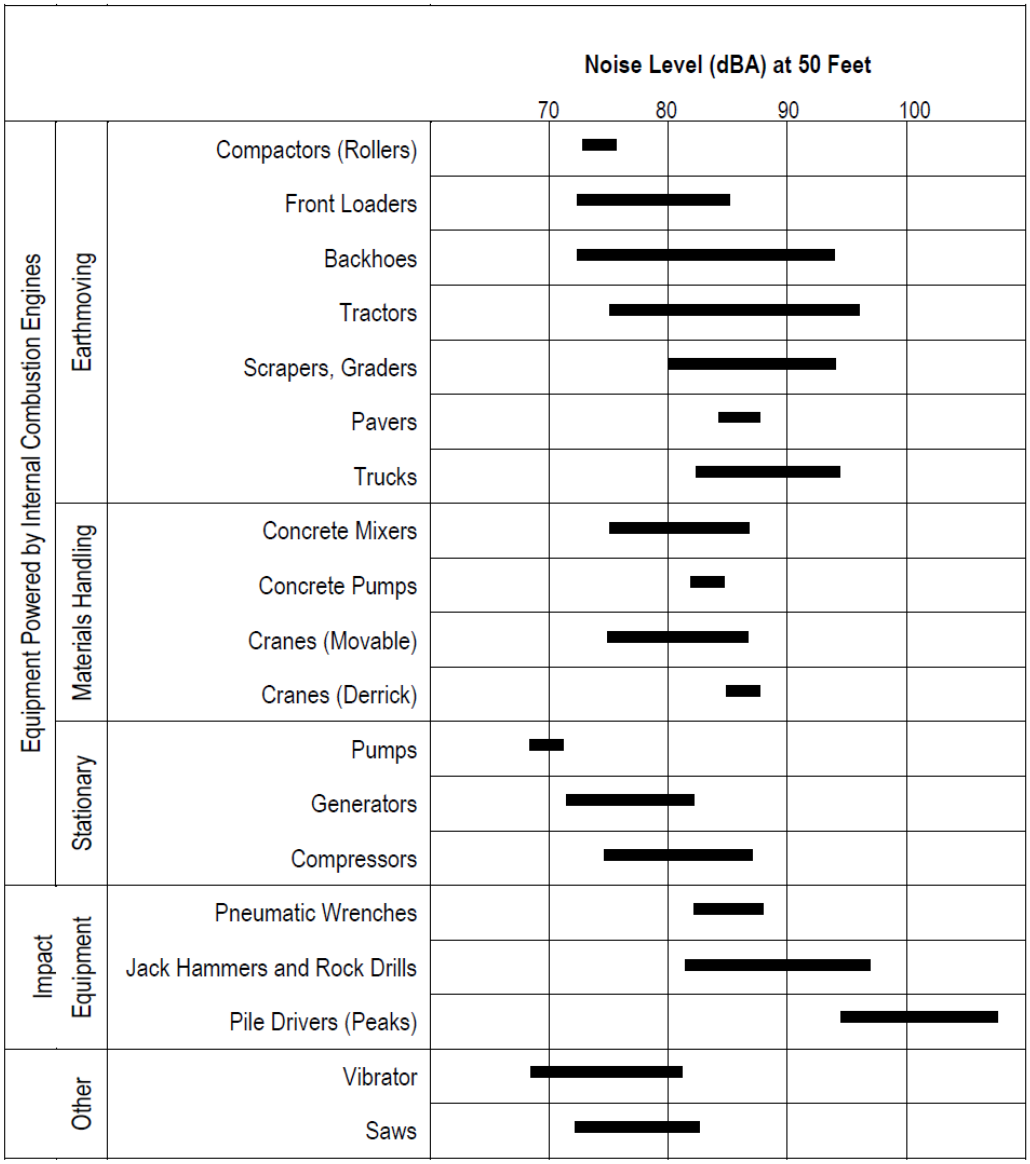
Impact Analysis: Construction noise creates a temporary intermittent impact on ambient noise levels in the vicinity of the construction. Noise generated by construction equipment, including trucks, graders, bulldozers, concrete mixers and portable generators, can reach high levels. Grading activities typically represent one of the highest potential sources for noise impacts. The most effective method of controlling construction noise is through local control of construction hours and by limiting the hours of construction to normal weekday working hours.

Demolition and clearing activities will be followed by excavation and grading. Construction and finishing will then occur. During these phases of building assembly and finish construction, equipment is generally less noisy. **Figure 3** shows the typical range of construction activity noise generation as a function of equipment used in various building phases. The earth-moving sources are seen to be the noisiest with equipment noise ranging up to about 90 dB(A) at 50 feet from the source. Spherically radiating point sources of noise emissions are atmospherically attenuated by a factor of 6 dB per doubling of distance, or about 20 dB in 500 feet of propagation. The loudest earth-moving noise sources may therefore sometimes be detectable above the local background beyond 1,000 feet from the construction area. An impact radius of 1,000 feet or more pre-supposes a clear line-of-sight and no other machinery or equipment noise that would mask project construction noise. With buildings and other barriers to interrupt line-of-sight conditions, the potential “noise envelope” around individual construction sites is reduced. Construction noise impacts are, therefore, somewhat less than that predicted under idealized input conditions. In general construction noise is of limited duration and restricted to daytime hours. For this reason, impacts to most nearby residences would be adverse but not significant as most individuals would not be expected to be at home.

The presence of suburban uses around the sites will result in reduction of noise levels behind the first row of development around the site by 10 to 20 decibels compared to the levels at an unprotected site with a line-of-sight noise exposure to construction activity. Thus at distances of more than one block from the site, construction noise may nearly fade into the background of traffic and other community noise. However, those homes immediately adjacent to the project site will be exposed to short term noise that may be intrusive into normal quiet activities. The distances below represent the shortest possible distance between the construction equipment and the off-site residences closest to the proposed project site during a heavy construction period (closest façade or point of construction to the nearest residence). The nearest off-site residential uses (sensitive

Figure 3

Typical Construction Equipment Noise Generation Levels



Source: EPA PB 206717, Environmental Protection Agency, December 31, 1971, "Noise from Construction Equipment and Operations."

receptor) to any project component are located approximately 80-1,000 feet from any project boundary as seen in **Table 7**.

Table 7
Distance from Project Element to Nearest Sensitive Use

Project Component	Component Location	Closest Residential Use
IVC		
New Surface Parking Lot	Corner Jeffrey and Barranca	>400 feet to the west across Jeffrey
New Parking Structure	Corner Jeffrey and Barranca	>600 feet to the south across Barranca
New Athletic Stadium	Corner Jeffrey and Barranca	>800 feet to the south across Barranca
New Life Science Bldg	S of Irvine Center Drive, W of Orange Tree	80 feet to the east
Swimming Pool Complex	S of Irvine Center Drive, W of Orange Blossom	>230 feet to the east
Saddleback College		
New Parking Structure	W of College Drive, E of Marguerite Parkway	< 100 feet to the west
Renovated Central Plant Facility	N of College Drive	>800 feet to the west
New Fine Arts Bldg	E of College Drive West	>600 feet to the west
New Softball Fields	E of College Drive West	>1,000 feet to the north or >1,000 feet to the south
Renovated Athletic Stadium	Southern Campus Perimeter along College Drive East	>450 feet to the south

The closest wall of the proposed Life Sciences Building at IVC could be 80 feet from the residences southeast of the college. These residences are two-story multi-family use and are located north of Orange Tree Drive. At a distance of 80 feet from the noise source, construction equipment noise sources (principally from engine exhaust and engine noise) could range from 71 to 91 dB for tractors, backhoes; the principal noise generating equipment anticipated for use for grading. Because construction of the Life Science Building will have minimal grading, these higher noise levels are anticipated only for a short duration. In addition, these temporary noise levels will not be continuous, but will vary as equipment is used for differing lengths of time and locations. The primary construction equipment anticipated will be cranes, generators and air compressors with a maximum noise level in the 80 dB range. The principal feasible mitigation measure for construction noise impacts is to limit high-level noise construction activity to daytime hours, a measure which is included in the City's current regulations.

Project scope for the IVC and Saddleback Campuses include construction of new parking structures. At IVC, the structure would be more than 600 feet from the nearest sensitive use across Barranca Parkway. However, at Saddleback College the proposed structure would be only 100 feet from the nearest multi-family use. However, because of variations in topography, the ground level of the structure will be between 35 feet and 55 feet lower than the ground level of the nearest sensitive use. This difference in height will assist in masking any project construction noise impacts.

Construction activities may occur near noise-sensitive receptors and noise disturbances may occur over prolonged periods of time. However, construction activities that result in high noise levels would be temporary, and occur sporadically. With implementation the following mitigation measures, construction related noise impacts would be less than significant without mitigation.

- All equipment shall be equipped with properly operating and maintained mufflers.
- Equipment and materials shall be staged in areas that will create the greatest distance between construction-related noise sources and the noise-sensitive receptors nearest the Proposed Project Site during all project construction.
- All construction-related activities shall be restricted to the construction hours outlined in the Noise Ordinance of the Cities of Irvine and Mission Viejo.
- Haul truck and other construction-related trucks traveling to and from any individual project site shall be restricted to the same hours specified for the operation of construction equipment. To the extent feasible, haul routes shall not pass directly by sensitive land uses.

VIBRATION IMPACTS

Typical background vibration levels in residential areas are usually 50 VdB or lower, below the threshold of human perception. Perceptible vibration levels inside residences are typically attributed to the operation of heating and air conditioning systems, door slams or street traffic. Construction activities and street traffic are some of the most common external sources of vibration that can be perceptible inside residences.

Construction activities generate ground-borne vibration when heavy equipment travels over unpaved surfaces or when it is engaged in soil movement. The effects of ground-borne vibration include discernable movement of building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. Vibration related problems generally occur due to resonances in the structural components of a building because structures amplify groundborne vibration. Within the "soft" sedimentary surfaces of much of Southern California, ground vibration is quickly damped out. Groundborne vibration is almost never annoying to people who are outdoors (FTA 2006).

Groundborne vibrations from construction activities rarely reach levels that can damage structures. Because vibration is typically not an issue, very few jurisdictions have adopted vibration significance thresholds. Vibration thresholds have been adopted for major public works construction projects, but these relate mostly to structural protection (cracking foundations or stucco) rather than to human annoyance.

Vibration is most commonly expressed in terms of the root mean square (RMS) velocity of a vibrating object. RMS velocities are expressed in units of vibration decibels. The range of vibration decibels (VdB) is as follows:

65 VdB	-	threshold of human perception
72 VdB	-	annoyance due to frequent events
80 VdB	-	annoyance due to infrequent events
94-98 VdB	-	minor cosmetic damage

To determine potential impacts of the project's construction activities, estimates of vibration levels induced by the construction equipment at various distances are presented below:

	Approximate Vibration Levels (VdB)*			
Equipment	**25 feet**	**50 feet**	**100 feet**	**200 feet**
Pile Driver	93	87	81	75
Large Bulldozer	87	81	75	69
Loaded Truck	86	80	74	68
Jackhammer	79	73	67	61
Small Bulldozer	58	52	46	40

* (FTA Transit Noise & Vibration Assessment, Chapter 12, Construction, 2006)

With the exception of pile driving which is not anticipated for use on this project, the on-site construction equipment that will create the maximum potential vibration is a large bulldozer.

The stated vibration source level in the FTA Handbook for such equipment is 81 VdB at 50 feet from the source. By 200 feet the vibration level dissipates to 69 VdB.

The closest off-site residential use (sensitive receptor) is located approximately 80 feet to the east from the proposed Life Sciences Building at IVC. (All other project components are at least 100 feet from any project activity and usually much further.) Adjacent to the Life Sciences building, vibration levels from heavy equipment would thus be around 77 VdB which is below the 80 VdB annoyance threshold for infrequent/temporary events at the nearest off-site homes. Most importantly, vibration levels will not exceed the building damage threshold. Because vibration levels from construction activities would not be substantial enough to cause architectural damage, construction activity vibration impacts are judged as less-than-significant.

.

OFF-SITE VEHICULAR NOISE IMPACTS

Development of the proposed Master Plan would result in an increase in traffic on the roadways surrounding the project site, which would result in an increase in noise emanating from these roadways.

Noise concerns from mobile source emissions were addressed using the California specific vehicle noise curves (CALVENO) in the federal highway noise prediction model (FHWA-RD-77-108) model developed by Caltrans. The model calculates the LEQ noise level for a particular reference set of input conditions, and then makes a series of adjustments for site-specific traffic volumes, distances, speeds, or noise barriers. The traffic (ADT) volumes for each road segment analyzed are provided in the traffic analysis conducted for this study. The noise metric used to evaluate traffic noise impacts is CNEL. Three traffic scenarios were evaluated; "existing conditions", "future-no project" and "future with project".

Irvine Valley College

Roadway speed limits utilized to analyze Irvine roadways were obtained from the City of Irvine Engineering and Traffic Survey for Speed Limits dated April, 2011. Development of the IVC Master Plan facilities would result in an increase in traffic on the roadways surrounding the project site, which would result in an increase in noise emanating from these roadways. **Table 8** summarizes the 24-hour CNEL level at 50 feet from the roadway centerline along area roadway segments.

Traffic attributed to the proposed project will only slightly increase the total traffic traveling along the major thoroughfares within the project vicinity and only very close to the project site. As project-related traffic becomes progressively diluted on any particular roadway, the incremental contribution to the noise environment becomes continually smaller.

As shown in Table 8, project implementation does little to change the traffic noise environment. Elevated non-project traffic levels on area roadways will substantially mask most project noise contributions. As shown in Table 8, the maximum project noise contribution is +0.2 dB CNEL. Of the 56 roadway segments analyzed in the IVC environs, all but 4 had no impact (+0.0 dB change). Of the 4 segments with a measurable impact, three had a +0.1 impact. Traffic noise impacts in the IVC project area are much less than the +3 dB significance threshold.

Cumulative impacts are defined as the difference between the "future with project" scenario and "existing" noise levels. Although several roadway segments along Laguna Canyon Road will experience significant traffic noise impacts in the future, these impacts are not attributed to the SOCCCD project. One roadway segment along Sand Canyon north of the I-5 is similarly expected to experience a cumulatively significant traffic noise impact in 2030. However, for all the potentially cumulative segments, the maximum project impact is less than 0.1 dB. The impacts would occur with or without project implementation and are due to area development. Cumulative impacts are therefore considered to be less-than-significant.

Table 8 IVC
Traffic Noise Impact Analysis
(dB CNEL at 50 feet from centerline)

Roadway		Existing	Future	Future With Project
Culver Dr/	N of I-5	75.3	76.2	76.2
	I-5 - Walnut	75.5	76.4	76.4
	Walnut - Irvine Center	74.9	75.4	75.4
	Irvine Center-Warner	75.2	75.6	75.6
	Warner-Barranca	75.1	75.7	75.7
	Barranca-Alton	75.3	76.1	76.1
	Alton-Main	75.4	76.1	76.1
	Main- I-405	75.0	75.7	75.7
Yale Ave/	N of I-5	67.8	68.6	68.6
	Walnut - Irvine Center	68.6	68.6	68.6
	Irvine Center-Yale Loop	67.4	68.3	68.3
Jeffrey Rd/	N of I-5	74.2	77.0	77.1
	Walnut - Irvine Center	74.5	75.8	75.8
	Irvine Center-Barranca	74.2	75.8	75.8
	Barranca-Alton	74.5	75.8	75.8
	Alton- I-405	74.8	76.7	76.7
	S of I-405	NA	77.8	77.8
Sand Canyon Ave/	N of I-5	72.6	76.8	76.8
	I-5 - Oak Canyon	73.5	75.8	75.8
	Oak Canyon-Irvine Center	72.6	75.1	75.1
	Irvine Center-Barranca	72.3	73.3	73.3
	Barranca-Alton	72.5	74.6	74.6
	Alton- I-405	73.7	74.9	74.9
Shady Canyon Dr/	S of I-405	71.3	71.6	71.6
Laguna Canyon Rd/	Sand Canyon-Technology	63.8	74.3	74.3
	Technology-Irvine Center	63.8	66.8	66.8
	Irvine Center-Barranca	62.6	65.6	65.6
	Barranca-Alton	63.9	64.8	64.8
	Alton- I-405	63.9	67.8	67.8

Table 8 IVC (continued)
(dB CNEL at 50 feet from centerline)

Roadway		Existing	Future	Future With Project
Trabuco Rd/	E of Culver	72.6	74.8	74.9
Walnut Ave/	W of Culver	69.9	72.0	72.0
	Culver-Yale	70.4	72.0	72.0
	Yale-Jeffrey	68.6	70.6	70.6
Technology Dr/	E of Laguna Canyon	NA	70.1	70.1
Irvine Center Dr/	W of Culver	71.8	72.6	72.6
	Culver-Yale	72.0	73.3	73.3
	Yale-Jeffrey	72.4	74.7	74.7
	E of Jeffrey	73.5	75.9	75.9
	W of San Canyon	74.3	76.3	76.4
	Sand Canyon-Laguna Canyon	71.6	72.9	73.1
	E of Laguna Canyon	71.2	72.7	72.7
Warner Ave/	W of Culver	66.9	67.8	67.8
	Culver-Yale Loop	67.4	68.3	68.3
Barranca Pkwy/	W of Culver	71.3	72.3	72.3
	Culver-Yale Loop	72.3	72.9	72.9
	Yale Loop-Jeffrey	72.5	73.5	73.5
	Jeffrey-Sand Canyon	69.4	71.3	71.3
	Sand Canyon-Laguna Cyn	68.6	70.8	70.8
	Laguna Canyon- SR-133	NA	70.5	70.5
	E of SR-133	70.8	71.6	71.6
Alton Pkwy/	W of Culver	71.6	71.8	71.8
	Culver-Yale Loop	71.5	72.3	72.3
	Yale Loop-Jeffrey	73.5	73.9	73.9
	Jeffrey-Sand Canyon	72.5	72.8	72.8
	Sand Canyon-Laguna Canyon	72.8	74.1	74.1
	Laguna Canyon- SR-133	71.1	72.3	72.3

Saddleback College

Speed limits for roadways in Mission Viejo were obtained from Ordinance 10-282 in the Mission Viejo Municipal Code which provides prima facie speed limits on certain streets published in 2010. Speed limits for roadways in Laguna Hills were derived from Chapter 11-20-010 (Established Speed Limits) of the Laguna Hills Code. As seen in **Table 9,** project implementation does little to change the ambient traffic noise environment. The largest project related noise increase is +0.4 dB CNEL at 50 feet from the roadway centerline. Of the 45 roadway segments analyzed in this study, 35 had no change in noise and 5 have a 0.1 dB CNEL increase in noise attributed to project traffic. Because of elevated non-project traffic volumes in the project area, any project related noise contribution is diluted and is less-than-significant.

Analysis of cumulative impacts (change between the "future with project" scenario and "existing" noise levels) shows that only one segment will exceed the +3.0 dB significance threshold. This roadway segment, Crown Valley Parkway west of Antonio is anticipated to experience a +3.9 dB CNEL increase in traffic noise in 2030 as compared to existing noise levels. However, only +0.1 dB CNEL is attributed to project development. The increase would be cumulatively significant regardless of project implementation. The project is therefore not considered to be cumulatively significant in the Saddleback College environs.

Table 9 Saddleback College
Traffic Noise Impact Analysis
(dB CNEL at 50 feet from centerline)

Roadway		Existing	Future	Future With Project
Moulton Pkwy/	N of Crown Valley	71.8	72.9	72.9
Golden Lantern/	S of Crown Valley	71.5	72.8	72.8
Greenfield Dr/	SR-73 - Crown Valley	71.5	71.8	71.8
Cabot Rd/	N of Oso	69.6	71.5	71.5
	S of Oso	69.6	69.9	69.9
	N of Crown Valley	69.3	69.3	69.3
Camino Capistrano/	N of Avery	72.3	72.3	72.3
	S of Avery	66.9	68.3	68.3
Marguerite Pkwy/	S of La Paz	73.4	73.8	73.8
	N of Oso	72.9	73.4	73.4
	Oso-Felipe	72.5	72.6	72.8
	Felipe-Crown Valley	73.4	73.5	73.6
	Crown Valley-Med Center	72.2	72.3	72.6
	Med Center-Shops Blvd	71.3	71.3	71.3
	S of Shops Blvd	71.8	71.8	72.0
	N of Avery	72.6	72.6	72.6
	S of Avery	68.6	71.5	71.5
Felipe Rd/	N of Crown Valley	69.9	70.4	70.4
	Crown Valley-Marguerite	67.8	68.6	68.6
Antonio Pkwy/	N of Oso	74.1	75.2	75.3
	Oso-Crown Valley	73.9	76.2	76.2
	S of Crown Valley	73.3	75.9	76.0
	N of Ortega Hwy	71.3	NA	NA

Table 9 (continued) Saddleback College
Traffic Noise Impact Analysis
(dB CNEL at 50 feet from centerline)

Roadway		Existing	Future	Future With Project
Oso Pkwy/	W of Cabot	73.8	74.9	74.9
	Cabot - I-5	75.3	76.3	76.3
	E of I-5	76.9	77.1	77.1
	W of Marguerite	76.3	76.7	76.7
	Marguerite-Felipe	75.4	76.2	76.2
	Felipe-Antonio	75.1	76.2	76.2
	E of Antonio	73.9	75.2	75.2
	W of SR-241	73.3	74.6	74.6
Crown Valley Pkwy/	W of Moulton	74.6	75.1	75.1
	Moulton-Greenfield	75.1	75.9	75.9
	Greenfield-Cabot	76.0	76.9	76.9
	Cabot - I-5	76.8	77.0	77.0
	E of I-5	77.1	78.3	78.3
	W of Marguerite	75.2	77.4	77.4
	E of Marguerite	75.5	77.5	77.6
	W of Antonio	72.3	76.1	76.2
Paseo De Colinas/	Golden Lantern-Cabot	71.8	72.5	72.5
	Cabot-Camino Capistrano	70.1	71.1	71.1
Avery Pkwy/	Camino-Capistrano - I-5	73.2	74.7	74.7
	I-5 - Marguerite	74.2	74.9	75.3
	Marguerite-Plata	70.2	72.3	72.6
	E of Plata	63.8	63.8	63.8

OPERATIONAL NOISE IMPACT

Existing residential and other noise-sensitive uses located near the proposed development areas on each campus may experience a slight change in their ambient noise environment as a result of the proposed project. The noise environment would be primarily affected by campus activities including recreational activities and parking activities.

The IVC campus is expected to increase in size from the current 15,000 to an estimated 26,000 by 2031. The Saddleback campus is expected to grow from its current 26,000 students to an estimated 40,700 students by 2031. These numbers indicate a 73% increase at IVC and a 56% increase at Saddleback. r

Most new campus buildings will be in the center of campus and there will be substantial noise loss from intervening structures at the closest off-site sensitive uses. **Table 7** shows the activities judged to be in proximity to sensitive use.

Parking Activities

At IVC, new parking lots and/or parking structures are proposed at the corner of Jeffrey and Barranca. The new parking lot could be as close as 400 feet to the nearest sensitive use and the parking structure could be as close as 600 feet. In both cases, the sensitive uses are across either Jeffrey or Barranca, and noise from these roadways as well as distance separation would assist in masking or reducing any project generated noise. The distance separation would reduce parking activity noise to comparable ambient levels.

The Saddleback campus is planned to have a new parking structure with approximately 100 feet separation to the nearest multi-family sensitive use to the northwest. The parking structure replaces on-site surface parking although the garage would accommodate more cars than the existing surface parking lot.

The parking area elevation is significantly below that of the nearest sensitive use. The 35-55 feet change in topography would assist with noise mitigation as the top of the parking garage would likely still be below the roadway grade level of the nearest multi-family uses.

In some cases the noise emanating from individual cars and trucks can be loud and disturbing. Typical parking lot noise includes doors shutting, engines starting, and acceleration. Other noises can include tire squeal noise, loud stereos and car alarms. These noises would occur intermittently and are not long in duration. The frequency of these on-site noise events would increase as a result of the project because an increased number of cars would park on the site and be concentrated in each location. However, the exact number of parking spaces planned for the new lots and parking structures is not yet known.

Single event noise from parking measurements show a wide diversity in noise levels. They occur infrequently and in short bursts. If one assumes a 100 foot source to receiver separation,

the following noise levels would be experienced at the closest homes to the proposed structure without consideration of the masking effects of grade separation:

Car alarm/horn	74 dB
People shouting	59 dB
Car door slamming	57 dB
Car starting	54 dB
Car driving	49 dB

The Mission Viejo noise standard limits single event daytime maxima to 75 dB and allows 70 dB for up to 1 minute, 65 dB for 5 minutes per hour and 60 dB for 15 minutes per hour. It is unlikely that any of the above levels last long enough or are loud enough to exceed the ordinance limits.

For the indicated reasons impacts from the parking activities to nearby noise-sensitive receptors would be potentially significant though mitigated by the following:

- The majority of the parking structure is below the grade of off-site homes.
- Uppermost parking levels will be undesirable relative to parking spaces on lower levels nearer ground floor. Bottom levels will be noise shielded by overhead ceilings and roofs.
- Each of these individual noise sources lasts for short duration and their occurrences would be infrequent.
- Parking lot activities are primarily limited to daytime hours of lesser noise sensitivity
- Possible noise levels from parking lot travel would be similar to the existing noise baseline such that people should not be aware that cars are entering or leaving the parking areas.

Athletic Activities

Both campuses will receive an updated Athletic Stadiums. In addition the following improvements are proposed for the IVC campus:

IVC Athletic Improvements
New baseball bleachers, restrooms and concessions
Renovate existing soccer fields and New Athletics Stadium
Construct a new gymnasium
New volleyball courts and swimming pool.

At the IVC campus, the Athletic Stadium is more than 800 feet from the closest sensitive use across Barranca Parkway at the closest point and more than 1,000 feet from the center of the stadium. Distance and masking effects of traffic along Barranca would mask any noise emanating from the stadium. No lighting is planned such that activities would end at sundown. The baseball improvements and Athletic Stadium are a continued use. The volleyball courts and swimming pool are interior to the campus and are more than 230 feet to any sensitive use.

Section 6-8-205D of the Irvine Municipal Code states that activities lawfully conducted on public parks, public playgrounds, and public or private school grounds are exempt from the Noise Ordinance provisions. In addition, school athletic and entertainment events that are conducted on school property are also exempt. Nevertheless, because of distance, nature of activities and lack of lighting (no nocturnal activities) ordinance standards are unlikely to be exceeded.

The SOCCCD has proposed the following improvements for the Saddleback campus:

Saddleback Athletic Improvements
New Wellness Center
New practice field for baseball
Renovate existing football stadium
New Athletics Stadium
New baseball and softball bleachers, restrooms and concessions

The Saddleback Wellness Center will be indoors and contain passive activities. The Saddleback softball fields are more than 1,000 feet from any sensitive use. The baseball fields are interior to the campus and are more than 1,500 feet from any sensitive use with many intervening buildings. The Saddleback renovated Athletic Stadium is 450 feet to the nearest off-site sensitive use at the nearest point, but 750 feet from the center of the field to the nearest receptor and is a continuation of an existing use.

Sec. 9.22.035 of the Mission Viejo Municipal Code, (Special Provisions) exempts activities conducted on the grounds of any public college from compliance with any numerical noise standards. However, the noise ordinance standards were used as a guideline of possible noise impact significance even if they do not legally apply to the proposed project.

Athletic event activity noise depends upon the intensity of the action and the number of spectators. There is no unique noise signature that can characterize every game. A variety of measurements of athletic events, however, produces a reasonably consistent pattern of noise observations. Typical reported noise levels at 500 feet from the middle of a soccer field (or from the middle of a complex of several fields) are as follows (dB Leq):

Marymount College Soccer	38 dB
Chico City Park (3 fields)	43 dB
Citrus Heights Soccer Complex	46 dB
San Rafael Recreation Center	47 dB
Gavilan College (football game)	53 dB
Lake Oswego, OR (football playoff)	55 dB

As noted above, every measured event has different levels of activity, spectators, enthusiasm, etc. The above data are presented to suggest a typical range of athletic event noise. They cannot be used to represent an exact analogue of noise generation to be expected from the upgraded Athletic Stadium because the parameters for an exact comparison were not recorded or reported. These data suggest that game noise is primarily in the low-to-mid 40 dB Leq range at a distance equal to that of the closest offsite use. The corresponding L_{50} level is approximately 40 dB (slightly less than Leq). Athletic event noise is not considered a significant impact for multiple reasons as follows:

- Such noise levels already occur from athletic events and games at the same location.
- Even though such noise is exempt from compliance with the numerical limits of the Mission Viejo Code, it will be less than the most stringent residential standard (Daytime Level of 50 dB L_{50}).
- Activity noise of 45 dB Leq will be much less than existing noise levels of 60-65 dB Leq found near the Las Tunas Drive homes between 7 a.m. to 10 p.m. that are located closest to campus.
- Use of lights on this field should be discontinued at 10 p.m. to minimize potential nuisance noise such as shouting, whistles, boom boxes, etc.

HVAC Noise

Stationary noise sources which may have an impact on the nearest residential activities are mechanical equipment source noise including electrical and mechanical air conditioning, most of which is typically located on rooftops, and will be screened from possible on-site sensitive use areas to reduce audibility. Noise standards for "stationary" sources allow for no more than an L_{50} of 55 daytime at the residential boundary or 50 dB L_{50} nocturnal.

Potential noise generated by HVAC equipment was evaluated using typical maximum HVAC equipment noise levels. The exact type and quantity of HVAC equipment is not yet known. The hourly average reference noise level at a 50-foot analysis distance for typical rooftop mounted equipment is 54 dB at 50 feet. Standard design features such as shielding and parapets would reduce noise emissions below this level. For direct line-of-sight conditions, the above point source data can be adjusted for geometrical (spherical) spreading losses at a 6 dB per distance doubling between the source and the closest receiver.

The closest project element building to any off-site sensitive use is the proposed Life Sciences building at IVC. The nearest façade of this building is approximately 80 feet to the nearest residence and the HVAC equipment is estimated to be located at approximately 120 feet. At this distance, HVAC equipment would be approximately 46 dB without shielding and shielding would reduce noise levels to less than 40 dB. This is less than the 55 dB L_{50} daytime or 50 dB L_{50} nighttime standard. The closest proposed building to any off-site receptor at Saddleback College is the Fine Arts Building with approximately 450 feet distance separation. At this distance noise from HVAC equipment would decay to less than 29 dB. Noise from HVAC equipment is not considered significant.

SUMMARY

Short-term construction noise intrusion and vibration impacts will be limited by conditions on construction permits requiring compliance with the City of Irvine and Mission Viejo Ordinance. The presumption is that compliance with the time restrictions hours reduces construction noise impacts to less-than-significant. Indicated time restrictions are as follows:

Mission Viejo

Permissible Hours of Equipment or Material Delivery

Sec. 6.35.070. of the Municipal Code addresses delivery of equipment and material at a construction site and states "Onsite building operations and the delivery of any materials, supplies, or construction equipment located within one-half mile of a structure for human occupancy shall be prohibited between the hours of 8:00 p.m. to 7:00 a.m. on weekdays and Saturdays, or at any time on Sunday or a city holiday."

Permissible Hours of Grading or Construction

Sec. 8.10.540. of the Municipal Code addresses the permissible hours of grading operations and states that "grading and equipment operations within one-half mile of a structure for human occupancy shall not be conducted between the hours of 8:00 p.m. and 7:00 a.m. nor on Sundays and federal holidays."

Irvine

Construction activities may occur between the hours of 7:00 a.m. – 7:00 p.m. Monday through Friday and 9:00 a.m. – 6:00 p.m. on Saturdays. No construction shall be permitted outside of these hours or on Sundays and federal holidays without a temporary waiver. Trucks, vehicles, and equipment that are making or involved with deliveries, loading, or transfer of materials for any construction project are also subject to these provisions.

Additionally, the following construction practices are recommended:

- All equipment shall be equipped with properly operating and maintained mufflers.
- Equipment and materials shall be staged in areas that will create the greatest distance between construction-related noise sources and the noise-sensitive receptors nearest the Proposed Project Site during all project construction.
- Haul truck and other construction-related trucks traveling to and from the project site shall be restricted to the same hours specified for the operation of construction equipment. To the extent feasible, haul routes shall not pass directly by sensitive land uses or residential dwellings.

Traffic noise resulting from project implementation on area roadways will be less-than-significant.

Noise generation from campus activities will generally have a minimal impact on surrounding residential uses.

Appendix F

Cultural Resources Assessment

CULTURAL RESOURCES ASSESSMENT

South Orange County Community College District Master Plan

Irvine Valley College and Saddleback College Campuses

Mission Viejo and Irvine, Orange County, California



BCRCONSULTING

June 21, 2011

CULTURAL RESOURCES ASSESSMENT

South Orange County Community College District Master Plan

Irvine Valley College and Saddleback College Campuses

Mission Viejo and Irvine, Orange County, California

Prepared for:

Jeremy Krout
RGP Planning & Development Services
8921 Research Drive
Irvine, California 92618

Prepared by:

David Brunzell, M.A., RPA
BCR Consulting
440 West 7th Street
Claremont, California 91711

Project No. RGP1101

National Archaeological Data Base Information:
Type of Study: Intensive Survey
Resources Recorded: None
Keywords: Saddleback College, Irvine Valley College
USGS Quadrangles: 7.5-minute *San Juan Capistrano, California 1977; Tustin, California* 1978

BCRCONSULTING

June 21, 2011

MANAGEMENT SUMMARY

Brunzell Cultural Resource Consulting (BCR Consulting) is under contract to RGP Planning & Development Services to conduct a cultural resources assessment of the South Orange County Community College District (SOCCCD) Master Plan, within the campuses of Irvine Valley College in the City of Irvine and Saddleback College in the City of Mission Viejo, Orange County, California. This work was completed pursuant to the California Environmental Quality Act (CEQA). A cultural resources records search, literature review, intensive field survey, Native American Consultation, and vertebrate paleontological resources assessment, were conducted for the Master Plan study areas. The records search and literature review revealed that 80 cultural resources studies have taken place resulting in the recording of 16 cultural resources within a one-mile radius of the Irvine Valley College portion of the SOCCCD Master Plan. Of the 80 previous studies, two have assessed portions of Irvine Valley College, resulting in the recording of no cultural resources within its boundaries. The records search and literature review also revealed that 69 cultural resources studies have taken place resulting in the recording of 11 resources within a one-mile radius of the Saddleback College portion of the SOCCCD Master Plan. Of those 69 previous studies, none have taken place, and no cultural resources have been recorded, within the Saddleback College boundaries (see Appendix A). Results of the Native American Consultation and paleontological resources assessment are provided in Appendices B and C, respectively.

During the field survey, BCR Consulting archaeologists did not discover any cultural resources, including prehistoric or historic archaeological sites or historic buildings, within the SOCCCD Master Plan study areas on either campus. Therefore, it is BCR Consulting's recommendation that no historical resources are likely to be impacted by developments that take place within the SOCCCD Master Plan study area boundaries. Although a number of resources have been recorded in the vicinity, due to significant artificial disturbances within both campuses BCR Consulting recommends that no additional cultural resources work or monitoring is necessary for the Master Plan. However, if previously undocumented cultural resources are identified during earthmoving activities, a qualified archaeologist should be contacted to assess the nature and significance of the find, diverting construction excavation if necessary.

The paleontological resources assessment (Attachment C) did not reveal vertebrate fossil localities directly within the SOCCCD Master Plan study area boundaries, but has shown vertebrate localities nearby from the same sedimentary deposits that occur within each of the campuses. As a result the following mitigation measures have been developed for paleontological resources.

Paleontological Resources Mitigation Measure 1. Prior to any excavation or grading, the district shall compare the limits of proposed excavations with the depth and lateral extent of existing sub-surface disturbances, including foundations, and utility and fill materials. The district shall determine the extent of sub-surface disturbances by using information including, but not limited to, as-built construction plans, underground utility surveys, and/or historic or recent geotechnical information, including boring and trenching logs.

Paleontological Resources Mitigation Measure 2. Should resources be uncovered as a result of campus grading and/or excavation shallower than five feet, a qualified paleontologist shall be retained and notified, and work in the vicinity of the find shall cease until a paleontological monitor under the supervision of the qualified paleontologist arrives. The paleontological monitor shall have the

authority to halt or divert any activities adversely impacting potentially significant paleontological resources, and those resources must be recovered, analyzed, and curated with the Natural History Museum of Los Angeles County.

Paleontological Resources Mitigation Measure 3. Based on information obtained from compliance with Paleontological Resources Mitigation Measure 1, should excavations exceed five feet in depth, a qualified paleontologist shall be retained to conduct additional paleontological assessment using pre-construction geotechnical surveys to better define the subsurface geological features of the campuses. Data from the geotechnical surveys will help define the vertical and horizontal distribution of paleontologically sensitive subsurface units to assist in the accurate development of any monitoring requirements. Should that data indicate paleontological sensitivity, the following shall occur:

- A qualified paleontologist shall be retained to attend a pre-construction meeting with construction personnel. The paleontologist shall inform construction personnel that fossils may be encountered, and provide information on the appearance of fossils, the role of paleontological monitors, and on proper notification procedures; and

- A paleontological monitor under the supervision of a qualified paleontologist shall monitor all earth moving activities with potential to disturb previously undisturbed paleontologically sensitive sediment. The paleontological monitor shall have the authority to halt or divert any activities adversely impacting potentially significant paleontological resources, and those resources must be recovered, analyzed, and curated with the Natural History Museum of Los Angeles.

If human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC.

TABLE OF CONTENTS

MANAGEMENT SUMMARY ii

TABLE OF CONTENTS iv

APPENDICES, FIGURES, AND TABLES v

INTRODUCTION 1

NATURAL SETTING 1

CULTURAL SETTING 4
- PREHISTORIC ETHNOGRAPHY 4
- HISTORY 4

PERSONNEL 5

METHODS 5
- RESEARCH 5
- FIELD SURVEY 5

RESULTS 5
- RESEARCH 5
- FIELD SURVEY 6

RECOMMENDATIONS 6

REFERENCES 8

APPENDICES AND FIGURES

APPENDICES

A: RECORDS SEARCH LETTER
B: NATIVE AMERICAN CONSULTATION
C: PALEONTOLOGICAL RESOURCES ASSESSMENT
D: PROJECT PHOTOS

FIGURES

1: Irvine Valley College Regional and Property Location 2
2: Saddleback College Regional and Property Location 3

INTRODUCTION

Brunzell Cultural Resource Consulting (BCR Consulting) is under contract to RGP Planning & Development Services to conduct a cultural resources assessment of the South Orange County Community College District (SOCCCD) Master Plan, within the campuses of Irvine Valley College in the City of Irvine, and Saddleback College in the City of Mission Viejo, Orange County, California. This work was completed pursuant to the California Environmental Quality Act (CEQA), Public Resources Code (PRC) Chapter 2.6, Section 21083.2, and California Code of Regulations (CCR) Title 14, Chapter 3, Article 5, Section 15064.5.

The Irvine Valley College portion of the SOCCCD Master Plan study area is located in an unsectioned portion of Township 6 South, Range 9 West, San Bernardino Baseline and Meridian (SBBM) in the City of Irvine. It is depicted on the United States Geological Survey (USGS) *Tustin, California* (1978) 7.5-minute topographic quadrangle (Figure 1).

The Saddleback College portion of the SOCCCD Master Plan study area is located in Section 24 of Township 7 South, Range 8 West, SBBM in the City of Mission Viejo. It is depicted on the United States Geological Survey (USGS) *San Juan Capistrano, California* (1977) 7.5-minute topographic quadrangle (Figure 2).

NATURAL SETTING

Irvine Valley College and Saddleback College are both located on the southern extent of the physiographic area known as the Los Angeles Basin. It is characterized as a transverse-oriented lowland basin and coastal plain approximately 50 miles long and 20 miles wide. The basin originated as a deep marine trough during the Pliocene (7-2 million years ago) that eventually filled with shallow water fossil bearing sediments. By the beginning of the Pleistocene (after 2 million years ago) uplifting created the series of plains and mesas along the coast that now characterize the area (Lambert 1994, Mendenhall 1905, Woodford et al. 1954).

Local rainfall ranges from 5 to 15 inches annually (Jaeger and Smith 1971: 36-37). Historically, regional flora was dominated by chaparral, coastal sage scrub, and riparian vegetation communities, although local urban and agricultural developments have severely reduced their modern proliferation. Key native plants included black sage, California brittlebush, California buckwheat, California sagebrush, deerweed, golden yarrow, laurel sumac, lemonadeberry, poison oak, purple sage, sticky monkeyflower, sugar bush, toyon, white sage, coastal century plant, coastal cholla, prickly-pear cactus, arroyo willow and bulrush. These plants were utilized by local animal species, which included kangaroo rats, California horned lizard, orange-throated whiptail, San Diego horned lizard, brown-headed cowbird, California gnatcatcher, California quail, cactus wren, darkling beetle, harvester ant, and Palos Verdes blue butterfly (Williams et al. 2008:117, 122). Peripheral species included deer, and various rodents and birds -many of which were utilized by prehistoric and historic inhabitants (Lightfoot and Parrish 2009).

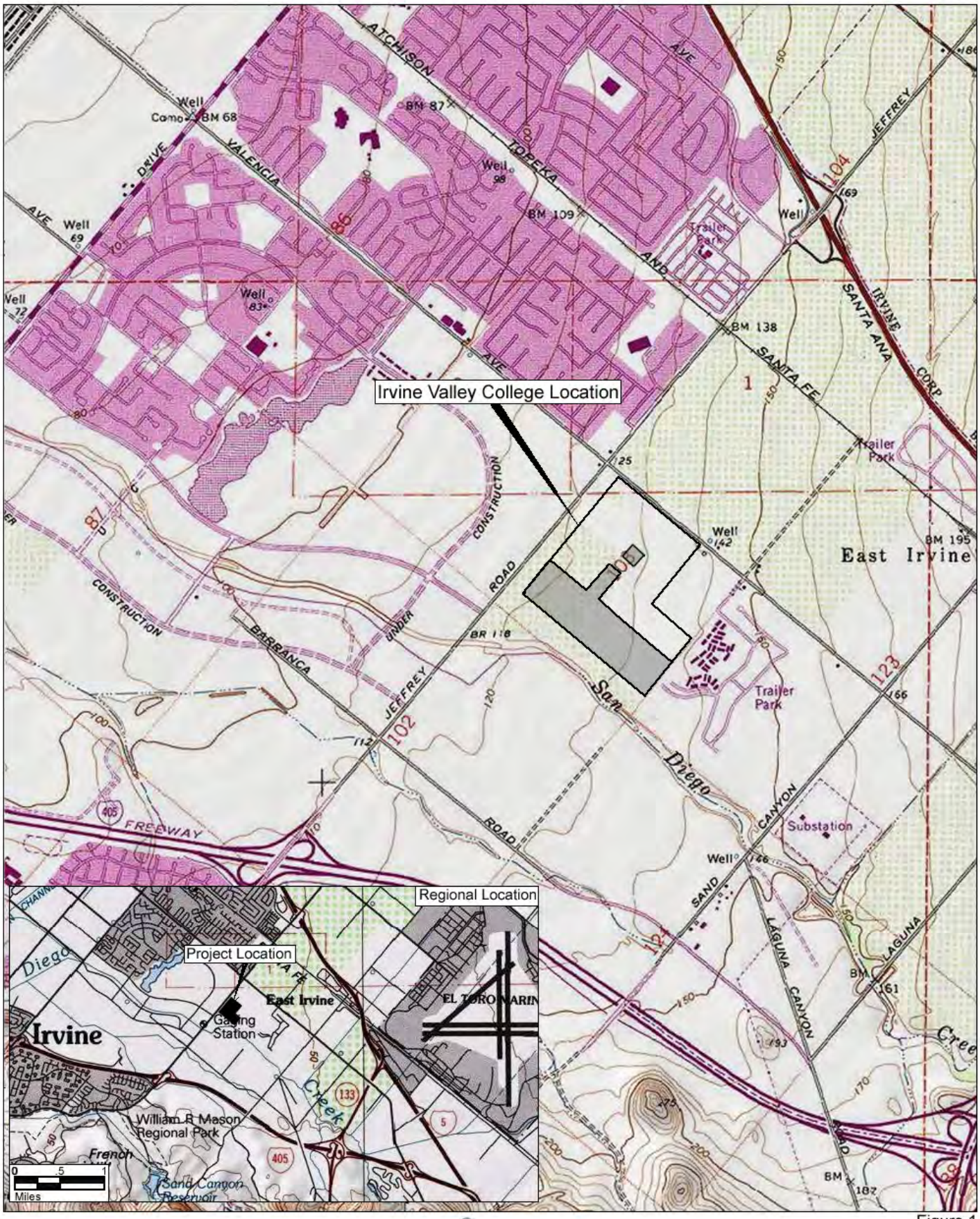


Figure 1

Study Area

BCRCONSULTING

N

0 1,000 2,000

Feet

South Orange County Community College District
Irvine Valley College
Regional and Project Location

SOURCE: TOPO! 2010 National Geographic; USGS 7.5 Quad: Tustin (1978), CA

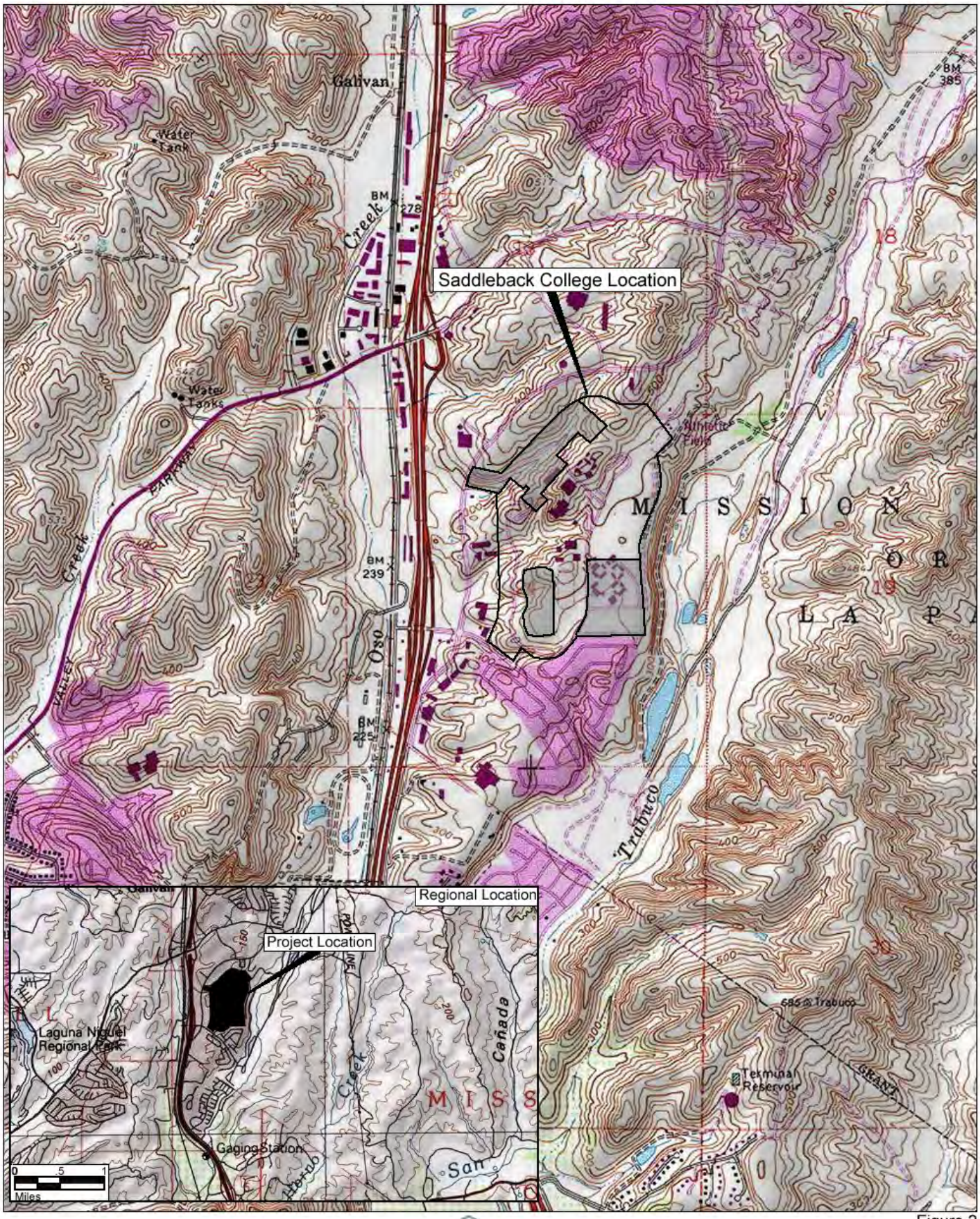


Figure 2

BCRCONSULTING

South Orange County Community College District
Saddleback College
Regional and Project Location

SOURCE: TOPO! 2010 National Geographic; USGS 7.5 Quad: San Juan Capistrano (1977), CA

CULTURAL SETTING

Prehistoric Ethnography

Both Irvine Valley College and Saddleback College are situated within the traditional boundaries of the Gabrielino (Tongva; see McCawley 1996, Heizer 1978, and Kroeber 1925). The Gabrielino were originally studied using ethnography, particularly during the early 20th century, although their decimation through acculturation and disease has necessitated supplementing any social analysis with archaeological data. The Gabrielino name has been attributed by association with the Spanish mission of San Gabriel, and refers to a subset of people sharing speech and customs with other Cupan speakers (such as the Juaneño/Ajachemem) from the greater Takic branch of the Uto-Aztecan language family (Bean and Smith 1978, Shipley 1978). The Gabrielino were semi-nomadic hunter-gatherers who subsisted by exploitation of seasonably available plant and animal resources. Plants utilized for food were heavily relied upon and included acorn-producing oaks, as well as seed-producing grasses and sage. Animal protein was commonly derived from rabbits and deer in inland regions, while coastal populations supplemented their diets with fish, shellfish, and marine mammals (Boscana 1933, Heizer 1968, Johnston 1962, McCawley 1996). Dog, coyote, bear, tree squirrel, pigeon, dove, mud hen, eagle, buzzard, raven, lizards, frogs, and turtles were specifically not utilized as a food source (Kroeber 1925:652).

History

In Southern California, the historic era is generally divided into three periods: the Spanish or Mission Period (1769 to 1821), the Mexican or Rancho Period (1821 to 1848), and the American Period (1848 to present).

Spanish Period. The Spanish period (1769-1821) is represented by exploration of the region; establishment of the San Diego Presidio and missions at San Gabriel and San Luis Rey; and the introduction of livestock, agricultural goods, and European architecture and construction techniques. Spanish influence continued to some extent after 1821 due to the continued implementation of the mission system.

Mexican Period. The Mexican period (1821-1848) began with Mexican independence from Spain and continued until the end of the Mexican-American War (Cleland 1941). The Secularization Act resulted in the transfer, through land grants (called ranchos) of large mission tracts to politically prominent individuals. At that time, cattle ranching was a more substantial business than agricultural activities, and trade in hides and tallow increased during the early portion of this period. Until the Gold Rush of 1849, livestock and horticulture dominated California's economy (Ingersoll 1904, Beattie 1925, Beattie and Beattie 1951).

American Period. The American Period, 1848–Present, began with the Treaty of Guadalupe Hidalgo. In 1850, California was accepted into the Union of the United States primarily due to the population increase created by the Gold Rush of 1849. The cattle industry reached its greatest prosperity during the first years of the American Period. Mexican Period land grants had created large pastoral estates in California, and demand for beef during the Gold Rush led to a cattle boom that lasted from 1849–1855. However, beginning about 1855, the demand for beef began to decline due to imports of sheep from New Mexico and cattle from the Mississippi and Missouri Valleys. When the

beef market collapsed, many California ranchers lost their ranchos through foreclosure. A series of disastrous floods in 1861–1862, followed by two years of extreme drought, which continued to some extent until 1876, altered ranching forever in the southern California area (Beattie and Beattie 1951).

PERSONNEL

David Brunzell, M.A., RPA acted as the Project Manager and Principal Investigator. The cultural resources records search was also conducted by Mr. Brunzell at the South Central Coastal Information Center (SCCIC) located at California State University, Fullerton. Mr. Brunzell also completed the field assessment, compiled the technical report, and provided project oversight.

METHODS

Research

Prior to fieldwork, a records search was conducted at the SCCIC. This included a review of all recorded historic and prehistoric cultural resources, as well as a review of known cultural resources, and survey and excavation reports generated from projects located within one mile of each of the campuses (see Appendix A). In addition, a review was conducted of the National Register of Historic Places (National Register), the California Register, and documents and inventories from the California Office of Historic Preservation including the lists of California Historical Landmarks, California Points of Historical Interest, Listing of National Register Properties, and the Inventory of Historic Structures. Additional research was conducted using local historic maps and aerial photos, internet resources, and personal interviews.

Field Survey

An intensive-level archaeological field survey of both study areas was conducted on April 21, 2011. The survey was conducted by walking parallel transects spaced approximately 15 meters apart across 100 percent of the study areas, where accessible. Soil exposures, including natural clearings, agricultural fields, and back dirt from rodent burrows were carefully inspected for evidence of cultural resources. Buildings and structural installations were also scrutinized for any evidence of historic-age components.

RESULTS

Research

Irvine Valley College. Data from the SCCIC revealed that 80 cultural resources studies have taken place resulting in the recording of 16 cultural resources (10 historic and six prehistoric) within a one-mile radius of the Irvine Valley College portion of the SOCCCD Master Plan. Of the 80 previous studies, two have assessed portions of Irvine Valley College, resulting in the recording of no cultural resources within its boundaries. The nearest previously recorded cultural resource was a single isolated prehistoric mano (a stone used to manually grind seeds), located approximately 100 meters southwest of the Irvine Valley College study area's southwestern boundary (Evans 1991; see also Appendix A).

Additional research has shown that Irvine Valley College was founded in 1979 (Tello 2008). Aerial photographs from 1946, 1952, and 1972 have indicated that the campus has never contained historic-age buildings or structures (Nationwide National Environmental Title Research 2009a).

Saddleback College. Data from the SCCIC also revealed that 69 cultural resources studies have taken place resulting in the recording of 11 cultural resources (eight prehistoric, two historic, and one with prehistoric and historic components) within a one-mile radius of the Saddleback College portion of the SOCCCD Master Plan. Of those 69 previous studies, none have taken place, and no cultural resources have been recorded, within the Saddleback College boundaries. The nearest previously recorded cultural resource was a concentration of historic debris remaining from a ca. 1930s Japanese settlement accompanied by a sparse prehistoric artifact scatter. This resource was recorded approximately one quarter mile east of the northern portion of the Saddleback College study area (Jones 1991; see also Appendix A).

Additional research has shown that Saddleback College was founded in 1968, and that it has never contained historic-age buildings or structures (Nationwide National Environmental Title Research 2009b, Saddleback College 2011, Personal Interview of Professor James Wright April 21, 2011).

Field Survey

During the field survey, David Brunzell inspected the SOCCCD Master Plan boundaries within the Irvine Valley College and Saddleback College campuses. No cultural resources were identified within either property. Ground disturbances were severe in most locations, and included plowed agricultural fields, and disturbances related to campus grading, landscaping, paving, and building installations.

RECOMMENDATIONS

BCR Consulting conducted an intensive cultural resources survey of the SOCCCD Master Plan boundaries within the Irvine Valley College Campus in the City of Irvine, and the Saddleback College Campus in the City of Mission Viejo, Orange County, California. This work was completed pursuant to CEQA. The records search and field survey did not identify any previously recorded cultural resources, including prehistoric or historic archaeological sites or historic buildings, within the SOCCCD Master Plan study areas. Based on these results the proposed project is not anticipated to affect any archaeological or historical resources. Therefore, BCR Consulting recommends that no additional cultural resources work or monitoring is necessary for developments associated with the SOCCCD Master Plan. However, if previously undocumented cultural resources are identified during earthmoving activities, a qualified archaeologist shall be contacted to assess the nature and significance of the find, diverting construction excavation if necessary.

The paleontological resources assessment (Attachment C) did not reveal vertebrate fossil localities directly within the SOCCCD Master Plan study area boundaries, but has shown vertebrate localities nearby from the same sedimentary deposits that occur within each of the campuses. As a result the following mitigation measures have been developed for paleontological resources.

Paleontological Resources Mitigation Measure 1. Prior to any excavation or grading, the district shall compare the limits of proposed excavations with the depth and lateral extent of existing sub-

surface disturbances, including foundations, and utility and fill materials. The district shall determine the extent of sub-surface disturbances by using information including, but not limited to, as-built construction plans, underground utility surveys, and/or historic or recent geotechnical information, including boring and trenching logs.

Paleontological Resources Mitigation Measure 2. Should resources be uncovered as a result of campus grading and/or excavation shallower than five feet, a qualified paleontologist shall be retained and notified, and work in the vicinity of the find shall cease until a paleontological monitor under the supervision of the qualified paleontologist arrives. The paleontological monitor shall have the authority to halt or divert any activities adversely impacting potentially significant paleontological resources, and those resources must be recovered, analyzed, and curated with the Natural History Museum of Los Angeles County.

Paleontological Resources Mitigation Measure 3. Based on information obtained from compliance with Paleontological Resources Mitigation Measure 1, should excavations exceed five feet in depth, a qualified paleontologist shall be retained to conduct additional paleontological assessment using pre-construction geotechnical surveys to better define the subsurface geological features of the campuses. Data from the geotechnical surveys will help define the vertical and horizontal distribution of paleontologically sensitive subsurface units to assist in the accurate development of any monitoring requirements. Should that data indicate paleontological sensitivity, the following shall occur:

- A qualified paleontologist shall be retained to attend a pre-construction meeting with construction personnel. The paleontologist shall inform construction personnel that fossils may be encountered, and provide information on the appearance of fossils, the role of paleontological monitors, and on proper notification procedures; and

- A paleontological monitor under the supervision of a qualified paleontologist shall monitor all earth moving activities with potential to disturb previously undisturbed paleontologically sensitive sediment. The paleontological monitor shall have the authority to halt or divert any activities adversely impacting potentially significant paleontological resources, and those resources must be recovered, analyzed, and curated with the Natural History Museum of Los Angeles.

If human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC.

REFERENCES

Bean, Lowell John, and Charles R. Smith
1978 *California*, edited by R.F. Heizer. Handbook of North American Indians, Vol. 8, W.C. Sturtevant, general editor, Smithsonian Institution. Washington, D.C.

Beattie, George W.
1925 Development of Travel between Southern Arizona and Los Angeles as it Related to the San Bernardino Valley. *Historical Society of Southern California, Annual Publications* 13(2). Southern California Historical Society. San Bernardino, California

Beattie, George W., and Helen P. Beattie
1951 *Heritage of the Valley: San Bernardino's First Century*. Biobooks. Oakland.

Boscana, Father Geronimo
1933 *Chinigchinich: A Revised and Annotated Version of Alfred Robinson's Translation of Father Geronimo Boscana's Historical Account of the Belief, Usages, Customs and Extravagancies of the Indians of this Mission of San Juan Capistrano Called the Acagchemem Tribe.* Fine Arts Press, Santa Ana. (Reprinted, Malki Museum Press, Banning, California 1978.

Cleland, Robert Glass
1941 *The Cattle on a Thousand Hills—Southern California, 1850-80.* Huntington Library. San Marino, California.

Evans, S.
1991 Site Record for P-30-100442. On File at the South Central Coastal Information Center at California State University, Fullerton.

Heizer, Robert F.
1978 Introduction. In *California,* edited by Robert F. Heizer, pp. 1-5. Handbook of North American Indians, vol. 8, W.C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

1968 Introduction and Notes. In *The Indians of Los Angeles County: Hugo Reid's Letters of 1852,* edited and annotated by Robert F. Heizer. Southwest Museum, Los Angeles.

Ingersoll, L.A.
1904 *Ingersoll's Century Annals of San Bernardino County 1769-1904.* Published by the Author. Los Angeles, California.

Jaeger, Edmund C., and Arthur C. Smith
1971 *Introduction to the Natural History of Southern California*. California Natural History Guides: 13. University of California Press. Los Angeles

Johnston, B.E.
1962 *California's Gabrielino Indians.* Southwest Museum, Los Angeles.

Jones, C.
1991 Site Record for CA-ORA-1301/H. On File at the South Central Coastal Information Center at California State University, Fullerton.

Kroeber, Alfred L.
1925 *Handbook of the Indians of California.* Bureau of American Ethnology Bulletin No. 78. Washington D.C.: Smithsonian Institution. Reprinted in 1976, Dover Publications. New York.

Lambert, David
1994 *The Field Guide to Prehistoric Life.* Diagram Visual Information Limited. New York.

Lightfoot, Kent G., Otis Parrish
2009 *California Indians and Their Environment, an Introduction.* University of California Press, Berkeley.

McCawley, William
1996 *The First Angelinos, The Gabrielino Indians of Los Angeles.* Malki Museum Press/Ballena Press Cooperative Publication. Banning/Novato, California.

Mendenhall, W.C.
1905 *Developments of Underground Waters in the Eastern Coastal Plain Regions of Southern California.* USGS Water Supply Paper, Number 137.

Nationwide National Environmental Title Research
2009a Aerial Photos of Properties at Barranca Parkway and Jeffrey Road Intersection in Irvine, California from 1946, 1952, and 1972. Electronic Document: http://historicaerials.com/aerials.php?op=home. Accessed May 13, 2011.

2009b Aerial Photos of Properties at Marguerite Parkway and Parkway Intersection in Mission Viejo, California from 1946 and 1952. Electronic Document: http://historicaerials.com/aerials.php?op=home. Accessed May 13, 2011.

Saddleback College
2011 About Saddleback College. Electronic Document: http://www.saddleback.edu/about/. Accesed May 13, 2011.

Shipley, William F.
1978 Native Languages of California. In *California,* edited by R.F. Heizer, pp. 80-90. Handbook of North American Indians, vol. 8, W.C. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.

Tello, Al
2008 *Irvine Valley College Report to the Community.* Electronic Document: http://www.ivc.edu/foundation/Documents/IVC08_RTC.pdf. Accessed May 13, 2011.

Williams, Patricia, Leah Messinger, Sarah Johnson
2008 *Habitats Alive! An Ecological Guide to California's Diverse Habitats.* California Institute for Biodiversity, Claremont, California.

Woodford, A.O., J.E. Schuellhamer, J.E. Wooder, and R.F. Yerkes
1954 Geology of the Los Angeles Basin. In *Geology of Southern California, Bulletin 170*. Division of Mines and Geology. San Francisco.

United States Geological Survey
1977 *San Juan Capistrano, California* 7.5-minute topographic quadrangle map.

1978 *Tustin, California* 7.5-minute topographic quadrangle map.

APPENDIX A

RECORDS SEARCH LETTER

April 25, 2011

Jeremy Krout
RGP Planning & Development Services
8921 Research Drive
Irvine, California 92618

Subject: Records Search Results for a Cultural Resources Assessment of the SOCCCD Master Plan at Irvine Valley College and Saddleback College, Irvine and Mission Viejo, Orange County, California (BCR Consulting Project No. RGB1101)

Dear Jeremy:

Brunzell Cultural Resource (BCR) Consulting is under contract to RGB Planning & Development Services to provide a records search for a Cultural Resources Assessment of the SOCCCD Master Plan at Irvine Valley College and Saddleback College, Irvine and Mission Viejo, Orange County, California. The record search was conducted at the South Central Coastal Information Center (SCCIC) located at California State University, Fullerton. It included a review of all recorded historic and prehistoric archaeological site records, recorded built resource records, and a review of known cultural resources survey, excavation, and monitoring reports plotted within one mile of the subject property. BCR Consulting also examined the California State Historic Property Data File (HPD), which includes the National Register of Historic Places (NRHP), California Historical Landmarks (CHL), and California Points of Historical Interest (CPHI). The following are the records search results:

Records Search Summary for Irvine Valley College Portion

USGS	Cultural Resources	Reports
Tustin, California (1978) 7.5 Minute Quadrangle	CA-ORA-341, 543, 1304, 1424, 1580, 1657 P-30-100442, 161870, 161871, 161872, 161873, 161874, 161875, 176663, 176664, 179855	OR-8, 233, 303, 304, 486, 596, 621, 645, 655, 669, 671, 672, 761*, 762, 784, 808, 814, 847*, 906, 1085, 1096, 1098, 1099, 1127, 1164, 1196, 1402, 1413, 1419, 1422, 1448, 1466, 1517, 1521, 1542, 1624, 1664, 1668, 1692, 1786, 1882, 1902, 1903, 1944, 2027, 2062, 2064, 2244, 2261, 2267, 2336, 2337, 2473, 2484, 2488, 2491, 2497, 2636, 3186, 3197, 3205, 3237, 3238, 3244, 3262, 3263, 3266, 3285, 3293, 3369, 3373, 3380, 3392, 3675, 3700, 3858, 3874, 3961

*Within SOCCCD Master Plan Boundaries

Records Search Summary for Saddleback College Portion

USGS	Cultural Resources	Reports
San Juan Capistrano, California (1977) 7.5 Minute Quadrangle	CA-ORA-375, 473, 497, 433, 498, 887, 890, 1301/H, 1603, 1604 P-30-177041	OR-286, 304, 324, 325, 370, 382, 397, 581, 584, 650, 653, 705, 706, 707, 708, 709, 710, 718, 720, 729, 1004, 1065, 1137, 1207, 1235, 1294, 1295, 1344, 1439, 1452, 1473, 1538, 1603, 1604, 1350, 1351, 1717, 1723, 1724, 1725, 1789, 1851, 1912, 2041, 2080, 2152, 2206, 2309, 2310, 2396, 2412, 2416, 2419, 2426, 2431, 2435, 2437, 2438, 2516, 3089, 3136, 3140, 3150, 3157, 3373, 3470, 3572, 3667, 3935

Thank you for the opportunity to assist you on this project. If BCR Consulting can be of further assistance, or if you have any questions concerning this letter, please contact me at (909) 525-7078.

Sincerely,

BCR CONSULTING



David Brunzell
Principal Investigator/Archaeologist

APPENDIX B

NATIVE AMERICAN CONSULTATION

From: David Brunzell (david.brunzell@yahoo.com)
To: ds_nahc@pacbell.net;
Date: Mon, April 18, 2011 7:54:39 AM
Cc:
Subject: Sacred Lands File Search and List of Tribes Request

Hi Dave,

I'd like to request a Sacred Lands File search and list of potentially interested tribes/individuals for the South Orange County Community College District Master Plan EIR at the Irvine Valley College and Saddleback College campuses. Saddleback College is located within Township 7 South, Range 8 West, Section 24 (SBBM) in the City of Mission Viejo, Orange County, California. Irvine Valley college is located within a non-sectioned portion of Township 6 South, Range 9 West (SBBM) in the City of Irvine, Orange County, California (see attached maps).*

Please send the list to the below fax number and please get in touch with any questions. Can you reference BCR Consulting project number RGP1101 in the subject heading of your letter?

Thanks,

David Brunzell
Principal Investigator/Archaeologist
BCR Consulting
Certified Small Business (SB)
440 West 7th Street
Claremont, California 91711
909/525-7078
Fax: 909/621-7678
www.bcrconsulting.net

*SEE FIGURES 1 AND 2 OF THE CULTURAL RESOURCES ASSESSMENT.

STATE OF CALIFORNIA Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
ds_nahc@pacbell.net

April 19, 2011

Mr. David Brunzell, Archaeologist, Principal
BCR Consulting
440 West 7th Street
Claremont, CA 91711

Sent by FAX to: 909-621-7678
No. of Pages: 4

Re: Request for a Sacred Lands File Search and Native American Contacts list for the **"South Orange Community College District Master Plan EIR Project;"** located at the Irvine Valley College and Saddleback College campuses, in the communities of Mission Viejo and Irvine; Orange County, California

Dear Mr. Brunzell:

The Native American Heritage Commission (NAHC), the State of California 'Trustee Agency' for the protection and preservation of Native American cultural resources. The NAHC Sacred **were not identified** within ½ mile of the area of potential effect (e.g. APE).

The California Environmental Quality Act (CEQA – CA Public Resources Code §§ 21000-21177, amendments effective 3/18/2010) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR) per the CEQA Guidelines defines a significant impact on the environment as 'a substantial, or potentially substantial, adverse change in any of physical conditions within an area affected by the proposed project, including ...objects of historic or aesthetic significance." In order to comply with this provision, the lead agency is required to assess whether the project will have an adverse impact on these resources within the 'area of potential effect (APE), and if so, to mitigate that effect. CA Government Code §65040.12(e) defines "environmental justice" provisions and is applicable to the environmental review processes.

Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries once a project is underway. Culturally affiliated tribes and individuals may have knowledge of the religious and cultural significance of the historic properties in the project area (e.g. APE). Consultation with Native American communities is also a matter of environmental justice as defined by California Government Code §65040.12(e). We urge consultation with those tribes and interested Native Americans on the list of Native American Contacts we attach to this letter in order to see if your proposed project might impact Native American cultural resources. Lead agencies should consider avoidance as defined in §15370 of the CEQA Guidelines when significant cultural resources as defined by the CEQA Guidelines §15064.5 (b)(c)(f) may be affected by a proposed project. If so, Section 15382 of the CEQA Guidelines defines a significant impact on the environment as "substantial."

Furthermore we suggest that you contact the California Historic Resources Information System (CHRIS) for pertinent archaeological data within or near the APE, at the California Office of Historic Preservation (916) 446-7000.

Consultation with tribes and interested Native American consulting parties, on the NAHC list, should be conducted in compliance with the requirements of federal NEPA (42 U.S.C 4321-43351) and Section 106 and 4(f) of federal NHPA (16 U.S.C. 470 *et seq*), 36 CFR Part 800.3 (f) (2) & .5, the President's Council on Environmental Quality (CSQ, 42 U.S.C 4371 *et seq.* and NAGPRA (25 U.S.C. 3001-3013) as appropriate. The 1992 *Secretary of the Interiors Standards for the Treatment of Historic Properties* were revised so that they could be applied to all historic resource types included in the National Register of Historic Places and including cultural landscapes. Also, federal Executive Orders Nos. 11593 (preservation of cultural environment), 13175 (coordination & consultation) and 13007 (Sacred Sites) are helpful, supportive guides for Section 106 consultation.

Also, California Public Resources Code Section 5097.98, California Government Code §27491 and Health & Safety Code Section 7050.5 provide for provisions for accidentally discovered archeological resources during construction and mandate the processes to be followed in the event of an accidental discovery of any human remains in a project location other than a 'dedicated cemetery'.

To be effective, consultation on specific projects must be the result of an ongoing relationship between Native American tribes and lead agencies, project proponents and their contractors, in the opinion of the NAHC. Regarding tribal consultation, a relationship built around regular meetings and informal involvement with local tribes will lead to more qualitative consultation tribal input on specific projects.

The response to this search for Native American cultural resources is conducted in the NAHC Sacred Lands Inventory, established by the California Legislature (CA Public Resources Code 5097.94(a) and is exempt from the CA Public Records Act (c.f. California Government Code 6254.10) although Native Americans on the attached contact list may wish to reveal the nature of identified cultural resources/historic properties. Confidentiality of "historic properties of religious and cultural significance" may also be protected under Section 304 of he NHPA or at the Secretary of the Interior discretion if not eligible for listing on the National Register of Historic Places. The Secretary may also be advised by the federal Indian Religious Freedom Act (cf. 42 U.S.C., 1996) in issuing a decision on whether or not to disclose items of religious and/or cultural significance identified in or near the APE and possibility threatened by proposed project activity.

If you have any questions about this response to your request, please do not hesitate to contact me at (916) 653-6251.

Sincerely,

Dave Singleton
Program Analyst

Attachment: Native American Contact List

Native American Contact List
Orange County
April 19, 2011

Ti'At Society/Inter-Tribal Council of Pimu
Cindi M. Alvitre, Chairwoman-Manisar
6515 E. Seaside Walk, #C Gabrielino
Long Beach , CA 90803
calvitre@yahoo.com
(714) 504-2468 Cell

Gabrielino Tongva Nation
Sam Dunlap, Chairperson
P.O. Box 86908 Gabrielino Tongva
Los Angeles , CA 90086
samdunlap@earthlink.net

(909) 262-9351 - cell

Juaneno Band of Mission Indians Acjachemen Nation
David Belardes, Chairperson
32161 Avenida Los Amigos Juaneno
San Juan Capistrano CA 92675
(949) 493-4933 - home
chiefdavidbelardes@yahoo.com
(949) 293-8522

Juaneno Band of Mission Indians Acjachemen Nation
Anthony Rivera, Chairman
31411-A La Matanza Street Juaneno
San Juan Capistrano CA 92675-2674
arivera@juaneno.com
(949) 488-3484
(949) 488-3294 - FAX
(530) 354-5876 - cell

Tongva Ancestral Territorial Tribal Nation
John Tommy Rosas, Tribal Admin.
Private Address Gabrielino Tongva

tattnlaw@gmail.com
310-570-6567

Gabrielino Tongva Indians of California Tribal Council
Robert F. Dorrnae, Tribal Chair/Cultural Resources
P.O. Box 490 Gabrielino Tongva
Bellflower , CA 90707
gtongva@verizon.net
562-761-6417 - voice
562-761-6417- fax

Gabrieleno/Tongva San Gabriel Band of Mission
Anthony Morales, Chairperson
PO Box 693 Gabrielino Tongva
San Gabriel , CA 91778
GTTribalcouncil@aol.com
(626) 286-1632
(626) 286-1758 - Home
(626) 286-1262 -FAX

Juaneno Band of Mission Indians
Alfred Cruz, Cultural Resources Coordinator
P.O. Box 25628 Juaneno
Santa Ana , CA 92799
alfredgcruz@sbcglobal.net
714-998-0721
714-998-0721 - FAX
714-321-1944 - cell

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed South Orange County Community College District Master Plan EIR at the Irvine Valley College and Saddleback College campuses in the communities of Irvine and Mission Viejo; Orange County, California.

Native American Contact List
Orange County
April 19, 2011

Juaneno Band of Mission Indians
Adolph 'Bud' Sepulveda, Vice Chairperson
P.O. Box 25828 Juaneno
Santa Ana , CA 92799
bssepul@yahoo.net
714-838-3270
714-914-1812 - CELL
bsepul@yahoo.net

Juaneño Band of Mission Indians
Sonia Johnston, Tribal Chairperson
P.O. Box 25628 Juaneno
Santa Ana , CA 92799
sonia.johnston@sbcglobal.net
(714) 323-8312

Gabrielino-Tongva Tribe
Bernie Acuna
1875 Century Pk East #1500 Gabrielino
Los Angeles , CA 90067
(760) 721-0371-work
(310) 428-7720 - cell
(310) 587-0170 - FAX
bacuna1@gabrieinotribe.org

Juaneno Band of Mission Indians Acjachemen Nation
Joyce Perry; Representing Tribal Chairperson
4955 Paseo Segovia Juaneno
Irvine , CA 92612
949-293-8522

Gabrielino-Tongva Tribe
Linda Candelaria, Chairwoman
1875 Century Park East, Suite 1500
Los Angeles , CA 90067 Gabrielino
lcandelaria1@gabrielinoTribe.org
626-676-1184- cell
(310) 587-0170 - FAX
760-904-6533-home

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed South Orange County Community College District Master Plan EIR at the Irvine Valley College and Saddleback College campuses in the Communities of Irvine and Mission Viejo; Orange County, California.

Native American Consultation Summary: Cultural Resource Studies for the South Orange County Community College District (SOCCCD) Master Plan at Irvine Valley College and Saddleback College Campuses, in Irvine and Mission Viejo, Orange County, California. Native American Heritage Commission replied to BCR Consulting Request on April 19, 2011. Results of Sacred Land File Search did not indicate presence of Native American cultural resources, and recommended that the below groups/individuals be contacted.

Groups Contacted	Date Letter/ Email Sent	Response from Tribes	Phone Calls
Ti-At Society/Inter-Tribal Council of Pimu Cindi M. Alvitre, Chairwoman-Manisar	Letter: 4/20/11 Email: 4/20/11	None	4/25/11: Left voice mail.
Gabrielinon Tongva Nation Sam Dunlap, Chairperson	Letter: 4/20/11 Email: 4/20/11	None	4/25/11: Sam has no specific concerns, although he would like to be notified of any finds.
Juaneno Band of Mission Indians Acjachemen Nation David Belardes, Chairperson	Letter: 4/20/11 Email: 4/20/11	None	4/25/11: Left voice mail.
Juaneno Band of Mission Indians Acjachemen Nation Anthony Rivera, Chairman	Letter: 4/20/11 Email: 4/20/11	None	4/25/11: Left voice mail.
Tongva Ancestral Territorial Tribal Nation JohnTommy Rosas, Tribal Admin.	Letter: 4/20/11 Email: 4/20/11	None	4/25/11: Left voice mail.
Gabrielino Tongva Indians of California Tribal Council Robert F. Doramae, Tribal Chair-Cultural Resources	Letter: 4/20/11 Email: 4/20/11	None	4/25/11: Spoke briefly with Robert. The connection was bad and he requested that the email be resent. Email was resent on 4/25/11.
Gabrieleno/Tongva San Gabriel Band of Mission Indians Anthony Morales, Chairperson	Letter: 4/20/11 Email: 4/20/11	None	4/25/11: Left voice mail. 5/11/11: Mr. Morales called and would like to be notified of any finds.
Juaneno Band of Mission Indians Alfred Cruz, Cultural Resources Coordinator	Letter: 4/20/11 Email: 4/20/11	None	4/25/11: Left voice mail.
Juaneno Band of Mission Indians Adolph “Bud” Sepulveda, Vice Chairperson	Letter: 4/20/11 Email: 4/20/11	None	4/25/11: Left voice mail.
Gabrielino-Tongva Tribe Linda Candelaria, Chairwoman	Letter: 4/20/11 Email: 4/20/11	None	4/25/11: Left voice mail.
Juaneño Band of Mission Indians Sonia Johnston, Tribal Chairperson	Letter: 4/20/11 Email: 4/20/11	None	4/25/11: Left voice mail.
Gabrielino-Tongva Tribe Bernie Acuna	Letter: 4/20/11 Email: 4/20/11	None	4/25/11: Requested follow-up phone call on April 26. 4/26/11: Left message for Mr. Acuna.
Juaneno Band of Mission Indians Acjachemen Nation Jorce Perry; Representing Tribal Chairperson	Letter: 4/20/11 Email: 4/20/11	None	4/25/11: Left voice mail.

April 20, 2011

Ti'At Society/Inter-Tribal Council of Pimu
Cindi M. Alvitre, Chairwoman-Manisar
calvitre@yahoo.com

Subject: Tribal Consultation for the South Orange County Community College District Master Plan EIR Project, Irvine and Mission Viejo, Orange County, California.

Dear Cindi:

This is an invitation to consult on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the consultation is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal consultation process, early consultation is encouraged in order to provide for full and reasonable public input from Native American Groups and Individuals, as consulting parties, on potential effect of the development project and to avoid costly delays. Further, we understand that much of the content of the consultation will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, cultural landscapes including traditional beliefs and practices.

The project is being completed at two locations. The first is at Irvine Valley College located within a non-sectioned portion of Township 6 South, Range 9 West, San Bernardino Baseline and Meridian (SBBM) in the City of Irvine. It is depicted on the U.S. Geological Survey (USGS) *Tustin* 7.5-minute quadrangle. The second location is at Saddleback College within Section 24 of Township 7 South, Range 8 West, SBBM in the City of Mission Viejo. It is depicted on the U.S. Geological Survey (USGS) *San Juan Capistrano* 7.5-minute quadrangle (see attached maps). If you know of any cultural resources in the vicinity that may be of religious and/or cultural significance to your community or if you would like more information, please contact me at 909-525-7078 or david.brunzell@yahoo.com. Correspondence can also be sent to BCR Consulting, Attn: David Brunzell, 440 West 7th Street, Claremont, California 91711. I request a response by May 5, 2011, so that your input can be included. If you require more time, please let me know. Thank you for your involvement in this process.

Sincerely,

BCR Consulting

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist
Attachment: USGS Maps

BCRCONSULTING ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY
www.bcrconsulting.net
909.525.7078
Claremont
Napa
Tehachapi

April 20, 2011

Gabrielino Tongva Nation
Sam Dunlap, Chairperson
P.O. Box 86908
Los Angeles, California 90086

Subject: Tribal Consultation for the South Orange County Community College District Master Plan EIR Project, Irvine and Mission Viejo, Orange County, California.

Dear Sam:

This is an invitation to consult on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the consultation is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal consultation process, early consultation is encouraged in order to provide for full and reasonable public input from Native American Groups and Individuals, as consulting parties, on potential effect of the development project and to avoid costly delays. Further, we understand that much of the content of the consultation will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, cultural landscapes including traditional beliefs and practices.

The project is being completed at two locations. The first is at Irvine Valley College located within a non-sectioned portion of Township 6 South, Range 9 West, San Bernardino Baseline and Meridian (SBBM) in the City of Irvine. It is depicted on the U.S. Geological Survey (USGS) *Tustin* 7.5-minute quadrangle. The second location is at Saddleback College within Section 24 of Township 7 South, Range 8 West, SBBM in the City of Mission Viejo. It is depicted on the U.S. Geological Survey (USGS) *San Juan Capistrano* 7.5-minute quadrangle (see attached maps). If you know of any cultural resources in the vicinity that may be of religious and/or cultural significance to your community or if you would like more information, please contact me at 909-525-7078 or david.brunzell@yahoo.com. Correspondence can also be sent to BCR Consulting, Attn: David Brunzell, 440 West 7th Street, Claremont, California 91711. I request a response by May 5, 2011, so that your input can be included. If you require more time, please let me know. Thank you for your involvement in this process.

Sincerely,

BCR Consulting



David Brunzell, M.A./RPA
Principal Investigator/Archaeologist
Attachment: USGS Maps

BCRCONSULTING ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY
www.bcrconsulting.net
909.525.7078
Claremont
Napa
Tehachapi

April 20, 2011

Juaneno Band of Mission Indians Acjachemen Nation
David Belardes, Chairperson
32161 Avenida Los Amigos
San Juan Capistrano, California 92675

Subject: Tribal Consultation for the South Orange County Community College District Master Plan EIR Project, Irvine and Mission Viejo, Orange County, California.

Dear David:

This is an invitation to consult on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the consultation is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal consultation process, early consultation is encouraged in order to provide for full and reasonable public input from Native American Groups and Individuals, as consulting parties, on potential effect of the development project and to avoid costly delays. Further, we understand that much of the content of the consultation will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, cultural landscapes including traditional beliefs and practices.

The project is being completed at two locations. The first is at Irvine Valley College located within a non-sectioned portion of Township 6 South, Range 9 West, San Bernardino Baseline and Meridian (SBBM) in the City of Irvine. It is depicted on the U.S. Geological Survey (USGS) *Tustin* 7.5-minute quadrangle. The second location is at Saddleback College within Section 24 of Township 7 South, Range 8 West, SBBM in the City of Mission Viejo. It is depicted on the U.S. Geological Survey (USGS) *San Juan Capistrano* 7.5-minute quadrangle (see attached maps). If you know of any cultural resources in the vicinity that may be of religious and/or cultural significance to your community or if you would like more information, please contact me at 909-525-7078 or david.brunzell@yahoo.com. Correspondence can also be sent to BCR Consulting, Attn: David Brunzell, 440 West 7th Street, Claremont, California 91711. I request a response by May 5, 2011, so that your input can be included. If you require more time, please let me know. Thank you for your involvement in this process.

Sincerely,

BCR Consulting

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist
Attachment: USGS Maps

BCRCONSULTING ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY
www.bcrconsulting.net
909.525.7078
Claremont
Napa
Tehachapi

April 20, 2011

Juaneno Band of Mission Indians Acjachemen Nation
Anthony Rivera, Chairman
31411-A La Matanza Street
San Juan Capistrano, California 92675-2674

Subject: Tribal Consultation for the South Orange County Community College District Master Plan EIR Project, Irvine and Mission Viejo, Orange County, California.

Dear Anthony:

This is an invitation to consult on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the consultation is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal consultation process, early consultation is encouraged in order to provide for full and reasonable public input from Native American Groups and Individuals, as consulting parties, on potential effect of the development project and to avoid costly delays. Further, we understand that much of the content of the consultation will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, cultural landscapes including traditional beliefs and practices.

The project is being completed at two locations. The first is at Irvine Valley College located within a non-sectioned portion of Township 6 South, Range 9 West, San Bernardino Baseline and Meridian (SBBM) in the City of Irvine. It is depicted on the U.S. Geological Survey (USGS) *Tustin* 7.5-minute quadrangle. The second location is at Saddleback College within Section 24 of Township 7 South, Range 8 West, SBBM in the City of Mission Viejo. It is depicted on the U.S. Geological Survey (USGS) *San Juan Capistrano* 7.5-minute quadrangle (see attached maps). If you know of any cultural resources in the vicinity that may be of religious and/or cultural significance to your community or if you would like more information, please contact me at 909-525-7078 or david.brunzell@yahoo.com. Correspondence can also be sent to BCR Consulting, Attn: David Brunzell, 440 West 7th Street, Claremont, California 91711. I request a response by May 5, 2011, so that your input can be included. If you require more time, please let me know. Thank you for your involvement in this process.

Sincerely,

BCR Consulting

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist
Attachment: USGS Maps

BCRCONSULTING ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY
www.bcrconsulting.net
909.525.7078
Claremont
Napa
Tehachapi

April 20, 2011

Tongva Ancestral Territorial Tribal Nation
John Tommy Rosas, Tribal Administration

Subject: Tribal Consultation for the South Orange County Community College District Master Plan EIR Project, Irvine and Mission Viejo, Orange County, California.

Dear John Tommy:

This is an invitation to consult on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the consultation is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal consultation process, early consultation is encouraged in order to provide for full and reasonable public input from Native American Groups and Individuals, as consulting parties, on potential effect of the development project and to avoid costly delays. Further, we understand that much of the content of the consultation will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, cultural landscapes including traditional beliefs and practices.

The project is being completed at two locations. The first is at Irvine Valley College located within a non-sectioned portion of Township 6 South, Range 9 West, San Bernardino Baseline and Meridian (SBBM) in the City of Irvine. It is depicted on the U.S. Geological Survey (USGS) *Tustin* 7.5-minute quadrangle. The second location is at Saddleback College within Section 24 of Township 7 South, Range 8 West, SBBM in the City of Mission Viejo. It is depicted on the U.S. Geological Survey (USGS) *San Juan Capistrano* 7.5-minute quadrangle (see attached maps). If you know of any cultural resources in the vicinity that may be of religious and/or cultural significance to your community or if you would like more information, please contact me at 909-525-7078 or david.brunzell@yahoo.com. Correspondence can also be sent to BCR Consulting, Attn: David Brunzell, 440 West 7th Street, Claremont, California 91711. I request a response by May 5, 2011, so that your input can be included. If you require more time, please let me know. Thank you for your involvement in this process.

Sincerely,

BCR Consulting

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist
Attachment: USGS Maps

BCRCONSULTING ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY
www.bcrconsulting.net
909.525.7078
Claremont
Napa
Tehachapi

April 20, 2011

Gabrielino Tongva Indians of California Tribal Council
Robert F. Doramae, Tribal Chair
P.O. Box 490
Bellflower, California 90707

Subject: Tribal Consultation for the South Orange County Community College District Master Plan EIR Project, Irvine and Mission Viejo, Orange County, California.

Dear Robert:

This is an invitation to consult on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the consultation is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal consultation process, early consultation is encouraged in order to provide for full and reasonable public input from Native American Groups and Individuals, as consulting parties, on potential effect of the development project and to avoid costly delays. Further, we understand that much of the content of the consultation will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, cultural landscapes including traditional beliefs and practices.

The project is being completed at two locations. The first is at Irvine Valley College located within a non-sectioned portion of Township 6 South, Range 9 West, San Bernardino Baseline and Meridian (SBBM) in the City of Irvine. It is depicted on the U.S. Geological Survey (USGS) *Tustin* 7.5-minute quadrangle. The second location is at Saddleback College within Section 24 of Township 7 South, Range 8 West, SBBM in the City of Mission Viejo. It is depicted on the U.S. Geological Survey (USGS) *San Juan Capistrano* 7.5-minute quadrangle (see attached maps). If you know of any cultural resources in the vicinity that may be of religious and/or cultural significance to your community or if you would like more information, please contact me at 909-525-7078 or david.brunzell@yahoo.com. Correspondence can also be sent to BCR Consulting, Attn: David Brunzell, 440 West 7th Street, Claremont, California 91711. I request a response by May 5, 2011, so that your input can be included. If you require more time, please let me know. Thank you for your involvement in this process.

Sincerely,

BCR Consulting

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist
Attachment: USGS Maps

BCRCONSULTING ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY
www.bcrconsulting.net
909.525.7078
Claremont
Napa
Tehachapi

April 20, 2011

Gabrieleno/Tongva San Gabriel Band of Mission Indians
Anthony Morales, Chairperson
P.O. Box 693
San Gabriel, California 91778

Subject: Tribal Consultation for the South Orange County Community College District Master Plan EIR Project, Irvine and Mission Viejo, Orange County, California.

Dear Anthony:

This is an invitation to consult on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the consultation is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal consultation process, early consultation is encouraged in order to provide for full and reasonable public input from Native American Groups and Individuals, as consulting parties, on potential effect of the development project and to avoid costly delays. Further, we understand that much of the content of the consultation will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, cultural landscapes including traditional beliefs and practices.

The project is being completed at two locations. The first is at Irvine Valley College located within a non-sectioned portion of Township 6 South, Range 9 West, San Bernardino Baseline and Meridian (SBBM) in the City of Irvine. It is depicted on the U.S. Geological Survey (USGS) *Tustin* 7.5-minute quadrangle. The second location is at Saddleback College within Section 24 of Township 7 South, Range 8 West, SBBM in the City of Mission Viejo. It is depicted on the U.S. Geological Survey (USGS) *San Juan Capistrano* 7.5-minute quadrangle (see attached maps). If you know of any cultural resources in the vicinity that may be of religious and/or cultural significance to your community or if you would like more information, please contact me at 909-525-7078 or david.brunzell@yahoo.com. Correspondence can also be sent to BCR Consulting, Attn: David Brunzell, 440 West 7th Street, Claremont, California 91711. I request a response by May 5, 2011, so that your input can be included. If you require more time, please let me know. Thank you for your involvement in this process.

Sincerely,

BCR Consulting

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist
Attachment: USGS Maps

BCRCONSULTING ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY
www.bcrconsulting.net
909.525.7078
Claremont
Napa
Tehachapi

April 20, 2011

Juaneno Band of Mission Indians
Alfred Cruz, Cultural Resources Coordinator
P.O. Box 25628
Santa Ana, California 92799

Subject: Tribal Consultation for the South Orange County Community College District Master Plan EIR Project, Irvine and Mission Viejo, Orange County, California.

Dear Alfred:

This is an invitation to consult on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the consultation is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal consultation process, early consultation is encouraged in order to provide for full and reasonable public input from Native American Groups and Individuals, as consulting parties, on potential effect of the development project and to avoid costly delays. Further, we understand that much of the content of the consultation will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, cultural landscapes including traditional beliefs and practices.

The project is being completed at two locations. The first is at Irvine Valley College located within a non-sectioned portion of Township 6 South, Range 9 West, San Bernardino Baseline and Meridian (SBBM) in the City of Irvine. It is depicted on the U.S. Geological Survey (USGS) *Tustin* 7.5-minute quadrangle. The second location is at Saddleback College within Section 24 of Township 7 South, Range 8 West, SBBM in the City of Mission Viejo. It is depicted on the U.S. Geological Survey (USGS) *San Juan Capistrano* 7.5-minute quadrangle (see attached maps). If you know of any cultural resources in the vicinity that may be of religious and/or cultural significance to your community or if you would like more information, please contact me at 909-525-7078 or david.brunzell@yahoo.com. Correspondence can also be sent to BCR Consulting, Attn: David Brunzell, 440 West 7th Street, Claremont, California 91711. I request a response by May 5, 2011, so that your input can be included. If you require more time, please let me know. Thank you for your involvement in this process.

Sincerely,

BCR Consulting



David Brunzell, M.A./RPA
Principal Investigator/Archaeologist
Attachment: USGS Maps

April 20, 2011

Juaneno Band of Mission Indians
Adolph "Bud" Sepulveda, Vice Chairperson
P.O. Box 25828
Santa Ana, California 92799

Subject: Tribal Consultation for the South Orange County Community College District Master Plan EIR Project, Irvine and Mission Viejo, Orange County, California.

Dear Adolph:

This is an invitation to consult on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the consultation is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal consultation process, early consultation is encouraged in order to provide for full and reasonable public input from Native American Groups and Individuals, as consulting parties, on potential effect of the development project and to avoid costly delays. Further, we understand that much of the content of the consultation will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, cultural landscapes including traditional beliefs and practices.

The project is being completed at two locations. The first is at Irvine Valley College located within a non-sectioned portion of Township 6 South, Range 9 West, San Bernardino Baseline and Meridian (SBBM) in the City of Irvine. It is depicted on the U.S. Geological Survey (USGS) *Tustin* 7.5-minute quadrangle. The second location is at Saddleback College within Section 24 of Township 7 South, Range 8 West, SBBM in the City of Mission Viejo. It is depicted on the U.S. Geological Survey (USGS) *San Juan Capistrano* 7.5-minute quadrangle (see attached maps). If you know of any cultural resources in the vicinity that may be of religious and/or cultural significance to your community or if you would like more information, please contact me at 909-525-7078 or david.brunzell@yahoo.com. Correspondence can also be sent to BCR Consulting, Attn: David Brunzell, 440 West 7th Street, Claremont, California 91711. I request a response by May 5, 2011, so that your input can be included. If you require more time, please let me know. Thank you for your involvement in this process.

Sincerely,

BCR Consulting

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist
Attachment: USGS Maps

BCRCONSULTING ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY
www.bcrconsulting.net
909.525.7078
Claremont
Napa
Tehachapi

April 20, 2011

Gabrielino-Tongva Tribe
Linda Candelaria, Chairwoman
1875 Century Park East
Los Angeles, California 90067

Subject: Tribal Consultation for the South Orange County Community College District Master Plan EIR Project, Irvine and Mission Viejo, Orange County, California.

Dear Linda:

This is an invitation to consult on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the consultation is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal consultation process, early consultation is encouraged in order to provide for full and reasonable public input from Native American Groups and Individuals, as consulting parties, on potential effect of the development project and to avoid costly delays. Further, we understand that much of the content of the consultation will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, cultural landscapes including traditional beliefs and practices.

The project is being completed at two locations. The first is at Irvine Valley College located within a non-sectioned portion of Township 6 South, Range 9 West, San Bernardino Baseline and Meridian (SBBM) in the City of Irvine. It is depicted on the U.S. Geological Survey (USGS) *Tustin* 7.5-minute quadrangle. The second location is at Saddleback College within Section 24 of Township 7 South, Range 8 West, SBBM in the City of Mission Viejo. It is depicted on the U.S. Geological Survey (USGS) *San Juan Capistrano* 7.5-minute quadrangle (see attached maps). If you know of any cultural resources in the vicinity that may be of religious and/or cultural significance to your community or if you would like more information, please contact me at 909-525-7078 or david.brunzell@yahoo.com. Correspondence can also be sent to BCR Consulting, Attn: David Brunzell, 440 West 7th Street, Claremont, California 91711. I request a response by May 5, 2011, so that your input can be included. If you require more time, please let me know. Thank you for your involvement in this process.

Sincerely,

BCR Consulting



David Brunzell, M.A./RPA
Principal Investigator/Archaeologist
Attachment: USGS Maps

April 20, 2011

Juaneño Band of Mission Indians
Sonia Johnston, Tribal Chairperson
P.O. Box 25628
Santa Ana, California 92799

Subject: Tribal Consultation for the South Orange County Community College District Master Plan EIR Project, Irvine and Mission Viejo, Orange County, California.

Dear Sonia:

This is an invitation to consult on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the consultation is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal consultation process, early consultation is encouraged in order to provide for full and reasonable public input from Native American Groups and Individuals, as consulting parties, on potential effect of the development project and to avoid costly delays. Further, we understand that much of the content of the consultation will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, cultural landscapes including traditional beliefs and practices.

The project is being completed at two locations. The first is at Irvine Valley College located within a non-sectioned portion of Township 6 South, Range 9 West, San Bernardino Baseline and Meridian (SBBM) in the City of Irvine. It is depicted on the U.S. Geological Survey (USGS) *Tustin* 7.5-minute quadrangle. The second location is at Saddleback College within Section 24 of Township 7 South, Range 8 West, SBBM in the City of Mission Viejo. It is depicted on the U.S. Geological Survey (USGS) *San Juan Capistrano* 7.5-minute quadrangle (see attached maps). If you know of any cultural resources in the vicinity that may be of religious and/or cultural significance to your community or if you would like more information, please contact me at 909-525-7078 or david.brunzell@yahoo.com. Correspondence can also be sent to BCR Consulting, Attn: David Brunzell, 440 West 7th Street, Claremont, California 91711. I request a response by May 5, 2011, so that your input can be included. If you require more time, please let me know. Thank you for your involvement in this process.

Sincerely,

BCR Consulting



David Brunzell, M.A./RPA
Principal Investigator/Archaeologist
Attachment: USGS Maps

BCRCONSULTING ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY
www.bcrconsulting.net
909.525.7078
Claremont
Napa
Tehachapi

April 20, 2011

Gabrielino-Tongva Tribe
Bernie Acuna
1875 Century Park East #1500
Los Angeles, California 90067

Subject: Tribal Consultation for the South Orange County Community College District Master Plan EIR Project, Irvine and Mission Viejo, Orange County, California.

Dear Bernie:

This is an invitation to consult on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the consultation is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal consultation process, early consultation is encouraged in order to provide for full and reasonable public input from Native American Groups and Individuals, as consulting parties, on potential effect of the development project and to avoid costly delays. Further, we understand that much of the content of the consultation will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, cultural landscapes including traditional beliefs and practices.

The project is being completed at two locations. The first is at Irvine Valley College located within a non-sectioned portion of Township 6 South, Range 9 West, San Bernardino Baseline and Meridian (SBBM) in the City of Irvine. It is depicted on the U.S. Geological Survey (USGS) *Tustin* 7.5-minute quadrangle. The second location is at Saddleback College within Section 24 of Township 7 South, Range 8 West, SBBM in the City of Mission Viejo. It is depicted on the U.S. Geological Survey (USGS) *San Juan Capistrano* 7.5-minute quadrangle (see attached maps). If you know of any cultural resources in the vicinity that may be of religious and/or cultural significance to your community or if you would like more information, please contact me at 909-525-7078 or david.brunzell@yahoo.com. Correspondence can also be sent to BCR Consulting, Attn: David Brunzell, 440 West 7th Street, Claremont, California 91711. I request a response by May 5, 2011, so that your input can be included. If you require more time, please let me know. Thank you for your involvement in this process.

Sincerely,

BCR Consulting

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist
Attachment: USGS Maps

BCRCONSULTING ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY
www.bcrconsulting.net
909.525.7078
Claremont
Napa
Tehachapi

April 20, 2011

Juaneno Band of Mission Indians Acjachemen Nation
Joyce Perry; Representing Tribal Chairperson
4955 Paseo Segovia
Irvine, California 92612

Subject: Tribal Consultation for the South Orange County Community College District Master Plan EIR Project, Irvine and Mission Viejo, Orange County, California.

Dear Joyce:

This is an invitation to consult on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the consultation is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal consultation process, early consultation is encouraged in order to provide for full and reasonable public input from Native American Groups and Individuals, as consulting parties, on potential effect of the development project and to avoid costly delays. Further, we understand that much of the content of the consultation will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, cultural landscapes including traditional beliefs and practices.

The project is being completed at two locations. The first is at Irvine Valley College located within a non-sectioned portion of Township 6 South, Range 9 West, San Bernardino Baseline and Meridian (SBBM) in the City of Irvine. It is depicted on the U.S. Geological Survey (USGS) *Tustin* 7.5-minute quadrangle. The second location is at Saddleback College within Section 24 of Township 7 South, Range 8 West, SBBM in the City of Mission Viejo. It is depicted on the U.S. Geological Survey (USGS) *San Juan Capistrano* 7.5-minute quadrangle (see attached maps). If you know of any cultural resources in the vicinity that may be of religious and/or cultural significance to your community or if you would like more information, please contact me at 909-525-7078 or david.brunzell@yahoo.com. Correspondence can also be sent to BCR Consulting, Attn: David Brunzell, 440 West 7th Street, Claremont, California 91711. I request a response by May 5, 2011, so that your input can be included. If you require more time, please let me know. Thank you for your involvement in this process.

Sincerely,

BCR Consulting

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist
Attachment: USGS Maps

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com®

OFFICIAL USE

Postage	$
Certified Fee	$2.85
Return Receipt Fee (Endorsement Required)	$0.00
Restricted Delivery Fee (Endorsement Required)	$0.00
Total Postage & Fees	$

Postmark Here: CLAREMONT, CA 91711 APR 21 2011

7010 1870 0003 6056 5960

Sent To: Sam Dunlap
Street, Apt. No.; or PO Box No.: P.O. Box 86908
City, State, ZIP+4: Los Angeles, CA 90086

PS Form 3800, August 2006 — See Reverse for Instructions

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com®

OFFICIAL USE

Postage	$
Certified Fee	$2.85
Return Receipt Fee (Endorsement Required)	$0.00
Restricted Delivery Fee (Endorsement Required)	$0.00
Total Postage & Fees	$

Postmark Here: CLAREMONT, CA 91711 APR 21 2011 USPS

7010 1870 0003 6056 5977

Sent To: David Belardes
Street, Apt. No.; or PO Box No.: 32161 Avenida Los Amigos
City, State, ZIP+4: San Juan Capistrano, CA 92675

PS Form 3800, August 2006 — See Reverse for Instructions

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com®

OFFICIAL USE

Postage	$
Certified Fee	$2.85
Return Receipt Fee (Endorsement Required)	$0.00
Restricted Delivery Fee (Endorsement Required)	$0.00
Total Postage & Fees	$

Postmark Here: CLAREMONT, CA 91711 APR 21 2011 USPS

7011 0110 0002 2521 3095

Sent To: Anthony Rivera
Street, Apt. No.; or PO Box No.: 31411-A La Matanza St.
City, State, ZIP+4: San Juan Capistrano, CA 92675-2674

PS Form 3800, August 2006 — See Reverse for Instructions

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com®

OFFICIAL USE

Postage	$
Certified Fee	$2.85
Return Receipt Fee (Endorsement Required)	$0.00
Restricted Delivery Fee (Endorsement Required)	$0.00
Total Postage & Fees	$

Postmark Here: CLAREMONT, CA 91711 APR 21 2011 USPS

7010 1060 0001 3610 5001

Sent To: Robert F. Doramce
Street, Apt. No.; or PO Box No.: P.O. Box 490
City, State, ZIP+4: Bellflower, CA 90707

PS Form 3800, August 2006 — See Reverse for Instructions

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com®

OFFICIAL USE

Postage	$
Certified Fee	$2.85
Return Receipt Fee (Endorsement Required)	$0.00
Restricted Delivery Fee (Endorsement Required)	$0.00
Total Postage & Fees	$

Postmark Here: CLAREMONT, CA 91711 APR 21 2011 USPS

7011 0110 0002 2520 4246

Sent To: Anthony Morales
Street, Apt. No.; or PO Box No.: P.O. Box 693
City, State, ZIP+4: San Gabriel, CA 91778-

PS Form 3800, August 2006 — See Reverse for Instructions

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com®

OFFICIAL USE

Postage	$
Certified Fee	$2.85
Return Receipt Fee (Endorsement Required)	$0.00
Restricted Delivery Fee (Endorsement Required)	$0.00
Total Postage & Fees	$

Postmark Here: CLAREMONT, CA 91711 APR 21 2011 USPS

7010 1870 0003 6056 6035

Sent To: Alfred Cruz
Street, Apt. No.; or PO Box No.: P.O. Box 25628
City, State, ZIP+4: Santa Ana, CA 92799

PS Form 3800, August 2006 — See Reverse for Instructions

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com®

OFFICIAL USE

Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Total Postage & Fees $

CLAREMONT, CA 02 APR 21 2011 USPS
Postmark Here

7010 1870 0003 6056 6011

Sent To Adolph "Bud" Sepulveda
Street, Apt. No.; or PO Box No. P.O. Box 25828
City, State, ZIP+4 Santa Ana, CA 92799

PS Form 3800, August 2006 See Reverse for Instructions

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com®

OFFICIAL USE

Postage $
Certified Fee $2.85
Return Receipt Fee (Endorsement Required) $0.00
Restricted Delivery Fee (Endorsement Required) $0.00
Total Postage & Fees $

CLAREMONT, CA 02 APR 21 2011 USPS
Postmark Here

7010 1870 0003 6056 6004

Sent To Linda Candelaria
Street, Apt. No.; or PO Box No. 1875 Century Park East
City, State, ZIP+4 Los Angeles, CA 90067

PS Form 3800, August 2006 See Reverse for Instructions

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com®

OFFICIAL USE

Postage $
Certified Fee $2.85
Return Receipt Fee (Endorsement Required) $0.00
Restricted Delivery Fee (Endorsement Required) $0.00
Total Postage & Fees $

CLAREMONT, CA 02 APR 21 2011 USPS
Postmark Here

7010 1870 0003 6056 6028

Sent To Sonia Johnston
Street, Apt. No.; or PO Box No. P.O. Box 25628
City, State, ZIP+4 Santa Ana, CA 92799

PS Form 3800, August 2006 See Reverse for Instructions

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com®

OFFICIAL USE

Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Total Postage & Fees $

CLAREMONT, CA 02 APR 21 2011 USPS
Postmark Here

7010 1870 0003 6056 5991

Sent To Bernie Acuna
Street, Apt. No.; or PO Box No. 1875 Century Park East #1500
City, State, ZIP+4 Los Angeles CA 90067

PS Form 3800, August 2006 See Reverse for Instructions

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com®

OFFICIAL USE

Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Total Postage & Fees $

CLAREMONT, CA 02 APR 21 2011 USPS
Postmark Here

7010 1870 0003 6056 5984

Sent To Joyce Perry
Street, Apt. No.; or PO Box No. 4955 Paseo Segovia
City, State, ZIP+4 Irvine, CA 92612

PS Form 3800, August 2006 See Reverse for Instructions

APPENDIX C

PALEONTOLOGICAL RESOURCES ASSESSMENT

Natural History Museum
of Los Angeles County
900 Exposition Boulevard
Los Angeles, CA 90007

tel 213.763.DINO
www.nhm.org

NATURAL HISTORY MUSEUM
LOS ANGELES COUNTY

Vertebrate Paleontology Section
Telephone: (213) 763-3324
FAX: (213) 746-7431
e-mail: vrhue@nhm.org

20 April 2011

BCR Consulting
Certified Small Business (SB)
440 West 7th Street
Claremont, CA 91711

Attn: David Bruznell, Principal Investigator / Archaeologist

re: Vertebrate Paleontological resources for the proposed Irvine Valley College and Saddleback College Campuses, in the Cities of Mission Viejo and Irvine, Orange County, project areas

Dear David:

I have conducted a thorough check of our paleontology collection records for the locality and specimen data for the proposed Irvine Valley College and Saddleback College Campuses, in the Cities of Mission Viejo and Irvine, Orange County, project areas as outlined on the portions of the Tustin and San Juan Capistrano USGS topographic quadrangle maps that you sent to Dr. Samuel A. McLeod via e-mail on 18 April 2011. We have no vertebrate fossil localities that lie directly within the proposed project areas boundaries, but we do have fossil vertebrate localities nearby from the same sedimentary deposits that occur in the proposed project areas.

The entire Irvine Valley College parcel of the proposed project areas has surficial deposits composed of younger Quaternary Alluvium, primarily derived as fan deposits from the hills to the east. These deposits usually do not contain significant vertebrate fossils, at least in the uppermost layers, but they may be underlain by older Quaternary deposits. Our closest fossil vertebrate locality from older Quaternary deposits is LACM 7713, south-southeast of the this parcel of the proposed project areas on the southwestern side of the intersection of the Laguna Freeway (Highway 133) and the San Diego Freeway (I-405), that produced a fossil specimen of ground sloth, Mylodontidae. Our next closest vertebrate fossil localities from these older Quaternary deposits are LACM 1066, 1068-1069, 1086, 1240, 3407, 3877, 4426 and 6732, west-southwest of the proposed project area around MacArthur Boulevard and just east of Upper Newport Bay. These localities, and many more closer

to Upper Newport Bay, produced a rich suite of Quaternary fossil vertebrates, many documented by W.E. Miller in his 1971 publication (Pleistocene vertebrates of the Los Angeles basin and vicinity (exclusive of Rancho La Brea). Los Angeles County Museum Science Bulletin 10:1-124).

Surficial deposits in the Saddleback College parcels of the proposed project areas consist of non-marine Quaternary terrace deposits only in the southeastern parcel. Our closest locality from Older Quaternary deposits is LACM 4543, located due west of these parcels of the proposed project areas on the west side of Sulphur Creek Reservoir, that produced a fossil specimen of bison, *Bison*. Our next closest localities from these older Quaternary deposits are LACM 4628-4629, located northwest of these parcels of the proposed project areas in Laguna Niguel, east of La Paz Road near Aliso Creek. Localities LACM 4628-4629 produced fossil specimens of horse, *Equus*, tapir, *Tapirus californicus*, bison, *Bison*, and mammoth, *Mammuthus*, with the tapir being published in the scientific literature by G. T. Jefferson (1989. Late Cenozoic Tapirs (Mammalia: Perissodactyla) of Western North America. Contributions in Science, Natural History Museum of Los Angeles County. 406. 1-21).

In addition, the marine Pliocene Niguel Formation occurs at higher elevations within the western two Saddleback College parcels of the proposed project areas. Our closest vertebrate fossil locality from the Niguel Formation is LACM 3804, north-northwest of these parcels of the proposed project areas, that produced a fossil specimen of white shark, *Carcharodon sulcidens*. Our next closest vertebrate fossil localities from the Niguel Formation are LACM 5551 and 65187, both north-northwest of these parcels of the proposed project areas near the intersection of La Paz Road and Paseo de Valencia, and produced fossil specimens of white shark, *Carcharocles megalodon*, sea lion, Otariidae, sea cow, Dugongidae, and baleen whale, *Herpetocetus*.

At lower elevations within the western two Saddleback College parcels of the proposed project areas, there are also exposures of the marine late Miocene siltstone facies of the Capistrano Formation that also underlies the Niguel Formation. We have a great number of vertebrate fossil localities from the Capistrano Formation in this portion of Orange County but our closest locality is LACM 5002, directly west of the Saddleback College parcels of the proposed project areas, that produced a fossil specimen of baleen whale, Mysticeti. Just to the northwest along Crown Valley Parkway directly west of the northern Saddleback College parcel of the proposed project areas, our Capistrano Formation locality LACM 3184 produced fossil specimens of ratfish, *Chimaera*, blue shark, *Prionace*, cookie cutter shark, *Isistius*, bony fish, Teleostei, auklet, *Mancalla*, and porpoise, Phocoenidae. Just east of north of these Saddleback College parcels of the proposed project areas, centered around Marguerite Parkway, our Capistrano Formation localities LACM 3164-3166, 3891, 4023-4030, and 4270, produced a rich suite of fossil marine vertebrates including sharks, bony fishes, birds, walruses, dolphins, and whales. A composite fossil fauna from these localities is provided in the appendix.

Shallow excavations in the younger Quaternary Alluvium at the proposed Irvine Valley College parcels of the proposed project areas are unlikely to uncover any significant vertebrate fossils. Deeper excavations in those areas that extend down into older Quaternary deposits, as well

as any excavations in the Saddleback College parcels of the proposed project areas where there are exposures of non-marine Quaternary terrace deposits, the marine Pliocene Niguel Formation or the marine late Miocene Capistrano Formation, however, may well encounter significant vertebrate fossil material. Any substantial excavations in the proposed project areas, therefore, should be monitored closely to quickly and professionally recover any fossil remains discovered while not impeding development. Any fossils collected should be placed in an accredited scientific institution for the benefit of current and future generations.

This records search covers only the vertebrate paleontology records of the Natural History Museum of Los Angeles County. It is not intended to be a thorough paleontological survey of the proposed project area covering other institutional records, a literature survey, or any potential on-site survey.

Sincerely,

Vanessa R. Rhue

Vanessa R. Rhue
Vertebrate Paleontology

enclosure: draft invoice

Composite fossil fauna from Capistrano Formation localities LACM 3164-3166, 3891, 4023-4030, and 4270 near Saddleback College

- Chondrichthyes
  - Carcharhiniformes
    - Carcharhinidae - requiem sharks
      - *Carcharhinus leucas*
      - *Prionace*
    - Sphyrnidae - hammerheads
      - *Sphyrna*
  - Chimaeriformes
    - Chimaeridae - ratfish
      - *Chimaera*
  - Heterodontiformes
    - Heterodontidae - horn sharks
      - *Heterodontus*
  - Hexanchiformes
    - Hexanchidae - six gill sharks
      - *Hexanchus griseus*
  - Lamniformes
    - Lamnidae - mackerel sharks
      - *Carcharodon carcharias*
      - *Isurus oxyrinchus*
      - *Lamna*
  - Myliobatiformes
    - Myliobatidae - eagle rays
      - *Myliobatis*
  - Squaliformes
    - Pristiophoridae - sawfish
      - *Pristiophorus*
  - Squaliformes
    - Squalidae - dogfish
      - *Isistius*

- Osteichthyes
  - Ophidiiformes
    - Ophidiidae - cusk eels
  - Perciformes
    - Anarhichadidae - wolf fish
      - *Anarrhichthys*
    - Embiotocidae - surf perch
      - *Damalichthys*
    - Gempylidae - snake mackerel
      - *Thyrsocles kriegeri*
    - Labridae - wrasses
      - *Semicossyphus*
    - Scombridae - mackerel
  - Pleuronectiformes
    - Bothidae - halibut
      - *Paralichthys*
    - Pleuronectidae - flounders
      - *Microstomus*
  - Scorpaeniformes
    - Cottidae - sculpins

- Aves
  - Anseriformes
    - Anatidae - ducks
      - *Branta dickeyi*
  - Charadriiformes
    - Alcidae - auklets
      - *Mancalla*
    - Laridae - gulls
  - Gaviiformes
    - Gaviidae - loons
      - *Gavia*
  - Pelecaniformes - pelecans
    - Phalacrocoracidae
      - *Phalacrocorax*
    - Sulidae - boobies
      - *Morus*
      - *Sula*
  - Podicipediformes
    - Podicipedidae - grebes
  - Procellariiformes
    - Diomedeidae - albatrosses
      - *Diomedea*

- Mammalia
  - Carnivora
    - Otariidae
      - Odobeninae - walruses
  - Cetacea
    - Balaenidae - right whales
    - Delphinidae - dolphins

APPENDIX D

PROJECT PHOTOGRAPHS

Saddleback College Photos

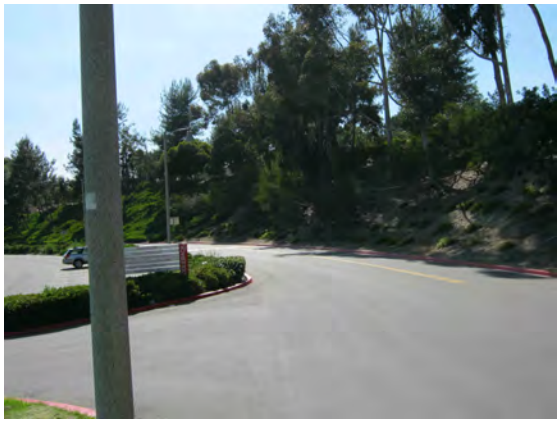


Photo 1: Lot 9 (View SW)



Photo 2: Bldg. 103 Area (View SW)



Photo 3: Lot 10 (View NW)



Photo 4: Area 120 (View SW)



Photo 5: Bldg. 108 Area (View NE)



Photo 6: Bldg. 105 Area (N)

Saddleback College Photos Continued



Photo 7: Lot 1 (View N)



Photo 8: Driving Range (View N)

Irvine Valley College Photos



Photo 9: Agricultural Field (View SW)



Photo 10: IVC From Field (View NE)



Photo 11. Soccer Fields (View S)



Photo 12: Softball Field (View SE)