CITY OF GOLETA

Agenda Item A.1
PUBLIC HEARING
Meeting Date: February 6, 2019

TO: Mayor and Councilmembers

FROM: Charles W. Ebeling, Public Works Director

SUBJECT: Development Impact Fees, Nexus Study and Development Impact Fee Ordinance

RECOMMENDATION:

A. Conduct first reading in title only and introduce Ordinance No. 19-__, entitled "An Ordinance of the City Council of the City of Goleta, California, Repealing Goleta Municipal Code Sections 16.12, 16.15, 16.18, 16.19, 16.20, and 16.21 and Ordinance No. 14-10, and Amending the Inland Zoning Ordinance to Add Section 35-333 and Coastal Zoning Ordinance to Add Section 35-187 to Require the Payment of Development Impact Fees for Development Projects within the City, Pursuant to the Mitigation Fee Act;"

B. Adopt Resolution 19-__, entitled "A Resolution of the City Council of the City of Goleta, California, Approving New Development Impact Fees and a Development Impact Fee Study Pursuant to the Mitigation Fee Act;"

C. Direct staff to file a Notice of Exemption to find that the adoption of the proposed ordinance and proposed fees are exempt from the California Environmental Quality Act.

BACKGROUND:

Development impacts fees ("DIF") are fees imposed on development projects for the purpose of defraying all or a portion of the cost of public facilities related to development projects. Cities have the authority to charge DIFs by way of the Mitigation Fee Act (MFA) (Government Code sections 66000-66025). Under the MFA, cities must ensure that there is a nexus between the development project's impacts and the imposed fee amounts. In addition, in order to have a DIF program, cities must have an ordinance in place to establish the types of fees and a nexus study to analyze the impacts of types of development (e.g.: residential, commercial, industrial) and their proportionate impacts on public facilities.

Goleta has operated a DIF program since incorporation relying on ordinances and nexus studies conducted by the County of Santa Barbara before incorporation. The City adopted the County's impact fee amounts for the Goleta Planning Area when the City incorporated in 2002. The City has adjusted the fees for inflation using the Construction Cost Index published by the Engineering News Record.

Currently, Goleta's DIF ordinances are located in several different places, including stand-alone ordinances for Transportation and Fire as well in sections of the Goleta Municipal Code. (Santa Barbara County Ordinance 4270 (Chapter 23C of Santa Barbara Municipal Code); Ordinance 14-10; Goleta Municipal Code chapters 16.14, 16.15, 16.18, 16.20, and 16.21.) The proposed DIF Ordinance would consolidate all these regulations into one place – a section would be added to the current Zoning Ordinance provide for all the DIF regulations.

DISCUSSION:

Starting in 2017, Staff has undergone a major effort to update the ordinances, complete a new DIF nexus study and update development impact fees.

Updated Development Impact Fees and Supporting Nexus Study

The updated Development Impact Fee Nexus Study has been prepared by Urban Economics, a firm specializing in the development of policies and programs to fund infrastructure and services that serve a community's growth and revitalization. The new study analyzes the proportionate relationship between development and all of the fees defined in the new DIF Ordinance discussed below.

This nexus report provides the supporting analysis for the City to update five existing impact fees and adopt one new fee. Some current types of fees, as noted below, will also either be subsumed into other fee types or separated out from other fees to become individual fees.

Current Fee	#	Proposed Fee	Notes
Public Administration	1	Public Administration	Public administration facilities impact fee updates existing fee and subsumes the police facilities impact fee.
Police			
Fire	2	Fire	The proposed Nexus Study does not encompass the fire fee. Ordinance 14-10 established the authority to collect a fire fee and adopted a fire fee amount and Fire Impact Fee Nexus Study dated September 2014 prepared by the Santa Barbara Fire Protection District. As part of the effort to consolidate all fees into one resolution and all fee regulations into one ordinance, Ordinance 14-10 is proposed to be repealed and integrated into the currently proposed DIF fee resolution and DIF Ordinance. The amount of the fee and nexus study will remain unchanged. Fire fees collected are being used to fund the construction of Fire Station 10. Once it is completed, Fire Station 10 will become a public administration asset and its value will be integrated into the public administration fee.
Library	3	Library	Fee updated.
Parks and Recreation	4	Parks and Recreation	The park and recreation facilities impact fee and park dedication in-lieu fees are updated.
Transportation	5	Transportation	The transportation fee has been updated but no longer includes contributions towards standalone bike and pedestrian projects.
	6	Bicycle and Pedestrian	A new bicycle and pedestrian facilities impact fee has been developed to contribute to standalone bike and pedestrian projects.
Flood Control	7	Storm Drain	The storm drain facilities impact fee is a new fee that replaces an existing flood control fee. The Santa Barbara Flood Control District provides flood control services in Goleta. The City does not provide flood control services and has never collected on the flood control fee. The flood control fee was adopted upon City incorporation and has never been utilized. The new storm drain fee will be a fee imposed upon development that increases the need for more or added capacity to the City's storm drain system.

All proposed DIF fees except the transportation fee reflect existing levels of service (facility standards) and the cost of maintaining those standards as growth occurs. All fees except the transportation fee are based on an existing capital asset facility standard that equals the ratio of the City's existing (2018) capital assets to the existing population served by those facilities. This approach is based solely on available data (existing inventory of capital assets and existing service population estimates). The facility standard is not based on adopted policy such as standards contained in the City's General Plan or state statute.

The existing capital asset facility standard provides a reasonable relationship between new development and the need for additional public facilities. The resulting impact fee funds the expansion of public facilities at a rate sufficient to maintain the existing ratio of facilities to service population as growth occurs.

The transportation fee was updated based on a similar approach used to establish the existing transportation fee. Planning for transportation improvements is typically addressed

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with the use of a travel demand model. The Goleta Travel Model developed for the *Goleta General Plan* was updated in 2017 for this nexus analysis. The travel model was used to analyze the impacts of the City's buildout growth scenario, along with surrounding regional growth, on the City's transportation system. The results update the list of improvements described in the Transportation Element of 2006 *Goleta General Plan*.

The travel model used facility standards to determine where transportation improvements are needed within the City to (1) correct existing deficiencies, and (2) address future deficiencies cause by new development. Facility standards for transportation analysis are based on policies in the Transportation Element of the City's General Plan. The City's primary policy for roadways and intersections is to maintain a level of service (LOS) "C" or better, representing restricted traffic flow that remains stable but without causing significant delay. In this instance, LOS is a commonly used measure of congestion and delay based on the ratio of the number of vehicles using a roadway to the capacity of the roadway (vehicle-to-capacity ratio). The LOS policy for intersections is similar, though the type of analysis varies. The results of the travel model and related transportation impact analysis generated a list of 42 capital improvement projects to address existing and future deficiencies on the City's transportation system.

Finally, a fair share analysis was conducted so that the impact fee will fund only the portion of those improvements that are associated with growth within the City. The analysis uses model output to quantify the number of trips using each improvement and the origin and destination of those trips. Cost estimates for each improvement were developed. Combining the fair share analysis with the improvement cost estimates resulted in a total cost to accommodate the impacts of new development within the City on the City's transportation system.

Based on the Nexus Study, the updated fees compared to the existing fees are summarized below:

Land Use Category	Units	Existing Fee (FY 2018-19)	Proposed Maximum Justified Fee	Difference (Proposed vs. Existing)	
				Amount	Percent
Public Administration(now includes Police Fee)					
Single Family Detached	per DU	$2,254	$3,086	$832	37%
All Other Residential[1]	per DU	$1,672	$2,238	$566	34%
Retail & Commercial	per KSF	$791	$487	-$304	-38%
Office & Medical	per KSF	$1,111	$655	-$456	-41%
Industrial	per KSF	$1,111	$243	-$868	-78%
Police					
Single Family Detached	per DU	$581	$0	-$581	-100%
All Other Residential[1]	per DU	$429	$0	-$429	-100%
Retail & Commercial	per KSF	$405	$0	-$405	-100%
Office & Medical	per KSF	$574	$0	-$574	-100%
Industrial	per KSF	$574	$0	-$574	-100%
Library					
Single Family Detached	per DU	$508	$959	$451	89%
All Other Residential[1]	per DU	$379	$696	$317	84%
Retail & Commercial	per KSF	$180	$151	-$29	-16%
Office & Medical	per KSF	$252	$203	-$49	-19%
Industrial	per KSF	$252	$75	-$177	-70%
Parks & Recreation					
Residential Subdivisions (Quimby Act)					
Single Family Detached	per DU	$11,555	$14,998	$3,443	30%
All Other Residential[1]	per DU	$11,555	$10,880	-$675	-6%
All Other Development (Mitigation fee Act)					
Single Family Detached	per DU	$11,848	$11,900	$52	0%
Duplex/Triplex/4-plex	per DU	$10,189	$9,843	-$346	-3%
Apartment	per DU	$8,412	$7,947	-$465	-6%
Mobile Home	per DU	$7,702	$7,947	$245	3%
Accessory Dwelling Unit	per DU	$4,265	$7,947	$3,682	86%
Retail and Commercial	per KSF	$1,832	$1,880	$48	3%
Office and Medical	per KSF	$2,582	$2,525	-$57	-2%
Industrial	per KSF	$2,582	$936	-$1,646	-64%
Storm Drain					
Single Family Detached	per DU	$0	$3,596	$3,596	NA
All Other Residential[1]	per DU	$0	$2,609	$2,609	NA
Retail & Commercial	per KSF	$0	$1,988	$1,988	NA
Office & Medical	per KSF	$0	$2,671	$2,671	NA
Industrial	per KSF	$0	$990	$990	NA

Land Use Category	Units	Existing Fee (FY 2018-19)	Proposed Maximum Justified Fee	Difference (Proposed vs. Existing)	
				Amount	Percent
Transportation (sample of land uses)					
Single Family Detached	per DU	$17,699	$12,077	-$5,622	-32%
Apartment	per DU	$10,948	$7,487	-$3,461	-32%
Hotel	per room	$10,583	$7,171	-$3,412	-32%
Supermarket	per KSF	$103,820	$70,816	-$33,004	-32%
General Office	per KSF	$26,092	$17,808	-$8,284	-32%
General Light Industrial	per KSF	$17,334	$11,835	-$5,499	-32%
Bicycle & Pedestrian					
Single Family Detached	per DU	$0	$3,092	$3,092	NA
All Other Residential[1]	per DU	$0	$2,243	$2,243	NA
Retail & Commercial	per KSF	$0	$488	$488	NA
Office & Medical	per KSF	$0	$656	$656	NA
Industrial	per KSF	$0	$243	$243	NA
Transportation + Bike& Ped (not an additional fee; these two fees are combined for demonstrative purposes only)					
Single Family Detached	per DU	$17,699	$15,169	-$2,530	-14%
All Other Residential[1]	per DU	$10,948	$9,730	-$1,218	-11%
Retail & Commercial	per KSF	$103,820	$71,304	-$32,516	-31%
Office & Medical	per KSF	$26,092	$18,464	-$7,628	-29%
Industrial	per KSF	$17,334	$12,078	-$5,256	-30%
All Updated Fees					
Single Family Detached	per DU	$32,890	$34,710	$1,820	6%
All Other Residential[1]	per DU	$23,617	$25,116	$1,499	6%
Retail & Commercial	per KSF	$107,028	$75,810	-$31,218	-29%
Office & Medical	per KSF	$30,611	$24,518	-$6,093	-20%
Industrial	per KSF	$21,853	$14,322	-$7,531	-34%

Notes: "DU" = dwelling unit; "KSF" = thousand building square feet.
The fire impact fee collected for a separate special district is not included in this update.

[1] Includes detached and attached accessory dwelling units.

[2] Existing flood control fee not included because the fee has not been applied to development projects to date.

[3] Parks and transportation fees based on "Apartment" category.

[4] For transportation fee, based on supermarket category.

[5] For transportation fee, based on general office category.

[6] For transportation fee, based on general light industrial category.

Sources: City of Goleta Fee Schedule, FY 2018-19; Tables 3.3, 4.3, 5.4, 6.1, 6.2, 6.4, 7.3, and 8.2.

Changes in total revenue and fee amounts by land use category under the proposed fee schedule are explained as follows:

- Public Administration fee: Nexus analysis updated based on current City facility standard. Total fee revenue to buildout remains at about $27 mil. under both fees. Change in fee amount by land use based on updated demographic data.
- Police fee: Sheriff facilities fee prior to incorporation. No nexus for separate City fee following incorporation so fee integrated into the Public Administration Fee.

- Library fee: Nexus analysis updated based on current City facility standard that is higher than County standard under existing fee so total fee revenue to buildout would increase by 40% (from $6.0 mil. to $8.5 mil.). Change in fee amount by land use based on updated demographic data.
- Parks and Recreation fees: Impact updated based on current City park standards. Total fee revenue to buildout remains at about $100 mil. under both fees. Change in fee amount by land use based on updated demographic data.
- Storm drain fee: Fee represents new revenue, about $50 mil. to buildout.
- Transportation fee: Fee declines from $620 mil. to $430 mil. (32%) because of updated nexus analysis (project costs have decreased because specific projects on the original list have been built and deleted from the list, and Bicycle and Pedestrian fee projects have been separated out into its own fee).
- Bicycle and Pedestrian fee: Fee represents new revenue, about $28 mil. to buildout.

DIF Ordinance

The updated DIF ordinance will locate all the current DIF regulations into the City's Zoning Ordinance. As reflected in the DIF Nexus Study, previously discussed, the new ordinance also adds one new development impact fee for Bicycle and Pedestrian facilities fee to provide a segregated revenue source for these types of facilities separate from the transportation impact fee. The ordinance combines two existing fees for public administration and police into a single public administration fee because the City does not own separate police facilities on which to establish a facility standard for the nexus analysis. Lastly, the new ordinance eliminates the Flood Control fee authorized in Goleta Municipal Code chapter 16.12 and replaces it with a Storm Drain fee to better describe the services and public facilities the City currently operates for new and expanded development. The City does not provide Flood Control services, which related more to creeks and waterways and are the purview of the Santa Barbara County Flood Control District. However, Goleta incurs costs when new or expanded development increases stormwater to the City's storm drain system. The new Storm Drain fee attempts to capture the costs imposed by new or expanded development.

The major components of the DIF ordinance include:

1. Definitions
    a. "Development" – The definition of "Development" is any project involving a land use permit, permit for construction or reconstruction, and permits for erection of manufactured housing and structures.
2. List of fees:
    A. Bicycle and Pedestrian Facilities Fee (new).
    B. Fire Facilities Fee (existing).
    C. Public Administration Facilities Fee (existing).
    D. Library Facilities Fee (existing).
    E. Parks and Recreation Facilities Fee (existing).
    F. Transportation Facilities Fee (existing).
    G. Storm Drain Facilities Fee (new).
3. Table 1 – Trigger of Fee Imposition. Table 1 provides for when a residential and non-residential development must pay development impact fees. The trigger is approval of any permit under the definition of "Development." Payment of the Transportation Facilities Fee will be based upon triggering one peak hour trip, or

fraction thereof for residential and non-residential projects. Payment of all other fees will be based upon the permitting of one dwelling unit for residential projects and permitting of 500 or more square feet of Development Area for non-residential projects.

4. Beneficial Projects – Council may adopt a resolution to deem certain projects eligible for fee reductions and waivers. This item will be discussed concurrently with the DIF Ordinance and Fee Resolution at the same workshop.
5. Protests – The DIF ordinance provides for a protest of any DIF utilizing the process outlined in the MFA.
6. Use of funds – The City must use the funds for the purpose of paying the actual or estimated cost of improving public facilities to which the specific fee or fees relate.
7. Fee credits - There are situations in which fee credits may be granted including when a development is demolished or converted to another use, destroyed by a natural disaster, or change of use. The City may also allow a credit when a project donates real property needed by the City for transportation purposes.

The DIF Ordinance also includes the repeal of existing DIF ordinances that will be located in the new DIF Ordinance, as follows.

1. Goleta Municipal Code Chapter 16.12 Flood Control Fees for Development of Land Not a Subdivision
2. Goleta Municipal Code 16.14 Park and Recreational Dedication and Fees.
3. Goleta Municipal Code Chapter 16.15 Development Mitigation Fees for Parks in Connection with Residential Development Projects Which Do Not Involve the Subdivision of Land.
4. Goleta Municipal Code Chapter 16.18 Development Impact Fees for Park in Connection Commercial and Industrial Development.
5. Goleta Municipal Code Chapter 16.19 Library Facility Development Impact Fees
6. Goleta Municipal Code Chapter 16.20 Public Administration Facility Development Impact Fees
7. Goleta Municipal Code Chapter 16.21 Police Facility Development Impact Fees
8. Ordinance No. 14-10 An Ordinance Adopting Development Impact Fees for Fire Facilities In Accordance with the Mitigation Fee Act (Government Code §§ 66000-66025).

GENERAL PLAN CONSISTENCY:

The following table references those portions of the City's General Plan relevant to the Development Impact Fee Ordinance:

Relevant Fee	**General Plan Chapter**	**General Plan Section Reference**
Park Facilities Fee	Chapter 3 – Open Space Element.	Policy OS 9.1 - Park and Open Space Standards and Fee Study.
		Policy OS 9.2 - Mitigation of Impacts of New Development on Parks and Recreation Facilities.
		Policy OS 9.3 - Alternatives to Impact Fees.
Transportation Facilities Fee	Chapter 7 – Transportation Element.	Policy TE 1.3, 10.4, 11.4, 11.5, 13, and 14.1.
Public	Chapter 8 – Public	Policy PF 1.6 – Potential Methods of Financing.

Administration Facilities Fee.	Facilities Element.	
Fire Facilities Fee.	Chapter 8 – Public Facilities Element.	Policy PF 3.3.
Police Facilities Fee.	Chapter 8 – Public Facilities Element.	Policy PF 3.8.
All.	Chapter 2 – Land Use Element, Chapter 8 – Public Facilities Element.	Chapter 2 – Policy LU 2.2, 11.1 Chapter 8 - Policy 10.2.

ENVIRONMENTAL REVIEW:

The adoption of a new development impact fees, related nexus study and ordinance is exempt from the California Environmental Quality Act and the regulations promulgated thereunder (14 Cal. Code of Regulations, §§ 15000, et seq., "CEQA Guidelines") because this action does not constitute a "project" pursuant to the CEQA Guidelines, § 15378(b)(4). In addition, obtaining funds (fees) for capital projects for services in existing service areas are statutorily exempt under CEQA Guidelines, § 15273(a)(4).

Because the DIF Ordinance will be located in the Zoning Ordinance, on December 10, 2018, the Planning Commission considered the proposed DIF Ordinance and approved a Resolution recommending to the City Council that it approve the DIF Ordinance.

GOLETA STRATEGIC PLAN:

Citywide Strategy: Ensure Financial Stability

Strategic Goal: Maintain sound fiscal policies and budgeting principles.

FISCAL IMPACTS:

Only staff time and other indirect minimal costs will be involved in processing the adoption of the Ordinance. The Ordinance and DIF adjustments will effective 60 days after its adoption. City staff will be able to implement and collect the proposed fees as part of the current development process. The actual fee revenues generated by the adjusted DIFs will be dependent on the number of development projects subject to payment of the DIF during the time the fees are in effect as development activity occurs. All DIF revenues are restricted to payment of identified projects and expenditures and is not discretionary with the City. The amount of the DIF's will be automatically adjusted on July 1st of each fiscal year, by the construction cost index (CCI) specific to California or nearest region, as published by the Engineering News Record's, or its successor publication, as reported for the preceding twelve-month period for when the CCI is available.

The DIF revenue estimates will be revised with each annual budget process, along with the related project costs funded by these fees.

NEXT STEPS:

Assuming adoption of the attached Development Impact Fees, Nexus Study Resolution and the Development Impact Fee Ordinance, the City will implement the new DIFs. The new DIFs will be effective 60 days after its adoption.

Legal Review By:

Michael Jenkins
City Attorney

Approved By:

Michelle Greene
City Manager

ATTACHMENTS

1. Resolution 19-__, entitled "A Resolution of the City Council of the City of Goleta, California, Approving New Development Impact Fees and a Development Impact Fee Study Pursuant to the Mitigation Fee Act".
2. Ordinance 19-__, entitled "An Ordinance of the City Council of the City of Goleta, California, Repealing Goleta Municipal Code Sections 16.12, 16.15, 16.18, 16.19, 16.20, and 16.21 and Ordinance No. 14-10, and Amending the Inland Zoning Ordinance to Add Section 35-333 and Coastal Zoning Ordinance to Add Section 35-187 to Require the Payment of Development Impact Fees for Development Projects within the City, Pursuant to the Mitigation Fee Act".
3. Notice of Exemption (NOE)

ATTACHMENT 1

Resolution 19-__, entitled “A Resolution of the City Council of the City of Goleta, California, Approving New Development Impact Fees and a Development Impact Fee Study Pursuant to the Mitigation Fee Act”.

RESOLUTION NO. 19-__

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF GOLETA, CALIFORNIA, APPROVING NEW DEVELOPMENT IMPACT FEES AND A DEVELOPMENT IMPACT FEE STUDY PURSUANT TO THE MITIGATION FEE ACT

WHEREAS, the State of California, through the enactment of Government Code sections 66001 through 66025 (also known as the "Mitigation Fee Act") has, among other things, authorized the legislative body of a city to, by ordinance, impose impact fees on development projects for the purpose of defraying all or a portion of the cost of public facilities related to the development project, provided that a nexus is established in the enactment of development impact fees between the development project's impacts and the imposed fee amounts; and

WHEREAS, the imposition of development impact fees is one of the preferred methods of ensuring that new development bears a proportionate share of the estimated reasonable cost of providing public facilities and service improvements necessary to accommodate such development; and

WHEREAS, the City has operated a development impact fee program since incorporation relying on ordinances and nexus studies conducted by the County before incorporation; and

WHEREAS, under the Mitigation Fee Act, cities must ensure that there is a nexus between the development project's impacts and the imposed fee amounts; and

WHEREAS, Council decided that it was necessary to prepare a new nexus study to ensure appropriate and development impact fees are being imposed on development projects within the City; and

WHEREAS, the City contracted with Urban Economics and GHD Inc to prepare a new nexus study updating the City's development impact fees program; and

WHEREAS, in January 2019, Urban Economics and GHD Inc. completed a *Development Impact Fee Program Update for the City of Goleta, California*, that recommends increases and decreases to the City's development impact fees and explains the nexus between the imposition of the fee and the estimated reasonable costs of providing the facility or service for which the fee is charged; and

WHEREAS, the *Development Impact Fee Program Update for the City of Goleta, California* ("the Report"), has been available for public review and comment; and

WHEREAS, the City Council adopted Ordinance 14-10 in 2014 which adopted the current fire fee and nexus study entitled Fire Impact Fee Nexus Study dated September 2014, prepared by the Santa Barbara Fire Protection District; and

WHEREAS, the City Council desires to re-adopt this fee and nexus study as a clean up item to consolidate all actions adopting development impact fees and nexus studies into one resolution; and

WHEREAS, following issuance of the Report, the City Council held a public workshop on February 6, 2019, to consider the proposed development impact fees and Report; and

WHEREAS, the City Council now desires to adopt new development impact fees in accordance with the nexus calculations and recommendations in the Report.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF GOLETA HEREBY RESOLVES AS FOLLOWS:

SECTION 1: FINDINGS. The City Council finds and determines that the Report complies with California Government Code Section 66001 by establishing the basis for the imposition of fees on new development. This finding is based on the fact that the Report:

A. Identifies the purpose of each fee;

C. Identifies the use to which the fee will be put;

D. Demonstrates a reasonable relationship between the use of the fee and the type of development project on which the fee is imposed;

E. Demonstrates a reasonable relationship between the need for the public facilities and the type of development projects on which the fee is imposed; and

F. Demonstrates a reasonable relationship between the amount of the fee and the cost of the public facilities or portion of the public facilities attributable to the development on which the fee is imposed.

SECTION 2: FEES FOR USES CONSISTENT WITH THE REPORT. The fees collected pursuant to this Resolution shall be used to finance the public facilities described or identified in the Report, or such other public facility master plans as may from time to time be adopted by the City Council.

SECTION 3: APPROVAL OF ITEMS IN REPORT. The City Council has considered the specific project descriptions and cost estimates identified in the Report and hereby approve such project descriptions and cost estimates and find them reasonable as the basis for calculating and imposing certain development impact fees.

SECTION 4: CONSISTENCY WITH GENERAL PLAN. The City Council finds that the projects and fee methodology identified in the Report are consistent with the City's General Plan.

SECTION 5: DIFFERENTIATION AMONG FEES. The City Council finds that the development impact fees recommended in the Report are separate and different from other fees the City may impose as a condition of building permit issuance, tentative subdivision map approval, parcel map approval, or final map approval, pursuant to its authority under the Subdivision Map Act, the Quimby Act, and the City's implementing ordinances, as may be amended from time to time, for, among other projects, the acquisition of parkland. In no event, however, shall a developer be required to pay for both a fee imposed pursuant to the Subdivision Map Act and/or the Quimby Act and a development impact fee, or portion thereof, as specified in this Resolution that would be used to fund the same type of facility as the fee imposed pursuant to the Subdivision Map Act and/or the Quimby Act.

SECTION 6: CEQA FINDING. The adoption of the Report and development impact fees are categorically exempt from the California Environmental Quality Act and the regulations promulgated thereunder (14 Cal. Code of Regulations, §§ 15000, et seq., "CEQA Guidelines") because this action does not constitute a "project" pursuant to the CEQA Guidelines, § 15378(b)(4). In addition, obtaining funds (fees) for capital projects for services in existing service areas are statutorily exempt under CEQA Guidelines, § 15273(a)(4).

SECTION 7: ADOPTION OF REPORT. Council hereby adopts The *Development Impact Fee Program Update for the City of Goleta,* dated January 2019, attached as Exhibit A and incorporated by reference herein.

SECTION 8: ADOPTION OF FIRE NEXUS STUDY. Council hereby adopts the Fire Impact Fee Nexus Study dated September 2014, prepared by the Santa Barbara Fire Protection District, and the fire fees as set forth in such study, attached as Exhibit B and incorporated by reference herein.

SECTION 9: ADOPTION OF FEES. Council hereby approves and adopts the development impact fees as set forth in Exhibit C to this Resolution, attached hereto and incorporated herein by this reference. The fire fees have been adjusted for inflation since 2014. The amount of the development impact fees shall be automatically modified annually each July 1 by a percentage equal to the appropriate Construction Cost Index ("CCI") as published by Engineering News Record, or its successor publication, for the preceding 12 months for which the CCI is available and such CCI shall be specific to California or the nearest region.

<u>SECTION 10:</u> PRIOR RESOLUTIONS AND ORDINANCES SUPERSEDED. Upon the effective date of this Resolution, the development impact fees hereby approved and adopted shall supersede previously adopted resolutions and ordinances setting development impact fees.

<u>SECTION 11:</u> SEVERABILITY. If any action, subsection, sentence, clause or phrase of this Resolution or the imposition of a development impact fee for any project described in the Report or the application thereof to any person or circumstance shall be held invalid or unconstitutional by a court of competent jurisdiction, such invalidity shall not affect the validity of the remaining portions of this Resolution and other fees levied by this Resolution that can be given effect without the invalid provisions or application of fees.

<u>SECTION 12.</u> EFFECTIVE DATE. This Resolution becomes effective on February 6, 2019. The proposed development impact fees will become effective upon the Effective Date of the Ordinance to Adopt Development Impact Fees (Ordinance No. 19-___), the first reading of which has been conducted concurrently with this Resolution.

<u>SECTION 13. CERTIFICATION</u>
The City Clerk shall certify to the passage and adoption of this resolution and enter it into the book of original resolutions.

PASSED, APPROVED AND ADOPTED this 6th day of February, 2019.

____
PAULA PEROTTE
MAYOR

ATTEST:

____
DEBORAH S. LOPEZ
CITY CLERK

APPROVED AS TO FORM:

____
MICHAEL JENKINS
CITY ATTORNEY

STATE OF CALIFORNIA)
COUNTY OF SANTA BARBARA) ss.
CITY OF GOLETA)

I, DEBORAH S. LOPEZ, City Clerk of the City of Goleta, California, DO HEREBY CERTIFY that the foregoing Resolution No. 19-__ was duly adopted by the City Council of the City of Goleta at a special meeting held on February 6th, 2019, by the following vote of the Council members:

AYES:

NOES:

ABSENT:

ABSTAIN:

(SEAL)

____
DEBORAH LOPEZ
CITY CLERK

EXHIBIT A

The Development Impact Fee Program Update for the City of Goleta dated January 2019 by Urban Economics.

DEVELOPMENT IMPACT FEE PROGRAM UPDATE

PUBLIC DRAFT REPORT

JANUARY 2019

Prepared For:

City of Goleta

Prepared By:

Robert D. Spencer, Urban Economics

With Assistance From:

Jim Damkowitch, GHD & Gerald Comati, COM3 Consulting

Urban Economics

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EXECUTIVE SUMMARY

Development impact fees provide a mechanism for new development projects to contribute financially to the one-time cost of improving and expanding the infrastructure and facilities needed to accommodate those projects. The City of Goleta (City) adopted the County of Santa Barbara's impact fees for the Goleta Planning Area when the City incorporated in 2002. The City has been updating the fees for inflation using the Construction Cost Index published by the Engineering News Record.

This report provides the supporting analysis for the City to update five existing impact fees, adopt one new fee, and leave one fee charged for a separate special district (fire) unchanged:

- Public administration facilities impact fee (update existing fee and integrate police facilities impact fee)
- Fire facilities impact fee (no change)
- Library facilities impact fee (update existing fee)
- Parks and recreation facilities impact fee and park dedication in-lieu (Quimby) fee (update existing fees)
- Transportation facilities impact fee (update existing fee)
- Bicycle and pedestrian facilities impact fee (new fee)
- Storm drain facilities impact fee (update existing flood control fee)

This update will also result in the following changes to the City's impact fee program (see **Table 1.1**):

- The existing police facilities impact fee is based on a County nexus study and will be rescinded. Any existing fund balance will be used to fund a police substation as part of the new civic center. Going forward, development impacts on police facilities are funded through the updated public administration facilities impact fee.
- The Santa Barbara County Fire Protection District provides fire services to the City and the existing fire development impact fee was developed by the District. The City is using fee revenues to construct Station No. 10. Once the station is completed, the City could consider rescinding the fee and revising the public administration facilities impact fee to fund additional impacts on fire facilities.
- The existing transportation impact fee that includes limited funding for bicycle and pedestrian facilities is being separated into a transportation impact fee dedicated to vehicle traffic-related improvements and a bicycle and pedestrian impact fee for bicycle and pedestrian facilities.

- The existing flood control fee will be rescinded and replaced with a new storm drain fee to fund expanded storm drain capacity to accommodate development.

Table E.1: Revisions to Impact Fee Program

Current Fee	Proposed Fee	Notes
Public Administration	Public Administration	Public administration fee updated and integrates police facilities
Police		
Fire	Fire	Special district fee not updated; could integrate into public administration fee once Station No. 10 completed
Library	Library	Fee updated
Parks and Recreation[1]	Parks and recreation	Fee updated
Transportation	Transportation	Transportation fee updated; bike and pedestrian facilities funded by new fee
	Bicycle and Pedestrian	
Flood Control	Storm Drain	Fee updated to focus on need for expanded storm drain facilities

[1] Includes Quimby Act parkland dedication in-lieu fee.

Impact fees reflect existing levels of service (facility standards) and the cost of maintaining those standards as growth occurs. Levels of existing development and forecast growth used in this study are shown **Table E.2**.

The cost per resident and per worker to maintain existing facility standards as growth occurs are shown in **Table E.3**. Parks represent the highest per capita cost for residential development and transportation is the highest cost for non-residential development.

The updated fee schedules based on the per capita costs from **Table E.3** are shown below in **Table E.4**. The table also includes a comparison with the City's existing fee schedule. The summary section "Transportation + Bike & Ped." provides a better comparison with the existing transportation fee that also funded some bicycle and pedestrian improvements.

Table E.2: Goleta Growth Forecast, 2018-Buildout

Land Use	Existing (2018)[1]	Buildout	Growth (% Buildout)	
Residential (residents & dwelling units)				
Residents	31,664	40,574	8,910	*22%*
Single Family Detached	5,439	6,106	667	*11%*
All Other Residential	6,582	9,826	3,244	*33%*
Total Dwelling Units	12,021	15,932	3,911	*25%*
Non-residential (workers & 1,000 bldg. sq. ft.)				
Workers	24,410	35,035	10,625	*30%*
Retail / Commercial	3,212	4,570	1,358	*30%*
Office & Medical	2,959	4,989	2,030	*41%*
Industrial	6,607	7,561	954	*13%*
Total Bldg. Sq. Ft. *(1,000s)*	37,188	52,155	14,967	*29%*

Sources: Tables 2.1 and 2.3.

Table E.3: Existing Facility Standard Costs

Facility	Cost to Maintain Existing Facility Standard: Per Resident	Cost to Maintain Existing Facility Standard: Per Worker
Public Administration	$ 1,046	$ 209
Library	$ 325	$ 65
Parks	$ 4,034	$ 807
Transportation	$ 2,909	$ 5,690
Bicycle & Pedestrian	$ 1,048	$ 210
Storm Drain	$ 1,219	$ 853

Notes: Transportation costs based on "all other residential" (all but detached single family) and "general office" land use categories.
Sources: Tables 2.2, 2.4, 3.2, 4.2, 5.3, 6.1, 6.2, 6.4, 7.2, and 8.2.

Table E.4: Existing and Proposed Fee Schedule

Land Use Category	Units	Existing Fee (FY 2018-19)	Proposed Maximum Justified Fee	Difference (Proposed vs. Existing) Amount	Percent
Public Administration					
Single Family Detached	per DU	$ 2,254	$ 3,086	$ 832	37%
All Other Residential[1]	per DU	1,672	2,238	566	34%
Retail & Commercial	per KSF	791	487	(304)	(38%)
Office & Medical	per KSF	1,111	655	(456)	(41%)
Industrial	per KSF	1,111	243	(868)	(78%)
Police					
Single Family Detached	per DU	$ 581	$ -	$ (581)	(100%)
All Other Residential[1]	per DU	429	-	(429)	(100%)
Retail & Commercial	per KSF	405	-	(405)	(100%)
Office & Medical	per KSF	574	-	(574)	(100%)
Industrial	per KSF	574	-	(574)	(100%)
Library					
Single Family Detached	per DU	$ 508	$ 959	$ 451	89%
All Other Residential[1]	per DU	379	696	317	84%
Retail & Commercial	per KSF	180	151	(29)	(16%)
Office & Medical	per KSF	252	203	(49)	(19%)
Industrial	per KSF	252	75	(177)	(70%)
Parks & Recreation					
Residential Subdivisions (Quimby Act)					
Single Family Detached	per DU	$ 11,555	$ 14,998	$ 3,443	30%
All Other Residential[1]	per DU	11,555	10,880	(675)	(6%)
All Other Development (Mitigation Fee Act)					
Single Family Detached	per DU	$ 11,848	$ 11,900	$ 52	0%
Duplex/Triplex/4-plex	per DU	10,189	9,843	(346)	(3%)
Apartment	per DU	8,412	7,947	(465)	(6%)
Mobile Home	per DU	7,702	7,947	245	3%
Accessory Dwelling Unit	per DU	4,265	7,947	3,682	86%
Retail & Commercial	per KSF	1,832	1,880	48	3%
Office & Medical	per KSF	2,582	2,525	(57)	(2%)
Industrial	per KSF	2,582	936	(1,646)	(64%)
Storm Drain					
Single Family Detached	per DU	$ -	$ 3,596	$ 3,596	NA
All Other Residential[1]	per DU	-	2,609	2,609	NA
Retail & Commercial	per KSF	-	1,988	1,988	NA
Office & Medical	per KSF	-	2,671	2,671	NA
Industrial	per KSF	-	990	990	NA

Table E.4: Existing and Proposed Fee Schedule (continued)

Land Use Category	Units	Existing Fee *(FY 2019-19)*	Proposed Maximum Justified Fee	Difference *(Proposed vs. Existing)* Amount	Percent
Transportation (sample of land uses)					
Single Family Detached	per DU	$ 17,699	$ 12,077	$ (5,623)	(32%)
Apartment	per DU	10,948	7,487	(3,461)	(32%)
Hotel	per room	10,583	7,171	(3,412)	(32%)
Supermarket	per KSF	103,820	70,816	(33,004)	(32%)
General Office	per KSF	26,092	17,808	(8,284)	(32%)
General Light Industrial	per KSF	17,334	11,835	(5,499)	(32%)
Bicycle & Pedestrian					
Single Family Detached	per DU	$ -	$ 3,092	$ 3,092	NA
All Other Residential[1]	per DU	-	2,243	2,243	NA
Retail & Commercial	per KSF	-	488	488	NA
Office & Medical	per KSF	-	656	656	NA
Industrial	per KSF	-	243	243	NA
Transportation + Bike & Ped. Fees Combined (not an additional fee; for information only)					
Single Family Detached	per DU	$ 17,699	$ 15,169	$ (2,531)	(14%)
All Other Residential[1,3]	per DU	10,948	9,730	(1,218)	(11%)
Retail & Commercial[4]	per KSF	103,820	71,304	(32,516)	(31%)
Office & Medical[5]	per KSF	26,092	18,464	(7,628)	(29%)
Industrial[6]	per KSF	17,334	12,078	(5,256)	(30%)
All Updated Fees		-	-	-	-
Single Family Detached	**per DU**	**$ 32,890**	**$ 34,710**	**$ 1,820**	**6%**
All Other Residential[1,3]	**per DU**	**23,617**	**25,116**	**1,499**	**6%**
Retail & Commercial[4]	**per KSF**	**107,028**	**75,810**	**(31,218)**	**(29%)**
Office & Medical[5]	**per KSF**	**30,611**	**24,518**	**(6,093)**	**(20%)**
Industrial[6]	**per KSF**	**21,853**	**14,322**	**(7,531)**	**(34%)**

Notes: "DU" = dwelling unit; "KSF" = thousand building square feet.
The fire impact fee collected for a separate special district is not included in this update.

[1] Includes detached and attached accessory dwelling units.

[2] Existing flood control fee not included because the fee has not been applied to development projects to date.

[3] Parks and transportation fees based on "Apartment" category.

[4] For transportation fee, based on supermarket category.

[5] For transportation fee, based on general office category.

[6] For transportation fee, based on general light industrial category.

Sources: City of Goleta Fee Schedule, FY 2018-19; Tables 3.3, 4.3, 5.4, 6.1, 6.2, 6.4, 7.3, and 8.2.

1. INTRODUCTION

Background

Development impact fees provide a mechanism for new development projects to contribute financially to the one-time cost of improving and expanding the infrastructure and facilities needed to accommodate that development. Impact fees are commonly used by local agencies throughout California and in many other states as one of many funding sources for capital improvement programs. Fees are a one-time, non-recurring revenue source paid at the time of development impact, typically at issuance. certificate of occupancy.[1]

The City adopted the County of Santa Barbara's impact fees for the Goleta Planning Area when the City incorporated in 2002. The City has been updating the fees for inflation using the Construction Cost Index published by the Engineering News Record.

This report provides the supporting analysis for the City to update five existing impact fees, adopt one new fee, and leave one fee charged for a separate special district (fire) unchanged:

- Public administration facilities impact fee (update existing fee and integrate police facilities impact fee)
- Fire facilities impact fee (no change)
- Library facilities impact fee (update existing fee)
- Parks and recreation facilities impact fee and park dedication in-lieu (Quimby) fee (update existing fees)
- Transportation facilities impact fee (update existing fee)
- Bicycle and pedestrian facilities impact fee (new fee)
- Storm drain facilities impact fee (update existing flood control fee)

This update will also result in the following changes to the City's impact fee program (see **Table 1.1**):

- The existing police facilities impact fee is based on a County nexus study and will be rescinded. Any existing fund balance will be used to fund a police substation as part of the new civic center. Going forward,

[1] If there is no certificate of occupancy, such a change of use that does not require a building permit, the fee would be paid prior to the land use permit. Quimby fees are due at the time of map recordation according to the Quimby Act.

development impacts on police facilities are funded through the updated public administration facilities impact fee.

- The Santa Barbara County Fire Protection District provides fire services to the City and the existing fire development impact fee was developed by the District. The City is using fee revenues to construct Station No. 10. Once the station is completed, the City could consider rescinding the fee and revising the public administration facilities impact fee to fund additional impacts on fire facilities.
- The existing transportation impact fee that includes limited funding for bicycle and pedestrian facilities is being separated into a transportation impact fee dedicated to vehicle traffic-related improvements and a bicycle and pedestrian impact fee for bicycle and pedestrian facilities.
- The existing flood control fee will be rescinded and replaced with a new storm drain fee to fund expanded storm drain capacity to accommodate development.

Table 1.1: Revisions to Impact Fee Program

Current Fee	Proposed Fee	Notes
Public Administration	Public Administration	Public administration fee updated and integrates police facilities
Police		
Fire	Fire	Special district fee not updated; could integrate into public administration fee once Station No. 10 completed
Library	Library	Fee updated
Parks and Recreation[1]	Parks and recreation	Fee updated
Transportation	Transportation	Transportation fee updated; bike and pedestrian facilities funded by new fee
	Bicycle and Pedestrian	
Flood Control	Storm Drain	Fee updated to focus on need for expanded storm drain facilities

[1] Includes Quimby Act parkland dedication in-lieu fee.

Study Objectives

California local agencies may adopt impact fees under authority granted by the Mitigation Fee Act (the Act), contained in Sections 66000 et seq. of the *California Government Code*. The primary purpose of this report is to substantiate the findings required by the Act for adopting or increasing an impact fee.

The Act requires the following key findings to be made before a local agency adopts or increases a fee imposed on a development project:

1. **Impact:** Reasonable relationship between new development and need for public facilities.[2] This finding demonstrates the impacts of new development on the demand for public facilities.
2. **Benefit:** Reasonable relationship between new development and the use of fee revenue for public facilities to accommodate that development.[3] This finding demonstrates how the use of fee revenues for public facilities benefits new development.
3. **Proportionality:** Reasonable relationship between the amount of the fee and the proportionate cost of public facilities attributable to new development.[4] This finding demonstrates how the fee on a development project is proportionate to the development project's impacts that create demand for the public facility.

Together these three key findings define the nexus among the impact of development, the amount of the fee, and the use of fee revenues.

Nexus Analysis Approach

The approach taken by this nexus analysis for all impact fees except the transportation impact fee includes the following steps:

1. Determine the population served by the facilities (service population).
2. Identify the existing facility standard to document the impact of new development on the need for additional facilities (finding #1, above).
3. Calculate the fee schedule necessary to maintain the facility standard (finding #3, above).
4. Describe the types of facilities eligible for funding with fee revenue (finding #2, above).

The basis for the service population are estimates of existing and buildout population and employment in the city and are provided in Chapter 2. The following six chapters (Chapters 3 through 8) provide for each impact fee and analysis necessary to substantiate the findings described above.

[2] Government Code, section 66001(a)(3).

[3] Government Code, section 66001(a)(4).

[4] Government Code, section 66001(b).

For the transportation fee, a slightly different approach was employed with the use of travel demand modeling:

1. Use the same citywide growth forecast as the other five fees put in the context of a region-wide forecast.
2. Use the regional growth forecast in a regional travel demand model to identify the capital improvements necessary to maintain level of service on the city's roadways based on measures of vehicle congestion (finding #1, above).
3. Estimate the cost of needed capital improvements, and the share associated with growth within the city versus growth elsewhere in the region (finding #2, above).
4. Calculate the fee schedule necessary to fund that city's cost share (finding #3, above).

Each fee chapter includes a schedule of maximum justified fees by land use category. The City may adopt any fee up to the amount shown in each fee schedule for each land use category. Any fee below the maximum justified amount need not be consistent in absolute or percentage terms across land use categories for any given fee.

Finally, the Act also requires findings regarding (1) the purpose of the fee, and (2) a description of the public facilities to be funded by the fee.[5] The purpose of each impact fee is to accommodate the impacts of new development by funding the expansion of the City's existing facilities. The types of facilities funded by each fee are described in the respective chapter of this report and more detail is provided in the City's current five-year Capital Improvement Program (CIP). The transportation fee is based on a comprehensive long-range list of specific improvements that is included in Chapter 6.

[5] *Ibid.*, sections 66001(a)(1) and 66001(a)(2).

2. GROWTH FORECAST

This chapter describes the growth forecast and related assumptions used as a basis for measuring the impact of development on the need for public facilities, including:

- Estimates of existing land use in 2018 and for buildout of the city under the current General Plan in terms of dwelling units and nonresidential building square feet.
- Estimates of population and employment from growth based on occupant density assumptions (residents per dwelling unit and workers per thousand square feet) that translate dwelling units and building square feet to residents and workers.
- Estimates of the need for public facilities to accommodate growth based on growth in the population served ("service population") by the various public facilities included in this impact fee program update.

The nexus analysis for each fee presented in subsequent chapters uses these estimates to determine facility standards and estimate facility needs and fee revenues.

Growth Forecast

Existing land use and buildout of the City's current General Plan expressed in terms of housing units and building space are shown in in **Table 2.1**. Existing dwelling units by type are based on January 1, 2018 estimates from the California Department of Finance (DOF). Buildout dwelling units and existing and buildout workers by land use type are based on estimates used in the Goleta travel demand model. As shown in **Table 2.1**, the travel demand model uses very detailed estimates of employment by land use category, including 11 retail/commercial categories, three office/medical categories, and three industrial categories.

The nexus analysis uses occupant density assumptions (residents per dwelling unit and workers per thousand square feet of nonresidential building space) to establish the relationship between development projects and the demand for public facilities and services. Occupant density assumptions vary by land use category to differentiate the impact of development on the need for public facilities. Differentiating fees by land use assists in supporting a reasonable relationship between the amount of the fee and the proportionate cost of public facilities attributable to new development.

Table 2.1: Growth Forecast (dwelling units & building space)

Land Use	Existing (2018)[1]	Buildout	Growth	(% Buildout)
Residential (dwelling units)				
Single Family Detached	5,439	6,106	667	11%
All Other Residential	6,582	9,826	3,244	33%
Total Residential	**12,021**	**15,932**	**3,911**	**25%**
Retail / Commercial (1,000 sq. ft.)				
Auto Services	424	499	75	15%
Banks	23	28	5	18%
Fast Food Restaurants	35	35	-	0%
Hotels[2]	410	664	254	38%
Indoor Recreation	254	368	114	31%
Shopping Mall			-	NA
Neighborhood Commercial	1,084	1,810	726	40%
Regional Commercial	491	528	37	7%
Resort Hotel[3]	281	329	48	15%
Restaurants	210	244	34	14%
Theater	-	65	65	NA
Subtotal	3,212	4,570	1,358	30%
Office & Medical (1,000 sq. ft.)				
Hospitals	101	161	60	37%
Medical	70	156	86	55%
Office	2,788	4,672	1,884	40%
Subtotal	2,959	4,989	2,030	41%
Industrial (1,000 sq. ft.)				
Heavy Industrial	274	418	144	34%
Light Industrial	6,333	7,077	744	11%
Research & Development	-	66	66	NA
Subtotal	6,607	7,561	954	13%
Total Non-residential	**12,778**	**17,120**	**4,342**	**25%**

[1] Nonresidential estimates for 2018 based on travel demand model data for 2013. The amount of subsequent development would not materially affect the nexus analysis in this report.

[2] Land use data for hotel rooms (630 existing, 1,022 buildout, and 392 growth) converted to building square feet at 650 square feet per room.

[3] Land use data for resort hotel rooms (360 existing, 422 buildout, and 62 growth) converted to building square feet at 780 square feet per room.

Sources: State of California, Department of Finance, *E-5 Population and Housing Estimates for Cities, Counties and the State — January 1, 2011- 2018*, Sacramento, California, May 2018; Goleta Traffic Model land use scenarios (2013 and General Plan buildout); Jan A. DeRoos, *Planning and Programming a Hotel*, Cornell University, 2011.

The occupant density assumptions used in this nexus analysis are based on the latest citywide population and housing estimates prepared by the U.S. Census Bureau, and surveys of nonresidential land uses in the Los Angeles metropolitan area. These assumptions are shown in **Table 2.2**. The occupant density assumption for the All Other Residential category is the weighted average of the four sub-categories shown below it.

Table 2.2: Occupant Density

Land Use				
Residential				
Single Family Detached	2.95	persons / DU		
All Other Residential	2.14	persons / DU		
Duplex/Triplex/4-plex	2.44	persons / DU		
Apartment	1.97	persons / DU		
Mobile Home	1.97	persons / DU		
Accessory Dwelling Unit[1]	1.97	persons / DU		
Nonresidential				
Retail & Commercial	430	sq. ft. / worker	2.33	worker / KSF
Office & Medical	320	sq. ft. / worker	3.13	worker / KSF
Industrial	861	sq. ft. / worker	1.16	worker / KSF

Notes: "DU" is dwelling units and "KSF" is thousand square feet.

[1] Includes detached and attached accessory dwelling units. Estimated at same occupant density as Apartment category.

Sources: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates, Tables B25033 and DP04; The Natelson Company, *Employment Density Survey Summary Report,* prepared for Southern California Association of Governments, October 31, 2001; Urban Economics

Existing land use and buildout of the City's current General Plan expressed in terms of residents and workers is shown in in **Table 2.3**. Total existing population is consistent with January 1, 2018 estimates by the California Department of Finance. Existing and buildout population by dwelling unit type, and existing and buildout workers by land use type, are based on the occupant density assumptions shown in **Table 2.2**.

New Development and Facilities Demand

Service population is a measure of the number of users or beneficiaries of a public service and the related public facilities required to deliver that service. Vehicle trip generation is the common measure of demand for transportation facilities. Service population and trip generation are commonly used and reasonable indicators of the impact of new development on the need for new or expanded facilities.

Table 2.3: Growth Forecast (residents & workers)

Land Use	Existing *(2018)*	Buildout	Growth *(% Buildout)*	
Residents[1]				
Single Family Detached	16,045	18,013	1,968	*11%*
All Other Residential	15,619	22,561	6,942	*31%*
Total	31,664	40,574	8,910	*22%*
Workers				
Retail & Commercial	7,484	10,648	3,164	*30%*
Office & Medical	9,262	15,616	6,354	*41%*
Industrial	7,664	8,771	1,107	*13%*
Total	24,410	35,035	10,625	*30%*

[1] Excludes group quarters population, e.g. assisted care facilities and dormitories.

Sources: State of California, Department of Finance, *E-5 Population and Housing Estimates for Cities, Counties and the State — January 1, 2011- 2018*, Sacramento, California, May 2018; Tables 2.1 and 2.2.

Service population is typically composed of residents plus workers. To equate residents and workers in a single measure of service population, workers are weighted by a factor to reflect the potential demand for public facilities from businesses and their workers relative to demand from residents.

This nexus analysis uses three separate approaches to measure the impacts of growth on public facilities:

1. The types of facilities covered by the public administration, library, parks, and bicycle & pedestrian impact fees have reasonably similar service populations. All of these facilities are generally associated with recreational and some business uses, tend to be used during certain parts of the day, and face similar levels of demand from workers relative to residents. Therefore, the same service population is used for all four of these impact fees.
2. A separate service population is calculated for storm drain facilities because these facilities provide 24-hour protection to property. This characteristic results in a different ratio of demand from non-residential versus residential land uses than used for the public facilities covered in #1, above.
3. Demand for transportation facilities is based on trip generation rates applied to residential and non-residential land uses.

The approach summarized above reflects the same approach used in the County of Santa Barbara's fee program that the City adopted upon incorporation in 2002.

The next section describes the approach used in this study to measure service population for the public administration, library, parks, bicycle & pedestrian, and storm drain facilities. See Chapter 6 for further explanation of how transportation demand is measured for the nexus analysis.

Service Population

Household population is used to represent public facility demand for residential land uses. Household population excludes persons living in group quarters. Group quarters include, for example, dormitories, adult care facilities, and detention facilities. The population in group quarters is excluded from the calculation of service population because these uses tend to be non-residential. This nexus analysis uses the employment associated with these non-residential uses to reflect their relative level of public facility demand.

Workers are used to represent service demand from nonresidential land uses. Workers include employees, partners, and owners. The city's existing and buildout resident and worker populations are shown in **Table 2.3**, above.

Surveys by other local government agencies have indicated that the demand for public services from one worker is typically less than the demand from one resident. This result is reasonable because nonresidential buildings are typically occupied less intensively (fewer hours of the day) than housing units.

This nexus analysis assumes that a worker represents demand for public administration, library, park, and bicycle & pedestrian facilities at a ratio of 0.20 relative to a resident. The ratio of worker-to-resident demand for storm drain facilities is 0.70. These factors are based on the types of facilities funded by these impact fees, the demand for and benefit provided by these facilities to workers versus residents, and user surveys conducted in other cities. For residents that both live and work in the city, the demand for public facilities is reflected at both the residential and non-residential location because both those locations generate facility demand.

The service populations used in this impact fee update are shown in **Table 2.4**.

Table 2.4: Service Population

Land Use	Existing (2018)	Buildout	Growth	(% Buildout)
Public Administration, Library, Park & Bike/Ped. Facilities				
Residents *(a)*	31,664	40,574	8,910	
Workers *(b)*	24,410	35,035	10,625	
Relative Demand/Benefit *(c)*	0.20	0.20	0.20	
Service Population *(a + (b x c))*	36,546	47,581	11,035	*23%*
Storm Drain Facilities				
Residents *(d)*	31,664	40,574	8,910	
Workers *(e)*	24,410	35,035	10,625	
Relative Demand/Benefit *(f)*	0.70	0.70	0.70	
Service Population *(d + (e x f))*	48,751	65,099	16,348	*25%*

Sources: Urban Economics; Table 2.3.

3. Public Administration Facilities

This chapter provides the updated nexus analysis, fee schedule, and estimated revenue for the public administration facilities impact fee. Public administration facilities include all facilities not otherwise associated with the nexus analysis for any of the City's other impact fees. Therefore, public administration facilities include a range of facilities such as community centers, corporation yards, police substations, and recreation facilities not associated with typical park development costs (see Chapter 5, *Park and Recreation Facilities*).

Facility Standards

Nexus analyses for impact fees often use an existing capital asset facility standard ("facility standard") that is based on the ratio of a city's existing capital assets to the existing population served by those facilities. This approach is based solely on available data (existing inventory of capital assets and existing service population estimates). The facility standard also commonly referred to as a "level of service" standard is not based on adopted policy such as standards contained in a city's General Plan or state statute, nor is it based on recommendations from the professional literature.

The existing capital asset facility standard provides a reasonable relationship between new development and the need for additional public facilities. The resulting impact fee funds the expansion of public facilities at a rate sufficient to maintain the existing ratio of facilities to service population as growth occurs.

The advantage of using an existing capital asset facility standard is that by definition there is no existing deficiency. An existing deficiency exists when new development is funding, through an impact fee, a facility standard that is higher than the existing capital asset standard. Facility standards based on adopted level of service policies, such as those contained in a general plan, are often higher than existing standards. If an impact is designed to fund new development's share of that higher standard, then the local agency must use other funding sources for the share of improvements needed to correct the deficiency. If not, the agency risks new development partially funding the deficiency and overpaying for a higher standard that is not achieved. The Mitigation Fee Act specifically prohibits the use of fees to correct existing deficiencies in public facilities.[6]

[6] Government Code, section 66001(g).

The use of existing capital assets to determine the facility standard is the approach used in all fees documented in this report except the transportation impact fee (see Chapter 6).

The City's existing capital asset inventory of public administration facilities and associated land is shown in **Table 3.1**. As mentioned above, this inventory includes all facilities not otherwise associated with the nexus analysis for any of the City's other impact fees.

The public administration facility standard and associated costs are shown in **Table 3.2**. Service population is from **Table 2.4**. Replacement costs are based on the average of values used in seven recent (since 2013) development impact fee nexus studies for jurisdictions in California. To be conservative, these values were not adjusted for cost inflation since the specific study was conducted. Land cost reflects a conservative estimate of $1,000,000 per acre based on a median sales price of $3,000,000 per acre for current vacant or mostly vacant properties listed for sale in and around the City at the time of this study. Total costs include a five percent charge for fee program administration based on typical charges by other jurisdictions in California.

As shown in the table, the City has an existing capital asset facility standard composed of 1.40 and 0.31 square feet per capita for civic and utility buildings, respectively, plus 14.67 square feet of land per capita. The total cost for new development to maintain this facility standard is $1,009 per capita including fee program administration costs.

Fee Schedule

The updated public administration facilities impact fee is in shown in **Table 3.3**. The fee is based on the cost per capita shown in **Table 3.2** necessary to maintain the City's existing capital asset facility standard.

Use of Fee Revenue

Estimated fee revenue through buildout based on the growth forecast presented in Chapter 2 is shown in **Table 3.4**.

Table 3.1: Existing Public Administration Facilities

Facility	Address	Use	Bldg. Type	Parcel (acres)	Building (sq. ft.)
Goleta Valley Community Center				9.84	
Main Bldg. / Goleta Community Center	5679 Hollister Ave.	Community center	Civic		19,607
Classroom Bldg. - North (site-built)	5689 Hollister Ave.	Youth services	Civic		6,851
Classroom Bldg. - North (pre-fabricated)	5689 Hollister Ave.	Youth services	Utility		3,884
Classroom Bldg. - South (pre-fabricated)	5717 Hollister Ave.	Youth services	Utility		2,970
Classroom Bldg. - West (site-built)	5681 Hollister Ave.	Youth services	Civic		5,376
Subtotal					38,688
Parking Lot	Orange Ave.	Parking lot	NA	0.15	-
Public Works Corporation Yard	6735 Hollister Ave.		Utility	2.32	4,000
Rancho La Patera & Stow House				Note 1	
Historic Train Depot	300 North Los Carneros Rd.	Museum, offices	Civic		5,000
Stow House	304 North Los Carneros Rd.	Museum	Civic		7,440
Caretaker's Residence	304 North Los Carneros Rd.	Residence	Civic		680
Garage	304 North Los Carneros Rd.	Visitor center	Civic		1,000
Bunk House	304 North Los Carneros Rd.	Administrative office	Civic		660
Packing Shed	304 North Los Carneros Rd.	Museum	Civic		3,180
Subtotal					17,960
Stow Grove Park				Note 1	
Caretaker's Residence & Garage	580 La Patera Lane		Civic		1,200
Restroom Building	580 La Patera Lane		Civic		200
Storage Shed	580 La Patera Lane		Utility		600
Subtotal					2,000
All Facilities					
Civic Buildings					51,194
Utility Buildings					11,454
Total				12.31	62,648

[1] Land included in parkland inventory.

Sources: Facility Reserve Studies (various), prepared by EMG for City of Goleta, 2010.

Table 3.2: Public Administration Facility Standard and Costs

Facility Type	Existing Facilities Inventory (sq. ft.)	Existing Service Pop-ulation	Existing Facility Standard (sq. ft. per capita)	Average Replace-ment Cost (per sq. ft.)[1]	Total Cost (per capita)
Civic Buildings	51,194	36,546	1.40	$400	$ 560
Utility Buildings	11,454	36,546	0.31	200	62
Land	536,224	36,546	14.67	23	337
Subtotal					$ 959
Program Administration (5% of total)					50
Total					$ 1,009

[1] Building replacement costs based on values used in similar studies for jurisdictions in California. Land cost reflect recent land sales in and around the City.

Sources: Urban Economics; Tables 2.4 and 3.1.

Table 3.3: Public Administration Facilities Impact Fee

Land Use Category	Cost per Capita	Occupant Density		Relative Demand	Maximum Justified Fee	
Residential						
Single Family Detached	$ 1,009	2.95	persons per DU	1.00	$2,977	per DU
All Other Residential[1]	1,009	2.14	persons per DU	1.00	2,159	per DU
Nonresidential						
Retail & Commercial	$ 1,009	2.33	workers per KSF	0.20	$ 470	per KSF
Office & Medical	1,009	3.13	workers per KSF	0.20	632	per KSF
Industrial	1,009	1.16	workers per KSF	0.20	234	per KSF

Notes: "DU" = dwelling unit; "KSF" = thousand building square feet.

[1] Includes attached and detached accessory dwelling units.

Sources: Tables 2.2, 2.4, and 3.2.

Table 3.4: Public Administration Facilities Impact Fee Revenue

Land Use Category	Growth *(2018-Buildout)*[1]	Maximum Justified Fee[2]	Revenue *(2017-Buildout)*
Residential			
Single Family Detached	667	$ 2,977	$ 2,000,000
All Other Residential	3,244	2,159	7,000,000
Subtotal	3,911		$ 9,000,000
Nonresidential			
Retail & Commercial	1,358	$ 470	$ 600,000
Office & Medical	2,030	632	1,300,000
Industrial	954	234	200,000
Subtotal	4,342		$ 2,100,000
Total			$11,100,000

[1] Dwelling units for residential and thousand building square feet for nonresidential land uses.

[2] Per dwelling unit for residential and per thousand building square foot for nonresidential land uses.

Sources: Table 2.1 and 3.3.

The need for expanded public facilities to accommodate new development is based on all facilities and related services not otherwise associated with the nexus analysis for any of the City's other impact fees. Thus, the City may use public administration facilities impact fee revenue to fund any capital project that (1) expands the ability of the City to deliver services and therefore accommodate new development, and (2) cannot otherwise be funded by any of the City's other development impact fees**.** Refer to the City's current Capital Improvement Program for the anticipated use of fee revenue to fund capital projects within the next five years.

If revenue is used to replace an existing facility without expanding capacity, the project provides a joint benefit to existing and new development. In this case then the fee can fund only 23 percent of project costs based on new development as a share of total development at buildout (see **Table 2.4**).

The City must allocate five percent of fee revenue to program administration. Administration costs include costs to collect and account for fee revenue, and costs to comply with the Mitigation Fee Act such as annual and five-year reporting requirements. The City should monitor its actual program administration costs and adjust this charge accordingly when the impact fee is updated in the future.

4. LIBRARY FACILITIES

This chapter provides the updated nexus analysis, fee schedule, and estimated revenue for the library facilities impact fee. Library facilities include the City's single library and its collection of materials.

Facility Standards

The library facilities impact fee uses the City's existing capital assets to determine the facility standard and provide a reasonable relationship between new development and the need for additional library facilities. The resulting impact fee would fund the expansion of library facilities at a rate sufficient to maintain the existing ratio of facilities to service population as growth occurs. See the *Facility Standard* section in Chapter 3 for more explanation of this approach.

The City's existing capital asset inventory of library facilities is shown in **Table 4.1**.

Table 4.1: Existing Library Facilities

Facility	Address	Building Type	Amount	
Building	500 North Fairview Ave.	Civic	15,773	square feet
Materials	500 North Fairview Ave.		97,000	volumes[1]
Land	500 North Fairview Ave.		2.07	acres

[1] Includes books, DVDs, etc.

Sources: Facility Reserve Study, prepared by EMG for City of Goleta, 2010.

The library facility standard and associated costs are shown in **Table 4.2**. Service population is from Table 2.4. Building and materials replacement costs are based on values used in similar studies for jurisdictions in California. Land cost reflect recent land sales in and around the City. Total costs include a five percent charge for fee program administration.

As shown in the table, the City has an existing capital asset facility standard composed of 0.43 square feet of library space and 2.65 volumes per 1,000 capita, plus 2.47 square feet of land per capita. The total cost for new development to maintain this facility standard is $325 per capita including fee program administration costs.

Table 4.2: Library Facility Standards and Costs

Facility Type	Existing Facilities Inventory *(units)*		Existing Service Pop-ulation	Existing Facility Standard *(units per capita)*	Average Replace-ment Cost *(per unit)*[1]	Total Cost *(per capita)*
Building	15,773	sq. ft.	36,546	0.43	$ 400	$ 172
Materials	97,000	sq. ft.	36,546	2.65	30	80
Land	90,169	sq. ft.	36,546	2.47	23	57
Subtotal						$ 309
Program Administration (5% of total)						16
Total						$ 325

[1] Building and materials replacement costs based on values used in similar studies for jurisdictions in California. Land cost reflect recent land sales in and around the City.

Sources: Urban Economics; Tables 2.4 and 4.1.

Fee Schedule

The updated library facilities impact fee is shown in **Table 4.3**. The fee is based on the cost per capita shown in **Table 4.2** necessary to maintain the City's existing capital asset facility standard.

Table 4.3: Library Facilities Impact Fee Schedule

Land Use Category	Cost per Capita	Occupant Density		Relative Demand	Maximum Justified Fee	
Residential						
Single Family Detached	$ 325	2.95	persons per DU	1.00	$959	per DU
All Other Residential[1]	325	2.14	persons per DU	1.00	696	per DU
Nonresidential						
Retail & Commercial	$ 325	2.33	workers per KSF	0.20	$151	per KSF
Office & Medical	325	3.13	workers per KSF	0.20	203	per KSF
Industrial	325	1.16	workers per KSF	0.20	75	per KSF

[1] Includes attached and detached accessory dwelling units.

Sources: Tables 2.2, 2.4, and 4.2.

Use of Fee Revenue

Estimated fee revenue through buildout based on the growth forecast presented in Chapter 2 is shown in **Table 4.4**.

Table 4.4: Library Facilities Impact Fee Revenue

Land Use Category	Growth *(2018-Buildout)*[1]	Maximum Justified Fee[2]	Revenue *(2017-Buildout)*
Residential			
Single Family Detached	667	$ 959	$ 600,000
All Other Residential	3,244	696	2,300,000
Subtotal	3,911		$ 2,900,000
Nonresidential		-	-
Retail & Commercial	1,358	$ 151	$ 200,000
Office & Medical	2,030	203	400,000
Industrial	954	75	100,000
Subtotal	4,342		$ 700,000
Total			$ 3,600,000

[1] Dwelling units for residential and thousand building square feet for nonresidential land uses.

[2] Per dwelling unit for residential and per thousand building square foot for nonresidential land uses.

Sources: Table 2.1 and 4.3.

The City may use library facilities impact fee revenue to fund any capital project, or to purchase equipment or volumes, that expands the capacity of the City's library facilities. The Goleta Library currently is in need of additional space to accommodate its growing physical collection of materials.

The City's five-year Capital Improvement Program (CIP) may indicate the anticipated use of fee revenue. However, the current CIP does not have any library capital projects because fee revenue is likely to be dedicated to the expansion of the library's collection of materials such as books and DVDs, reflecting recent practice. These expenditures are programmed through the operating budget not the CIP.

Capital projects that address changing service demands, such as the reconfiguration of existing library space, as opposed to increasing service demands, benefit both existing and new development. Therefore, impact fee revenue for these types of projects must be combined with other funding sources so that new development only pays for a fair share of total capital costs. Service population from growth is forecast to be 23 percent of total service population at buildout (see **Table 2.4**), so the share of costs for joint benefit projects funded with the impact fee should be limited to 23 percent.

The City must also allocate five percent of fee revenue to program administration. Administration costs include costs to collect and account for fee revenue, and costs to comply with the Mitigation Fee Act such as annual and five-year reporting requirements. The City should monitor its actual program administration costs and adjust this charge accordingly when the impact fee is updated in the future.

5. Park & Recreation Facilities

This chapter provides the updated nexus analysis, fee schedule, and estimated revenue for the park and recreation facilities impact fee. Park and recreation facilities include the City's developed and undeveloped parks plus the City's open space. The City also has a parkland dedication in-lieu fee that is governed by Government Code section 66477, also known as the Quimby Act. This chapter also explains the relationship between the impact fee and the Quimby in-lieu fee.

Facility Standards

This section explains both the existing capital asset facility standard and the Quimby Act standard for park facilities. These standards are both based on the City's existing inventory of improved parklands, unimproved parklands, and open space as shown in **Table 5.1**.

Existing Capital Asset Standard

The park and recreation facilities impact fee uses the City's existing capital assets to determine the facility standard and provide a reasonable relationship between new development and the need for additional park facilities. The resulting impact fee would fund the expansion of park facilities at a rate sufficient to maintain the existing ratio of facilities to service population as growth occurs. See the *Facility Standard* section in Chapter 3 for more explanation of this approach.

This fee program update calculates three components that combined represent the City's existing parkland standard:

- Improved parkland per capita
- Total parkland (improved and unimproved) per capita
- Open space per capita.

Table 5.1: Park Inventory (acres)

Park	Unimproved	Improved	Total Parkland	Open Space	Total
Andamar	0.82	1.63	2.45	-	2.45
Armitos	1.25	0.23	1.48	-	1.48
Armstrong	-	0.46	0.46	-	0.46
Bella Vista I & II	-	4.27	4.27	-	4.27
Berkeley/Emerald Terrace	-	4.20	4.20	-	4.20
Brandon	2.22	-	2.22	-	2.22
Campus Glen	6.31	-	6.31	-	6.31
Evergreen	22.32	6.40	28.72	-	28.72
Community Center Parcel	-	0.96	0.96	-	0.96
Koarts Apartments	6.60	-	6.60	-	6.60
La Goleta	6.06	-	6.06	-	6.06
Lake Los Carneros	-	5.53	5.53	134.46	139.99
Mathilda	-	0.16	0.16	-	0.16
Nectarine	-	0.13	0.13	-	0.13
Oro Verde	6.96	-	6.96	-	6.96
San Miguel	4.97	0.81	5.78	-	5.78
SB Shores	7.15	0.49	7.64	-	7.64
Sperling Preserve/Ellwood Mesa	-	0.86	0.86	217.82	218.68
Stonebridge	2.60	-	2.60	-	2.60
Stow Grove	-	11.10	11.10	-	11.10
Stow Tennis Courts	-	2.68	2.68	-	2.68
Winchester 1	3.04	0.32	3.36	-	3.36
Winchester 2	-	1.20	1.20	-	1.20
University Village Walkway	-	3.16	3.16	-	3.16
Covington Walkway	3.38	-	3.38	-	3.38
Hollister/Kellogg Park	3.98	-	3.98	-	3.98
Total	**77.66**	**44.59**	**122.25**	**352.28**	**474.53**

Notes: "Unimproved" reflects lands that could be improved given adequate funding. "Open Space" reflects lands that are planned as open space or would not be cost effective to improve due to topography.

Sources: City of Goleta.

Quimby Act Standard

The Quimby Act[7] allows local agencies to require certain residential projects to dedicate parkland or pay a fee in lieu of dedication. Compared to impact fees adopted pursuant to the Mitigation Fee Act, Quimby Act land dedication and in-lieu fees:

[7] Government Code, section 66477.

- Can only apply to residential projects that require a tentative or parcel map (typically any type of subdivision)
- Cannot be based on a service population that includes workers and therefore Quimby fees cannot apply to nonresidential development
- Cannot include park development costs
- Cannot include open space.

The Quimby Act allows a local agency to require dedication of three to five acres of unimproved parkland per 1,000 residents based on the development project's estimated residential population. A local agency may require a minimum of three acres of unimproved parkland per 1,000 residents regardless of the agency's existing parkland standard. This standard is the ratio of existing improved and unimproved neighborhood and community parkland to existing residents and excludes open space.

The agency may require dedication of up to five acres of unimproved parkland per 1,000 residents if the existing parkland standard supports that higher level. The agency may not require dedication at a standard greater than five acres per 1,000 residents regardless of the agency's existing parkland standard.

The local agency may allow payment of a fee in lieu of parkland dedication based on the cost of land acquisition but not the cost of park development. This in-lieu fee is exempt from the Mitigation Fee Act.[8] The Act contains no language that prohibits an agency from adopting an impact fee to fund park development costs and open space acquisition, in addition to the Quimby dedication requirement or in-lieu fee. Thus, the agency may adopt both approaches to ensure that the combined requirements address all development impacts.

Summary

The parkland standards applicable to the Mitigation Fee Act and the Quimby Act are shown in **Table 5.2**. Service population is from **Table 2.4**. Service population includes residents and workers for the Mitigation Fee Act standard but only residents for the Quimby Act standard.

As shown in the table, the City has an existing parkland standard under the Mitigation Fee Act composed of 1.22 acres of improved parkland, 3.35 acres of total parkland, and 9.64 acres of open space per 1,000 capita.

The Quimby Act standard based only on existing residents and parkland is 3.86 acres per 1,000 residents. The Quimby Act standard is slightly higher than the comparable Mitigation Fee Act standard (3.86 versus 3.35 acres)

[8] *Ibid.*, sections 66000(b)

for total parkland because the former is based on only residents and does not include workers. This approach results in a higher ratio of acres per capita. Because this standard is between the minimum and maximum Quimby Act standards (three to five acres per 1,000 residents), this standard is the maximum amount that the City can require in parkland dedication.

Table 5.2: Park Facility Standards

Facility Type	Existing Facilities Inventory *(units)*		Existing Service Pop-ulation[1]	Existing Facility Standard	
Mitigation Fee Act Park Facilities Standard					
Improved Parkland	44.59	acres	36,546	1.22	*acres / 1,000 capita*
Total Parkland	122.25	acres	36,546	3.35	*acres / 1,000 capita*
Open Space	352.28	acres	36,546	9.64	*acres / 1,000 capita*
Quimby Act Parkland Dedication Standard					
Total Parkland	122.25	acres	31,664	3.86	*acres / 1,000 capita*

[1] Service population is based on residents and workers for the Mitigation Fee Act standard and only for the Quimby Act standard.

Sources: Tables 2.4 and 5.1.

Park facility costs based on the facility standards in **Table 5.2** are shown in **Table 5.3**. Land costs reflect recent land sales in and around the City. Park development costs based on recent park impact fee studies for jurisdictions in California. The table has two sections, depending on whether the project is subject to the Quimby Act:

- The “All Development Except Residential Subdivisions” section shows costs for development projects that would not be subject to the Quimby Act. Costs components include: (1) improved parkland (park development costs only excluding land acquisition), (2) total parkland (land acquisition costs only), and (3) open space (land acquisition costs only).
- The “Residential Subdivision” section shows costs for development projects that would be subject to the Quimby Act. Cost components include: (1) a Quimby park dedication in-lieu fee based on parkland acquisition, (2) an impact fee based on park improvements and open space acquisition.
- All costs include five percent for fee program administration.

Table 5.3: Existing Capital Asset Park Facility Standards

Facility Type	**Existing Facility Standard** *(acres per 1,000 capita)*	**Average Replace-ment Cost** *(per unit)*[1]	**Total Cost** *(per capita)*
All Development Except Residential Subdivisions			
Park Facilities Impact Fee (Mitigation Fee Act)			
Improved Parkland	1.22	400,000	488
Total Parkland	3.35	$1,000,000	$ 3,350
Open Space	9.64	50,000	482
Subtotal			$ 3,832
Program Administration (5% of total)			202
Total			**$ 4,034**
Residential Subdivisions			
Parkland Dedication In-lieu Fee (Quimby Act)			
Total Parkland	3.86	$1,000,000	$ 3,860
Program Administration (5% of total)			203
Subtotal			$ 4,063
Park Facilities Impact Fee (Mitigation Fee Act)			
Improved Parkland	1.22	400,000	488
Open Space	9.64	50,000	482
Subtotal			$ 970
Program Administration (5% of total)			51
Subtotal			$ 1,021
Total			**$ 5,084**

[1] Land costs reflect recent land sales in and around the City. Park development costs based on recent park impact fee studies for jurisdictions in California.

Sources: Urban Economics; Table 5.2.

The total cost for new development to maintain the existing parkland standard is $4,034 per capita if the project is not a residential subdivision subject to the Quimby Act. The total cost is $5,084 if the project is subject to the Quimby Act. The higher per capita cost for projects subject to the Quimby Act is due to the higher standard for parkland acquisition, as described above.

Fee Schedule

The updated park and recreation facilities impact fee and Quimby Act in-lieu fee are shown in **Table 5.4**. The fees are based on the costs per capita shown in **Table 5.3** necessary to maintain the City's existing park standards.

Table 5.4: Park & Recreation Facilities Impact and Park Dedication In-lieu Fees

Land Use Category	Cost per Capita	Occupant Density		Relative Demand	Maximum Justified Fee	
All Development Except Residential Subdivisions (Mitigation Fee Act)						
Residential						
Single Family Detached	$4,034	2.95	persons per DU	1.00	$11,900	per DU
Duplex/Triplex/4-plex	4,034	2.44	persons per DU	1.00	9,843	per DU
Apartment	4,034	1.97	persons per DU	1.00	7,947	per DU
Mobile Home	4,034	2.39	persons per DU	1.00	9,641	per DU
Accessory Dwelling Unit	4,034	1.97	persons per DU	1.00	7,947	per DU
Nonresidential						
Retail & Commercial	$4,034	2.33	workers per KSF	0.20	$ 1,880	per KSF
Office & Medical	4,034	3.13	workers per KSF	0.20	2,525	per KSF
Industrial	4,034	1.16	workers per KSF	0.20	936	per KSF
Residential Subdivisions						
Parkland Dedication In-Lieu Fee (Quimby Act)						
Single Family Detached	$4,063	2.95	persons per DU	1.00	$11,986	per DU
All Other Residential	4,063	2.14	persons per DU	1.00	8,695	per DU
Park Development & Open Space Fee (Mitigation Fee Act)						
Single Family Detached	$1,021	2.95	persons per DU	1.00	$ 3,012	per DU
All Other Residential	1,021	2.14	persons per DU	1.00	2,185	per DU
Total Fee						
Single Family Detached	**$5,084**	**2.95**	**persons per DU**	**1.00**	**$14,998**	**per DU**
All Other Residential	**5,084**	**2.14**	**persons per DU**	**1.00**	**10,880**	**per DU**

Notes: "DU" = dwelling unit; "KSF" = thousand building square feet.

Sources: Tables 2.2, 2.4, and 5.3.

Use of Fee Revenue

Estimated fee revenue through buildout based on the growth forecast presented in Chapter 2 is shown in **Table 5.5**. This estimate assumes that all projects are subject to the Mitigation Fee Act only and would not pay a Quimby in-lieu fee. The fee for apartments is used to estimate revenue for the “All Other Residential” category. Fee revenue would be slightly higher to the extent growth includes single family detached housing and/or is subject to the Quimby Act.

Table 5.5: Park & Recreation Facilities Impact Fee Revenue

Land Use Category	Growth (2018-Buildout)[1]	Maximum Justified Fee[2]	Revenue (2017-Buildout)
Residential			
Single Family Detached	667	$ 11,900	$ 7,900,000
All Other Residential	3,244	7,947	25,800,000
Subtotal	3,911		$33,700,000
Nonresidential			
Retail & Commercial	1,358	$ 1,880	$ 2,600,000
Office & Medical	2,030	2,525	5,100,000
Industrial	954	936	900,000
Subtotal	4,342		$ 8,600,000
Total			$42,300,000

Notes: Revenue estimates assume all projects are subject only to the Mitigation Fee Act fees and not the Quimby Act in-lieu fee.

[1] Dwelling units for residential and thousand building square feet for nonresidential land uses.

[2] Per dwelling units for residential and per thousand building square foot for nonresidential land uses.

Sources: Table 2.1 and 5.4.

The City may use park and recreation facilities impact fee revenue for any capital project that expands the capacity of the City's park facilities.

If revenue is used to replace an existing facility without expanding capacity, the project provides a joint benefit to existing and new development. In this case then the fee can fund only 23 percent of project costs based on new development as a share of total development at buildout (see **Table 2.4**).

The City is largely built out and there are limited opportunities for to acquire additional parkland. Therefore, the City anticipates using fee revenue to further develop existing parks with expanded, improved, or enhanced recreational facilities and infrastructure. Refer to the City's current Capital Improvement Program for the anticipated use of fee revenue to fund capital projects within the next five years.

The City must also allocate five percent of fee revenue to program administration. Administration costs include costs to collect and account for fee revenue, and costs to comply with the Mitigation Fee Act such as annual and five-year reporting requirements. The City will monitor its actual program administration costs and adjust this charge accordingly when the impact fee is updated in the future.

6. Transportation Facilities

This chapter provides the updated nexus analysis, fee schedule, and estimated revenue for the transportation impact fee. Transportation facilities include roadways, intersections, and transit infrastructure. Improvements specifically targeted to accommodate increased bicycle and pedestrian travel from new development are addressed in the following chapter.

Determining the impact of development on the need for expanded transportation facilities required a sophisticated technical analysis. That analysis is described in this chapter and supported by attachments to this report.

Transportation Demand Modeling

Planning for transportation improvements is typically addressed with the use of a travel demand model. Travel demand models estimate the effect of land use on the generation of vehicle trips and how those trips distribute across the transportation network. The Goleta Travel Model developed for the *Goleta General Plan* was updated in 2017 for this nexus analysis. The model encompasses 180 traffic analysis zones that aggregate the underlying land use based on 19 land use categories. The model covers an area that includes the city and surrounding portions of the Goleta Valley to analyze impacts on the City's transportation system from growth both in and around the city. The model is a single-mode (auto trips only) model and analyzes only evening (p.m.) peak-period travel.

The travel model was used to analyze the impacts of the city's buildout growth scenario described in Chapter 2, along with surrounding regional growth, on the city's transportation system. The results update the list of improvements described in the Transportation Element of 2006 *Goleta General Plan*.

Facility Standards

The travel model used facility standards to determine where transportation improvements are needed within the city (1) to correct existing deficiencies, and (2) address future deficiencies cause by new development. Facility standards for transportation analysis are based on policies in the

Transportation Element of the City's *General Plan*.[9] The City's primary policy for roadways and intersections is to maintain a level of service (LOS) "C" or better, representing restricted traffic flow that remains stable but without causing significant delay. In this instance LOS is a commonly used measure of congestion and delay based on the ratio of the number of vehicles using a roadway to the capacity of the roadway (vehicle-to-capacity ratio). The LOS policy for intersections is similar though the type of analysis varies. Certain roadways and intersections required more specialized analysis of their operation (operational analysis) to determine if a deficiency exists.

Capital Improvements and Fair Share Analysis

The results of the travel model and related transportation impact analysis generated a list of 42 capital improvement projects to address existing and future deficiencies on the City's transportation system.

Next, a fair share analysis was conducted so that the impact fee will fund only the portion of those improvements that are associated with growth within the city. The analysis uses model output to quantify the number of trips using each improvement and the origin and destination of those trips. The fair share analysis allocated the need for each improvement across three categories that summed to 100 percent:

1. Existing deficiency
2. New development outside Goleta
3. New development inside Goleta

Finally, cost estimates for each improvement were developed. The total cost for all 42 projects is $229 million.

Combining the fair share analysis with the improvement cost estimates resulted in a total cost to accommodate the impacts of new development within the city on the City's transportation system. See **Table 6.1** for a summary of these results for each improvement. As shown in the table, new development within the city is responsible for 69 percent of total project costs, or $158 million.

[9] City of Goleta, *Goleta General Plan/Coastal Land Use Plan*, Transportation Element, September 2006, pp. 7-16 to 7-17.

Table 6.1: Transportation Improvements and Costs

Map ID	Project Location	Total Cost ($1,000s)	Existing Deficiency Share	Existing Deficiency Cost ($1,000s)	Total Growth[1] Share	Total Growth[1] Cost ($1,000s)	Goleta Growth Share	Goleta Growth Cost ($1,000s)
	Existing Roadways							
R12	Storke Road Widening: Phelps Road to City Limits	2,350	65.83%	1,547	34.17%	803	13.64%	321
R2	Hollister Avenue Complete Streets Corridor Plan	5,050	0.00%	-	100.00%	5,050	75.02%	3,788
R10	US 101 NB Aux Lane Between Los Carneros Road and Storke Road	4,310	0.00%	-	100.00%	4,310	74.56%	3,214
R11	US 101 NB/SB Aux Lanes Between Fairview Avenue and Los Carneros Road	10,900	0.00%	-	100.00%	10,900	80.95%	8,824
R13	Los Carneros Way Realignment	3,890	0.00%	-	100.00%	3,890	86.61%	3,369
R14	South Fairview Avenue Widening	2,040	0.00%	-	100.00%	2,040	65.79%	1,342
R18	Los Carneros Road/Calle Koral Roadway Widening	1,580	0.00%	-	100.00%	1,580	88.27%	1,395
Subtotal		**30,120**	**5.14%**	**1,547**	**94.86%**	**28,573**	**73.88%**	**22,252**
	Existing Intersections							
I1	Fairview Avenue/Calle Real Intersection Improvements	1,990	0.00%	-	100.00%	1,990	70.24%	1,398
I2	Fairview Avenue at US101 SB On-Ramp Improvements	6,650	81.88%	5,445	18.12%	1,205	14.27%	949
I3	Fairview Avenue at US 101 NB On-Ramp Improvements	2,550	87.37%	2,228	12.63%	322	8.80%	224
I10	Hollister Avenue at Patterson Avenue	955	0.00%	-	100.00%	955	52.68%	503
I7	Hollister Widening - West of Storke Road	1,700	82.17%	1,397	17.83%	303	14.72%	250
I8	Patterson Avenue at US101 SB Ramp Improvements	12,300	79.86%	9,823	20.14%	2,477	11.18%	1,375
I9	Patterson Avenue at US 101 NB Ramp Improvements	1,620	0.00%	-	100.00%	1,620	53.89%	873
I13	Hollister Avenue at Kellogg Avenue	465	0.00%	-	100.00%	465	74.87%	348
I14	Hollister Avenue/Pacific Oaks Road Intersection Improvements	405	0.00%	-	100.00%	405	86.26%	349
I16	Glen Annie Road at US 101 NB Ramps	395	83.90%	331	16.10%	64	12.19%	48
I6	Los Carneros/Hollister	390	0.00%	-	100.00%	390	78.66%	307
R1a.1	Hollister Avenue at Route 217 Southbound Ramps (Roundabout)	6,700	0.00%	-	100.00%	6,700	64.99%	4,354
R1a.2	Hollister Avenue at Route 217 Northbound Ramps (Roundabout)	5,650	0.00%	-	100.00%	5,650	48.37%	2,733

Table 6.1: Transportation Improvements and Costs (continued)

Map ID	Project Location	Total Cost ($1,000s)	Existing Deficiency Share	Existing Deficiency Cost ($1,000s)	Total Growth[1] Share	Total Growth[1] Cost ($1,000s)	Goleta Growth Share	Goleta Growth Cost ($1,000s)
I12-2 (I4)	New Traffic Signal Installation - Cathedral Oaks Road/Hollister Avenue/US 101 NB Ramps	792	0.00%	-	100.00%	792	86.73%	687
I12-10	New Traffic Signal Installation - Hollister Avenue/Cannon Green Drive	792	0.00%	-	100.00%	792	88.99%	705
I12-3 (R4)	New Traffic Signal Installation - Calle Real/N La Patera Lane	792	0.00%	-	100.00%	792	67.58%	535
I12-5	New Traffic Signal Installation - Cathedral Oaks Road/Los Carneros Road	792	75.96%	602	24.04%	190	15.70%	124
I12-7	New Traffic Signal Installation - Fairview Avenue/Stow Canyon Road	792	82.13%	650	17.87%	142	16.00%	127
I12-2	New Traffic Signal Installation - Calle Real/Carlo Drive	792	50.87%	403	49.13%	389	28.00%	222
I12-8	New Traffic Signal Installation - Fairview Avenue/Berkeley Road	792	80.93%	641	19.07%	151	17.34%	137
I-18	Storke Road at US101 SB Ramps	4,380	0.00%	-	100.00%	4,380	74.87%	3,279
I-20	Los Carneros Road/US 101 SB On-Ramp Dual Right Turn Lanes	6,150	0.00%	-	100.00%	6,150	81.74%	5,027
I-21	Los Carneros Road at Hollister Avenue	1,620	0.00%	-	100.00%	1,620	80.28%	1,301
I-22	Hollister Avenue/Fairview Avenue Intersection Improvements	6,700	0.00%	-	100.00%	6,700	75.59%	5,065
I12-6	New Traffic Signal Installation - Cathedral Oaks Road/N La Patera Lane	792	65.07%	515	34.93%	277	24.71%	196
I12-1	New Traffic Signal Installation - Calle Real/Carlo Drive	792	59.13%	468	40.87%	324	22.66%	179
I12-9	New Traffic Signal Installation - Fairview Avenue/Shirrell Way	792	0.00%	-	100.00%	792	80.41%	637
I12-11	New Traffic Signal Installation - Hollister Avenue/Pebble Beach Drive	792	0.00%	-	100.00%	792	93.20%	738
I12-12	New Traffic Signal Installation - Hollister Avenue/St. Joseph's Street	792	0.00%	-	100.00%	792	46.74%	370
Subtotal		**70,124**	**32.09%**	**22,504**	**67.91%**	**47,620**	**47.12%**	**33,041**

Table 6.1: Transportation Improvements and Costs (continued)

Map ID	Project Location	Total Cost *($1,000s)*	Existing Deficiency Share	Existing Deficiency Cost *($1,000s)*	Total Growth[1] Share	Total Growth[1] Cost *($1,000s)*	Goleta Growth Share	Goleta Growth Cost *($1,000s)*
	New Roadways							
R4.2	La Patera Road/US 101 Crossing	60,600	0.00%	-	100.00%	60,600	71.58%	43,377
R5	Goleta US 101 Overcrossing	28,850	0.00%	-	100.00%	28,850	90.15%	26,008
R1c	Ekwill Street Extension	8,650	0.00%	-	100.00%	8,650	86.09%	7,447
R1b	Fowler Road Extension	6,050	0.00%	-	100.00%	6,050	68.17%	4,124
R9	Phelps Road Extension	4,650	0.00%	-	100.00%	4,650	52.16%	2,425
Subtotal		**108,800**	**0.00%**	**-**	**100.00%**	**108,800**	**76.64%**	**83,381**
	Transit							
T1	Goleta Train Depot and La Patera Lane Improvements	19,700	0.00%	-	100.00%	19,700	100.00%	19,700
Total		**228,744**	**10.51%**	**24,051**	**89.49%**	**204,693**	**69.24%**	**158,374**

[1] Total growth share includes Goleta growth share and excludes existing deficiency share.

Sources: Appendix A.

See **Appendix A:** *Traffic Needs Analysis* provided under separate cover for more detail on the travel forecast, deficiency assessment, and fair share analysis. See **Appendix B:** *Transportation Improvement Cost Opinions* provided under separate cover for more detail on the cost estimation work conducted for each improvement.

Fee Schedule

The transportation impact fee schedule is based on (1) trip generation rates, (2) total trips from new development, and (3) the overall cost per new trip associated with the improvements in **Table 6.1**. The methodology is explained in the sections that follow.

Trip Generation Rates

Demand for traffic facilities is based on vehicle trip generation rates. Trip rates measure the rate at which trips occur, either an origin or a destination (known as a "trip end"), from a specific type of land use. Thus, trip generation rates distribute the impact of growth equally between both ends of a trip.

Vehicle trip rates are based on the evening peak hour because this period generates the greatest demand on the roadway system. The use of evening peak hour trip rates for the fee calculation is consistent with the approach taken by the travel modeling and described above.

The transportation impact fee schedule is based on a "cost per trip" that represents the total improvement cost allocated to new development divided by total trips estimated to be generated by new development. The formula is:

$$\text{Cost per trip} = \frac{\text{Total trips (across all land use categories)}}{\text{Total improvement costs allocated to new development (see Table 6.1)}}$$

The formula for calculating trips from land use category[(a)] is shown below:

Trips for land use category[(a)] =

Land use category[(a)] growth (in units) x
Land use category[(a)] trip rate (per unit)

Total trips are calculated by summing up trips generated across all land use categories in the growth forecast.

Growth by land use category is expressed in dwelling units or 1,000 building square feet. Trip rates are expressed per dwelling unit or per 1,000 building square feet.

To calculate the fee on a development project, the appropriate land use category and related trip generation rate are identified from the *Trip Generation* manual published by the Institute of Transportation Engineers (ITE). The manual includes estimated trip rates for over 100 land use categories. The cost per trip is multiplied by the trip rate applicable to the development project and by the size of the development project to calculate the fee for that project, or:

Development project with land use category[(a)] fee =

Cost per trip x Trip rate for land use category[(a)] (per unit) x
Project size (in units)

Note that trip rates by land use category are used both in (1) calculation of total trips used to calculate the cost per trip, and (2) application of the fee to individual development projects. To ensure that the fee program generates total revenue equal to the cost of improvements allocated to new development, both calculations must use a consistent set of trip generation rates.

As shown in Chapter 2 (see **Table 2.1**) the growth forecast for this study and used in the travel model includes 19 land use categories. To maintain consistency between the calculation of total trips based on the growth forecast, and the ITE rates used to calculate individual project fees, growth in each of the forecast's 19 categories is allocated to the more detailed categories used by ITE. This effort ensures that the calculation of total trips from growth, and therefore the cost per trip used in the fee schedule, is as consistent as possible with the trip rates used to calculate the fee on each development project.

Table 6.2 shows how trip generation rates were developed for each of the growth forecast's 19 land use categories based on ITE rates. For each category, we estimated the amount of growth in land use sub-categories consistent with the ITE rates and calculated a weighted average trip rate for each category.

Table 6.2: Vehicle Trip Rates

Travel Demand Model Land Use Category	ITE Trip Generation Manual			P.M. Peak Hour Trip Rate		
	Code	**Land Use**	**Unit**	**ITE**	**Weight[1]**	**Avg.**
Single Family Detached	210	Single Family Detached	DU	1.00	100%	1.00
All Other Residential	220	Apartment	DU	0.62	36%	
	230	Condominium / Townhouse	DU	0.52	53%	
	252	Senior Housing - Attached	DU	0.25	5%	
	255	Continuing Care	DU	0.16	5%	
		Weighted Average			100%	0.52
Auto Services	843	Automobile Parts Sales	KSF	5.98	*100%*	5.98
Banks	911	Walk-In Bank	KSF	12.13	*100%*	12.13
Fast Food Restaurants		[No growth forecast]				
Hotel	310	Hotel	room	0.60	*50%*	
	320	Motel	room	0.47	*50%*	
		Weighted Average			100%	0.54
Indoor Recreation	492	Health / Fitness Club	KSF	3.53	*50%*	
	493	Athletic Club	KSF	5.96	*50%*	
		Weighted Average			100%	4.75
Shopping Mall		[No growth forecast]				
Neighborhood Commercial	814	Variety Store	KSF	6.82	6%	
	816	Hardware / Paint Store	KSF	4.84	0%	
	817	Nursery / Garden Center	KSF	6.94	1%	
	850	Supermarket	KSF	9.48	55%	
	861	Sporting Goods Superstore	KSF	1.84	1%	
	863	Electronic Superstore	KSF	4.50	1%	
	875	Department Store	KSF	1.87	0%	
	876	Apparel Store	KSF	3.83	10%	
	880	Pharmacy / Drugstore	KSF	8.40	15%	
	890	Furniture Store	KSF	0.45	3%	
	925	Drinking Place	KSF	11.34	7%	
		Weighted Average			100%	8.30
Regional Commercial	814	Variety Store	KSF	6.82	6%	
	816	Hardware / Paint Store	KSF	4.84	7%	
	817	Nursery / Garden Center	KSF	6.94	1%	
	850	Supermarket	KSF	9.48	15%	
	861	Sporting Goods Superstore	KSF	1.84	3%	
	863	Electronic Superstore	KSF	4.50	6%	
	875	Department Store	KSF	1.87	32%	
	876	Apparel Store	KSF	3.83	12%	
	880	Pharmacy / Drugstore	KSF	8.40	4%	
	890	Furniture Store	KSF	0.45	11%	
	925	Drinking Place	KSF	11.34	2%	
		Weighted Average			100%	4.26
Resort Hotel	330	Resort Hotel	KSF	0.60	100%	0.60

Table 6.2: Vehicle Trip Rates (continued)

Travel Demand Model Land Use Category	ITE Trip Generation Manual			P.M. Peak Hour Trip Rate		
	Code	Land Use	Unit	ITE	Weight[1]	Avg.
Restaurants	931	Quality Restaurant	KSF	7.49	*25%*	
	932	High-turnover (sit-down)	KSF	9.85	*75%*	
		Weighted Average			100%	9.26
Theater	445	Multiplex Movie Theater	KSF	4.91	*100%*	4.91
Hospitals	610	Hospital		0.93	100%	0.93
Medical	630	Clinic	KSF	5.18	*50%*	
	720	Medical-Dental Office	KSF	3.57	*50%*	
		Weighted Average			100%	4.38
Office	710	General Office	KSF	1.49	*50%*	
	770	Business Park	KSF	1.26	*50%*	
		Weighted Average			100%	1.38
Heavy Industrial	130	Industrial Park	KSF	0.85	*100%*	0.85
Light Industrial	110	General Light Industrial	KSF	0.97	*100%*	0.97
Research & Development	760	Research & Development	KSF	1.07	*100%*	1.07

Notes: "DU" = dwelling unit; "KSF" = thousand building square feet.

[1] Weight reflects estimated share of new development by land use category. All Other Residential estimates from Goleta fiscal impact study (see sources). Commercial land use estimates based on Easton and Owen (see sources). Other estimates reflect current land use allocations within the City and input from City staff.

Sources: Institute of Transportation Engineers, *Trip Generation 10th Edition*, 2017; Economics Research Associates, *A Fiscal Impact Analysis of the Proposed General Plan for the City of Goleta*, Sept. 7, 2006, Table II-1; Gregory Easton and John Owen, *Creating Walkable Neighborhood Business Districts*, June 2009, Table 2.

Total Trips from Growth

Total trips from growth are based on the trip generation rates in **Table 6.2** and the growth forecast from **Table 2.1** in Chapter 2. Vehicle trip rates are adjusted to exclude pass-by trips. Pass-by trips reflect trip ends that are intermediate stops between an origin and destination and therefore place additional demand on the roadway network. Pass-by rates are based on surveys conducted by the San Diego Association of Governments and provide sufficient detail by land use category. The same pass-by rates will be used when applying the fee to individual development projects to maintain the necessary consistency discussed above. Total trips from growth are 11,508 as show in **Table 6.3**.

Table 6.3: New Development Vehicle Trip Generation

Travel Demand Model Land Use Category	Growth (2018-Buildout)[1] Amount	Units	P.M. Peak Hour Trip Rate Total Trips	Pass-by Trip Share	Primary/ Diverted Trip Rate	Primary P.M. Peak Hour Trips	Share
Single Family Detached	667	DU	1.00	3%	0.97	647	6%
All Other Residential	3,244	DU	0.52	3%	0.50	1,622	14%
Auto Services[1]	75	KSF	5.98	10%	5.38	404	4%
Banks[1]	5	KSF	12.13	25%	9.10	46	0%
Fast Food Restaurants[1]	-	KSF	NA	40%	NA	NA	NA
Hotels	454	rooms	0.54	4%	0.52	236	2%
Indoor Recreation	114	KSF	4.75	9%	4.32	492	4%
Shopping Mall	-	KSF	NA	NA	NA	NA	NA
Neighborhood Commercial[1]	726	KSF	8.30	40%	4.98	3,615	31%
Regional Commercial[1]	37	KSF	4.26	20%	3.41	126	1%
Resort Hotel	48	KSF	0.60	4%	0.58	28	0%
Restaurants[1]	34	KSF	9.26	20%	7.41	252	2%
Theater	65	KSF	4.91	17%	4.08	265	2%
Hospitals	60	KSF	0.93	2%	0.91	55	0%
Medical	86	KSF	4.38	10%	3.94	339	3%
Office	1,884	KSF	1.38	4%	1.32	2,487	22%
Heavy Industrial	144	KSF	0.85	3%	0.82	118	1%
Light Industrial	744	KSF	0.97	2%	0.95	707	6%
Research & Development	66	KSF	1.07	2%	1.05	69	1%
Total Trips						**11,508**	**100%**

Notes: "DU" = dwelling unit; "KSF" = thousand building square feet.

[1] Used specific rates for p.m. peak hour noted in footnote (S) of SANDAG (see sources). For Auto Services, used SANDAG rate for Special Retail/Strip Commercial (other) category. For Restaurants, used SANDAG rate for Sit Down/High Turnover Restaurant category.

Source: San Diego Association of Governments, *(Not So) Brief Guide of Vehicular Trip Generation Rates For The San Diego Region*, April 2002; Tables 2.1 and 6.2.

Cost per Trip

The cost per trip used to apply the fee to individual development projects is based on the total costs of capital improvements allocated to growth ($158 million) from **Table 6.1**, and total trips from growth (11,508) shown in **Table 6.3**. Total costs are reduced by the following two amounts that represent programmed funding from other sources reducing revenue needs:

- Awarded grant of $13 million for the Rail Depot project

- Existing transportation impact fee fund balance of $9,260,000 as of June 30, 2018.

In addition, five percent is added to the net cost for fee program administration. The total cost per trip is $12,450 as shown in **Table 6.4**.

Table 6.4: Transportation Fee Cost per Trip

Transportation Improvement Cost: Goleta Growth Share ($1,000s)	$ 158,374
Alternative Funding: Rail Depot Grant	(13,000)
Estimated Impact Fee Fund Balance (June 30, 2018)	(9,260)
Net Goleta Growth Share	$ 136,114
Program Administration (5% of total)	7,164
Total GTIF Program Cost	$ 143,278
P.M. Peak Hour Trips from Growth, 2017-Buildout	11,508
Proposed Fee per P.M. Peak Hour Trip	$ 12,450

Sources: Tables 6.1 and 6.3.

As described above, the fee for each development project will be calculated by multiplying the cost per trip from **Table 6.4** by the applicable ITE trip generation rate adjusted by the applicable SANDAG pass-by rate. Fees for a sample of land use categories are shown in **Table 6.5**.

Table 6.5: Transportation Impact Fee Schedule (sample)

Sample Land Use Category	Cost per Trip	ITE P.M. Peak Hour Trip Rate	SANDAG Pass-by Trip Share	Transportation Impact Fee	
Formula	*a*	*b*	*c*	*d = a x b x (1 - c)*	
Residential					
Single Family Detached	$12,450	1.00	3%	$12,077	per DU
Apartment	12,450	0.62	3%	7,487	per DU
Nonresidential					
Hotel	$12,450	0.60	4%	$ 7,171	per room
Supermarket	12,450	9.48	40%	70,816	per KSF
General Office	12,450	1.49	4%	17,808	per KSF
General Light Industrial	12,450	0.97	2%	11,835	per KSF

Notes: "DU" = dwelling unit; "KSF" = thousand building square feet.

Source: San Diego Association of Governments, *(Not So) Brief Guide of Vehicular Trip Generation Rates For The San Diego Region* (including footnote (s)), April 2002; Tables 6.2, 6.3, and 6.4.

Use of Fee Revenue

The City may use transportation impact fee revenue for any of the capital improvements listed in **Table 6.1**. Some of these projects overlap with the prior nexus study and are already programmed in the City's current (FY 2017-18 to FY 2021-22) Capital Improvement Plan. The City can revise the list of capital improvements to be funded by the fee based on updated travel demand modeling when it periodically updates the nexus analysis.

The City need not limit funding from fee revenue for each project to the fair share amounts shown in **Table 6.1**. The City can concentrate fee revenue on some projects in exchange for using alternative funding sources on other projects. Alternative funding sources includes state and federal transportation programs and grants. Through the planning horizon of this program (buildout), the City needs to identify approximately $70 million in alternative funding sources to fully fund all improvements ($228 million - $158 million). At a minimum the City needs to identify $24 million associated with correcting existing deficiencies noted in **Table 6.1**.

The City must allocate five percent of fee revenue to program administration. Administration costs included costs to collect and account for fee revenue, and costs to comply with the Mitigation Fee Act such as annual and five-year reporting requirements. The City will monitor its actual program administration costs and adjust this charge accordingly when the impact fee is updated in the future.

7. BICYCLE & PEDESTRIAN FACILITIES

This chapter provides a nexus analysis, fee schedule, and estimated revenue for a new impact fee to fund bicycle and pedestrian facilities. Bicycle and pedestrian facilities include sidewalks and related improvements, and bicycle paths and bike lanes whether within or outside of the street right of way.

Facility Standards

The bicycle and pedestrian facilities impact fee uses the City's existing capital assets to determine the facility standard and provide a reasonable relationship between new development and the need for additional facilities. The impact fee would fund the expansion of bicycle and pedestrian facilities at a rate sufficient to maintain the existing ratio of facilities to service population as growth occurs. See the *Facility Standard* section in Chapter 3 for more explanation of this approach.

The City's existing capital asset inventory of bicycle and pedestrian facilities and the associated facility standards is shown in **Table 7.1**. Service population is from **Table 2.4**.

Table 7.1: Bicycle & Pedestrian Facilities Standard

	Existing Inventory					
Facility Type	**Linear Feet**	**Average Width** *(ft.)*	**Total** *(units)*		**Existing Service Pop-ulation**	**Existing Facility Standard** *(units per capita)*
Sidewalks	233,209	6	1,399,254	sq. ft.	36,546	38
Curb & Gutter	233,209	NA	233,209	ln, ft.	36,546	6
Class I Bike Paths	21,956	10	219,560	sq. ft.	36,546	6
Class II Bike Lanes	106,234	10	1,062,340	sq. ft.	36,546	29
Class III Bike Boulevards	40,990	24	983,760	sq. ft.	36,546	27

Sources: City of Goleta; Tables 2.4.

The bicycle and pedestrian facilities costs are shown in **Table 7.2**. Replacement costs are based on capital projects in Goleta and values used in similar studies for jurisdictions in California. The total cost for new development to maintain this facility standard is $1,048 per capita including fee program administration costs.

Table 7.2: Bicycle & Pedestrian Facilities Costs

Facility Type	Existing Facility Standard (units per capita)		Average Replacement Cost (per unit)	Total Cost (per capita)
Sidewalks	38	sq. ft.	$ 10.00	$380
Curb & Gutter	6	ln. ft.	25.00	150
Class I Bike Paths	6	sq. ft.	7.50	45
Class II Bike Lanes	29	sq. ft.	7.50	218
Class III Bike Boulevards	27	sq. ft.	7.50	203
Subtotal				$996
Program Administration (5% of total)				52
Total				$1,048

Sources: Table 7.1.

Fee Schedule

The bicycle and pedestrian facilities impact fee is shown in **Table 7.3**. The fee is based on the cost per capita shown in **Table 7.2** necessary to maintain the City's existing capital asset facility standard.

Table 7.3: Bicycle and Pedestrian Facilities Impact Fee

Land Use Category	Cost per Capita	Occupant Density		Relative Demand	Maximum Justified Fee	
Residential						
Single Family Detached	$ 1,048	2.95	persons per DU	1.00	$3,092	per DU
All Other Residential[1]	1,048	2.14	persons per DU	1.00	2,243	per DU
Nonresidential						
Retail & Commercial	$ 1,048	2.33	workers per KSF	0.20	$ 488	per KSF
Office & Medical	1,048	3.13	workers per KSF	0.20	656	per KSF
Industrial	1,048	1.16	workers per KSF	0.20	243	per KSF

[1] Includes attached and detached accessory dwelling units.

Sources: Tables 2.2, 2.4, and 7.2.

Use of Fee Revenue

Estimated fee revenue through buildout based on the growth forecast presented in Chapter 2 is shown in **Table 7.4**.

Table 7.4: Bicycle & Pedestrian Facilities Impact Fee Revenue

Land Use Category	Growth *(2018-Buildout)*[1]	Maximum Justified Fee[2]	Revenue *(2017-Buildout)*
Residential			
Single Family Detached	667	$ 3,092	$ 2,100,000
All Other Residential	3,244	2,243	7,300,000
Subtotal	3,911		$ 9,400,000
Nonresidential			
Retail & Commercial	1,358	$ 488	$ 700,000
Office & Medical	2,030	656	1,300,000
Industrial	954	243	200,000
Subtotal	4,342		$ 2,200,000
Total			$11,600,000

[1] Dwelling units for residential and thousand building square feet for nonresidential land uses.

[2] Per dwelling unit for residential and per thousand building square foot for nonresidential land uses.

Sources: Table 2.1 and 7.3.

The City may use bicycle and pedestrian facilities impact fee revenue to fund any capital project that expands the capacity of the City's bicycle and/or pedestrian facilities. The City's current five-year Capital Improvement Program (CIP) includes a number of bicycle and pedestrian improvement projects indicating the anticipated use of fee revenue.

If revenue is used to replace an existing facility without expanding capacity, the project provides a joint benefit to existing and new development. In this case then the fee can fund only 23 percent of project costs based on new development as a share of total development at buildout (see **Table 2.4**). However, if the City raises other funds for facility expansion that would accommodate growth, then the impact fee revenue that would have been used for expansion projects could be re-programmed to joint benefit projects without adhering to the funding share noted here.

The City must also allocate five percent of fee revenue to program administration. Administration costs include costs to collect and account for fee revenue, and costs to comply with the Mitigation Fee Act such as annual and five-year reporting requirements. The City will monitor its actual program administration costs and adjust this charge accordingly when the impact fee is updated in the future.

8. Storm Drain Facilities Fee

This chapter provides a nexus analysis, fee schedule, and estimated revenue for a new impact fee to fund storm drain facilities. Storm drain facilities include pipes, culverts, catch basins and related facilities used to convey surface storm water. The storm drain facilities fee would replace the existing flood control fee.

Facility Standards

The storm drain facilities impact fee uses the City's existing capital assets to determine the facility standard and provide a reasonable relationship between new development and the need for additional facilities. The impact fee would fund the expansion of storm drain facilities at a rate sufficient to maintain the existing ratio of facilities to service population as growth occurs. See the *Facility Standard* section in Chapter 3 for more explanation of this approach.

The City's existing inventory of storm drain facilities and associated replacement costs are shown in **Table 8.1**. Unit replacement costs (costs per linear foot of pipe) are based on engineering estimates from a recent (2016) impact fee nexus study for the City of Oakland prepared by BKF Engineers. These unit costs are generally applicable by type of pipe for local jurisdictions in California. The City has the equivalent of 97,000 linear feet of storm drain facilities at an average replacement cost of $582 per linear foot for a total replacement cost of $56 million.

Table 8.1: Existing Storm Drain Facilities & Costs

Pipe Diameter or Equivalent *(inches)*	Total Assets *(Linear Feet)*	Replacement Cost *(per Linear Foot)*	Replacement Value
8	89.4	$255	$ 22,792
12	1,615.5	$295	$ 476,568
15	219.7	$333	$ 73,160
18	15,844.4	$374	$ 5,925,800
19	94.1	$386	$ 36,339
20	142.6	$398	$ 56,762
21	5,189.9	$409	$ 2,122,686
24	13,329.8	$444	$ 5,918,431
26	81.9	$470	$ 38,495
27	7,993.1	$484	$ 3,868,656
30	18,625.9	$523	$ 9,741,368
33	3,037.0	$566	$ 1,718,944
36	6,374.7	$608	$ 3,875,843
38	57.5	$641	$ 36,885
39	1,322.5	$657	$ 868,863
40	54.2	$674	$ 36,532
42	4,799.3	$706	$ 3,388,281
45	2,178.2	$753	$ 1,640,220
48	3,733.9	$800	$ 2,987,156
54	2,254.6	$918	$ 2,069,759
60	3,642.9	$1,010	$ 3,679,299
64	159.5	$1,035	$ 165,033
66	642.1	$1,074	$ 689,568
72	3,799.7	$1,137	$ 4,320,294
84	494.0	$1,331	$ 657,553
90	40.3	$1,446	$ 58,203
96	946.2	$1,562	$ 1,477,990
120	168.2	$1,957	$ 329,220
144	70.5	$2,394	$ 168,858
Total	97,001.8	$582	$56,449,558

Notes: Replacement cost includes: open cut trenching, manhole, inlet, closed circuit television review, survey, traffic control, pavement, curb & gutter, striping, landscaping, and contingency, plus 35% for project delivery (administrative and engineering).

Sources: City of Oakland Impact Fee Nexus, memorandum to Robert D. Spencer, Urban Economics, from Ed Boscacci and Jake Taylor, BKF Engineers, March 4, 2016; Urban Economics.

The existing storm drain facilities standard and associated cost are shown in **Table 8.2**. See **Table 2.4** for the existing service population. The existing standard is 1.99 linear feet per capita. This total for new development to maintain this facility standard is $1,219 per capita including fee program administration costs.

Table 8.2: Storm Drain Facilities Standard & Costs

Storm Drain Facilities (ln. ft.)	97,002	
Existing Service Population	48,751	
Existing Facility Standard (ln ft. / capita)		1.99
Average Cost per Linear Foot		$ 582
Subtotal Cost per Capita		$1,158
Program Administration (5% of total)		61
Total Cost per Capita		$1,219

Sources: Tables 2.4 and 8.1.

Fee Schedule

The storm drain facilities impact fee is shown in **Table 8.3**. The fee is based on the cost per capita shown in **Table 8.2** necessary to maintain the City's existing capital asset facility standard.

Table 8.3: Storm Drain Facilities Impact Fee

Land Use Category	Cost per Capita	Occupant Density		Relative Demand	Maximum Justified Fee	
Residential						
Single Family Detached	$ 1,219	2.95	persons per DU	1.00	$3,596	per DU
All Other Residential[1]	1,219	2.14	persons per DU	1.00	2,609	per DU
Nonresidential						
Retail & Commercial	$ 1,219	2.33	workers per KSF	0.70	$1,988	per KSF
Office & Medical	1,219	3.13	workers per KSF	0.70	2,671	per KSF
Industrial	1,219	1.16	workers per KSF	0.70	990	per KSF

[1] Includes attached and detached accessory dwelling units.

Sources: Tables 2.2, 2.4, and 8.2.

Use of Fee Revenue

Estimated fee revenue through buildout based on the growth forecast presented in Chapter 2 is shown in **Table 8.4**.

Table 8.4: Storm Drain Facilities Impact Fee Revenue

Land Use Category	Growth (2018-Buildout)[1]	Maximum Justified Fee[2]	Revenue (2017-Buildout)
Residential			
Single Family Detached	667	$ 3,596	$ 2,400,000
All Other Residential	3,244	2,609	8,500,000
Subtotal	3,911		$10,900,000
Nonresidential			
Retail & Commercial	1,358	$ 1,988	$ 2,700,000
Office & Medical	2,030	2,671	5,400,000
Industrial	954	990	900,000
Subtotal	4,342		$ 9,000,000
Total			$19,900,000

[1] Dwelling units for residential and thousand building square feet for nonresidential land uses.

[2] Per dwelling units for residential and per thousand building square foot for nonresidential land uses.

Sources: Table 2.1 and 8.3.

The City may use storm drain facilities impact fee revenue to fund any capital project that expands the capacity of the City's storm drain facilities.

If revenue is used to replace an existing facility without expanding capacity, the project provides a joint benefit to existing and new development. In this case then the fee can fund only 25 percent of project costs based on new development as a share of total development at buildout (see **Table 2.4**). However, if the City raises other funds for facility expansion that would accommodate growth, then the impact fee revenue that would have been used for expansion projects could be re-programmed to joint benefit projects without adhering to the funding share noted here.

The City's current five-year Capital Improvement Program (CIP) includes storm drain projects such as Covington and La Patera drainage system improvements. The CIP also includes funding for a storm drain master plan that will assist in prioritizing the use of fee revenue.

The City must allocate five percent of fee revenue to program administration. Administration costs include costs to collect and account for fee revenue, and costs to comply with the Mitigation Fee Act such as annual and five-year reporting requirements. The City will monitor its actual program administration costs and adjust this charge accordingly when the impact fee is updated in the future.

October 31, 2018

To:	Charlie Ebeling, Director Public Works	Ref. No.:	
From:	Jim Damkowitch, GHD	Tel:	(916) 782-8688
CC:	Winnie Cai, Deputy City Attorney; Gerald Comati, COM3 Consulting; Bob Spencer, Urban Economics		
Subject:	**City of Goleta Draft Development Impact Fee Program Update, Appendix A: Traffic Needs Analysis**		

1. Introduction

As part of the overall Development Impact Fee (DIF) update by the City of Goleta, GHD performed a traffic needs analysis of existing and future year roadway deficiencies within the City of Goleta. The analysis also includes a developer fee fair-share assessment analysis for the identified roadway deficiencies. These analyses served to inform the update of the Goleta Traffic Impact Fee (GTIF) portion of the Development Impact Fee (DIF) fee schedule. The intent of the GTIF is to contribute funds for construction of the City of Goleta's Transportation Improvement Program (GTIP) through administration of locally generated developer traffic impact fees. This analysis satisfies the requisite California Mitigation Fee Act (MFA[1]) nexus requirements for developer based fee programs in the State of California.

The deficiency analysis and fair-share assessment were based on the General Plan / Coastal Land Use Plan approved by the City of Goleta on October 2, 2006 including subsequent amendments to the plan. Projected land use assumptions were developed by the City of Goleta and are consistent with the adopted General Plan / Coastal Land Use Plan. These assumptions are reflected in the recently updated City of Goleta Travel Model. The Goleta Travel Model is the operative analysis tool for identifying capital project needs to offset the impacts of growth citywide and to determine the fair-share calculations for allocating the GTIF cost estimates. The latter is a requisite step for developing a fee schedule by land use type.

2. Goleta Travel Model Update

The VISUM Goleta Travel Model is an analysis tool that gives the City of Goleta the capability to generate technical information pertinent to the understanding of travel behavior and transportation network performance within the City. This information is critical to the development, updating and monitoring of the City's transportation capital improvement program, analysis of specific transportation projects and programs,

[1] Mitigation Fee Act (MFA), California Government Code, Sections 66000-66025.

and General Plan land use and transportation strategies and policies. The Goleta travel model yields the future volume sets (i.e., roadway segment volumes and intersection turn movements) to inform operational analyses that determine whether a given road segment or intersection will operate acceptably in the future the extent to which new development within the City limits will contribute to future infrastructure deficiencies identified within the City of Goleta.

A comprehensive update to the Goleta Travel Model was completed in March 2017. The following key update tasks were performed as part of the update:

- Software platform upgrade from VISUM version 9.52 to version 16.0;
- Baseline land use was updated from 2005 to reflect 2013 conditions based on tracking of the City's cumulative (2005-2013) and importing the County of Santa Barbara's 2012-13 baseline travel model land use; and the City of Santa Barbara permit activity (2005-2014);
- Traffic Analysis Zones (TAZs) were split to isolate schools (Elementary, Middle and High Schools);
- Updated school enrollment data to reflect 2013 enrollment;
- Updated external traffic growth (i.e., model boundary conditions) based on most recent traffic counts, the County of Santa Barbara travel model boundary conditions, and forecast information from SBCAG's regional travel demand model;
- Network coding adjustments to more comprehensively reflect roadway network and to more accurately reflect roadway geometrics;
- Added coding of minor side streets (i.e., stub links) throughout the model network to allow TAZ loadings to occur at modal links versus nodes (i.e., intersections);
- A comprehensive data collection effort in 2013 including recording counts in the model link attribute fields (AM/PM peak hour segment counts and intersection turn movement counts);
- Updated trip generation estimates to reflect the most recent ITE Trip Generation Manual (10th Edition);
- Development of an AM Peak Hour Model – including ITE AM peak hour trip generation rates;
- Development of a Master Network structure (allows user to toggle future improvements on or off);
- Development of a Master Land Use File including the following land use selections:
  - Baseline Land Use (2013)
  - Cumulative Land Use - reflects only Existing Plus Approved and Pending (EPAP) land uses per City of Goleta Cumulative Projects List)
  - 2035 Land Use – reflects build-out in the City of Goleta, UCSB and the Santa Barbara Airport and only Existing Plus Approved and Pending (EPAP) land uses outside the City
  - Buildout Land Use – reflects full build-out in the City of Goleta (including estimate of ADU activity), the County (including estimate of ADU activity), and fully buildout of the City of Santa Barbara's Airport Master Plan (aviation uses) and Airport Specific Plan (non-aviation related uses);

- Added VMT calculation utility per SB 743 for trips generated within the City of Goleta's jurisdiction and outside;
- Developed "Flow Bundle" districts to track future trips by jurisdiction (City, County, City of Santa Barbara and UCSB); and,
- Performed Static and Dynamic validation of both the AM and PM Peak Hour Models.

The City of Goleta Travel Model was validated using traffic counts performed in the 2013-2015 timeframe. The link-based validation results were compared to established state/federal standard criteria for replicating model volumes relative to count data on various road types and for percent error at screenlines. Intersection and roadway segment locations where traffic counts were performed are shown in **Figure 1** and **Figure 2** respectively. In addition to performing these static validation analyses, dynamic validation tests were also applied. Dynamic validation gauges whether or not the model "behaves" appropriately given changes in inputs. Based on these tests, it was determined that the Goleta Travel Model meets or exceeds established calibration/validation criteria for travel demand model base year calibration and validation.

Attachment A provides a description of the Goleta Model calibration/validation analysis.

3. Mitigation Fee Act

Mitigation Fee Act (MFA) nexus criteria ensures that the GTIF program only funds the share of transportation improvements costs that are reasonably related to the impacts of new development occurring or anticipating to occur in the City of Goleta. In this regard, GTIF capital projects must conform to the following criteria:

- Existing Deficiencies: A GTIF capital project on roadways determined to be deficient under baseline conditions, can only increase the capacity of a transportation facility or service such that future operating conditions are returned to levels experienced under baseline conditions (i.e., degradation attributable to only new growth is applicable);
- Future Deficiencies: A GTIF capital project must increase the capacity of a transportation facility or service that otherwise would be deficient at the time horizon (2035);
- Fair Share: The GTIF can only fund that share of a capital project reasonably related to the impacts of new development occurring inside the City of Goleta.
- Discount Fair Share: California Government Code section 66005.1 indicates the need to establish a methodology within the program to account for reducing the fee when a housing development meets a set of specific characteristics.

4. Fee Assessment Geography

The Goleta Travel Model is comprised of 180 geographical spaces called Traffic Analysis Zones (TAZ's). These 180 TAZ's are the major units of analysis of the modeling process. TAZs are delimited on the basis of socio-economic, topographic, political, and transportation facilities information. For purposes of this analysis, the following sub-areas were identified based on the Goleta Travel Model TAZ structure:

1. City of Goleta TAZs;
2. Non-City TAZs[2]; and,
3. External Zone TAZs.

These three areas are the operative geographic units needed to determine the GTIF. New development and the resulting trip growth associated with the City of Goleta TAZs determine the GTIF while trips associated with Non-City and External TAZ growth do not.

For information purposes, the Goleta Travel Model was further divided into the following sub-geographies:

- City of Goleta – Old Town Area;
- City of Santa Barbara – Old Town Area;
- County of Santa Barbara – Old Town Area;
- City of Santa Barbara – Airport Master Plan Area;
- City of Santa Barbara – Airport Community Plan Area (same as Old Town Area);
- City of Santa Barbara – East Goleta Valley; and,
- University of California at Santa Barbara (UCSB)

Trips associated with new development planned within these sub-areas were analyzed to determine the fee implications associated with inter-jurisdictional travel demand. These geographies are shown in **Figure 3**. TAZ to Planning Area correspondence tables were developed and coded as VISUM graphics parameter files for analysis.

[2] County of Santa Barbara and City of Santa Barbara areas within the City of Goleta's modeling domain are labeled as Non-City.

Figure 2 - Goleta Travel Model Intersection Count Locations

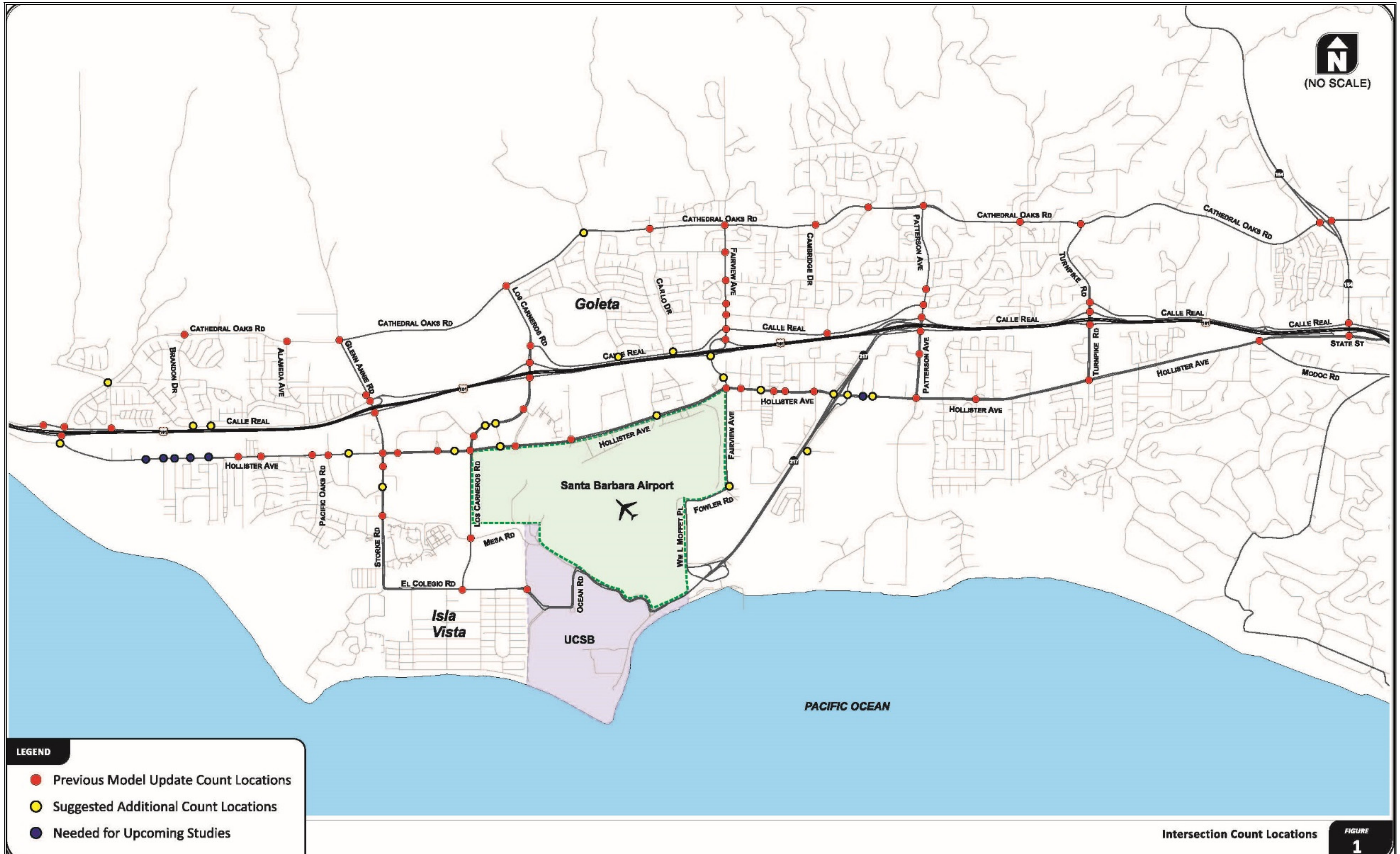


Figure 3 - Goleta Travel Model Roadway Segment Count Locations and Screenlines

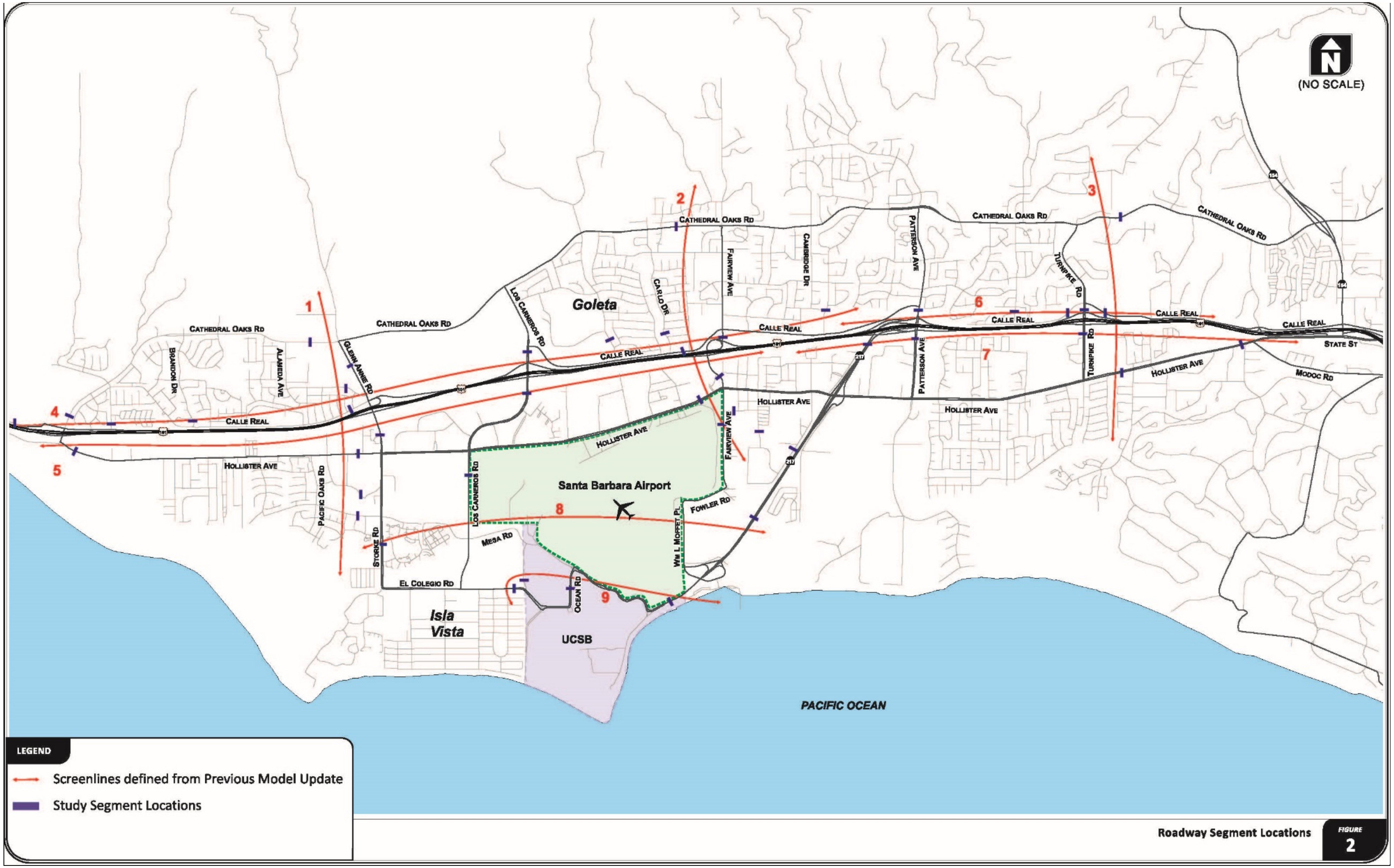
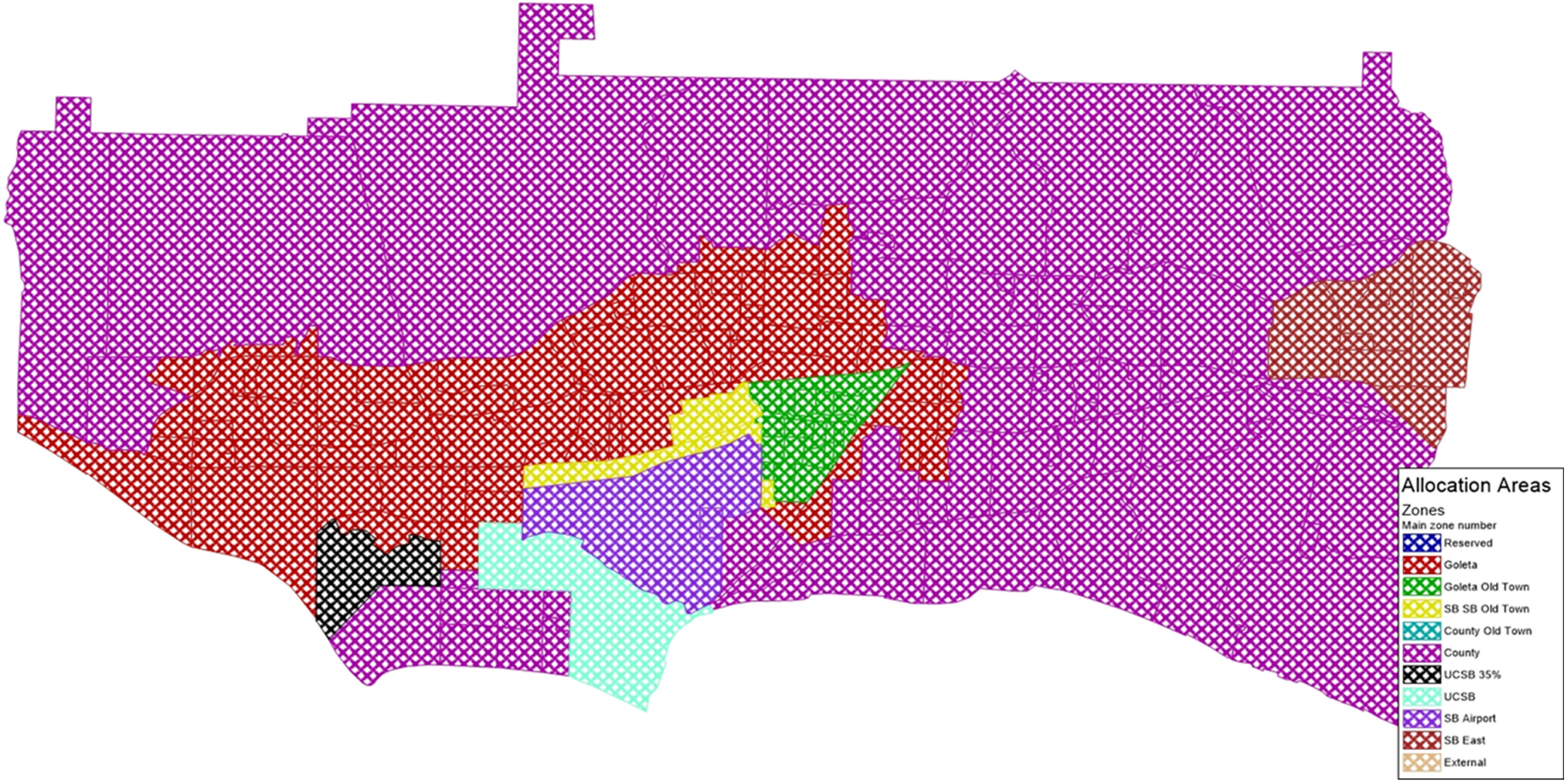


Figure 3 - Goleta Travel Model Sub-Areas



5. Fee Assessment Planning Horizon

Given that fee programs are specifically designed to address traffic resulting from new growth, a baseline year must be established to distinguish new growth versus existing development. For residential development, the baseline year of the GTIF is 2018 was based on the Department of Finance, Population and Housing Estimates for Cities and Counties. Nonresidential estimates for 2018 were based on the Goleta Traffic Model data for 2013. Based on built and occupied development permits, the implication of the base year gap for nonresidential development was considered negligible.

The planning horizon for this fee assessment is 2035. This forecast horizon is consistent with the planning horizon developed for the City's travel model forecast horizon. A planning horizon of 2035 is considered long enough to plan for long-term infrastructure needs, yet short enough to represent reasonably anticipated growth based on current land use policy.

6. Planning Horizon Land Use Assumptions

Land use assumptions within Goleta City Limits were based on project build out as defined in the City of Goleta's General Plan / Coastal Land Use Plan. For areas reflected in the Goleta travel model that lie outside the Goleta City Limits, growth projections were based on the following:

- Buildout of the County of Santa Barbara's cumulative residential and non-residential project list as defined in the Eastern Goleta Valley Community Plan, the Isla Vista Specific Plan and the Gaviota Community Plan;
- Buildout of the University of California at Santa Barbara Long Range Plan;
- Buildout of the City of Santa Barbara's Santa Barbara Airport Master Plan and Airport Specific Plan.

Table 1 provides a summary of the net development growth assumed to occur between 2013 and 2035 stratified by model land use category. Note that these totals reflect the entire Goleta Travel Model modeling domain – including the other jurisdictions cited above. **Table 2** provides the land use growth projected for City of Goleta. This data is further refined by TAZ for traffic modeling purposes.

7. Planning Horizon External Traffic Assumptions

External traffic growth assumptions for 2035 were developed as part of the Goleta Model update. For state highway facilities, external growth assumptions were developed considering like assumptions used by the County of Santa Barbara's travel model, SBCAG's regional travel model projected growth, and historical traffic growth. External assumptions for non-state facilities was based on historical traffic growth and future land use considerations (i.e., potential to be impacted by future development). The following external link 2013-2035 traffic growth assumptions were made for the Goleta Travel Model forecasts:

1. SR-154 32% Growth
2. SR-192/Cathedral Oaks 20% Growth
3. State Street 20% Growth
4. Calle Real (East) 20% Growth
5. Highway 101 (East) 35% Growth
6. Modoc Drive 20% Growth
7. Las Palmas Drive 40% Growth
8. Highway 101 (West) 50% Growth
9. Calle Real (West) 50% Growth

Table 1: Goleta Travel Model Land Use Growth Summary

Land Use Category	Model ID	Units	2013 Base	2035 Build-Out	Change
Single Family	SFDU	Dwelling Units	13,591	14,846	1,255
Multi-Family	MFDU	Dwelling Units	12,038	17,471	5,433
Regional Commercial	REG_COMM	1,000 sq. ft.	640	937	297
Neighborhood Commercial	NB_COMM	1,000 sq. ft.	1,733	2,655	922
Office	OFFICE	1,000 sq. ft.	3,404	5,567	2,163
Research & Development	R_D	1,000 sq. ft.	0	66	66
Light Industrial	LT_INDUST	1,000 sq. ft.	6,724	7,672	948
Heavy Industrial	HV_INDUST	1,000 sq. ft.	1,386	1,530	144
Agriculture	AGRI	Acres	6,815	6,868	53
Hotel/Motel	HOTEL	Rooms	949	1,456	507
Restaurant	RESTR	1,000 sq. ft.	285	364	79
Elementary School	K_SCHOOL	Students	6,330	6,862	532
Middle-High School	H_SCHOOL	Students	6,976	8,251	1,275
Medical	MEDICAL	1,000 sq. ft.	140	288	148
Park Recreation	PARK_REC	Acres	1,078	1,152	74
Theater	THEATER	1,000 sq. ft.	9	90	81
Auto	AUTO	1,000 sq. ft.	530	632	102
Hospital	HOTEL	1,000 sq. ft	135	195	60
Indoor Recreation	INDOOR_REC	1,000 sq. ft.	441	618	177
Santa Barbara Airport	SB_AIRPORT	passengers/day	1,741	3,127	1,386
UCSB	UCSB	Students	19,039	25,000	5,961
Student Housing (Off Campus)	STUDENT_HO	Dwelling Units	6,196	6,525	329
Student Housing (On Campus)	STU_HSE	Dwelling Units	65	65	0
La Cumbre Mall	LA_CUMBRA	1,000 sq. ft.	651	651	0
Resort Hotel	RESORT_HOT	Rooms	360	422	62
UCSB Faculty/Staff	FACULTY_ST	Employees	9,528	11,400	1,872
Bank	BANK	1,000 sq. ft.	23	37	14
Fast Food Restaurant	F_FOOD	1,000 sq. ft.	35	38	3
Golf Course	GOLF	Holes	54	54	0

Table 2: City of Goleta Land Use Growth Summary

Land Use	Existing *(2018)* [1]	Buildout	Growth *(% Buildout)*	
Residential (dwelling units)				
Single Family Detached	5,439	6,106	667	11%
All Other Residential	6,582	9,826	3,244	33%
Total Residential	**12,021**	**15,932**	**3,911**	**25%**
Retail / Commercial (1,000 sq. ft.)				
Auto Services	424	499	75	15%
Banks	23	28	5	18%
Fast Food Restaurants	35	35	-	0%
Hotels [2]	410	664	254	38%
Indoor Recreation	254	368	114	31%
Shopping Mall	-	-	-	NA
Neighborhood Commercial	1,084	1,810	726	40%
Regional Commercial	491	528	37	7%
Resort Hotel [3]	281	329	48	15%
Restaurants	210	244	34	14%
Theater	-	65	65	NA
Subtotal	3,212	4,570	1,358	30%
Office & Medical (1,000 sq. ft.)				
Hospitals	101	161	60	37%
Medical	70	156	86	55%
Office	2,788	4,672	1,884	40%
Subtotal	2,959	4,989	2,030	41%
Industrial (1,000 sq. ft.)				
Heavy Industrial	274	418	144	34%
Light Industrial	6,333	7,077	744	11%
Research & Development	-	66	66	NA
Subtotal	6,607	7,561	954	13%
Total Non-residential	**12,778**	**17,120**	**4,342**	**25%**

[1] Nonresidential estimates for 2018 based on travel demand model data for 2013. The amount of subsequent development would not materially affect the nexus analysis in this report.
[2] Land use data for hotel rooms (630 existing, 1,022 buildout, and 392 growth) converted to building square feet at 650 square feet per room.
[3] Land use data for resort hotel rooms (360 existing, 422 buildout, and 62 growth) converted to building square feet at 780 square feet per room.
Sources: State of California, Department of Finance, *E-5 Population and Housing Estimates for Cities, Counties and the State — January 1, 2011- 2018*. Sacramento, California, May 2018; Goleta Traffic Model land use scenarios (2013 and General Plan buildout); Jan A. DeRoos, *Planning and Programming a Hotel*, Cornell University, 2011.

8. Total New Trips Resulting from New Growth

Per AB 1600 vehicle trips from existing growth and external areas are not applicable to developer based fee programs. To estimate the number of “new” trips from new development within the City of Goleta, the difference between the 2013 Baseline model and 2035 General Plan model trip generation estimates from within the City’s jurisdiction was calculated. This latter excludes trip growth within County of Santa Barbara TAZs, City of Santa Barbara TAZs, UCSB TAZs, and external/regional trips. Based on trip rates established in the ITE Trip Generation 10th Edition, projected land use growth within the City of Goleta is forecast to generate 11,505 new PM peak hour trips over the planning horizon of this study.

9. Deficiency Analysis – Technical Approach

Existing/future year capacity deficiencies were identified based on the City’s level of service standard of LOS C. The volume-to-capacity ratio of conflicting turn movements using the Intersection Capacity Utilization (ICU) method is used to determine the level of service at signalized intersections. Average delay criteria is used to determine the LOS at stop-controlled intersections based on the HCM 6th Edition operational methodology. The LOS criteria for each of these approaches is presented in **Attachment B**.

All analysis scenarios reflect AM/PM peak hours during average weekday (Tues-Thurs) traffic conditions. Peak hours are defined as the maximum consecutive 60 minutes during the weekday peak commute hour periods of 7:00 AM to 9:00 AM and between 4:00 PM – 6:00 PM. Operational determinations herein do not reflect peak season or peak weekend traffic conditions. These conditions can be dominated by interregional traffic that is not appropriate for computing traffic fees to local development.

Roadway deficiencies were based on the City of Goleta’s adopted roadway classification and LOS thresholds. These LOS thresholds are based on average daily traffic volumes and provide a generalized estimate of LOS. The City of Goleta’s approved roadway classification and level of service thresholds are presented in **Attachment B**.

9.1 Existing Deficiencies

Given that the financial responsibility for fully mitigating existing deficiencies cannot be placed on new development, identification of existing deficiencies is a requisite step in developing a traffic fee program. At a maximum, only the degree of future degradation to an existing deficiency, as measured by the share of new development’s peak hour traffic growth is applicable. Roadway segment baseline deficiencies were based on 2013-15 ADT counts. Intersection baseline deficiencies were based on AM/PM peak hour turning movement counts collected in 2013-15.

If a given facility is shown to be deficient under existing conditions but it had been previously identified in the 1999 GTIP as a future deficiency and the identified GTIP improvement had yet to be implemented, the facility would continue to be considered a future deficiency for fair share purposes as part of this update.

9.2 Future Deficiencies

As described above, the Goleta Travel Model was used to generate future volumes based on 2035 land use growth projections relative to the existing (no-build) transportation network (i.e., without GTIF capital projects). The projected volumes from the Goleta Travel Model provide the basis for determining future deficiencies in the City's roadway network.

9.3 Model Post-Processing

Before "raw" model output can be considered suitable for operational determinations, post-processing adjustments must be performed. The recommended procedure is based on the NCHRP Report 255, 1982. NCHRP-255 adjustments entail using model generated link-based growth (computed variation between base year and forecast year model link volumes) to adjust baseline traffic counts to reflect future conditions. These adjustments were performed as appropriate for both daily roadway segment volumes and AM/PM peak hour intersection turn movements respectively. These adjustments are described below.

9.4 Roadway Segments

Given that the City of Goleta applies a daily traffic threshold for roadway segments, the Goleta Travel Model's peak hour forecast volumes must be factored to yield future daily volumes. Where daily traffic counts exist – roadway counts are "grown" to reflect 2035 conditions by dividing the delta between model baseline and 2035 PM peak hour forecast by 0.1. Where daily traffic counts are not available, future year 2035 daily volumes are estimated by dividing the NCHRP-255 adjusted PM peak hour segment volume by 0.1. Both approaches are based on the simplifying assumption that PM peak hour volumes are 10% of daily volumes. The estimated 2035 daily volumes can then be compared to City of Goleta's established ADT Thresholds. These LOS thresholds provide a generalized estimate of LOS and serve as a screen for existing and/or future year problem identification. These thresholds should not be construed as daily roadway volume capacities given that all roads are under-utilized during off-peak hours, while heavily congested roadways will sometimes experience volumes higher that those reported herein.

9.5 Intersection Turn Movements"

The Goleta Travel Model generates both AM and PM peak hour turning movement volumes for each model intersection. To generate 2035 forecast turning movements at intersections, a refinement process called the Furness Method is applied. This adjustment is recommended given that travel models are calibrated to produce more accurate results on road segments than on individual turn movements. The Furness Method iteratively adjusts turning movement ground counts until the directional sum of the movements balance to the NCHRP-255 adjusted future link volumes. This factoring process will produce forecast turn distributions that resemble the count distribution, but turn movement proportions will change in response to different growth rates on different legs as produced by the Goleta Travel Model. The adjusted future year turning movements are then used to compute future year LOS.

9.6 Intersection Signal Warrant

The potential need for traffic signals at the non-signalized intersections was based on the peak hour signal warrant criteria of the California Manual on Uniform Traffic Control Devices (MUTCD, March 2018).

Signal warrant criteria are traffic volume levels above which it is presumed that the need for a traffic signal is warranted. For purposes of this analysis, when the peak hour signal warrant volumes are exceeded at a given intersection under existing or future year conditions, it is assumed to require signalization. However, the decision to install a traffic signal should not be based solely upon the warrants. Delay, congestion, approach conditions, driver confusion, future land use or other evidence of the need for right of way assignment beyond that provided by stop signs must be demonstrated. Hence, the satisfaction of a traffic signal warrant shall not in itself require the installation of a traffic control signal.

This analysis did not evaluate all of the warrants for traffic signals, but instead focused on the peak hour warrant. It is being used as an "indicator" of the likelihood of a given non-signalized intersection warranting a traffic signal in the future. This peak hour analysis is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction.

10. Deficiency Analysis

Tables 3 and **4** provide the existing intersection LOS results for the AM and PM peak hours respectively. **Tables 5 and 6** provide the 2035 future intersection LOS results for the AM and PM peak hours respectively. **Table 7A** and **Table 7B** present the existing and future ADT Threshold analysis based on the "Delta" and "Peak Hour Adjustment" methods respectively. Baseline and future LOS worksheets for roadway segments and intersections are provided in **Attachment C** and **D** respectively**.**

11. Fair Share

Fair share refers to the share of the total cost of a GTIF capital project that is related to the impacts of new development occurring within the City of Goleta's jurisdiction.

Fair share percentages were developed by performing "Flow Bundle" analysis for each deficient GTIF roadway segment and intersection using the Goleta Travel Model for both the baseline model and the 2035 forecast respectively. The link/node volume delta (or difference) between the baseline and horizon year model runs represents "new" trips generated by future growth - thereby allowing trips generated by new growth to be isolated. The following adjustments to total project costs were applied to determine the GTIF fair share for roadway projects to yield a final fair share allocation percentage specific to each identified GTIF deficiency.

Internal Trip Share: The Goleta Travel Model was used to measure the share of total trips on a specific facility that (1) start and end inside the city (Internal-Internal); (2) start or end outside the city with the other end of the trip occurring inside the city (Internal-External or External-Internal); and, 3) start and end outside the city (External-External). The share of trips associated with (1) plus half the share of trips associated with (2) represents the total internal share of trips that can be attributed to new development within the city. This share of total project costs can be funded by the GTIF.

External Trip Share: The share of trips associated with (3) plus half the share of trips associated with (2) represents the total external share of trips not associated with new development within the city. This share of total project costs cannot be funded by the GTIF.

Existing/Future Development Share: For capital projects that address an existing (2015) deficiency only the percentage of future degradation to an existing deficiency is applicable. The existing development share of the project cost equals the existing AM/PM peak hour trips on the facility as a share of the total AM/PM peak hour trips on the facility at the time horizon (2035). For a GTIF capital project that addresses a future (2035) deficiency – 100% of the cost is applied. The new development share of the applicable cost is then determined by tracking the number of internal trips, as defined above, that are attributable to new development in the City of Goleta.

Table 8 presents the Goleta Travel Model trips (categorized by jurisdiction) used in the fair share cost assessment. As shown, each GTIF improvement location is defined as either an "Existing" or "Future" deficiency based on the applicable operational criteria described previously. Baseline trips and future trips identified as traversing a given facility by the Goleta Travel Model are reported. The difference between future and baseline trips reflects the portion of trips resulting from new development. These trips are first stratified between City of Goleta Old Town trips and non-Old Town trips, the latter representing any trip regardless of origin – including the City of Goleta. The City of Goleta's Old Town fair share is then combined with the City of Goleta's Non-Old Town fair share to reflect the City's total fair share responsibility to fund a given GTIF improvement.

Table 9 presents the same information as in **Table 8** with the added step of computing the fair share cost. Based on the fair share percentages by project, total holistic fair share cost for the City of Goleta is **$138,674,000**. Of this total fair share cost, $43,376,000 is attributable to specific to the Old Town Goleta area and $95,298,000 outside Old Town Goleta. For informational purposes, the fair share costs associated with future development in non-Goleta jurisdictions is $46,319,000. Of this amount: $5,861,000 is attributable to growth at UCSB; $14,508,000 to the implementation of the City of Santa Barbara's Airport Specific Plan (shown as Santa Barbara Old Town in Figure 3); $2,988,000 to the City of Santa Barbara Airport Master Plan; $1,002,000 to growth by the City of Santa Barbara in eastern Goleta Valley; and, $21,960,000 is attributable to growth in the unincorporated County in Goleta Valley (i.e., Eastern Goleta Valley Community Plan, the Isla Vista Specific Plan, and the Gaviota Community Plan).

Table 3: Existing AM Peak Hour Intersection Operations Summary

Number	Name	Control Type	V/C	Avg Delay	Avg LOS	Max Delay	Max LOS
151	Cathedral Oaks & Kellogg	Signalized	0.43	20.62	A	46.43	A
164	Cathedral Oaks & La Patera	TWSC	0.00	1.26	A	30.66	D
171	Cathedral Oaks & Fairview	Signalized	0.51	28.33	A	48.32	A
173	Cathedral Oaks & Cambridge	Signalized	0.39	15.94	A	51.44	A
195	Cathedral Oaks & Los Carneros	TWSC	0.00	2.23	A	27.41	D
203	Stow Canyon & Fairview	TWSC	0.00	9.74	A	52.13	F
204	Fairview & Berkeley	TWSC	0.00	2.81	A	31.06	D
240	Fairview & Shirrell Way	TWSC	0.00	1.91	A	24.13	C
241	Encina & Fairview	Signalized	0.36	8.28	A	37.78	A
256	Calle Real & Patterson	Signalized	0.72	26.54	C	44.41	C
257	University & Patterson	Signalized	0.50	18.68	A	21.07	A
273	Cathedral Oaks & Brandon	TWSC	0.00	3.90	A	14.41	B
276	Cathedral Oaks & Alameda	Signalized	0.60	30.59	A	40.44	A
277	Cathedral Oaks & Glen Anne	Signalized	0.58	25.97	A	55.71	A
279	Calle Real & Los Caneros	Roundabout	0.23	4.98	A	5.49	A
280	Calle Real & La Patera	TWSC	0.00	4.24	A	15.16	C
282	Calle Real & Carlo Dr	TWSC	0.00	3.73	A	20.48	C
288	Calle Real & Fairview	Signalized	0.83	39.43	D	66.17	D
289	Fairview & US 101 NB Ramps	Signalized	0.27	49.11	A	93.95	A
296	Calle Real & Kellogg	Signalized	0.42	22.12	A	28.32	A
305	Patterson & Overpass	Signalized	0.54	10.13	A	64.38	A
359	Cathedral Oaks & Winchester Canyon	AWSC	0.24	9.27	A	9.75	A
372	Glen Annie & Del Norte	TWSC	0.00	0.96	A	10.28	B
375	Los Caneros & US101 SB Ramps	Signalized	0.55	25.92	A	127.71	A
376	Los Carneros & US 101 NB Ramps	Signalized	0.58	24.66	A	37.52	A
383	Fairview & US 101 SB Ramps	Signalized	0.54	25.84	A	50.47	A
385	Hollister & Fairview	Signalized	0.67	31.75	B	42.27	B
386	Fairview & Mandarin	TWSC	0.00	5.30	A	133.53	F
387	Hollister & Orange	TWSC	0.00	1.66	A	39.98	E
390	Hollister & Pine/Nectarine	Signalized	0.47	12.80	A	29.81	A
394	Hollister & Rutherford	Signalized	0.37	4.21	A	46.81	A
396	Hollister & Community Center West Driveway	TWSC	0.00	0.40	A	8.73	A
397	Hollister & Kinman	Signalized	0.57	10.71	A	40.63	A
399	Hollister & Kellogg	Signalized	0.53	24.85	A	50.73	A
402	Hollister & SR-217 SB Ramps	Signalized	0.52	28.45	A	44.41	A
405	Hollister & SR-217 NB Ramps	Signalized	0.45	24.59	A	41.38	A
441	Calle Real & NB 101 OnRamp	TWSC	0.00	4.97	A	10.12	B
445	Calle Real & Winchester Canyon	AWSC	0.20	7.86	A	8.59	A
450	Calle Real & Brandon Dr.	TWSC	0.00	4.50	A	12.72	B
452	Calle Real & Elwood Station	TWSC	0.00	3.26	A	12.77	B
461	Storke & US 101 NB Ramps	Signalized	0.81	41.29	D	83.97	D
462	Storke & US 101 SB Ramp	Signalized	0.92	54.81	E	170.68	E
466	Los Carneros & Cremona	Signalized	0.37	2.85	A	54.41	A
467	Los Carneros & Calle Koral	Signalized	0.55	8.01	A	45.13	A
489	Hollister & Patterson	Signalized	0.71	37.12	C	95.92	C
493	Hollister & Walnut	Signalized	0.52	24.15	A	50.18	A
506	Cathedral Oaks 101 SB-Ramp	TWSC	0.00	5.88	A	55.15	F
511	Hollister & Pebble Beach Rd	TWSC	0.00	2.21	A	17.56	C
512	Hollister & Palo Alto Dr	TWSC	0.00	1.33	A	18.04	C
513	Hollister & Coronado	TWSC	0.00	2.15	A	15.44	C
515	Hollister & Cannon Green	TWSC	0.00	4.29	A	34.32	D
517	Hollister & Pacific Oaks	Signalized	0.49	11.05	A	36.51	A
518	Hollister & Santa Felicia	TWSC	0.00	2.24	A	54.66	F
521	Storke & Marketplace	Signalized	0.43	19.42	A	77.35	A
522	Hollister & Storke	Signalized	0.69	40.35	B	55.20	B
524	Hollister & Coromar Project Access	Signalized	0.34	4.87	A	43.29	A
525	Hollister & Los Carneros	Signalized	0.65	32.50	B	62.73	B
528	Hollister & Los Carneros Way	Signalized	0.29	11.77	A	62.13	A
530	Hollister & Aero Camino	Signalized	0.35	14.08	A	45.01	A
553	Storke & Santa Felicia	TWSC	0.00	0.59	A	18.98	C
562	Storke & Phelps	Signalized	0.50	23.85	A	43.85	A
564	Mesa & Los Carneros	Signalized	0.62	27.88	B	64.76	B
620	Hollister & St Joseph	TWSC	0.00	0.87	A	19.88	C
624	Cathedral Oaks & Calle Real	AWSC	0.60	14.20	B	18.57	C
630	Hollister & Marketplace/Village Way	Signalized	0.50	9.60	A	55.89	A
636	Hollister & Cathedral Oaks	TWSC	0.00	1.63	A	13.47	B
717	Hollister & Entrance	Signalized	0.49	24.22	A	52.56	A
856	Hollister & Cortona	TWSC	0.00	6.02	A	78.86	F
877	Hollister & Sumida Gardens	Signalized	0.39	13.58	A	73.87	A
1009	Los Carneros & Raytheon Dr.	Signalized	0.33	1.70	A	133.11	A
1042	Hollister & Santa Babara Shores	TWSC	0.00	1.00	A	13.83	B
1159	Hollister & David Love PL	TWSC	0.00	1.29	A	68.49	F
1182	Ward & Ekwill	TWSC	0.00	1.62	A	12.53	B

Table 4: Existing PM Peak Hour Intersection Operations Summary

Number	Name	Control Type	V/C	Avg Delay	Avg LOS	Max Delay	Max LOS
151	Cathedral Oaks & Kellogg	Signalized	0.40	17.91	A	41.26	A
164	Cathedral Oaks & La Patera	TWSC	0.00	1.15	A	17.57	C
171	Cathedral Oaks & Fairview	Signalized	0.47	26.30	A	36.51	A
173	Cathedral Oaks & Cambridge	Signalized	0.35	14.64	A	45.25	A
195	Cathedral Oaks & Los Carneros	TWSC	0.00	3.64	A	16.03	C
203	Stow Canyon & Fairview	TWSC	0.00	2.71	A	24.17	C
204	Fairview & Berkeley	TWSC	0.00	1.47	A	21.79	C
240	Fairview & Shirrell Way	TWSC	0.00	3.68	A	24.50	C
241	Encina & Fairview	Signalized	0.45	11.97	A	45.19	A
256	Calle Real & Patterson	Signalized	0.74	26.62	C	39.00	C
257	University & Patterson	Signalized	0.50	10.02	A	39.10	A
273	Cathedral Oaks & Brandon	TWSC	0.00	3.24	A	11.63	B
276	Cathedral Oaks & Alameda	Signalized	0.35	14.87	A	49.34	A
277	Cathedral Oaks & Glen Anne	Signalized	0.51	26.66	A	66.32	A
279	Calle Real & Los Caneros	Roundabout	0.33	6.98	A	7.52	A
280	Calle Real & La Patera	TWSC	0.00	1.55	A	17.87	C
282	Calle Real & Carlo Dr	TWSC	0.00	2.59	A	27.64	D
288	Calle Real & Fairview	Signalized	0.85	37.82	D	54.73	D
289	Fairview & US 101 NB Ramps	Signalized	0.32	38.47	A	75.49	A
296	Calle Real & Kellogg	Signalized	0.53	17.67	A	59.17	A
305	Patterson & Overpass	Signalized	0.67	14.11	B	69.36	B
359	Cathedral Oaks & Winchester Canyon	AWSC	0.09	8.27	A	8.64	A
372	Glen Annie & Del Norte	TWSC	0.00	0.51	A	9.46	A
375	Los Caneros & US101 SB Ramps	Signalized	0.70	19.15	B	108.91	B
376	Los Carneros & US 101 NB Ramps	Signalized	0.55	24.28	A	31.79	A
383	Fairview & US 101 SB Ramps	Signalized	0.85	24.37	D	62.15	D
385	Hollister & Fairview	Signalized	0.76	35.15	C	50.33	C
386	Fairview & Mandarin	TWSC	0.00	12.20	B	456.06	F
387	Hollister & Orange	TWSC	0.00	4.40	A	90.65	F
390	Hollister & Pine/Nectarine	Signalized	0.60	17.46	B	39.38	B
394	Hollister & Rutherford	Signalized	0.49	8.12	A	80.88	A
396	Hollister & Community Center West Driveway	TWSC	0.00	0.37	A	10.88	B
397	Hollister & Kinman	Signalized	0.47	9.32	A	39.06	A
399	Hollister & Kellogg	Signalized	0.60	20.12	B	50.25	B
402	Hollister & SR-217 SB Ramps	Signalized	0.59	24.72	A	44.36	A
405	Hollister & SR-217 NB Ramps	Signalized	0.53	30.51	A	40.13	A
441	Calle Real & NB 101 OnRamp	TWSC	0.00	1.97	A	10.45	B
445	Calle Real & Winchester Canyon	AWSC	0.26	9.00	A	10.00	A
450	Calle Real & Brandon Dr.	TWSC	0.00	1.70	A	10.69	B
452	Calle Real & Elwood Station	TWSC	0.00	1.72	A	12.35	B
461	Storke & US 101 NB Ramps	Signalized	0.76	34.43	C	51.82	C
462	Storke & US 101 SB Ramp	Signalized	0.92	23.62	E	101.67	E
466	Los Carneros & Cremona	Signalized	0.44	13.00	A	32.76	A
467	Los Carneros & Calle Koral	Signalized	0.66	17.93	B	25.20	B
489	Hollister & Patterson	Signalized	0.81	45.22	D	59.36	D
493	Hollister & Walnut	Signalized	0.70	23.80	C	55.85	C
506	Cathedral Oaks 101 SB-Ramp	TWSC	0.00	2.53	A	23.03	C
511	Hollister & Pebble Beach Rd	TWSC	0.00	1.41	A	16.13	C
512	Hollister & Palo Alto Dr	TWSC	0.00	1.24	A	15.96	C
513	Hollister & Coronado	TWSC	0.00	1.61	A	15.56	C
515	Hollister & Cannon Green	TWSC	0.00	1.93	A	35.70	E
517	Hollister & Pacific Oaks	Signalized	0.50	11.37	A	39.44	A
518	Hollister & Santa Felicia	TWSC	0.00	131.71	F	1579.24	F
521	Storke & Marketplace	Signalized	0.57	32.06	A	60.25	A
522	Hollister & Storke	Signalized	1.07	131.98	F	312.29	F
524	Hollister & Coromar Project Access	Signalized	0.45	8.40	A	49.45	A
525	Hollister & Los Carneros	Signalized	0.70	37.57	B	59.86	B
528	Hollister & Los Carneros Way	Signalized	0.48	8.67	A	50.06	A
530	Hollister & Aero Camino	Signalized	0.50	12.99	A	51.66	A
553	Storke & Santa Felicia	TWSC	0.00	3.19	A	60.20	F
562	Storke & Phelps	Signalized	0.53	20.08	A	46.92	A
564	Mesa & Los Carneros	Signalized	0.66	27.65	B	65.03	B
620	Hollister & St Joseph	TWSC	0.00	0.19	A	23.64	C
624	Cathedral Oaks & Calle Real	AWSC	0.33	10.62	B	12.11	B
630	Hollister & Marketplace/Village Way	Signalized	0.71	32.51	C	48.65	C
636	Hollister & Cathedral Oaks	TWSC	0.00	2.75	A	15.86	C
717	Hollister & Entrance	Signalized	0.55	29.86	A	42.02	A
856	Hollister & Cortona	TWSC	0.00	50.58	F	571.17	F
877	Hollister & Sumida Gardens	Signalized	0.47	10.93	A	57.48	A
1009	Los Carneros & Raytheon Dr.	Signalized	0.38	6.29	A	46.88	A
1042	Hollister & Santa Babara Shores	TWSC	0.00	0.62	A	12.26	B
1159	Hollister & David Love PL	TWSC	0.00	3.33	A	71.86	F
1182	Ward & Ekwill	TWSC	0.00	2.02	A	12.80	B

Table 5: Future AM Peak Hour Intersection Operations Summary

Number	Name	Control Type	V/C (pc/pl/mi)	Avg Delay (sec)	Avg LOS	Max Delay	Max LOS
151	Cathedral Oaks & Kellogg	Signalized	0.55	18.80	A	55.94	A
164	Cathedral Oaks & La Patera	TWSC	0.00	1.78	A	69.56	F
171	Cathedral Oaks & Fairview	Signalized	0.56	28.84	A	50.63	A
173	Cathedral Oaks & Cambridge	Signalized	0.49	16.81	A	49.63	A
175	Cathedral Oaks & Patterson	Signalized	0.71	30.29	C	41.95	C
181	Turnpike & Cathedral Oaks	Signalized	0.66	17.27	B	38.73	B
195	Cathedral Oaks & Los Carneros	TWSC	0.00	3.80	A	65.60	F
203	Stow Canyon & Fairview	TWSC	0.00	12.52	B	164.47	F
204	Fairview & Berkeley	TWSC	0.00	6.85	A	65.84	F
240	Fairview & Shirrell Way	TWSC	0.00	2.62	A	37.25	E
241	Encina & Fairview	Signalized	0.39	7.61	A	43.90	A
256	Calle Real & Patterson	Signalized	0.82	29.09	D	50.98	D
273	Cathedral Oaks & Brandon	TWSC	0.00	3.85	A	18.56	C
276	Cathedral Oaks & Alameda	Signalized	0.64	30.21	B	48.33	B
277	Cathedral Oaks & Glen Anne	Signalized	0.67	29.36	B	54.84	B
279	Calle Real & Los Caneros	Roundabout	0.31	6.37	A	8.24	A
280	Calle Real & La Patera	TWSC	0.00	5.29	A	20.79	C
282	Calle Real & Carlo Dr	TWSC	0.00	4.29	A	26.39	D
288	Calle Real & Fairview	Signalized	0.90	45.41	D	76.63	D
289	Fairview & US 101 NB Ramps	Signalized	0.27	34.03	A	86.70	A
296	Calle Real & Kellogg	Signalized	0.45	22.36	A	31.87	A
305	Patterson & Overpass	Signalized	0.60	11.76	A	67.26	A
306	Patterson & US 101 SB Ramps	Signalized	0.77	35.36	C	60.42	C
331	Hollister & Modoc Rd	Signalized	0.76	17.43	C	46.35	C
340	San Marcos Pass & Calle Real	Signalized	0.72	45.34	C	78.97	C
341	San Marcos Pass & State & SB On-Ramp	Signalized	0.75	38.16	C	48.16	C
359	Cathedral Oaks & Winchester Canyon	AWSC	0.35	10.78	B	11.87	B
372	Glen Annie & Del Norte	TWSC	0.00	1.62	A	11.02	B
375	Los Caneros & US101 SB Ramps	Signalized	0.65	91.75	B	629.98	B
376	Los Carneros & US 101 NB Ramps	Signalized	0.72	26.38	C	90.20	C
383	Fairview & US 101 SB Ramps	Signalized	0.62	97.91	B	544.81	B
385	Hollister & Fairview	Signalized	0.84	34.69	D	49.35	D
386	Fairview & Mandarin	TWSC	0.00	17.38	C	831.59	F
387	Hollister & Orange	TWSC	0.00	3.56	A	100.38	F
390	Hollister & Pine/Nectarine	Signalized	0.54	13.91	A	31.46	A
394	Hollister & Rutherford	Signalized	0.43	4.75	A	47.66	A
396	Hollister & Community Center West Driveway	TWSC	0.00	0.36	A	8.78	A
397	Hollister & Kinman	Signalized	0.68	10.71	B	48.11	B
399	Hollister & Kellogg	Signalized	0.65	27.16	B	60.60	B
402	Hollister & SR-217 SB Ramps	Signalized	0.57	31.64	A	43.71	A
405	Hollister & SR-217 NB Ramps	Signalized	0.53	23.98	A	46.02	A
441	Calle Real & NB 101 OnRamp	TWSC	0.00	4.41	A	10.56	B
445	Calle Real & Winchester Canyon	AWSC	0.23	8.20	A	9.07	A
450	Calle Real & Brandon Dr.	TWSC	0.00	4.74	A	12.62	B
452	Calle Real & Elwood Station	TWSC	0.00	3.84	A	13.22	B
461	Storke & US 101 NB Ramps	Signalized	0.92	74.08	E	157.57	E
462	Storke & US 101 SB Ramp	Signalized	0.94	57.43	E	182.42	E
466	Los Carneros & Cremona	Signalized	0.56	4.88	A	65.43	A
467	Los Carneros & Calle Koral	Signalized	0.75	11.62	C	52.27	C
489	Hollister & Patterson	Signalized	0.81	54.68	D	155.94	D
506	Cathedral Oaks 101 SB-Ramp	TWSC	0.00	12.58	B	263.04	F
511	Hollister & Pebble Beach Rd	TWSC	0.00	2.59	A	26.17	D
512	Hollister & Palo Alto Dr	TWSC	0.00	1.32	A	23.29	C
513	Hollister & Coronado	TWSC	0.00	2.02	A	18.77	C
515	Hollister & Cannon Green	TWSC	0.00	7.14	A	59.85	F
517	Hollister & Pacific Oaks	Signalized	0.54	12.00	A	44.27	A
518	Hollister & Santa Felicia	TWSC	0.00	185.35	F	2655.12	F
521	Storke & Marketplace	Signalized	0.51	21.29	A	106.28	A
522	Hollister & Storke	Signalized	0.80	72.42	D	132.13	D
524	Hollister & Coromar Project Access	Signalized	0.53	9.33	A	34.64	A
525	Hollister & Los Carneros	Signalized	0.85	42.55	D	85.18	D
528	Hollister & Los Carneros Way	Signalized	0.44	20.10	A	42.22	A
530	Hollister & Aero Camino	Signalized	0.45	14.91	A	109.88	A
553	Storke & Santa Felicia	TWSC	0.00	1.08	A	29.70	D
562	Storke & Phelps	Signalized	0.60	24.35	B	51.12	B
564	Mesa & Los Carneros	Signalized	0.75	31.50	C	69.24	C
592	Los Caneros & El Collegio	Signalized	0.44	16.14	A	27.03	A
596	El Colegio & Stadium	Signalized	0.23	9.45	A	37.90	A
617	Los Caneros & Castilian	Signalized	0.67	16.21	B	66.96	B
620	Hollister & St Joseph	TWSC	0.00	1.06	A	29.65	D
624	Cathedral Oaks & Calle Real	AWSC	0.75	21.36	C	30.27	D
630	Hollister & Marketplace/Village Way	Signalized	0.57	10.39	A	58.48	A
636	Hollister & Cathedral Oaks	TWSC	0.00	2.05	A	18.05	C
717	Hollister & Entrance	Signalized	0.52	23.68	A	55.07	A
856	Hollister & Cortona	TWSC	0.00	119.65	F	2485.35	F
877	Hollister & Sumida Gardens	Signalized	0.49	14.06	A	51.46	A
1009	Los Carneros & Raytheon Dr.	Signalized	0.56	8.55	A	57.58	A
1042	Hollister & Santa Babara Shores	TWSC	0.00	1.04	A	17.14	C
1159	Hollister & David Love PL	TWSC	0.00	16.62	C	922.69	F
1182	Ward & Ekwill	TWSC	0.00	1.76	A	12.77	B

Table 6: Future PM Peak Hour Intersection Operations Summary

Name	Control Type	V/C	Avg Delay	Avg LOS	Max Delay	Max LOS
Cathedral Oaks & Kellogg	Signalized	0.53	17.43	A	48.89	A
Cathedral Oaks & La Patera	TWSC	0.00	1.24	A	28.57	D
Cathedral Oaks & Fairview	Signalized	0.59	27.51	A	44.43	A
Cathedral Oaks & Cambridge	Signalized	0.47	15.79	A	52.14	A
Cathedral Oaks & Los Carneros	TWSC	0.00	9.32	A	29.90	D
Stow Canyon & Fairview	TWSC	0.00	4.91	A	47.93	E
Fairview & Berkeley	TWSC	0.00	2.12	A	34.71	D
Fairview & Shirrell Way	TWSC	0.00	4.94	A	40.21	E
Encina & Fairview	Signalized	0.53	12.63	A	64.70	A
Calle Real & Patterson	Signalized	0.74	31.70	C	54.02	C
Cathedral Oaks & Brandon	TWSC	0.00	2.93	A	12.39	B
Cathedral Oaks & Alameda	Signalized	0.40	18.60	A	46.00	A
Cathedral Oaks & Glen Anne	Signalized	0.57	27.67	A	52.92	A
Calle Real & Los Caneros	Roundabout	0.48	12.27	B	14.08	B
Calle Real & La Patera	TWSC	0.00	2.13	A	23.37	C
Calle Real & Carlo Dr	TWSC	0.00	3.03	A	38.63	E
Calle Real & Fairview	Signalized	0.93	45.75	E	69.04	E
Fairview & US 101 NB Ramps	Signalized	0.43	43.20	A	88.44	A
Calle Real & Kellogg	Signalized	0.56	19.54	A	70.46	A
Patterson & Overpass	Signalized	0.73	16.91	C	77.26	C
Cathedral Oaks & Winchester Canyon	**AWSC**	0.18	9.21	A	9.66	A
Glen Annie & Del Norte	TWSC	0.00	0.48	A	9.73	A
Los Caneros & US101 SB Ramps	Signalized	0.83	57.82	D	214.59	D
Los Carneros & US 101 NB Ramps	Signalized	0.62	24.18	B	41.95	B
Fairview & US 101 SB Ramps	Signalized	0.87	24.37	D	72.41	D
Hollister & Fairview	Signalized	0.96	41.08	E	69.64	E
Fairview & Mandarin	TWSC	0.00	89.11	F	8451.91	F
Hollister & Orange	TWSC	0.00	724.52	F	7522.02	F
Hollister & Pine/Nectarine	Signalized	0.69	19.15	B	47.09	B
Hollister & Rutherford	Signalized	0.61	13.44	B	35.54	B
Hollister & Community Center West Driveway	TWSC	0.00	0.36	A	12.25	B
Hollister & Kinman	Signalized	0.55	10.65	A	59.10	A
Hollister & Kellogg	Signalized	0.82	27.63	D	55.50	D
Hollister & SR-217 SB Ramps	Signalized	0.70	31.94	C	58.04	C
Hollister & SR-217 NB Ramps	Signalized	0.57	33.29	A	50.27	A
Hollister & Turnpike	Signalized	0.97	210.19	E	289.10	E
Calle Real & NB 101 OnRamp	TWSC	0.00	2.00	A	10.81	B
Calle Real & Winchester Canyon	**AWSC**	0.28	10.04	B	11.43	B
Calle Real & Brandon Dr.	TWSC	0.00	1.59	A	11.19	B
Calle Real & Elwood Station	TWSC	0.00	1.93	A	13.53	B
Storke & US 101 NB Ramps	Signalized	0.87	46.72	D	68.61	D
Storke & US 101 SB Ramp	Signalized	1.15	208.20	F	538.13	F
Los Carneros & Cremona	Signalized	0.58	22.12	A	34.53	A
Los Carneros & Calle Koral	Signalized	0.81	17.06	D	31.44	D
Hollister & Patterson	Signalized	0.89	74.31	D	120.13	D
Cathedral Oaks 101 SB-Ramp	TWSC	0.00	3.29	A	51.71	F
Hollister & Pebble Beach Rd	TWSC	0.00	2.07	A	31.72	D
Hollister & Palo Alto Dr	TWSC	0.00	1.23	A	24.97	C
Hollister & Coronado	TWSC	0.00	1.38	A	21.59	C
Hollister & Cannon Green	TWSC	0.00	2.44	A	61.32	F
Hollister & Pacific Oaks	Signalized	0.60	13.97	B	63.75	B
Hollister & Santa Felicia	TWSC	0.00	1125.03	F	10000.00	F
Storke & Marketplace	Signalized	0.66	35.73	B	101.08	B
Hollister & Storke	Signalized	1.38	426.98	F	995.58	F
Hollister & Coromar Project Access	Signalized	0.68	17.96	B	29.79	B
Hollister & Los Carneros	Signalized	0.85	47.73	D	82.47	D
Hollister & Los Carneros Way	Signalized	0.65	15.59	B	50.56	B
Hollister & Aero Camino	Signalized	0.59	12.87	A	53.93	A
Storke & Santa Felicia	TWSC	0.00	287.87	F	2638.13	F
Storke & Phelps	Signalized	0.62	21.87	B	49.95	B
Mesa & Los Carneros	Signalized	0.80	35.14	C	95.51	C
Hollister & St Joseph	TWSC	0.00	0.31	A	29.01	D
Cathedral Oaks & Calle Real	**AWSC**	0.50	13.91	B	16.52	C
Hollister & Marketplace/Village Way	Signalized	0.76	35.72	C	63.40	C
Hollister & Cathedral Oaks	TWSC	0.00	3.32	A	30.57	D
Hollister & Entrance	Signalized	0.59	29.03	A	49.03	A
Hollister & Cortona	TWSC	0.00	914.28	F	10000.00	F
Hollister & Sumida Gardens	Signalized	0.56	11.25	A	73.05	A
Los Carneros & Raytheon Dr.	Signalized	0.51	7.57	A	53.93	A
Hollister & Santa Babara Shores	TWSC	0.00	0.44	A	16.18	C
Hollister & David Love PL	TWSC	0.00	66.60	F	951.80	F
Ward & Ekwill	TWSC	0.00	2.11	A	12.94	B

Table 7A: Roadway Segment LOS Analysis Results (Delta Method)

Location	Model Link ID	Functional Classification	Lanes	Lanes	LOS C Threshold (ADT)	ADT	Adjusted Future ADT	Existing Above Threshold?	Future Above Threshold?
Brandon Dr near Calle Real	280	Collector	1	2	9,280	2,507	2,936	-	-
Calle Real near Amador Ave	21106	Local	2	2	7,280	14,781	21,174	Yes	Yes
Calle Real near El Camino Real US 101 On-Ramp	378	Local	1	2	7,280	1,417	1,502	-	-
Calle Real near N Turnpike Rd	143	Major Arterial	1	2	14,300	6,458	14,835	-	Yes
Calle Real near Vega Dr	171	Major Arterial	2	2	14,300	10,414	12,123	-	-
Calle Real near Via Lee	144	Major Arterial	1	2	14,300	6,128	8,939	-	-
Carlo Dr near Verdura Ave	115	Collector	1	2	9,280	1,971	2,095	-	-
Carson St near S Fairview Ave	424	Local	1	2	7,280	2,946	5,608	-	-
Cathedral Oaks Rd near Calle Real	274	Major Arterial	1	2	14,300	2,725	4,513	-	-
Cathedral Oaks Rd near El Rodeo Rd	51	Major Arterial	1	2	14,300	8,961	13,203	-	-
Cathedral Oaks Rd near Glen Annie Rd	617	Major Arterial	1	2	14,300	9,174	10,359	-	-
Cathedral Oaks Rd near Santa Marguerita Dr	633	Major Arterial	2	2	14,300	6,896	10,410	-	-
Del Norte Dr near Colusa Dr	289	Collector	1	2	9,280	1,328	1,295	-	-
El Colegio Rd near Embarcadero Del Norte	562	Minor Arterial	2	4	30,100	9,785	16,321	-	-
Fairview Ave near Calle Real	804	Major Arterial	3	6	47,000	25,788	25,710	-	-
Fairview Ave south of US-101 Interchange	306	Major Arterial	2	4	34,000	23,700	31,193	-	-
Fairview Ave near Hollister Ave	421	Major Arterial	1	4	34,000	9,025	11,871	-	-
Glen Annie Rd near Cathedral Oaks Dr	163	Major Arterial	1	2	14,300	7,654	8,303	-	-
Hollister Ave near Cathedral Oaks Rd	458	Major Arterial	1	2	14,300	6,212	12,308	-	-
Hollister Ave near Glen Annie Rd	479	Major Arterial	2	4	34,000	25,593	31,258	-	-
Hollister Ave near Lopez Rd	420	Major Arterial	2	4	34,000	19,441	23,137	-	-
Hollister Ave near N Arboleda Rd	230	Major Arterial	1	2	14,300	13,557	17,346	-	Yes
Hollister Ave near Puente Dr	354	Major Arterial	2	4	34,000	15,510	18,926	-	-
Kellogg Ave near Kellogg Way	428	Minor Arterial	1	2	12,500	1,681	3,325	-	-
Kellogg Ave near Marbury Dr	132	Collector	1	2	9,280	6,207	6,364	-	-
La Patera Ln near Shamrock Ave	112	Collector	1	2	9,280	3,237	3,423	-	-
Los Carneros Rd near Calle Koral	798	Major Arterial	3	5	47,000	22,050	28,464	-	-
Los Carneros Rd near El Camino Real WB Ramps	166	Major Arterial	2	4	34,000	5,356	7,595	-	-
Los Carneros Rd south of Hollister Avenue	488	Major Arterial	2	4	34,000	15,420	21,479	-	-
Los Carneros Rd near Mesa Rd	522	Major Arterial	2	2	14,300	15,942	20,383	Yes	Yes
Los Carneros Rd near US 101 SB Ramps	799	Major Arterial	2	4	34,000	22,808	29,332	-	-
Ocean Rd near El Colegio Rd	569	Minor Arterial	2	4	30,100	9,009	13,224	-	-
Patterson Ave near Calle Real	813	Major Arterial	4	4	34,000	25,885	27,051	-	-
Patterson Ave near Overpass Rd	811	Major Arterial	2	4	34,000	20,086	22,868	-	-
Phelps Rd near Storke Rd	686	Minor Arterial	1	2	12,500	3,776	4,888	-	-
Pine Ave near Thorn Wood Dr	907	Collector	1	2	9,280	4,266	6,196	-	-
San Marcos Rd near Patricia Ln	139	Local	1	2	7,280	3,091	4,800	-	-
Santa Felicia Dr near Storke Rd	509	Local	1	2	7,280	4,030	4,308	-	-
Stadium Rd near El Colegio Rd	564	Local	1	2	7,280	3,279	5,560	-	-
Storke Rd near Hollister Ave	408	Major Arterial	2	5	47,000	22,228	31,679	-	-
Storke Rd near Phelps Rd	517	Major Arterial	2	4	34,000	14,269	21,348	-	-
Storke Rd south of Highway 101	408	Major Arterial	2	4	34,000	34,122	31,679	Yes	-
Storke Rd near Willowgrove Dr	533	Major Arterial		2	14,300	13,280	18,785	-	Yes
Turnpike Rd near El Camino Real EB Ramps	140	Major Arterial	2	4	34,000	21,222	20,205	-	-
Turnpike Rd near El Camino Real WB Ramps	217	Major Arterial	2	4	34,000	18,918	21,429	-	-
Winchester Canyon Rd near Calle Real	388	Minor Arterial	1	2	12,500	3,050	2,616	-	-

Table 7B: Roadway Segment LOS Analysis Results (PM Peak Hour Adjustment Method)

Location	Model Link ID	Functional Classification	Lanes	LOS C Threshold (ADT)	ADT	Adjusted Future ADT	Existing Above Threshold?	Future Above Threshold?
Aero Camino north of Hollister Ave	933	Local	2	7,280	2,030	2,329	-	-
Alameda Ave south of Cathedral Oaks Rd	162	Local	2	7,280	1,230	1,768	-	-
Berkeley Rd east of Fairview Ave	80	Collector	2	9,280	1,350	1,563	-	-
Cambridge Dr north of Cathedral Oaks Rd	1	Collector	2	9,280	1,660	1,821	-	-
Cannon Green Dr south of Hollister Ave	468	Collector	2	9,280	2,730	3,397	-	-
Castilian Dr west of Los Carneros Rd	667	Local	2	7,280	4,320	6,700	-	-
Hollister Avewest of Entrance Rd	471	Major Arterial	4	34,000	8,640	12,670	-	-
Hollister Ave west of Cannon Green Dr	781	Major Arterial	4	34,000	12,790	15,819	-	-
Hollister Ave west of Pacific Oaks Rd	472	Major Arterial	4	34,000	15,810	20,577	-	-
Hollister Ave west of Storke Rd	478	Major Arterial	4	47,000	23,170	28,445	-	-
Hollister Ave east of Storke Rd	815	Major Arterial	4	47,000	19,580	28,114	-	-
Hollister Ave west of Los Carneros Rd	831	Major Arterial	4	34,000	17,230	22,768	-	-
Hollister Ave east of Los Carneros Rd	486	Major Arterial	4	34,000	13,370	18,573	-	-
Hollister Ave west of Fairview Ave	310	Major Arterial	4	47,000	18,240	22,101	-	-
Hollister Ave west of Pine Ave	823	Major Arterial	4	34,000	16,290	20,337	-	-
Hollister Ave west of Kellog Ave	824	Major Arterial	4	34,000	17,950	20,340	-	-
Hollister Ave west of Patterson Ave	436	Major Arterial	4	34,000	15,060	18,118	-	-
Kellog Ave north of Hollister Ave	330	Local	2	7,280	3,260	4,851	-	-
Kellog Ave south of Hollister Ave	329	Minor Arterial	2	12,500	3,240	5,243	-	-
Los Carneros Rd north of Cremona Dr	924	Major Arterial	4	34,000	16,860	23,346	-	-
Los Carneros Rd north of Hollister Ave	794	Major Arterial	4	34,000	14,340	20,124	-	-
Nectarine Ave north of Hollister Ave	317	Local	2	7,280	2,950	4,837	-	-
Pine Ave north of Gaviota St	701	Collector	2	9,280	3,790	4,082	-	-
Orange Ave north of Hollister Ave	756	Local	2	7,280	1,020	1,376	-	-
Shirrell Way west of Fairview Ave	116	Local	2	7,280	2,780	3,099	-	-
Stow Canyon Rd west of Fairview Ave	739	Collector	2	9,280	1,890	2,353	-	-

12. Discounted Fair Share

Per California Code–Section 66005.1 (effective January 1, 2011), housing development projects that satisfy all of the following "Smart Growth" characteristics shall be provided a discounted fee.

- The housing development is located within one-half mile of a transit station and there is direct access between the housing development and the transit station along a barrier-free walkable pathway not exceeding one-half mile in length.
- Convenience retail uses, including a store that sells food, are located within one-half mile of the housing development.
- The housing development provides either the minimum number of parking spaces required by the local ordinance, or no more than one onsite parking space for zero to two bedroom units, and two onsite parking spaces for three or more bedroom units, whichever is less.

A discounted fee amount of 15% was established for the City of Goleta based on Smart Growth Trip Generation Study (SANDAG, June 2010). The average reduction in trip generation from the SANDAG Study was shown to be approximately 15% relative to the Institute of Transportation Engineers (ITE) based trip generation factors for housing developments without these characteristics.

As used in this section, "housing development" means a development project with common ownership and financing consisting of residential use or mixed use where not less than 50 percent of the floor space is for residential use.

For the purposes of this section, "transit station" has the meaning set forth in paragraph (4) of subdivision (b) of Section 65460.1. "Transit station" includes planned transit stations otherwise meeting this definition whose construction is programmed to be completed prior to the scheduled completion and occupancy of the housing development. Transit headway criteria of 10 minutes or less at a transit hub served by three or more service lines is defined as cumulative headway versus individual service line headways.

The applicant/developer will be responsible for conducting the initial analysis of the relationship of the new project to the criteria in order to consider eligibility for the discount. The City of Goleta will need to verify accuracy for final determination of project's eligibility for the discount.

Table 8: Goleta Travel Demand Model Trips used within Fair Share Assessment

Map ID	Model Link or Node ID	Link ID	CIP Project Locations	Volumes: Future	Existing or Future Deficiency	LOS: Deficient Period	LOS: Base	LOS: Future	Future Warrant	LOS Method	Baseline Trips by Jurisdiction: Total Trips Less External	Baseline Trips by Jurisdiction: Non-Old Town Goleta	Baseline Trips by Jurisdiction: Old Town Goleta	Baseline Fair Share: Non-Old Town Goleta	Baseline Fair Share: Old Town Goleta	Future Trips by Jurisdiction: Total Trips Less External	Future Trips by Jurisdiction: Non-Old Town Goleta	Future Trips by Jurisdiction: Old Town Goleta	Future Fair Share: Non-Old Town Goleta	Future Fair Share: Old Town Goleta	Net New Trips by Jurisdiction: Total Trips Less External	Net New Trips: Non-Old Town Goleta	Net New Trips: Old Town Goleta	Net New Trips: Non-Old Town Goleta Share	Net New Trips: City of Goleta Old Town Share	Non-Old Town Goleta Share Net New Trips (w/o Negatives): City of Goleta (non-OT)	UCSB	SB Airport Master Plan	SB East	County	SB Airport Master Plan	Revised Total Non-Old Town Goleta (w/o negatives)	% Fair Share of Non-Old Town Share: City of Goleta (non-Old Town)	% Fair Share of Non-Old Town Share: City of Goleta (non-Old Town) Less Old Town
Existing Roadways:																																		
R12	517	533	Storke Road Widening: Phelps Road to City Limits	2,244	Existing	Daily		> C		ADT Thresh	1,673	1,659	13	99%	1%	2,244	2,212	32	99%	1%	572	552	19	96.65%	3.35%	209	62	6	2	273	1	553	37.83%	36.57%
R2	824-309	824-309	Hollister Avenue Complete Streets Corridor Plan	6,681	Future			See Footnote 2		n/a	6,089	2,668	3,422	44%	56%	6,681	2,816	3,865	42%	58%	592	148	444	24.98%	75.02%	0	0	107	0	131	0	238	0.00%	0.00%
R10	294	see footnote	US 101 NB Aux Lane Between Los Carneros Road and Storke Road	2,853	Future[8]	AM/PM	D	D	n/a	HCM	2,257	2,136	121	95%	5%	2,853	2,661	192	93%	7%	596	525	71	88.02%	11.98%	373	7	21	12	105	7	525	71.10%	62.58%
R11	301	see footnote	US 101 NB/SB Auz Lanes Between Fairview Avenue and Los Carneros Road	3,961	Future[8]	AM/PM	D	F	n/a	HCM	3,256	3,037	220	93%	7%	3,961	3,652	309	92%	8%	705	615	89	87.33%	12.67%	487	11	0	0	111	13	623	78.19%	68.28%
R13	628	628	Los Carneros Way Realignment	707	Future			See Footnote 4		n/a	503	457	46	91%	9%	707	679	28	96%	4%	222	222	0	100.00%	0.00%	215	26	0	0	6	1	249	86.61%	86.61%
R14	495	494	South Fairview Avenue Widening	819	Future			See Footnote 3		n/a	512	394	118	77%	23%	819	604	215	74%	26%	307	210	97	68.49%	31.51%	106	12	9	0	9	75	211	50.04%	34.28%
R18	467	414	Los Carneros Road/Calle Koral Roadway Widening	4,215	Future			See Footnote 4		n/a	3,341	3,274	66	98%	2%	4,215	4,149	66	98%	2%	875	875	0	100.00%	0.00%	789	0	0	7	94	4	894	88.28%	88.28%
Total											**17,630**	**13,625**	**4,005**	**77%**	**23%**	**21,480**	**16,773**	**4,707**	**78%**	**22%**	**3,868**	**3,148**	**720**	**81.37%**	**18.63%**	**2,179**	**118**	**144**	**20**	**730**	**101**	**3,292**	**66%**	**55.64%**
Existing Intersections:																																		
I1	288	288	Fairview Avenue. Calle Real Intersection Improvements	6,160	Future[8]	AM/PM	D	D	n/a	ICU	5,191	4,484	707	86%	14%	6,160	5,177	982	84%	16%	968	693	275	71.57%	28.43%	405	2	153	5	120	8	694	58.42%	41.81%
I2	383	383	Fairview Avenue at US 101 SB On-Ramp Improvements	2,825	Existing	PM	D	D	n/a	ICU	2,392	1,452	940	61%	39%	2,825	1,544	1,281	55%	45%	433	92	341	21.25%	78.75%	0	13	82	0	48	11	153	0.00%	0.00%
I3	289	289	Fairview Avenue at US 101 NB On-Ramp Improvements	3,375	Existing	AM/PM	E/F	E/F	n/a	ICU	2,997	2,302	695	77%	23%	3,375	2,434	941	72%	28%	378	132	246	35.00%	65.00%	19	12	75	0	23	9	138	13.41%	4.69%
I10	489	489	Hollister Avenue & Patterson Avenue	3,542	Future[8]	PM	D	D	n/a	ICU	3,009	2,709	300	90%	10%	3,542	3,156	386	89%	11%	533	447	86	83.83%	16.17%	195	35	8	0	203	7	449	43.55%	36.51%
I7	522	522	Hollister Widening West of Storke Road	5,009	Existing	PM	F	F	n/a	ICU	4,251	4,103	148	97%	3%	5,009	4,847	161	97%	3%	758	744	14	98.18%	1.82%	618	0	0	4	130	0	752	82.26%	80.76%
I8	306	306	Patterson Avenue at US 101 SB Ramp Improvements	3,307	Existing	PM	E	F	n/a	ICU	2,753	2,581	172	94%	6%	3,307	3,083	224	93%	7%	554	502	52	90.64%	9.36%	257	43	17	0	180	8	505	50.92%	46.15%
I9	307	307	Patterson Avenue at US 101 NB Ramp Improvements	2,589	Future	AM	C	D	n/a	ICU	2,294	2,174	120	95%	5%	2,589	2,426	163	94%	6%	295	252	43	85.52%	14.48%	120	5	6	0	121	8	260	46.08%	39.41%
I13	399	399	Hollister Avenue at Kellogg Avenue	2,704	Future	PM	B	D	n/a	ICU	2,132	829	1,303	39%	61%	2,704	979	1,725	36%	64%	572	150	422	26.23%	73.77%	6	0	14	0	121	12	154	4.19%	1.10%
I14	517	517	Hollister Avenue/ Pacific Oaks Road Intersection Improvements	4,522	Future			See Footnote 7		ICU	3,763	3,635	128	97%	3%	4,522	4,375	147	97%	3%	758	740	19	97.53%	2.47%	640	58	11	0	35	0	744	85.92%	83.79%
I16	461	461	Glen Annie Road at US 101 NB Ramps	2,894	Existing	AM	E	F	n/a	HCM	2,493	2,434	59	98%	2%	2,894	2,825	69	98%	2%	401	392	10	97.62%	2.38%	296	5	0	6	85	1	394	75.13%	73.34%
I6	525	525	Los Carneros/ Hollister	3,390	Future	PM	B	D	n/a	ICU	2,538	2,302	236	91%	9%	3,390	3,070	320	91%	9%	852	768	84	90.15%	9.85%	587	16	23	3	139	1	769	76.33%	68.81%
R1a.1	402	402	Hollister Avenue at Route 217 Southbound Ramps (Roundabout)	4,651	Future			See Project R1		ICU	3,721	1,951	1,770	52%	48%	4,651	2,343	2,308	50%	50%	930	392	538	42.19%	57.81%	68	22	30	0	260	18	397	17.01%	7.18%
R1a.2	405	405	Hollister Avenue at Route 217 Northbound Ramps (Roundabout)	4,240	Future			See Project R1		ICU	3,576	2,406	1,170	67%	33%	4,240	2,814	1,426	66%	34%	664	408	256	61.42%	38.58%	65	50	21	0	261	13	410	15.94%	9.79%
I12-2 (I4)	624	636	New Traffic Signal Installation - Cathedral Oaks Road/ Hollister Avenue/ US 101 NB Ramps	702	Future	PM	B	F	n/a	HCM/Warrants	613	598	15	98%	2%	702	673	29	96%	4%	89	76	14	84.72%	15.28%	65	0	2	0	9	1	77	84.34%	71.46%
I12-10	515	515	New Traffic Signal Installation - Hollister Avenue/ Cannon Green Drive	3,671	Future	AM/PM	C	F	n/a	HCM/Warrants	3,125	3,032	93	97%	3%	3,671	3,574	97	97%	3%	546	542	4	99.18%	0.82%	491	56	6	0	0	0	552	88.89%	88.17%
I12-3 (R4)	280	280	New Traffic Signal Installation - Calle Real/ N La Patera Lane	2,360	Future			See Project R4		HCM/Warrants	1,215	1,161	54	96%	4%	2,360	2,036	323	86%	14%	1,145	875	269	76.48%	23.52%	510	0	250	13	112	1	885	57.61%	44.06%
I12-5	195	195	New Traffic Signal Intersection - Cathedral Oaks Road/ Los Carneros Road	1,159	Existing	AM	D	F	No (Based on Ex Vols)	HCM/Warrants	934	926	8	99%	1%	1,159	1,148	11	99%	1%	225	221	3	98.48%	1.52%	143	5	7	3	63	0	221	64.75%	63.77%
I12-7	203	203	New Traffic Signal Intersection - Fairview Avenue/ Stow Canyon	1,209	Existing	AM	F	F	Yes	HCM/Warrants	1,025	946	79	92%	8%	1,209	1,101	107	91%	9%	183	155	28	84.66%	15.34%	138	1	7	0	10	2	158	87.61%	74.17%
I12-2	281	281+ 282	New Traffic Signal Installation Calle Real/ Carlo Drive	1,080	Existing	PM	D	E	Yes	HCM/Warrants	725	683	42	94%	6%	1,080	958	123	89%	11%	356	275	81	77.22%	22.78%	131	0	95	7	62	0	296	44.29%	34.21%
I12-8	204	204	New Traffic Signal Intersection - Fairview Avenue/ Berkeley Road	1,387	Existing	AM	D	D	Yes	HCM/Warrants	1,164	1,049	115	90%	10%	1,387	1,231	155	89%	11%	222	182	40	82.09%	17.91%	166	4	11	0	3	3	187	88.96%	73.03%
I-18	462	462	Storke Road at US 101 SB Ramps	6,200	Future	AM/PM	B	D	n/a	HCM	5,313	5,196	117	98%	2%	6,200	6,032	169	97%	3%	888	836	52	94.19%	5.81%	618	43	0	0	176	6	843	73.32%	69.05%
I-20	375	375	Los Carneros Road/ US 101 SB On-Ramp Dual Right Turn Lanes	2,297	Future	PM	B	D	n/a	ICU	1,973	1,916	57	97%	3%	2,297	2,240	57	98%	2%	324	324	0	99.97%	0.03%	298	0	0	0	65	1	365	81.74%	81.71%
I-21	525	525	Los Carneros Road at Hollister Avenue	6,202	Future	AM/PM	B	D	n/a	ICU	4,601	4,176	425	91%	9%	6,202	5,631	572	91%	9%	1,601	1,455	146	90.85%	9.15%	1186	0	60	7	259	2	1515	78.29%	71.13%
I-22	385	385	Hollister Avenue/Fairview Avenue Intersection Improvements	6,962	Future	AM/PM	C	E	n/a	ICU	5,714	3,133	2,581	55%	45%	6,962	3,438	3,524	49%	51%	1,248	305	943	24.41%	75.59%	0	15	235	0	103	49	401	0.00%	0.00%
I12-6	164	164	New Traffic Signal Installation - Cathedral Oaks Road/ N La Patera Lane	1,129	Existing	AM	D	F	No (Based on Ex Vols)	HCM/Warrants	836	833	3	100%	0%	1,129	1,118	11	99%	1%	292	284	8	97.33%	2.67%	199	5	4	5	71	0	284	69.94%	68.07%
I12-1	282	282	New Traffic Signal Installation - Calle Real/ Carlo Drive	1,108	Existing	PM	D	E	No (Based on Ex Vols)	HCM/Warrants	787	734	53	93%	7%	1,108	983	126	89%	11%	322	249	73	77.34%	22.66%	113	0	85	7	62	0	267	42.38%	32.77%
I12-9	240	240	New Traffic Signal Installation - Fairview Avenue/ Shirrell Way	3,029	Future	AM/PM	C	E	No	ICU	2,560	2,276	284	89%	11%	3,029	2,618	410	86%	14%	468	342	126	73.08%	26.92%	253	4	41	0	41	7	346	73.19%	53.49%
I12-11	511	511	New Traffic Signal Installation - Holliter Avenue/ Pebble Beach Drive	1,862	Future	AM/PM	C	D	No	ICU	1,484	1,462	22	98%	2%	1,862	1,840	23	99%	1%	378	378	0	99.95%	0.05%	353	16	1	0	8	0	378	93.20%	93.15%
I12-12	620	620	New Traffic Signal Installation - Hollister Avenue/ St.Joseph's Street	2,969	Future	AM/PM	C	D	No	ICU	2,391	1,759	632	74%	26%	2,969	2,150	820	72%	28%	579	391	188	67.50%	32.50%	83	55	20	0	219	15	392	21.09%	14.24%
Total											**75,569**	**63,241**	**12,328**	**84%**	**16%**	**92,532**	**75,843**	**16,689**	**82%**	**18%**	**16,963**	**12,602**	**4,361**	**74.29%**	**25.71%**	**8,024**	**464**	**1,265**	**60**	**2,988**	**186**	**12,988**	**61.78%**	**37.31%**
New Roadways:																																		
R4.2	21127	925 + 304	La Patera Road Crossing	$1,440	Future	AM/PM	n/a	n/a	n/a	See Footnote	n/a	n/a	n/a	n/a	n/a	1,440	1,125	314	78%	22%	1,440	1,125	314	78.18%	21.82%	716	10	259	14	121	6	1,125	63.65%	49.76%
R5	21125	924	Goleta Overcrossing	$932	Future	AM/PM	n/a	n/a	n/a	See Footnote	n/a	n/a	n/a	n/a	n/a	932	931	1	99%	1%	932	931	1	99.86%	0.14%	838	34	0	6	52	0	930	90.14%	90.01%
R1c	918-919	919	Ekwill Street Extension	$1,433	Future	AM/PM	n/a	n/a	n/a	See Footnote	n/a	n/a	n/a	n/a	n/a	1,433	475	959	33%	67%	1,433	475	959	33.12%	66.88%	276	16	28	10	122	24	475	58.00%	19.21%
R1b	913	913	Fowler Road Extension	$341	Future	AM/PM	n/a	n/a	n/a	See Footnote	n/a	n/a	n/a	n/a	n/a	341	192	149	56%	44%	341	192	149	56.30%	43.70%	84	10	4	2	29	64	193	43.47%	24.47%
R9	21126	926	Phelps Road Extension	$1,048	Future	AM/PM	n/a	n/a	n/a	See Footnote	n/a	n/a	n/a	n/a	n/a	1,048	1,035	13	99%	1%	1,048	1,035	13	98.73%	1.27%	533	434	5	0	56	5	1,033	51.54%	50.89%
Total											**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**5,194**	**3,758**	**1,436**	**72%**	**28%**	**5,194**	**3,758**	**1,436**	**72.35%**	**27.65%**	**2,446**	**504**	**296**	**31**	**381**	**98**	**3,756**	**65.13%**	**56.65%**
Grand Total											**93,199**	**76,866**	**16,333**	**82%**	**18%**	**119,206**	**96,373**	**22,833**	**81%**	**19%**	**26,026**	**19,507**	**6,518**	**74.95%**	**25.05%**	**12,649**	**1,086**	**1,705**	**112**	**4,099**	**385**	**20,036**	**63.13%**	**51.51%**

LEGEND: =

Notes

I16: Deficiency based on AM Peak Hour Analysis

I12-2 Calle Real/Carlo Dr - closely spaced signals - one signalization project - turn movements combined for fair share allocation calculation.

T-1: Goleta Train Depot and La Patera Lane Improvements (Transit - Passenger Rail Improvement) not included in this Table.

Footnotes

1. Hollister Interchange Deficiency Analysis Technical Memorandum, Dowling Associates, 7/23/2009
2. Improvement associated with Goleta Old Town Revitialization - Minor side street deficiencies - Hollister Redesign Technical Memorandum, Dowling Associates, 7/23/2009.
3. Improvement considered part of CIP R1 - South Fairview Left Turn Storage Requirement Technical Memorandum, Dowling Associates, 7/23/2009
4. Improvement associated with deficiency at Intersection Los Carneros/Calle Koral, Los Carneros Way/Calle Koral and Relignment of Camino Vista
5. Improvement associated with deficiencies R18 and I22
6. Improvement associated with improvement/deficiency I7
7. Improvement associated with the Hollister Class I Bikeway Improvement; need for minor channelization and signal retiming
8. Listed in 1999 GTIP as Future Deficiency - GTIP Improvement Not Implemented

Table 9: List of Deficiencies and Fair Share Assessment for Identified CIPs

Map ID (Network Obj.)	Model Link or Node ID	Link ID	CIP Project Locations	Volumes Future	Existing or Future Deficiency	LOS Deficient Period	LOS Base	LOS Future	Future Warrant	LOS Method	Project Cost ($1,000s) COST	Adj for Existing Deficiencies %	Adj for Existing Deficiencies $	City Goleta – City Fair Share: City of Goleta Old Town	City Goleta – City Fair Share: City of Goleta (non-Old Town)	Regents – Non-City Fair Share of the Non-City of Goleta Old Town: UCSB	City SB – SB Airport Specific Plan	City SB – SB East	County of SB – County	City SB – SB Airport Master Plan	City Goleta – City of Goleta (Old Town) (x1000)	Total Non-Old Town (x1000)	City Goleta – City of Goleta (Non-Old Town) (x1000)	Regents (Non-City) – UCSB Cost (x1000)	City SB – SB Airport Specific Plan (x1000)	City SB – SB East Cost (x1000)	County of SB – County of SB Cost (x1000)	City SB – SB Airport Master Plan Cost (x1000)
Existing Roadways:																												
R12	517	533	Storke Road Widening: Phelps Road to City Limits	2,244	Existing	Daily	> C			ADT Thresh	$2,350	34%	$803	3.35%	36.57%	11.13%	1.15%	0.29%	49.42%	0.18%	$27	$776	$294	$86	$9	$2	$384	$1
R2	824-309	824-309	Hollister Avenue Complete Streets Corridor Plan	6,681	Future		See Footnote 2			n/a	$5,050	100%	$5,050	75.02%	0.00%	0.00%	45.11%	0.00%	54.89%	0.00%	$3,788	$1,262	$0	$0	$569	$0	$693	$0
R10	294	see footnote	US 101 NB Aux Lane Between Los Carneros Road and Storke Road	2,853	Future[8]	AM/PM	D	D	n/a	HCM	$4,310	100%	$4,310	11.98%	62.58%	1.34%	4.03%	2.22%	20.04%	1.27%	$516	$3,794	$2,697	$51	$153	$84	$760	$48
R11	301	see footnote	US 101 NB/SB Auz Lanes Between Fairview Avenue and Los Carneros Road	3,961	Future[8]	AM/PM	D	F	n/a	HCM	$10,900	100%	$10,900	12.67%	68.28%	1.84%	0.00%	0.00%	17.90%	2.08%	$1,381	$9,519	$7,443	$175	$0	$0	$1,704	$198
R13	628	628	Los Carneros Way Realignment	707	Future		See Footnote 4			n/a	$3,890	100%	$3,890	0.00%	86.61%	10.55%	0.00%	0.00%	2.55%	0.29%	$0	$3,890	$3,369	$410	$0	$0	$99	$11
R14	495	494	South Fairview Avenue Widening	819	Future		See Footnote 3			n/a	$2,040	100%	$2,040	31.51%	34.28%	5.70%	4.45%	0.00%	4.04%	35.77%	$643	$1,397	$699	$80	$62	$0	$56	$500
R18	467	414	Los Carneros Road/Calle Koral Roadway Widening	4,215	Future		See Footnote 4			n/a	$1,580	100%	$1,580	0.00%	88.28%	0.00%	0.00%	0.74%	10.55%	0.44%	$0	$1,580	$1,395	$0	$0	$12	$167	$7
			Total								**$30,120**		**$28,573**	**18.63%**	**55.64%**	**3.59%**	**4.38%**	**0.60%**	**22.16%**	**3.06%**	**$6,355**	**$22,218**	**$15,897**	**$802**	**$793**	**$98**	**$3,862**	**$766**
Existing Intersections:																												
I1	288	288	Fairview Avenue. Calle Real Intersection Improvements	6,160	Future[8]	AM/PM	D	D	n/a	ICU	$1,990	100%	$1,990	28.43%	41.81%	0.30%	22.01%	0.70%	17.37%	1.21%	$566	$1,424	$832	$4	$313	$10	$247	$17
I2	383	383	Fairview Avenue at US 101 SB On-Ramp Improvements	2,825	Existing	PM	D	D	n/a	ICU	$6,650	18%	$1,205	78.75%	0.00%	8.47%	53.11%	0.00%	30.98%	7.44%	$949	$256	$0	$22	$136	$0	$79	$19
I3	289	289	Fairview Avenue at US 101 NB On-Ramp Improvements	3,375	Existing	AM/PM	E/F	E/F	n/a	ICU	$2,550	13%	$322	65.00%	4.69%	8.89%	54.29%	0.00%	16.77%	6.65%	$209	$113	$15	$10	$61	$0	$19	$7
I10	489	489	Hollister Avenue & Patterson Avenue	3,542	Future[8]	PM	D	D	n/a	ICU	$955	100%	$955	16.17%	36.51%	7.85%	1.87%	0.00%	45.16%	1.56%	$154	$801	$349	$63	$15	$0	$362	$13
I7	522	522	Hollister Widening West of Storke Road	5,009	Existing	PM	F	F	n/a	ICU	$1,700	18%	$303	1.82%	80.76%	0.00%	0.00%	0.51%	17.23%	0.00%	$6	$298	$245	$0	$0	$2	$51	$0
I8	306	306	Patterson Avenue at US 101 SB Ramp Improvements	3,307	Existing	PM	E	F	n/a	ICU	$12,300	20%	$2,477	9.36%	46.15%	8.43%	3.46%	0.00%	35.63%	1.55%	$232	$2,245	$1,143	$189	$78	$0	$800	$35
I9	307	307	Patterson Avenue at US 101 NB Ramp Improvements	2,589	Future	AM	C	D	n/a	ICU	$1,620	100%	$1,620	14.48%	39.41%	1.88%	2.19%	0.00%	46.61%	3.25%	$235	$1,385	$638	$26	$30	$0	$646	$45
I13	399	399	Hollister Avenue at Kellogg Avenue	2,704	Future	PM	B	D	n/a	ICU	$465	100%	$465	73.77%	1.10%	0.00%	9.33%	0.24%	78.21%	8.03%	$343	$122	$5	$0	$11	$0	$95	$10
I14	517	517	Hollister Avenue/ Pacific Oaks Road Intersection Improvements	4,522	Future		See Footnote 7			ICU	$405	100%	$405	2.47%	83.79%	7.86%	1.49%	0.00%	4.74%	0.00%	$10	$395	$339	$31	$6	$0	$19	$0
I16	461	461	Glen Annie Road at US 101 NB Ramps	2,894	Existing	AM	E	F	n/a	HCM	$395	16%	$64	2.38%	73.34%	1.34%	0.07%	1.45%	21.71%	0.30%	$2	$62	$47	$1	$0	$1	$13	$0
I6	525	525	Los Carneros/ Hollister	3,390	Future	PM	B	D	n/a	ICU	$390	100%	$390	9.85%	68.81%	2.02%	3.00%	0.40%	18.08%	0.17%	$38	$352	$268	$7	$11	$1	$64	$1
R1a.1	402	402	Hollister Avenue at Route 217 Southbound Ramps (Roundabout)	4,651	Future		See Project R1			ICU	$6,700	100%	$6,700	57.81%	7.18%	5.47%	7.60%	0.00%	65.48%	4.45%	$3,874	$2,826	$481	$154	$215	$0	$1,851	$126
R1a.2	405	405	Hollister Avenue at Route 217 Northbound Ramps (Roundabout)	4,240	Future		See Project R1			ICU	$5,650	100%	$5,650	38.58%	9.79%	12.21%	5.18%	0.00%	63.54%	3.13%	$2,180	$3,470	$553	$424	$180	$0	$2,205	$108
I12-2 (I4)	624	636	New Traffic Signal Installation - Cathedral Oaks Road/ Hollister Avenue/ US 101 NB Ramps	702	Future	PM	B	F	n/a	HCM/Warrants	$792	100%	$792	15.28%	71.46%	0.00%	2.79%	0.00%	11.24%	1.64%	$121	$671	$566	$0	$19	$0	$75	$11
I12-10	515	515	New Traffic Signal Installation - Hollister Avenue/ Cannon Green Drive	3,671	Future	AM/PM	C	F	n/a	HCM/Warrants	$792	100%	$792	0.82%	88.17%	10.06%	1.05%	0.00%	0.00%	0.00%	$6	$786	$698	$79	$8	$0	$0	$0
I12-3 (R4)	280	280	New Traffic Signal Installation - Calle Real/ N La Patera Lane	2,360	Future		See Project R4			HCM/Warrants	$792	100%	$792	23.52%	44.06%	0.00%	28.20%	1.42%	12.60%	0.17%	$186	$606	$349	$0	$171	$9	$76	$1
I12-5	195	195	New Traffic Signal Intersection - Cathedral Oaks Road/ Los Carneros Road	1,159	Existing	AM	D	F	No (Based on Ex Vols)	HCM/Warrants	$792	24%	$190	1.52%	63.77%	2.04%	3.22%	1.33%	28.66%	0.00%	$3	$188	$121	$4	$6	$2	$54	$0
I12-7	203	203	New Traffic Signal Intersection - Fairview Avenue/ Stow Canyon	1,209	Existing	AM	F	F	Yes	HCM/Warrants	$792	18%	$142	15.34%	74.17%	0.69%	4.32%	0.00%	6.08%	1.29%	$22	$120	$105	$1	$5	$0	$7	$2
I12-2	281	281+ 282	New Traffic Signal Installation Calle Real/ Carlo Drive	1,080	Existing	PM	D	E	Yes	HCM/Warrants	$792	49%	$389	22.78%	34.21%	0.00%	32.26%	2.46%	20.98%	0.00%	$89	$300	$133	$0	$97	$7	$63	$0
I12-8	204	204	New Traffic Signal Intersection - Fairview Avenue/ Berkeley Road	1,387	Existing	AM	D	D	Yes	HCM/Warrants	$792	19%	$151	17.91%	73.03%	1.96%	6.05%	0.00%	1.39%	1.64%	$27	$124	$110	$2	$8	$0	$2	$2
I-18	462	462	Storke Road at US 101 SB Ramps	6,200	Future	AM/PM	B	D	n/a	HCM	$4,380	100%	$4,380	5.81%	69.05%	5.09%	0.00%	0.01%	20.86%	0.72%	$255	$4,125	$3,024	$210	$0	$1	$861	$30
I-20	375	375	Los Carneros Road/ US 101 SB On-Ramp Dual Right Turn Lanes	2,297	Future	PM	B	D	n/a	ICU	$6,150	100%	$6,150	0.03%	81.71%	0.00%	0.00%	0.00%	17.89%	0.37%	$2	$6,148	$5,025	$0	$0	$0	$1,100	$23
I-21	525	525	Los Carneros Road at Hollister Avenue	6,202	Future	AM/PM	B	D	n/a	ICU	$1,620	100%	$1,620	9.15%	71.13%	0.00%	3.97%	0.49%	17.08%	0.16%	$148	$1,472	$1,152	$0	$58	$7	$251	$2
I-22	385	385	Hollister Avenue/Fairview Avenue Intersection Improvements	6,962	Future	AM/PM	C	E	n/a	ICU	$6,700	100%	$6,700	75.59%	0.00%	3.69%	58.56%	0.00%	25.59%	12.16%	$5,065	$1,635	$0	$60	$958	$0	$418	$199
I12-6	164	164	New Traffic Signal Installation - Cathedral Oaks Road/ N La Patera Lane	1,129	Existing	AM	D	F	No (Based on Ex Vols)	HCM/Warrants	$792	35%	$277	2.67%	68.07%	1.72%	1.40%	1.75%	25.10%	0.10%	$7	$269	$188	$5	$4	$5	$68	$0
I12-1	282	282	New Traffic Signal Installation - Calle Real/ Carlo Drive	1,108	Existing	PM	D	E	No (Based on Ex Vols)	HCM/Warrants	$792	41%	$324	22.66%	32.77%	0.00%	31.67%	2.67%	23.28%	0.00%	$73	$250	$106	$0	$79	$7	$58	$0
I12-9	240	240	New Traffic Signal Installation - Fairview Avenue/ Shirrell Way	3,029	Future	AM/PM	C	E	No	ICU	$792	100%	$792	26.92%	53.49%	1.15%	11.76%	0.00%	11.97%	1.93%	$213	$579	$424	$7	$68	$0	$69	$11
I12-11	511	511	New Traffic Signal Installation - Holliter Avenue/ Pebble Beach Drive	1,862	Future	AM/PM	C	D	No	ICU	$792	100%	$792	0.05%	93.15%	4.34%	0.29%	0.00%	2.17%	0.00%	$0	$792	$738	$34	$2	$0	$17	$0
I12-12	620	620	New Traffic Signal Installation - Hollister Avenue/ St.Joseph's Street	2,969	Future	AM/PM	C	D	No	ICU	$792	100%	$792	32.50%	14.24%	14.06%	5.21%	0.00%	55.75%	3.88%	$257	$535	$113	$75	$28	$0	$298	$21
			Total								**$70,124**		**$47,620**	**25.71%**	**37.31%**	**3.57%**	**9.74%**	**0.46%**	**23.01%**	**1.43%**	**$15,272**	**$32,348**	**$17,769**	**$1,408**	**$2,567**	**$52**	**$9,869**	**$682**
New Roadways:																												
R4.2	21127	925 + 304	La Patera Road/ US 101 Crossing	1439.58	Future	AM/PM	n/a	n/a	n/a	See Footnote	$60,600	100%	$60,600	21.82%	49.76%	0.85%	22.97%	1.23%	10.78%	0.53%	$13,222	$47,378	$30,155	$402	$10,884	$582	$5,107	$249
R5	21125	924	Goleta US 101 Overcrossing	932.225	Future	AM/PM	n/a	n/a	n/a	See Footnote	$28,850	100%	$28,850	0.14%	90.01%	3.61%	0.01%	0.60%	5.64%	0.00%	$39	$28,811	$25,969	$1,041	$3	$172	$1,626	$0
R1c	918-919	919	Ekwill Street Extension	1433.435	Future	AM/PM	n/a	n/a	n/a	See Footnote	$8,650	100%	$8,650	66.88%	19.21%	3.37%	5.89%	2.07%	25.71%	4.97%	$5,785	$2,865	$1,662	$96	$169	$59	$736	$142
R1b	913	913	Fowler Road Extension	341.315	Future	AM/PM	n/a	n/a	n/a	See Footnote	$6,050	100%	$6,050	43.70%	24.47%	5.35%	2.04%	1.14%	14.92%	33.08%	$2,644	$3,406	$1,481	$182	$69	$39	$508	$1,127
R9	21126	926	Phelps Road Extension	1047.88	Future	AM/PM	n/a	n/a	n/a	See Footnote	$4,650	100%	$4,650	1.27%	50.89%	42.02%	0.50%	0.00%	5.46%	0.47%	$59	$4,591	$2,366	$1,929	$23	$0	$251	$22
			Total								**$108,800**		**$108,800**	**27.65%**	**56.65%**	**13.41%**	**7.87%**	**0.84%**	**10.14%**	**2.61%**	**$21,749**	**$87,051**	**$61,632**	**$3,651**	**$11,149**	**$852**	**$8,228**	**$1,540**
			GTIP Assessment + Annual Maintenance																									
			Grand Total								**$209,044**		**$184,993**	**25.05%**	**51.51%**	**5.42%**	**8.51%**	**0.56%**	**20.46%**	**1.92%**	**$43,376**	**$141,617**	**$95,298**	**$5,861**	**$14,508**	**$1,002**	**$21,960**	**$2,988**
																					Total City Cost (not including UC, SB, or County):		$138,674				Total non-City Cost:	$46,319

LEGEND: =

Notes

I16: Deficiency based on AM Peak Hour Analysis

I12-2 Calle Real/Carlo Dr - closely spaced signals - one signalization project - turn movements combined for fair share allocation calculation.

T-1: Goleta Train Depot and La Patera Lane Improvements (Transit - Passenger Rail Improvement) not included in this Table.

Footnotes

1. Hollister Interchange Deficiency Analysis Technical Memorandum, Dowling Associates, 7/23/2009
2. Improvement associated with Goleta Old Town Revitialization - Minor side street deficiencies - Hollister Redesign Technical Memorandum, Dowling Associates, 7/23/2009.
3. Improvement considered part of CIP R1 - South Fairview Left Turn Storage Requirement Technical Memorandum, Dowling Associates, 7/23/2009
4. Improvement associated with deficiency at Intersection Los Carneros/Calle Koral, Los Carneros Way/Calle Koral and Relignment of Camino Vista
5. Improvement associated with deficiencies R18 and I22
6. Improvement associated with improvement/deficiency I7
7. Improvement associated with the Hollister Class I Bikeway Improvement; need for minor channelization and signal retiming
8. Listed in 1999 GTIP as Future Deficiency - GTIP Improvement Not Implemented

ATTACHMENT A

Model Validation Efforts

Model Validation Efforts

To evaluate the veracity of the Goleta Travel Model to accurately predict travel behavior, Goleta's 2013 baseline model results were evaluated relative to several key validation criteria pursuant to the following related travel demand model publications:

- 2010 Regional Transportation Plan Guidelines (California Transportation Commission);
- Travel Forecasting Guidelines, (California Department Transportation, 1992).

To facilitate the validation assessment, the following 2013 baseline model files were reviewed:

- Loaded base year model networks (AM/PM Peak Hour Assignments).
- Geographic files of centroids
- Geographic files of TAZ boundaries
- Excel summary file of static validation statistics

Although not entirely relevant to this peer review, additional model validation criteria from the following state/federal documents were also consulted.

- Travel Model Validation and Reasonableness Checking Manual Second Edition
- Travel Model Improvement Program Travel Model Validation and Reasonableness Checking Manual Second Edition (September 24, 2010)
- 2010 California Regional Transportation Plan Guidelines (April 7, 2010)
- A Manual of Regional Transportation Modeling Practice for Air Quality Analysis
- Transportation-Air Quality Planning: Issues & Analysis Needs
- EPA Section 187 VMT Forecasting and Tracking Guidance (March 1992)
- Guidance for the Use of Latest Planning Assumptions in Transportation Conformity Determinations (March 2001)

Validation Criteria:

Based on the review of the aforementioned documents, the following static criteria were selected for this evaluation.

Table A1 - Primary Static Criteria and Thresholds

Validation Item	Criteria for Acceptance
Percent of Links with volume-to-count ratios within Caltrans deviation allowance	At Least 75%
Correlation Coefficient	At Least 0.88
Percent Root Mean Squared Error (RMSE)	Below 40%

In order to determine if the TRPA/TMPO model "behaves" appropriately to changes in model parameters or inputs, the following dynamic land use sensitivity tests were also examined:

- Add 100 households to a TAZ
- Add 100 employees to a TAZ
- Subtract 100 households from a TAZ
- Subtracts 100 employees from a TAZ

Assessment of Validation Results

Static Validation

Based on the existing sample of roadway locations historically tracked by the City of Goleta for model validation purposes, AM and PM peak hour static validation results for established screenlines in the Goleta Valley are provided in **Table A2** in **Table A3.** Screenlines are shown graphically in **Figure A1**.

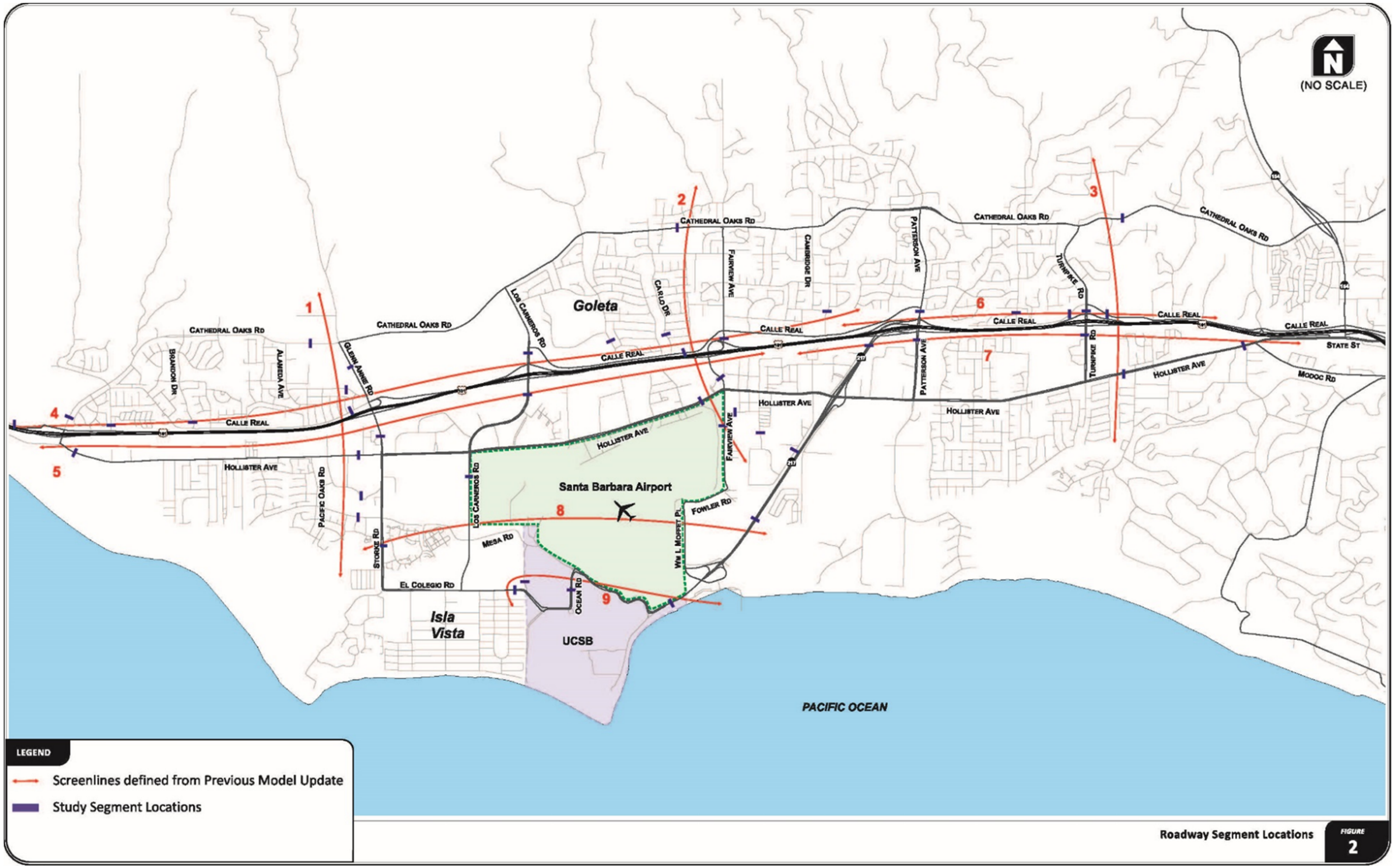
Table A2 – AM Peak Hour Static Validation Result by Screenline

Screenline No.	Screenline Name	Model AMF	Count AMF	Model AMB	Count AMB	Model AMT	Count AMT	% AM T	Abs %	Allow AMT
1	NS - W/o Storke/Glenn Annie	3307	2852	2377	1877	5684	4729	20%	20%	34%
2	NS - W/o Fairview	4469	5474	6027	5750	10496	11224	-6%	6%	24%
3	NS - E/o Turnpike	1694	2419	2439	2138	4133	4557	-9%	9%	34%
4	EW - N/o Hwy 101 West	3292	3892	4756	4093	8048	7985	1%	1%	28%
5	EW - S/o Hwy 101 West	2132	2763	4954	4263	7086	7026	1%	1%	28%
6	EW - N/o Hwy 101 East	2513	2557	3783	3476	6296	6033	4%	4%	30%
7	EW - S/o Hwy 101 East	2765	3059	2903	3011	5668	6070	-7%	7%	30%
8	EW - SB Airport	951	980	1326	1089	2277	2069	10%	10%	46%
9	EW - N/o UCSB	847	1152	2252	1770	3099	2922	6%	6%	42%
	Total	**27120**	**31558**	**36007**	**31828**	**63127**	**63386**	**0%**	**0%**	**15%**

Table A3 – PM Peak Hour Static Validation Result by Screenline

Screenline No.	Screenline Name	Model PMF	Count PMF	Model PMB	Count PMB	Model PMT	Count PMT	% PM T	Abs %	Allow PMT
1	NS - W/o Storke/Glenn Ai	2205	2625	2979	2851	5184	5476	-5%	5%	33%
2	NS - W/o Fairview	6389	5964	4861	5125	11250	11089	1%	1%	24%
3	NS - E/o Turnpike	2485	2465	1622	2416	4107	4881	-16%	16%	34%
4	EW - N/o Hwy 101 West	5086	5054	3657	4332	8743	9386	-7%	7%	26%
5	EW - S/o Hwy 101 West	5855	4726	2508	3001	8363	7727	8%	8%	28%
6	EW - N/o Hwy 101 East	3916	3837	2839	3143	6755	6980	-3%	3%	29%
7	EW - S/o Hwy 101 East	2781	3130	3149	3232	5930	6362	-7%	7%	30%
8	EW - SB Airport	1484	1553	1025	1680	2509	3233	-22%	22%	40%
9	EW - N/o UCSB	2194	2289	1388	1568	3582	3857	-7%	7%	38%
	Total	**43220**	**40958**	**26373**	**30698**	**69593**	**71656**	**-3%**	**3%**	**15%**

Figure A1 – Goleta Travel Model Roadway Segment Count Locations and Screenlines



As shown in **Figures A2** and **A3**, the correlation coefficient between the Goleta Travel Model baseline volumes and traffic counts is 0.95 which meets established criteria. Another statistic for identifying the consistency between the model outputs and the base year counts is the Percent Root Mean Square Error (RMSE). The percent RMSE for the Goleta Travel Model baseline is 28.0% which is well below the maximum acceptable range of 40%.

Figure A2 – AM Peak Hour Goleta Model Coefficient of Determination

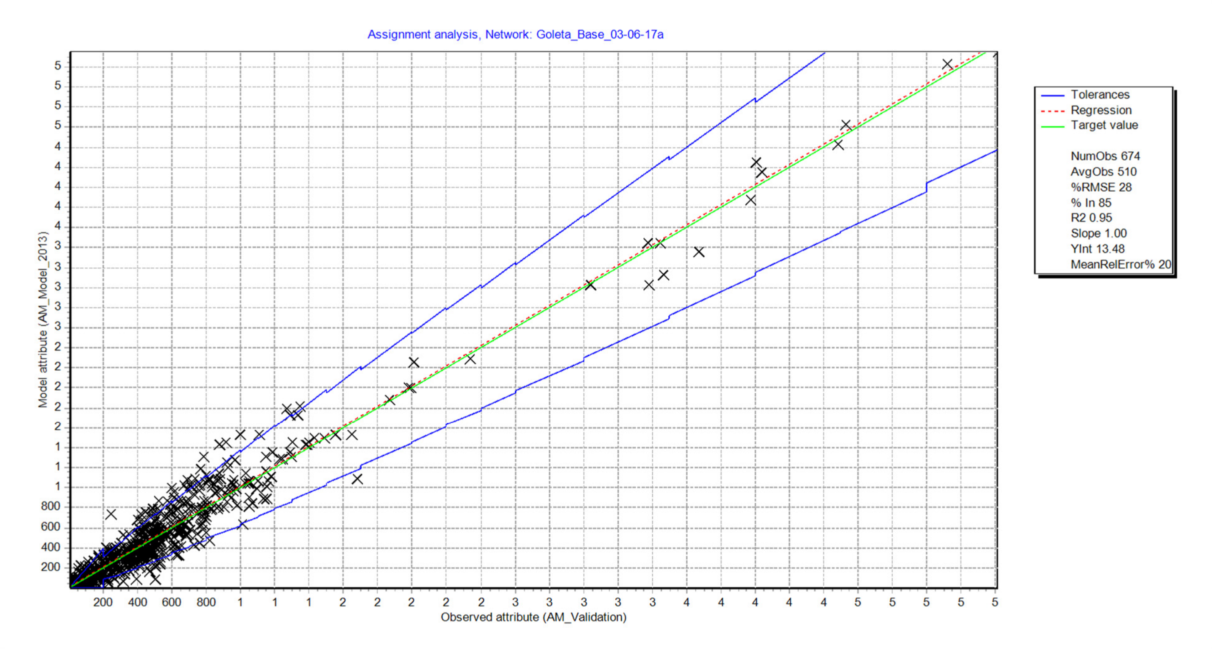


Figure A3 – PM Peak Hour Goleta Model Coefficient of Determination

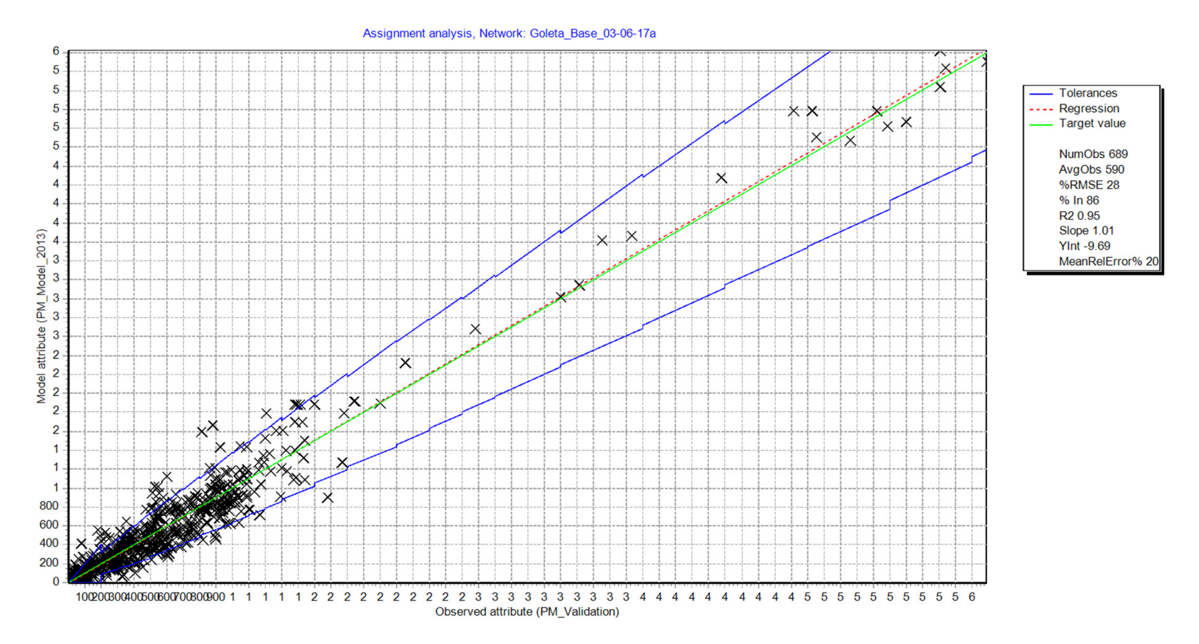


Table A4 and A5 summarizes the static validation results for the Goleta Travel Model baseline model. As shown, all tests meet criteria for validation of travel demand models. The model behavior was analyzed for the AM and PM Peak hour periods for the following scenarios:

- Addition of 300 single-family dwelling units to the TAZ 10 and generating AM/PM difference plot
- Addition of total of 250 KSF of regional commercial area to TAZ 15.
- Addition of a hypothetical bypass with the inclusion of Elwood Station

Table A4: Goleta Baseline Travel Demand Model Static Validation Results for the AM Scenario

				Change from Base		
AM Scenario	**VMT**	**VHT**	**Avg.Speed**	**VMT**	**VHT**	**Avg.Speed**
AM Base	61,317	1,472	41.65	0	0	0.00
Plus 300 SFDU in TAZ 10	61,640	1,482	41.59	323	10	-0.06
Plus 250 KSF Reg Comm in TAZ	61,483	1,478	41.59	165	6	-0.05
Added LaPatera	61,384	1,466	41.88	67	(7)	0.23
Added Elwood Station	61,115	1,463	41.77	(202)	(9)	0.12

Table A5: Goleta Baseline Travel Demand Model Static Validation Results for the AM Scenario

				Change from Base		
PM Scenario	VMT	VHT	Avg.Speed	VMT	VHT	Avg.Speed
PM Base	66,859	1,698	39.39	0	0	0.00
Plus 300 SFDU in TAZ 10	67,239	1,716	39.19	380	18	-0.19
Plus 250 KSF Reg Comm in TAZ	67,674	1,741	38.87	814	43	-0.51
Added LaPatera	66,860	1,676	39.90	1	(22)	0.52
Added Elwood Station	66,692	1,690	39.47	(168)	(8)	0.08

Although not listed as Primary Static Criteria, given the importance of accurately estimating VMT particularly in the context of SB 743, a VMT validation metric is desired. However, given that the City of Goleta's HPMS VMT estimate is not derived from a statistically valid sample of roadways, compliance with Section 187 of the Clean Air Act – VMT tracking and baseline VMT percent deviation criteria is not possible.

ATTACHMENT B

Deficiency Analysis

City of Goleta LOS Thresholds – Based on the Traffic/Circulation Element of the City of Goleta General Plan

Signalized Intersections ICU

Non-signalized Intersections HCM 6th Edition

Roadway Segments ADT Thresholds

Existing Conditions Level of Service

Level of Service

Level of service (LOS) is a concept used by traffic engineers to describe the peak hour traffic conditions at a given intersection. There are six levels of service, Level A through Level F, with A being the least congested and F being the most congested. The City of Goleta has an intersection level of service goal of LOS C, which means that LOS A through C are considered to provide traffic conditions in the acceptable range and LOS D and F provide traffic conditions in the unacceptable range.

Stop Controlled Intersections

The methodology for analysis of stop-controlled intersections is the Highway Capacity Manual (HCM) 6th Edition. This method calculates average delay per vehicle for each major street movement and minor street left-turn movements - based on the availability of adequate gaps in the main street through traffic. At intersections with minor street stop control, most of the major street traffic experiences little or no delay, and by definition have acceptable conditions. The major street left-turn movements and the minor street movements are all susceptible to delay of varying degrees. Generally, the higher the major street traffic volumes, the higher the delay for the minor movements.

An LOS designation is assigned to individual or combinations of movements (for shared lanes) based upon delay. An average total delay per vehicle for each minor street movement and for the major street left-turn movements is calculated, based on the availability of adequate gaps in the major street through traffic. A level of service designation is assigned to individual movements or to combinations of movements (in the case of shared lanes) based upon delay. Levels of service are reported herein for each movement (or group of movements) based upon the respective average delay per vehicle.

Table B1 presents the average delay criteria used to determine the level of service at unsignalized intersections.

At all-way stop intersections, the level of service is determined by the weighted average delay for all vehicles entering the intersection. The methodology for this type of intersection calculates a single weighted average delay and LOS for the intersection as a whole. The average delay criteria used to determine the level of service at all-way stop intersections is the same as that presented in **Table B1**.

Table B1: Level of Service & Delay Ranges.

Level of Service (LOS)	Description of Operation	Unsignalized Intersection
		Average Delay[1] (Seconds/Vehicle)
A	Describes primarily free-flow conditions at average travel speeds. Vehicles are seldom impeded in their ability to maneuver in the traffic stream. Delay at intersections is minimal.	0 – 10.0
B	Represents reasonably unimpeded operations at average travel speeds. The ability to maneuver in the traffic stream is slightly restricted and delays are not bothersome.	10.1 - 15.0
C	Represents stable operations, however, ability to change lanes and maneuver may be more restricted than LOS B and longer queues are experienced at intersections.	15.1 - 25.0
D	Congestion occurs and a small change in volumes increases delays substantially.	25.1 - 35.0
E	Severe congestion occurs with extensive delays and low travel speeds occur.	35.1 - 50.0
F	Characterizes arterial flow at extremely low speeds and intersection on congestion occurs with high delays and extensive queueing.	50.1<
[1] Weighted Average of Delay Source: 2000 Highway Capacity Manual, Transportation Research Board, Washington DC		

Signalized Intersections

The methodology used to determine signalized intersection LOS is the Intersection Capacity Utilization (ICU) methodology. The ICU method calculates an intersection's LOS by taking the sum of each pair of intersection critical movements (movements that compete for the same space within the intersection) and dividing that value by the intersections saturation flow rate (capacity). The saturation flow rate assumed for all City intersections is 1,600 vehicles per lane per hour. Each critical movement's volume to capacity ratio is then summed and a 10 percent lost time adjustment is added to yield a peak hour volume to capacity ratio that is the basis for determining the intersection's LOS.

Table B2 presents the V/C ratio criteria used to determine the level of service at signalized intersections.

Table B2: Level of Service & V/C Ratio

LOS	Description of Operation	V/C Ratio
A	**Very Low Delay:** This level of service occurs when progression is extremely favorable and most vehicles arrive during a green phase. Most vehicles do not stop at all.	0.000 - 0.600
B	**Minimal Delays:** This level of service generally occurs with good progression, short cycle lengths, or both. More vehicles stop than at LOS A, causing higher levels of average delay.	0.61-0.70
C	**Acceptable Delay:** Delay increases due to only fair progression, longer cycle lengths, or both. Individual cycle failures (*to service all waiting vehicles*) may begin to appear at this level of service. The number of vehicles stopping is significant, though many still pass through the intersection without stopping.	0.71-0.80
D	**Approaching Unstable/Tolerable Delays:** The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	0.81-0.90
E	**Unstable Operation/Significant Delays:** These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.	0.91-1.00
F	**Excessive Delays:** Describes operations with average delay in excess of 60 seconds per vehicle. This level, considered to be unacceptable to most drivers, often occurs with over-saturation (i.e., when arrival flow rates exceed the capacity of the intersection) and with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.	>1.00

Roadway Segment Level of Service

Table B3 shows the City of Goleta's established roadway classification and level of service thresholds for segment analysis. These LOS thresholds provide a generalized estimate of LOS and serve as a screen for existing and/or future year problem identification. These thresholds should not be construed as daily roadway volume capacities given that all roads are under-utilized during off-peak hours, while heavily congested roadways will sometimes experience volumes higher that those reported herein.

Table B3: Roadway Classification & Level of Service Thresholds

Functional Street Classification	Purpose and Design Factors	ADT Design Capacity			LOS C ADT Threshold		
		2 Lanes	4 Lanes	4+ Lanes	2 Lanes	4 Lanes	4+ Lanes
Major Arterial (MA)	Continuous roadways that carry through traffic between various neighborhoods and communities, frequently providing access to major traffic generators such as shopping areas, employment centers, and higher density residential areas. Roadways would have a minimum of 12-ft wide lanes with shoulders. Signals are typically spaced at a minimum of 0.5-mile intervals.	17,900	42,480	58,750	14,300	34,000	47,000
Minor Arterial (MA)	Roadways that serve as a secondary type of arterial facility carrying local and through traffic within communities, frequently connecting neighborhood areas within the City, providing access to shopping areas, employment centers, and higher density residential areas. Roadways would have a minimum 12-ft wide lanes with shoulders. Signal intervals typically range from 0.25 to 0.5 mile.	15,700	37,680	NA	12,500	30,100	NA
Collector Streets (Col)	Roadways designed to collect traffic from local streets and connect to major or minor arterials. Collector Streets provide access to local streets within residential and commercial areas and connect streets of higher classifications to permit adequate traffic circulation. Generally no more than 2 travel lanes and signalized at intersections with arterial roadways.	11,600	NA	NA	9,280	NA	NA
Local Streets (L)	Roadways designed to provide access to individual properties carrying traffic to and from a collector street. Intended to service adjacent uses and are not intended for through traffic. Designed with two lanes and close to moderately close driveways.	9,100	NA	NA	7,280	NA	NA
Source: City of Goleta, 2006							
4+ Lanes include 5 or 6 Lane roadways.							

Freeway Mainline Segment and Merge-Diverge

Highway 101 basic freeway segment and merge-diverge LOS methodologies published in HCM 6th Edition were applied. The HCM methods for mainline and ramps analyses were performed using HCS validated Excel spreadsheets. **Table B4** shows LOS criteria for freeway and ramps analysis.

Signal Warrant Status

The potential need for traffic signals at the unsignalized intersections is evaluated herein, using the peak hour signal warrant criteria of the Manual on Uniform Traffic Control Devices (MUTCD).

Signal warrant criteria are traffic volume levels above which it is presumed that the need for a traffic signal is warranted. Traffic signals tend to reduce the potential for right-angle type collisions but also tend to increase the potential for less severe rear-end collisions. The signal warrant volumes represent the threshold point at which the potential for more rear-end collisions is offset by the potential for fewer more severe right-angle collisions. When the signal warrant volumes are exceeded, an intersection should be considered for signalization; however, the decision to install a traffic signal should not be based solely upon the warrants. Delay, congestion, approach conditions, driver confusion, future land use or other evidence of the need for right of way assignment beyond that provided by stop signs must be demonstrated.

As stated in the 2003 edition of the Manual on Uniform Traffic Control Devices (MUTCD),

"*An engineering study of traffic conditions, pedestrian characteristics, and physical characteristics of the location shall be performed to determine whether installation of a traffic control signal is justified at a particular location. The investigation of the need for a traffic control signal shall include an analysis of the applicable factors contained in the following traffic signal warrants and other factors related to existing operation and safety at the study location:*

Warrant 1, Eight-Hour Vehicular Volume.

Warrant 2, Four-Hour Vehicular Volume.

Warrant 3, Peak Hour.

Warrant 4, Pedestrian Volume.

Warrant 5, School Crossing.

Warrant 6, Coordinated Signal System.

Warrant 7, Crash Experience.

Warrant 8, Roadway Network.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal."

This traffic impact analysis did not evaluate all of the warrants for traffic signals, but instead focused on the peak hour warrant. The MUTCD states that, “This [peak hour] signal warrant shall be applied only in unusual cases, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time.” So the peak hour warrant is being used in this impact analysis study as an “indicator” of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed the peak hour warrant are considered for the purposes of this impact analysis to be likely to meet one or more of the other signal warrants (such as the 4-hour or 8-hour warrants). This peak hour analysis is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction.

ATTACHMENT C

Base Year Analysis

AM Peak Hour Analysis

PM Peak Hour Analysis

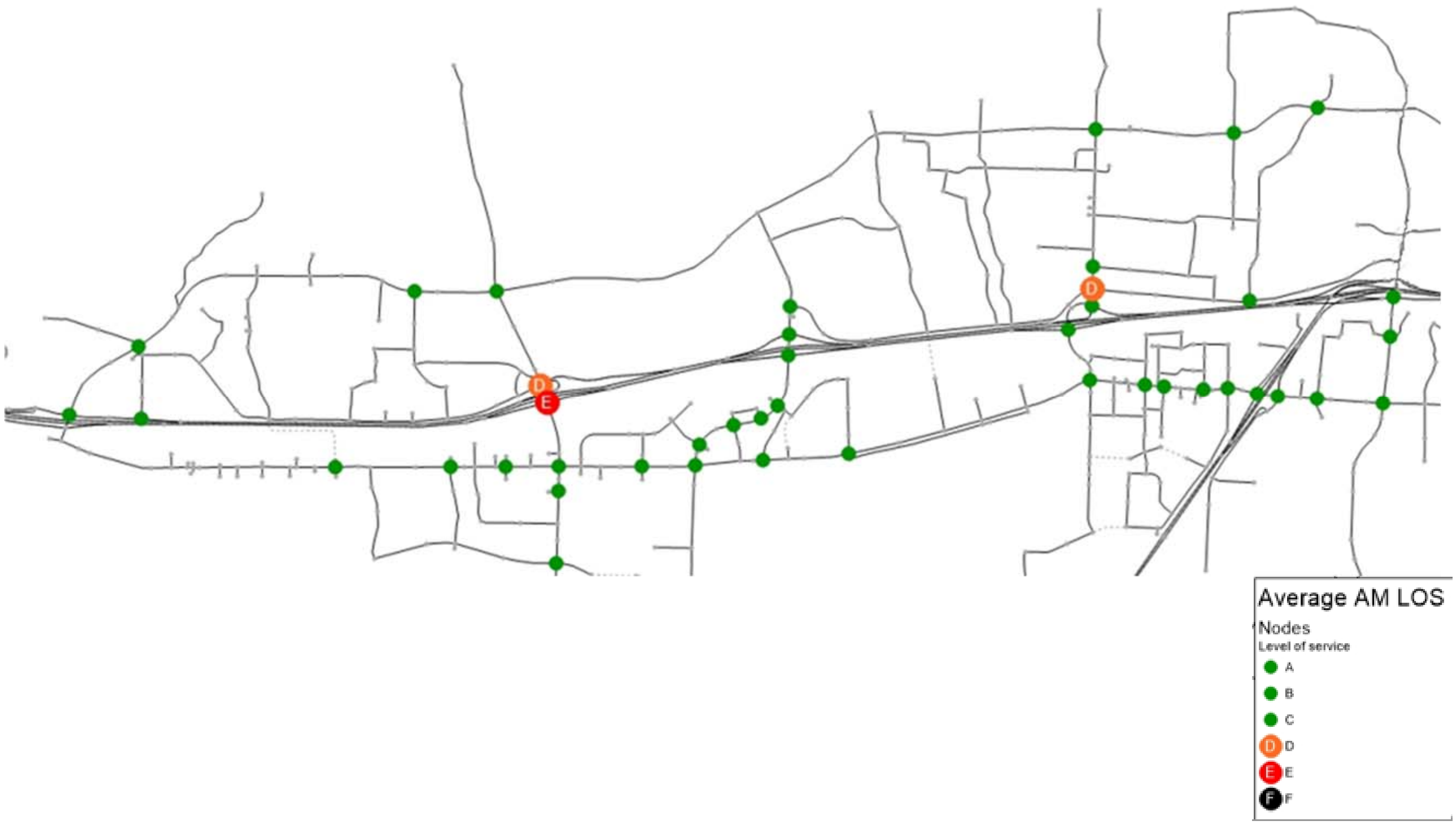
Base Year Conditions– AM Peak Hour Analysis

Intersection Capacity Analysis Summary Page

Analysis Time:	Tue Aug 22 12:00:30 2017
Driving Side:	Right
Analysis Period:	1 Hours

Number	Name	Control Type	V/C	Avg Delay	Avg LOS	Max Delay	Max LOS
151	Cathedral Oaks & Kellogg	Signalized	0.43	20.62	A	46.43	A
164	Cathedral Oaks & La Patera	TWSC	0.00	1.26	A	30.66	D
171	Cathedral Oaks & Fairview	Signalized	0.51	28.33	A	48.32	A
173	Cathedral Oaks & Cambridge	Signalized	0.39	15.94	A	51.44	A
195	Cathedral Oaks & Los Carneros	TWSC	0.00	2.23	A	27.41	D
203	Stow Canyon & Fairview	TWSC	0.00	9.74	A	52.13	F
204	Fairview & Berkeley	TWSC	0.00	2.81	A	31.06	D
240	Fairview & Shirrell Way	TWSC	0.00	1.91	A	24.13	C
241	Encina & Fairview	Signalized	0.36	8.28	A	37.78	A
256	Calle Real & Patterson	Signalized	0.72	26.54	C	44.41	C
257	University & Patterson	Signalized	0.50	18.68	A	21.07	A
273	Cathedral Oaks & Brandon	TWSC	0.00	3.90	A	14.41	B
276	Cathedral Oaks & Alameda	Signalized	0.60	30.59	A	40.44	A
277	Cathedral Oaks & Glen Anne	Signalized	0.58	25.97	A	55.71	A
279	Calle Real & Los Caneros	Roundabout	0.23	4.98	A	5.49	A
280	Calle Real & La Patera	TWSC	0.00	4.24	A	15.16	C
282	Calle Real & Carlo Dr	TWSC	0.00	3.73	A	20.48	C
288	Calle Real & Fairview	Signalized	0.83	39.43	D	66.17	D
289	Fairview & US 101 NB Ramps	Signalized	0.27	49.11	A	93.95	A
296	Calle Real & Kellogg	Signalized	0.42	22.12	A	28.32	A
305	Patterson & Overpass	Signalized	0.54	10.13	A	64.38	A
359	Cathedral Oaks & Winchester Canyon	AWSC	0.24	9.27	A	9.75	A
372	Glen Annie & Del Norte	TWSC	0.00	0.96	A	10.28	B
375	Los Caneros & US101 SB Ramps	Signalized	0.55	25.92	A	127.71	A
376	Los Carneros & US 101 NB Ramps	Signalized	0.58	24.66	A	37.52	A
383	Fairview & US 101 SB Ramps	Signalized	0.54	25.84	A	50.47	A
385	Hollister & Fairview	Signalized	0.67	31.75	B	42.27	B
386	Fairview & Mandarin	TWSC	0.00	5.30	A	133.53	F
387	Hollister & Orange	TWSC	0.00	1.66	A	39.98	E
390	Hollister & Pine/Nectarine	Signalized	0.47	12.80	A	29.81	A
394	Hollister & Rutherford	Signalized	0.37	4.21	A	46.81	A
396	Hollister & Community Center West Driveway	TWSC	0.00	0.40	A	8.73	A
397	Hollister & Kinman	Signalized	0.57	10.71	A	40.63	A
399	Hollister & Kellogg	Signalized	0.53	24.85	A	50.73	A
402	Hollister & SR-217 SB Ramps	Signalized	0.52	28.45	A	44.41	A
405	Hollister & SR-217 NB Ramps	Signalized	0.45	24.59	A	41.38	A
441	Calle Real & NB 101 OnRamp	TWSC	0.00	4.97	A	10.12	B
445	Calle Real & Winchester Canyon	AWSC	0.20	7.86	A	8.59	A
450	Calle Real & Brandon Dr.	TWSC	0.00	4.50	A	12.72	B
452	Calle Real & Elwood Station	TWSC	0.00	3.26	A	12.77	B
461	Storke & US 101 NB Ramps	Signalized	0.81	41.29	D	83.97	D
462	Storke & US 101 SB Ramp	Signalized	0.92	54.81	E	170.68	E
466	Los Carneros & Cremona	Signalized	0.37	2.85	A	54.41	A
467	Los Carneros & Calle Koral	Signalized	0.55	8.01	A	45.13	A
489	Hollister & Patterson	Signalized	0.71	37.12	C	95.92	C
493	Hollister & Walnut	Signalized	0.52	24.15	A	50.18	A
506	Cathedral Oaks 101 SB-Ramp	TWSC	0.00	5.88	A	55.15	F
511	Hollister & Pebble Beach Rd	TWSC	0.00	2.21	A	17.56	C
512	Hollister & Palo Alto Dr	TWSC	0.00	1.33	A	18.04	C
513	Hollister & Coronado	TWSC	0.00	2.15	A	15.44	C
515	Hollister & Cannon Green	TWSC	0.00	4.29	A	34.32	D
517	Hollister & Pacific Oaks	Signalized	0.49	11.05	A	36.51	A
518	Hollister & Santa Felicia	TWSC	0.00	2.24	A	54.66	F
521	Storke & Marketplace	Signalized	0.43	19.42	A	77.35	A
522	Hollister & Storke	Signalized	0.69	40.35	B	55.20	B
524	Hollister & Coromar Project Access	Signalized	0.34	4.87	A	43.29	A
525	Hollister & Los Carneros	Signalized	0.65	32.50	B	62.73	B
528	Hollister & Los Carneros Way	Signalized	0.29	11.77	A	62.13	A
530	Hollister & Aero Camino	Signalized	0.35	14.08	A	45.01	A
553	Storke & Santa Felicia	TWSC	0.00	0.59	A	18.98	C
562	Storke & Phelps	Signalized	0.50	23.85	A	43.85	A
564	Mesa & Los Carneros	Signalized	0.62	27.88	B	64.76	B
620	Hollister & St Joseph	TWSC	0.00	0.87	A	19.88	C
624	Cathedral Oaks & Calle Real	AWSC	0.60	14.20	B	18.57	C
630	Hollister & Marketplace/Village Way	Signalized	0.50	9.60	A	55.89	A
636	Hollister & Cathedral Oaks	TWSC	0.00	1.63	A	13.47	B
717	Hollister & Entrance	Signalized	0.49	24.22	A	52.56	A
856	Hollister & Cortona	TWSC	0.00	6.02	A	78.86	F
877	Hollister & Sumida Gardens	Signalized	0.39	13.58	A	73.87	A
1009	Los Carneros & Raytheon Dr.	Signalized	0.33	1.70	A	133.11	A
1042	Hollister & Santa Babara Shores	TWSC	0.00	1.00	A	13.83	B
1159	Hollister & David Love PL	TWSC	0.00	1.29	A	68.49	F
1182	Ward & Ekwill	TWSC	0.00	1.62	A	12.53	B

City of Goleta General Plan Update –Average LOS for City Intersections for AM Peak of Base Conditions



Node 151: Cathedral Oaks & Kellogg	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.431
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement												
Approach		N			E			S			W	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	120	12	45	51	392	85	18	5	62	14	420	14
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	30	3	11	13	98	21	5	1	16	4	105	4
Adjusted Volume	120	12	45	51	392	85	18	5	62	14	420	14

Volume and Adjustments by Lane Group								
Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	12207	12208	12204	12205	12212	12213	12209	12210
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	132	45	51	477	23	62	14	434

Saturation Flow Rate								
Approach	N		E		S		W	
Lane Group	12207	12208	12204	12205	12212	12213	12209	12210
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	2	1	1	1	2
Saturation Flow Rate	1600	1600	1600	3200	1600	1600	1600	3200

Capacity Analysis												
Approach		N			E			S			W	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	120	12	45	51	392	85	18	5	62	14	420	14
Volume / Saturation Flow Rate	0.075	0.082	0.028	0.032	0.149	0.149	0.011	0.014	0.039	0.009	0.136	0.136
Overlap adjusted Volume / Saturation	0.075	0.082	0.028	0.032	0.149	0.149	0.011	0.014	0.039	0.009	0.136	0.136
Critical Movement	Y			Y					Y		Y	

Node 164: Cathedral Oaks & La Patera	
Control Type	TWSC
Method	HCM 6th Edition
LOS	1.26
Critical V/C	30.66
Loss Time	D
Cycle Length	

Volume and Adjustments

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	5.00	5.00	6.00	33.00	490.00	7.00	5.00	5.00	32.00	5.00	490.00	12.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	5.43	5.43	6.52	35.87	532.61	7.61	5.43	5.43	34.78	5.43	532.61	13.04

Pedestrians

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
w, Lane Width (ft)	12.00	12.00	12.00	12.00			12.00	12.00	12.00	12.00		
Sp, Walking Speed (ft/s)	3.50	3.50	3.50	3.50			3.50	3.50	3.50	3.50		
fpb, Percent Blockage	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		

Capacity of Movements below Rank 1

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	2	1	1	4	3	2	2	1	1
vx, Volume	5.43	5.43	6.52	35.87			5.43	5.43	34.78	5.43		
Conflicting Volume (Veh)	1178.26	1164.67	536.41	545.65			1164.13	1161.96	539.13	540.22		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1178.26	1164.67	536.41	545.65			1164.13	1161.96	539.13	540.22		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	169.15	195.92	548.26	1033.69			172.96	196.65	546.32	1038.48		
Capacity	148.15	184.80	548.26	1033.69			159.85	185.48	546.32	1038.48		

Critical Headway and Follow Up Headway

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Headway	7.10	6.50	6.20	4.10			7.10	6.50	6.20	4.10		
tc,base,I, Base Critical Headway (Stage I)												
tc,base,II, Base Critical Headway (Stage II)												
tc,HV, Heavy Vehicles Adjustment Factor	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00		
Phv, % Heavy Vehicles	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Factor	0.20	0.20	0.10	1.00			0.20	0.20	0.10	1.00		
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment Factor	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc, Critical Headway	7.10	6.50	6.20	4.10			7.10	6.50	6.20	4.10		
tc,I, Critical Headway (Stage I)												
tc,II, Critical Headway (Stage II)												
tf,base, Base Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		
tf,hv, Heavy Vehicles Adjustment Factor	0.90	0.90	0.90	0.90			0.90	0.90	0.90	0.90		
tf, Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		

Delay and Level of Service by Movement

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	5.43	5.43	6.52	35.87	532.61	7.61	5.43	5.43	34.78	5.43	532.61	13.04
cmx, Capacity	148.15	184.80	548.26	1033.69			159.85	185.48	546.32	1038.48		
V / C	0.04	0.03	0.01	0.03			0.03	0.03	0.06	0.01		
d, Delay	30.66	25.85	12.93	8.61			28.98	25.86	13.04	8.48		
LOS	D	D	B	A			D	D	B	A		
dA, Approach Delay		22.51			0.54			16.47			0.08	
Approach LOS		C						C				
dRank1, Rank 1 Delay					0.00						0.00	

Delay and Level of Service by Lane

Approach	N	E (Major)		S	W (Major)	
Lane	Lane 1	Lane 1	Lane 2	Lane 1	Lane 1	Lane 2
Movements	L1, T, R1		T, R1	L1, T, R1		T, R1
vx, Volume	17.39	35.87	540.22	45.65	5.43	545.65
Flared Storage Size						
cmx, Capacity	223.00			359.56		
V / C	0.08			0.13		
Q95, 95% Queue Length	0.25			0.44		
d, Delay	22.51			16.47		
LOS	C			C		
dA, Approach Delay	22.51	0.54		16.47	0.08	
Approach LOS	C			C		

Node 171: Cathedral Oaks & Fairview	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.51
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	66	90	17	217	305	30	67	40	103	13	298	144
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	17	23	4	54	76	8	17	10	26	3	75	36
Adjusted Volume	66	90	17	217	305	30	67	40	103	13	298	144

Volume and Adjustments by Lane Group								
Approach	N		E		S		W	
Lane Group	L	C	L	C	L	C	L	C
ID	12217	12218	12214	12215	12223	12224	12220	12221
Lanes	L	T, RT	L	T, RT	L	T, RT	L	T, RT
Volume	66	107	217	335	67	143	13	442

Saturation Flow Rate								
Approach	N		E		S		W	
Lane Group	12217	12218	12214	12215	12223	12224	12220	12221
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	1	2	1	2	1	2
Saturation Flow Rate	1600	3200	1600	3200	1600	3200	1600	3200

Capacity Analysis												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	66	90	17	217	305	30	67	40	103	13	298	144
Volume / Saturation Flow Rate	0.041	0.033	0.033	0.136	0.105	0.105	0.042	0.045	0.045	0.008	0.138	0.138
Overlap adjusted Volume / Saturation Fl	0.041	0.033	0.033	0.136	0.105	0.105	0.042	0.045	0.045	0.008	0.138	0.138
Critical Movement	Y			Y				Y			Y	

Node 173: Cathedral Oaks & Cambridge	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.386
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	26	8	73	42	461	12	32	8	23	24	417	44
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	7	2	18	11	115	3	8	2	6	6	104	11
Adjusted Volume	26	8	73	42	461	12	32	8	23	24	417	44

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	12229	12230	12226	12227	12234	12235	12231	12232
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	34	73	42	473	40	23	24	461

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	12229	12230	12226	12227	12234	12235	12231	12232
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	2	1	1	1	2
Saturation Flow Rate	1600	1600	1600	3200	1600	1600	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	26	8	73	42	461	12	32	8	23	24	417	44
Volume / Saturation Flow R	0.016	0.021	0.046	0.026	0.148	0.148	0.020	0.025	0.014	0.015	0.144	0.144
Overlap adjusted Volume /	0.016	0.021	0.046	0.026	0.148	0.148	0.020	0.025	0.014	0.015	0.144	0.144
Critical Movement			Y	Y			Y				Y	

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Node 175: Cathedral Oaks & Patterson	
Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.603
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement												
Approach		N			E			S			W	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	46	116	5	178	319	21	142	67	73	5	284	272
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	12	29	1	45	80	5	36	17	18	1	71	68
Adjusted Volume	46	116	5	178	319	21	142	67	73	5	284	272

Volume and Adjustments by Lane Group										
Approach	N		E			S			W	
Lane Group	L	C	L	C	L	C	R	L	C	R
ID	12239	12240	12236	12237	12244	12245	12246	12241	12242	12243
Lanes	L	RT	L	T, RT	L	T	R	L	T	R
Volume	46	121	178	340	142	67	73	5	284	272

Saturation Flow Rate										
Approach	N		E			S			W	
Lane Group	12239	12240	12236	12237	12244	12245	12246	12241	12242	12243
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	2	1	1	1	1	1	1
Saturation Flow Rate	1600	1600	1600	3200	1600	1600	1600	1600	1600	1600

Capacity Analysis												
Approach		N			E			S			W	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	46	116	5	178	319	21	142	67	73	5	284	272
Volume / Saturation Flow Rate	0.029	0.076	0.076	0.111	0.106	0.106	0.089	0.042	0.046	0.003	0.177	0.170
Overlap adjusted Volume / Saturation F	0.029	0.076	0.076	0.111	0.106	0.106	0.089	0.042	0.046	0.003	0.177	0.17
Critical Movement		Y		Y			Y				Y	

Node 179: Cathedral Oaks & San Marcos (West)	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	0.61
Worst Case Delay	20.91
Worst Case LOS	C

Volume and Adjustments						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	15.00	589.00	19.00	8.00	351.00	8.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	16.30	640.22	20.65	8.70	381.52	8.70

Pedestrians						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Flow (Ped/hr)	0.00		0.00	0.00		
w, Lane Width (ft)	12.00		12.00	12.00		
Sp, Walking Speed (ft/s)	3.50		3.50	3.50		
fpb, Percent Blockage	0.00		0.00	0.00		

Capacity of Movements below Rank 1						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Rank	2	1	3	2	1	1
vx, Volume	16.30		20.65	8.70		
Conflicting Volume (Veh)	390.22		1054.35	381.52		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	390.22		1054.35	381.52		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	1179.31		252.31	670.13		
Capacity	1179.31		246.90	670.13		

Critical Headway and Follow Up Headway						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
tc,base, Base Critical Headway	4.10		7.10	6.20		
tc,base,I, Base Critical Headway (Stage I)						
tc,base,II, Base Critical Headway (Stage II)						
tc,HV, Heavy Vehicles Adjustment Factor	1.00		1.00	1.00		
Phv, % Heavy Vehicles	0.00		0.00	0.00		
tc,G, Grade Adjustment Factor	1.00		0.20	0.10		
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment Factor	0.00		0.70	0.00		
tc, Critical Headway	4.10		6.40	6.20		
tc,I, Critical Headway (Stage I)						
tc,II, Critical Headway (Stage II)						
tf,base, Base Follow-Up Headway	2.20		3.50	3.30		
tf,hv, Heavy Vehicles Adjustment Factor	0.90		0.90	0.90		
tf, Follow-Up Headway	2.20		3.50	3.30		

Delay and Level of Service by Movement						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Volume	16.30	640.22	20.65	8.70	381.52	8.70
cmx, Capacity	1179.31		246.90	670.13		
V / C	0.01		0.08	0.01		
d, Delay	8.10		20.91	10.44		
LOS	A		C	B		
dA, Approach Delay	0.20		17.81		0.00	
Approach LOS			C			
dRank1, Rank 1 Delay	0.00				0.00	

Delay and Level of Service by Lane						
Approach	E (Major)		S		W (Major)	
Lane	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
Movements						
vx, Volume	16.30	640.22	20.65	8.70	381.52	8.70
Flared Storage Size						
cmx, Capacity						
V / C						
Q95, 95% Queue Length						
d, Delay						
LOS						
dA, Approach Delay	0.20		17.81		0.00	
Approach LOS			C			

Node 181: Turnpike & Cathedral Oaks

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.58
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	5	50	5	210	327	50	146	5	169	5	352	206
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	1	13	1	53	82	13	37	1	42	1	88	52
Adjusted Volume	5	50	5	210	327	50	146	5	169	5	352	206

Volume and Adjustments by Lane Group

Approach	N	E		S		W		
Lane Group	C	L	C	C	R	L	C	R
ID	12251	12249	12250	12247	12248	12252	12253	12254
Lanes	LTR	L	RT	LT	R	L	T	R
Volume	60	210	377	151	169	5	352	206

Saturation Flow Rate

Approach	N	E		S		W		
Lane Group	12251	12249	12250	12247	12248	12252	12253	12254
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	1	1	1	1	1
Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	5	50	5	210	327	50	146	5	169	5	352	206
Volume / Saturation Flow R	0.003	0.037	0.038	0.131	0.236	0.236	0.091	0.094	0.106	0.003	0.220	0.129
Overlap adjusted Volume /	0.003	0.037	0.038	0.131	0.236	0.236	0.091	0.094	0.106	0.003	0.220	0.129
Critical Movement			Y	Y			Y				Y	

Node 188: Cathedral Oaks & SB 154 Ramps

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	218.13
Worst Case Delay	1998.43
Worst Case LOS	F

Volume and Adjustments								
Approach	N			E	S (Major)		W (Major)	
Movement	L1	T	R1		T	R1	L1	T
Base Volume	51.00	104.00	5.00		358.00	158.00	220.00	531.00
PHF, Peak-hour factor	0.920	0.920	0.920		0.920	0.920	0.920	0.920
V, Adjusted Volume	55.43	113.04	5.43		389.13	171.74	239.13	577.17

Pedestrians								
Approach	N			E	S (Major)		W (Major)	
Movement	L1	T	R1		T	R1	L1	T
vx, Flow (Ped/hr)	0.00	0.00	0.00				0.00	
w, Lane Width (ft)	12.00	12.00	12.00				12.00	
Sp, Walking Speed (ft/s)	3.50	3.50	3.50				3.50	
fpb, Percent Blockage	0.00	0.00	0.00				0.00	

Capacity of Movements below Rank 1								
Approach	N			E	S (Major)		W (Major)	
Movement	L1	T	R1		T	R1	L1	T
Rank	4	3	2		1	1	2	1
vx, Volume	55.43	113.04	5.43				239.13	
Conflicting Volume (Veh)	1250.00	1616.30	288.59				560.87	
Conflicting Volume (Ped)	0.00	0.00	0.00				0.00	
Conflicting Volume	1250.00	1616.30	288.59				560.87	
Two-Stage Gap Acceptanc	No	No						
Number of Storage Spaces								
cpx, Potential Capacity	131.45	104.70	714.08				1020.40	
Capacity	103.09	75.48	714.08				1020.40	

Critical Headway and Follow Up Headway								
Approach	N			E	S (Major)		W (Major)	
Movement	L1	T	R1		T	R1	L1	T
tc,base, Base Critical Head	7.50	6.50	6.90				4.10	
tc,base,I, Base Critical Hea								
tc,base,II, Base Critical Hea								
tc,HV, Heavy Vehicles Adju	2.00	2.00	2.00				2.00	
Phv, % Heavy Vehicles	0.00	0.00	0.00				0.00	
tc,G, Grade Adjustment Fac	0.20	0.20	0.10				1.00	
G, % Grade	0.00			0.00	0.00		0.00	
T3,lt, Geometry Adjustment	0.00	0.00	0.00				0.00	
tc, Critical Headway	7.50	6.50	6.90				4.10	
tc,I, Critical Headway (Stag								
tc,II, Critical Headway (Stag								
tf,base, Base Follow-Up He	3.50	4.00	3.30				2.20	
tf,hv, Heavy Vehicles Adjus	1.00	1.00	1.00				1.00	
tf, Follow-Up Headway	3.50	4.00	3.30				2.20	

Delay and Level of Service by Movement								
Approach	N			E	S (Major)		W (Major)	
Movement	L1	T	R1		T	R1	L1	T
vx, Volume	55.43	113.04	5.43		389.13	171.74	239.13	577.17
cmx, Capacity	103.09	75.48	714.08				1020.40	
V / C	0.54	1.50	0.01				0.23	
d, Delay	1985.65	1998.43	10.08				9.61	
LOS	F	F	B				A	
dA, Approach Delay	1932.22			0.00	0.00		2.81	
Approach LOS	F			A				
dRank1, Rank 1 Delay					0.00		0.00	

Delay and Level of Service by Lane								
Approach	N		E	S (Major)		W (Major)		
Lane	Lane 1	Lane 2		Lane 1	Lane 2	Lane 1	Lane 2	Lane 3
Movements	L1, T				T, R1			
vx, Volume	168.48	5.43		280.43	280.43	239.13	288.59	288.59
Flared Storage Size								
cmx, Capacity	82.77							
V / C	2.04							
Q95, 95% Queue Length	48.11							
d, Delay	1994.23							
LOS	F							
dA, Approach Delay	1932.22		0.00	0.00		2.81		
Approach LOS	F		A					

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Node 189: Cathedral Oaks & NB 154 Ramps

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	2553.56
Worst Case Delay	8338.66
Worst Case LOS	F

Volume and Adjustments

Approach	N (Major)		E			S (Major)		W
Movement	T	R1	L1	T	R1	L1	T	
Base Volume	724.00	41.00	80.00	638.00	51.00	29.00	522.00	
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	
V, Adjusted Volume	786.96	44.57	86.96	693.48	55.43	31.52	567.39	

Pedestrians

Approach	N (Major)		E			S (Major)		W
Movement	T	R1	L1	T	R1	L1	T	
vx, Flow (Ped/hr)			0.00	0.00	0.00	0.00		
w, Lane Width (ft)			12.00	12.00	12.00	12.00		
Sp, Walking Speed (ft/s)			3.50	3.50	3.50	3.50		
fpb, Percent Blockage			0.00	0.00	0.00	0.00		

Capacity of Movements below Rank 1

Approach	N (Major)		E			S (Major)		W
Movement	T	R1	L1	T	R1	L1	T	
Rank	1	1	4	3	2	2	1	
vx, Volume			86.96	693.48	55.43	31.52		
Conflicting Volume (Veh)			1023.91	1461.96	283.70	831.52		
Conflicting Volume (Ped)			0.00	0.00	0.00	0.00		
Conflicting Volume			1023.91	1461.96	283.70	831.52		
Two-Stage Gap Acceptanc			No	No				
Number of Storage Spaces								
cpx, Potential Capacity			192.40	129.97	719.26	809.62		
Capacity			185.60	123.97	719.26	809.62		

Critical Headway and Follow Up Headway

Approach	N (Major)		E			S (Major)		W
Movement	T	R1	L1	T	R1	L1	T	
tc,base, Base Critical Head			7.50	6.50	6.90	4.10		
tc,base,I, Base Critical Hea								
tc,base,II, Base Critical Hea								
tc,HV, Heavy Vehicles Adju			2.00	2.00	2.00	2.00		
Phv, % Heavy Vehicles			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Fac			0.20	0.20	0.10	1.00		
G, % Grade	0.00		0.00			0.00		0.00
T3,lt, Geometry Adjustment			0.00	0.00	0.00	0.00		
tc, Critical Headway			7.50	6.50	6.90	4.10		
tc,I, Critical Headway (Stag								
tc,II, Critical Headway (Stag								
tf,base, Base Follow-Up He			3.50	4.00	3.30	2.20		
tf,hv, Heavy Vehicles Adjus			1.00	1.00	1.00	1.00		
tf, Follow-Up Headway			3.50	4.00	3.30	2.20		

Delay and Level of Service by Movement

Approach	N (Major)		E			S (Major)		W
Movement	T	R1	L1	T	R1	L1	T	
vx, Volume	786.96	44.57	86.96	693.48	55.43	31.52	567.39	
cmx, Capacity			185.60	123.97	719.26	809.62		
V / C			0.47	5.59	0.08	0.04		
d, Delay			41.20	8338.66	10.42	9.63		
LOS			E	F	B	A		
dA, Approach Delay	0.00		6923.13			0.51		0.00
Approach LOS			F					A
dRank1, Rank 1 Delay	0.00					0.00		

Delay and Level of Service by Lane

Approach	N (Major)		E			S (Major)			W
Lane	Lane 1	Lane 2	Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 3	
Movements		T, R1							
vx, Volume	415.76	415.76	86.96	693.48	55.43	31.52	283.70	283.70	
Flared Storage Size									
cmx, Capacity									
V / C									
Q95, 95% Queue Length									
d, Delay									
LOS									
dA, Approach Delay	0.00		6923.13			0.51			0.00
Approach LOS			F						A

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Node 195: Cathedral Oaks & Los Carneros	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	2.23
Worst Case Delay	27.41
Worst Case LOS	D

Volume and Adjustments						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	103.00	417.00	24.00	63.00	438.00	66.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	111.96	453.26	26.09	68.48	476.09	71.74

Pedestrians						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Flow (Ped/hr)	0.00		0.00	0.00		
w, Lane Width (ft)	12.00		12.00	12.00		
Sp, Walking Speed (ft/s)	3.50		3.50	3.50		
fpb, Percent Blockage	0.00		0.00	0.00		

Capacity of Movements below Rank 1						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Rank	2	1	3	2	1	1
vx, Volume	111.96		26.09	68.48		
Conflicting Volume (Veh)	547.83		1153.26	476.09		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	547.83		1153.26	476.09		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces						
cpx, Potential Capacity	1031.78		220.18	592.96		
Capacity	1031.78		188.25	592.96		

Critical Headway and Follow Up Headway						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
tc,base, Base Critical Head	4.10		7.10	6.20		
tc,base,I, Base Critical Hea						
tc,base,II, Base Critical Hea						
tc,HV, Heavy Vehicles Adju	1.00		1.00	1.00		
Phv, % Heavy Vehicles	0.00		0.00	0.00		
tc,G, Grade Adjustment Fac	1.00		0.20	0.10		
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment	0.00		0.70	0.00		
tc, Critical Headway	4.10		6.40	6.20		
tc,I, Critical Headway (Stag						
tc,II, Critical Headway (Stag						
tf,base, Base Follow-Up He	2.20		3.50	3.30		
tf,hv, Heavy Vehicles Adjus	0.90		0.90	0.90		
tf, Follow-Up Headway	2.20		3.50	3.30		

Delay and Level of Service by Movement						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Volume	111.96	453.26	26.09	68.48	476.09	71.74
cmx, Capacity	1031.78		188.25	592.96		
V / C	0.11		0.14	0.12		
d, Delay	8.91		27.41	14.36		
LOS	A		D	B		
dA, Approach Delay	1.77		17.96		0.00	
Approach LOS			C			
dRank1, Rank 1 Delay	0.00				0.00	

Delay and Level of Service by Lane					
Approach	E (Major)		S	W (Major)	
Lane	Lane 1	Lane 2	Lane 1	Lane 1	Lane 2
Movements			L1, R1		
vx, Volume	111.96	453.26	94.57	476.09	71.74
Flared Storage Size					
cmx, Capacity			372.21		
V / C			0.25		
Q95, 95% Queue Length			1.01		
d, Delay			17.96		
LOS			C		
dA, Approach Delay	1.77		17.96	0.00	
Approach LOS			C		

Node 203: Stow Canyon & Fairview

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	9.74
Worst Case Delay	52.13
Worst Case LOS	F

Volume and Adjustments

Approach	N (Major)			E			S (Major)			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	5.00	313.00	141.00	6.00	5.00	12.00	231.00	164.00	5.00	28.00	5.00	259.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	5.43	340.22	153.26	6.52	5.43	13.04	251.09	178.26	5.43	30.43	5.43	281.52

Pedestrians

Approach	N (Major)			E			S (Major)			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
w, Lane Width (ft)	12.00			12.00	12.00	12.00	12.00			12.00	12.00	12.00
Sp, Walking Speed (ft/s)	3.50			3.50	3.50	3.50	3.50			3.50	3.50	3.50
fpb, Percent Blockage	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00

Capacity of Movements below Rank 1

Approach	N (Major)			E			S (Major)			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	2	1	1	4	3	2	2	1	1	4	3	2
vx, Volume	5.43			6.52	5.43	13.04	251.09			30.43	5.43	281.52
Conflicting Volume (Veh)	183.70			1113.59	1187.50	180.98	493.48			1113.59	1113.59	416.85
Conflicting Volume (Ped)	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
Conflicting Volume	183.70			1113.59	1187.50	180.98	493.48			1113.59	1113.59	416.85
Two-Stage Gap Acceptance				No	No					No	No	
Number of Storage Spaces												
cpx, Potential Capacity	1403.36			187.29	189.90	866.87	1080.54			187.29	210.06	640.24
Capacity	1403.36			81.53	140.05	866.87	1080.54			142.92	154.92	640.24

Critical Headway and Follow Up Headway

Approach	N (Major)			E			S (Major)			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Head	4.10			7.10	6.50	6.20	4.10			7.10	6.50	6.20
tc,base,I, Base Critical Hea												
tc,base,II, Base Critical Hea												
tc,HV, Heavy Vehicles Adju	1.00			1.00	1.00	1.00	1.00			1.00	1.00	1.00
Phv, % Heavy Vehicles	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
tc,G, Grade Adjustment Fac	1.00			0.20	0.20	0.10	1.00			0.20	0.20	0.10
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
tc, Critical Headway	4.10			7.10	6.50	6.20	4.10			7.10	6.50	6.20
tc,I, Critical Headway (Stag												
tc,II, Critical Headway (Stag												
tf,base, Base Follow-Up He	2.20			3.50	4.00	3.30	2.20			3.50	4.00	3.30
tf,hv, Heavy Vehicles Adjus	0.90			0.90	0.90	0.90	0.90			0.90	0.90	0.90
tf, Follow-Up Headway	2.20			3.50	4.00	3.30	2.20			3.50	4.00	3.30

Delay and Level of Service by Movement

Approach	N (Major)			E			S (Major)			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	5.43	340.22	153.26	6.52	5.43	13.04	251.09	178.26	5.43	30.43	5.43	281.52
cmx, Capacity	1403.36			81.53	140.05	866.87	1080.54			142.92	154.92	640.24
V / C	0.00			0.08	0.04	0.02	0.23			0.21	0.04	0.44
d, Delay	7.58			52.13	33.68	12.13	9.34			46.87	44.92	27.31
LOS	A			F	D	B	A			E	E	D
dA, Approach Delay		0.08			27.25			5.39			29.49	
Approach LOS					D						D	
dRank1, Rank 1 Delay		0.00						0.00				

Delay and Level of Service by Lane

Approach	N (Major)			E	S (Major)		W
Lane	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2	Lane 1
Movements			T, R1	L1, T, R1		T, R1	L1, T, R1
vx, Volume	5.43	246.74	246.74	25.00	251.09	183.70	317.39
Flared Storage Size							
cmx, Capacity				186.78			461.50
V / C				0.13			0.69
Q95, 95% Queue Length				0.46			6.09
d, Delay				27.25			29.49
LOS				D			D
dA, Approach Delay		0.08		27.25	5.39		29.49
Approach LOS				D			D

Node 204: Fairview & Berkeley	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	2.81
Worst Case Delay	31.06
Worst Case LOS	D

Volume and Adjustments

Approach		N (Major)			E			S (Major)			W	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	24.00	564.00	5.00	66.00	5.00	48.00	8.00	417.00	32.00	5.00	5.00	7.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	26.09	613.04	5.43	71.74	5.43	52.17	8.70	453.26	34.78	5.43	5.43	7.61

Pedestrians

Approach		N (Major)			E			S (Major)			W	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
w, Lane Width (ft)	12.00			12.00	12.00	12.00	12.00			12.00	12.00	12.00
Sp, Walking Speed (ft/s)	3.50			3.50	3.50	3.50	3.50			3.50	3.50	3.50
fpb, Percent Blockage	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00

Capacity of Movements below Rank 1

Approach		N (Major)			E			S (Major)			W	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	2	1	1	4	3	2	2	1	1	4	3	2
vx, Volume	26.09			71.74	5.43	52.17	8.70			5.43	5.43	7.61
Conflicting Volume (Veh)	488.04			849.46	1158.70	244.02	618.48			914.67	1173.37	309.24
Conflicting Volume (Ped)	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
Conflicting Volume	488.04			849.46	1158.70	244.02	618.48			914.67	1173.37	309.24
Two-Stage Gap Acceptanc				No	No					No	No	
Number of Storage Spaces												
cpx, Potential Capacity	1085.53			257.47	197.53	762.66	971.55			230.96	193.61	692.60
Capacity	1085.53			241.52	189.77	762.66	971.55			204.17	186.00	692.60

Critical Headway and Follow Up Headway

Approach		N (Major)			E			S (Major)			W	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Head	4.10			7.50	6.50	6.90	4.10			7.50	6.50	6.90
tc,base,I, Base Critical Hea												
tc,base,II, Base Critical Hea												
tc,HV, Heavy Vehicles Adju	2.00			2.00	2.00	2.00	2.00			2.00	2.00	2.00
Phv, % Heavy Vehicles	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
tc,G, Grade Adjustment Fac	1.00			0.20	0.20	0.10	1.00			0.20	0.20	0.10
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
tc, Critical Headway	4.10			7.50	6.50	6.90	4.10			7.50	6.50	6.90
tc,I, Critical Headway (Stag												
tc,II, Critical Headway (Stag												
tf,base, Base Follow-Up He	2.20			3.50	4.00	3.30	2.20			3.50	4.00	3.30
tf,hv, Heavy Vehicles Adjus	1.00			1.00	1.00	1.00	1.00			1.00	1.00	1.00
tf, Follow-Up Headway	2.20			3.50	4.00	3.30	2.20			3.50	4.00	3.30

Delay and Level of Service by Movement

Approach		N (Major)			E			S (Major)			W	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	26.09	613.04	5.43	71.74	5.43	52.17	8.70	453.26	34.78	5.43	5.43	7.61
cmx, Capacity	1085.53			241.52	189.77	762.66	971.55			204.17	186.00	692.60
V / C	0.02			0.30	0.03	0.07	0.01			0.03	0.03	0.01
d, Delay	8.40			26.99	31.06	16.81	8.74			23.56	25.29	11.13
LOS	A			D	D	C	A			C	D	B
dA, Approach Delay		0.34			23.06			0.15			18.95	
Approach LOS					C						C	
dRank1, Rank 1 Delay		0.00						0.00				

Delay and Level of Service by Lane

Approach		N (Major)		E		S (Major)		W
Lane	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2	Lane 3	Lane 1
Movements			T, R1	L1, T, R1			T, R1	L1, T, R1
vx, Volume	26.09	309.24	309.24	129.35	8.70	244.02	244.02	18.48
Flared Storage Size								
cmx, Capacity				328.23				276.52
V / C				0.39				0.07
Q95, 95% Queue Length				1.91				0.21
d, Delay				23.06				18.95
LOS				C				C
dA, Approach Delay		0.34		23.06		0.15		18.95
Approach LOS				C				C

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Node 240: Fairview & Shirrell Way	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	1.91
Worst Case Delay	24.13
Worst Case LOS	C

Volume and Adjustments						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
Base Volume	618.00	40.00	26.00	423.00	44.00	70.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	671.74	43.48	28.26	459.78	47.83	76.09

Pedestrians						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
vx, Flow (Ped/hr)			0.00		0.00	0.00
w, Lane Width (ft)			12.00		12.00	12.00
Sp, Walking Speed (ft/s)			3.50		3.50	3.50
fpb, Percent Blockage			0.00		0.00	0.00

Capacity of Movements below Rank 1						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
Rank	1	1	2	1	3	2
vx, Volume			28.26		47.83	76.09
Conflicting Volume (Veh)			715.22		979.89	357.61
Conflicting Volume (Ped)			0.00		0.00	0.00
Conflicting Volume			715.22		979.89	357.61
Two-Stage Gap Acceptance					No	
Number of Storage Spaces						
cpx, Potential Capacity			894.50		250.59	644.70
Capacity			894.50		241.51	644.70

Critical Headway and Follow Up Headway						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
tc,base, Base Critical Head			4.10		7.50	6.90
tc,base,I, Base Critical Hea						
tc,base,II, Base Critical Hea						
tc,HV, Heavy Vehicles Adju			2.00		2.00	2.00
Phv, % Heavy Vehicles			0.00		0.00	0.00
tc,G, Grade Adjustment Fac			1.00		0.20	0.10
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment			0.00		0.70	0.00
tc, Critical Headway			4.10		6.80	6.90
tc,I, Critical Headway (Stag						
tc,II, Critical Headway (Stag						
tf,base, Base Follow-Up He			2.20		3.50	3.30
tf,hv, Heavy Vehicles Adjus			1.00		1.00	1.00
tf, Follow-Up Headway			2.20		3.50	3.30

Delay and Level of Service by Movement						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
vx, Volume	671.74	43.48	28.26	459.78	47.83	76.09
cmx, Capacity			894.50		241.51	644.70
V / C			0.03		0.20	0.12
d, Delay			9.16		24.13	14.81
LOS			A		C	B
dA, Approach Delay	0.00		0.53		18.41	
Approach LOS					C	
dRank1, Rank 1 Delay	0.00		0.00			

Delay and Level of Service by Lane						
Approach	N (Major)		S (Major)			W
Lane	Lane 1	Lane 2	Lane 1	Lane 2	Lane 3	Lane 1
Movements		T, R1				L1, R1
vx, Volume	357.61	357.61	28.26	229.89	229.89	123.91
Flared Storage Size						
cmx, Capacity						392.07
V / C						0.32
Q95, 95% Queue Length						1.37
d, Delay						18.41
LOS						C
dA, Approach Delay	0.00		0.53			18.41
Approach LOS						C

Node 241: Encina & Fairview	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.356
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement						
Approach	N		E		S	
Movement	L1	T	L1	R1	T	R1
Base Volume	114	566	56	78	388	48
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	29	142	14	20	97	12
Adjusted Volume	114	566	56	78	388	48

Volume and Adjustments by Lane Group					
Approach	N		E		S
Lane Group	L	C	L	R	C
ID	12257	12258	12255	12256	12260
Lanes	L	T, T	L	R	T, RT
Volume	114	566	56	78	436

Saturation Flow Rate					
Approach	N		E		S
Lane Group	12257	12258	12255	12256	12260
Base Saturation Flow Rate	1600	1600	1600	1600	1600
Number of Lanes	1	2	1	1	2
Saturation Flow Rate	1600	3200	1600	1600	3200

Capacity Analysis						
Approach	N		E		S	
Movement	L1	T	L1	R1	T	R1
Volume	114	566	56	78	388	48
Volume / Saturation Flow R	0.071	0.177	0.035	0.049	0.136	0.136
Overlap adjusted Volume /	0.071	0.177	0.035	0.049	0.136	0.136
Critical Movement	Y			Y	Y	

Node 256: Calle Real & Patterson

Control Type	Signalized
Method	ICU Method 1
LOS	C
Critical V/C	0.723
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		S		W	
Movement	T	R1	L1	T	L1	R1
Base Volume	886	90	347	363	49	512
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	222	23	87	91	12	128
Adjusted Volume	886	90	347	363	49	512

Volume and Adjustments by Lane Group

Approach	N	S		W	
Lane Group	C	L	C	L	R
ID	12262	12267	12269	12264	12265
Lanes	T, RT	L, L	T, T	L	R, R
Volume	976	347	363	49	512

Saturation Flow Rate

Approach	N	S		W	
Lane Group	12262	12267	12269	12264	12265
Base Saturation Flow Rate	1600	1600	1600	1600	1600
Number of Lanes	2	2	2	1	2
Saturation Flow Rate	3200	3200	3200	1600	3200

Capacity Analysis

Approach	N		S		W	
Movement	T	R1	L1	T	L1	R1
Volume	886	90	347	363	49	512
Volume / Saturation Flow R	0.305	0.305	0.108	0.113	0.031	0.160
Overlap adjusted Volume /	0.305	0.305	0.108	0.113	0.031	0.160
Critical Movement	Y		Y			Y

Node 257: University & Patterson	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.501
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	11	613	5	266	5	24	15	263	111	7	8	36
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	3	153	1	67	1	6	4	66	28	2	2	9
Adjusted Volume	11	613	5	266	5	24	15	263	111	7	8	36

Volume and Adjustments by Lane Group

Approach	N		E	S		W
Lane Group	L	C	C	L	C	C
ID	12272	12273	12271	12276	12277	12275
Lanes	L	T, RT	LTR	L	T, RT	LTR
Volume	11	618	295	15	374	51

Saturation Flow Rate

Approach	N		E	S		W
Lane Group	12272	12273	12271	12276	12277	12275
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	1	1	2	1
Saturation Flow Rate	1600	3200	1600	1600	3200	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	11	613	5	266	5	24	15	263	111	7	8	36
Volume / Saturation Flow R	0.007	0.193	0.193	0.166	0.184	0.184	0.009	0.117	0.117	0.004	0.032	0.032
Overlap adjusted Volume /	0.007	0.193	0.193	0.166	0.184	0.184	0.009	0.117	0.117	0.004	0.032	0.032
Critical Movement			Y	Y			Y				Y	

Node 261: Turnpike & NB 101 Ramps

Control Type	Signalized
Method	ICU Method 1
LOS	C
Critical V/C	0.789
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		E			S		W
Movement	T	R1	L1	T	R1	L1	T	
Base Volume	594	324	478	5	164	325	499	
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Peak 15 Volume	149	81	120	1	41	81	125	
Adjusted Volume	594	324	478	5	164	325	499	

Volume and Adjustments by Lane Group

Approach	N	E		S		W
Lane Group	C	C	R	L	C	
ID	12282	12279	12281	12284	12285	
Lanes	T, RT	L, LT	R	L	T, T	
Volume	918	483	164	325	499	

Saturation Flow Rate

Approach	N	E		S		W
Lane Group	12282	12279	12281	12284	12285	
Base Saturation Flow Rate	1600	1600	1600	1600	1600	
Number of Lanes	2	2	1	1	2	
Saturation Flow Rate	3200	3200	1600	1600	3200	

Capacity Analysis

Approach	N		E			S		W
Movement	T	R1	L1	T	R1	L1	T	
Volume	594	324	478	5	164	325	499	
Volume / Saturation Flow R	0.287	0.287	0.149	0.151	0.102	0.203	0.156	
Overlap adjusted Volume /	0.287	0.287	0.149	0.151	0.102	0.203	0.156	
Critical Movement	Y		Y			Y		

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Node 262: Turnpike & Calle Real	
Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.692
Loss Time	20
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	57	428	20	218	35	50	107	280	267	20	59	238
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	14	107	5	55	9	13	27	70	67	5	15	60
Adjusted Volume	57	428	20	218	35	50	107	280	267	20	59	238

Volume and Adjustments by Lane Group

Approach	N		E			S		W		
Lane Group	L	C	L	C	R	L	C	L	C	R
ID	12290	12291	12287	12288	12289	12296	12298	12293	12294	12295
Lanes	L	T, RT	L	T	R	L, L	T, RT	L	T	R
Volume	57	448	218	35	50	107	547	20	59	238

Saturation Flow Rate

Approach	N		E			S		W		
Lane Group	12290	12291	12287	12288	12289	12296	12298	12293	12294	12295
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	1	1	1	2	2	1	1	1
Saturation Flow Rate	1600	3200	1600	1600	1600	3200	3200	1600	1600	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	57	428	20	218	35	50	107	280	267	20	59	238
Volume / Saturation Flow R	0.036	0.140	0.140	0.136	0.022	0.031	0.033	0.171	0.171	0.013	0.037	0.149
Overlap adjusted Volume /	0.036	0.140	0.140	0.136	0.022	0.031	0.033	0.171	0.171	0.013	0.037	0.149
Critical Movement	Y			Y				Y				Y

Node 273: Cathedral Oaks & Brandon	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	3.9
Worst Case Delay	14.41
Worst Case LOS	B

Volume and Adjustments

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	21.00	5.00	5.00	60.00	79.00	5.00	21.00	5.00	76.00	5.00	192.00	51.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	22.83	5.43	5.43	65.22	85.87	5.43	22.83	5.43	82.61	5.43	208.70	55.43

Pedestrians

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
w, Lane Width (ft)	12.00	12.00	12.00	12.00			12.00	12.00	12.00	12.00		
Sp, Walking Speed (ft/s)	3.50	3.50	3.50	3.50			3.50	3.50	3.50	3.50		
fpb, Percent Blockage	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		

Capacity of Movements below Rank 1

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	2	1	1	4	3	2	2	1	1
vx, Volume	22.83	5.43	5.43	65.22			22.83	5.43	82.61	5.43		
Conflicting Volume (Veh)	507.61	491.30	85.87	264.13			444.02	441.30	208.70	91.30		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	507.61	491.30	85.87	264.13			444.02	441.30	208.70	91.30		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces												
cpx, Potential Capacity	478.87	481.01	978.46	1311.65			527.58	513.25	836.71	1516.28		
Capacity	409.60	454.04	978.46	1311.65			497.64	484.48	836.71	1516.28		

Critical Headway and Follow Up Headway

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Head	7.10	6.50	6.20	4.10			7.10	6.50	6.20	4.10		
tc,base,I, Base Critical Hea												
tc,base,II, Base Critical Hea												
tc,HV, Heavy Vehicles Adju	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00		
Phv, % Heavy Vehicles	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Fac	0.20	0.20	0.10	1.00			0.20	0.20	0.10	1.00		
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc, Critical Headway	7.10	6.50	6.20	4.10			7.10	6.50	6.20	4.10		
tc,I, Critical Headway (Stag												
tc,II, Critical Headway (Stag												
tf,base, Base Follow-Up He	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		
tf,hv, Heavy Vehicles Adjus	0.90	0.90	0.90	0.90			0.90	0.90	0.90	0.90		
tf, Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		

Delay and Level of Service by Movement

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	22.83	5.43	5.43	65.22	85.87	5.43	22.83	5.43	82.61	5.43	208.70	55.43
cmx, Capacity	409.60	454.04	978.46	1311.65			497.64	484.48	836.71	1516.28		
V / C	0.06	0.01	0.01	0.05			0.05	0.01	0.10	0.00		
d, Delay	14.41	13.55	9.30	7.89			13.17	13.36	10.24	7.38		
LOS	B	B	A	A			B	B	B	A		
dA, Approach Delay		13.44			3.29			10.99			0.15	
Approach LOS		B						B				
dRank1, Rank 1 Delay					0.00						0.00	

Delay and Level of Service by Lane

Approach	N	E (Major)			S	W (Major)		
Lane	Lane 1	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2	Lane 3
Movements	L1, T, R1				L1, T, R1			
vx, Volume	33.70	65.22	85.87	5.43	110.87	5.43	208.70	55.43
Flared Storage Size								
cmx, Capacity	460.00				711.54			
V / C	0.07				0.16			
Q95, 95% Queue Length	0.24				0.55			
d, Delay	13.44				10.99			
LOS	B				B			
dA, Approach Delay	13.44		3.29		10.99		0.15	
Approach LOS	B				B			

Node 276: Cathedral Oaks & Alameda	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.599
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement						
Approach	E		S		W	
Movement	L1	T	L1	R1	T	R1
Base Volume	213	127	58	184	322	129
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	53	32	15	46	81	32
Adjusted Volume	213	127	58	184	322	129

Volume and Adjustments by Lane Group						
Approach	E		S		W	
Lane Group	L	C	L	R	C	R
ID	12300	12301	12304	12305	12302	12303
Lanes	L	T	L	R	T	R
Volume	213	127	58	184	322	129

Saturation Flow Rate						
Approach	E		S		W	
Lane Group	12300	12301	12304	12305	12302	12303
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	1	1	1
Saturation Flow Rate	1600	1600	1600	1600	1600	1600

Capacity Analysis						
Approach	E		S		W	
Movement	L1	T	L1	R1	T	R1
Volume	213	127	58	184	322	129
Volume / Saturation Flow R	0.133	0.079	0.036	0.115	0.201	0.081
Overlap adjusted Volume /	0.133	0.079	0.036	0.115	0.201	0.081
Critical Movement	Y			Y	Y	

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Node 277: Cathedral Oaks & Glen Anne	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.576
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	9	23	9	79	357	14	266	28	59	5	304	292
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	2	6	2	20	89	4	67	7	15	1	76	73
Adjusted Volume	9	23	9	79	357	14	266	28	59	5	304	292

Volume and Adjustments by Lane Group											
Approach	N		E			S			W		
Lane Group	L	C	L	C	R	L	C	R	L	C	R
ID	12312	12313	12309	12310	12311	12306	12307	12308	12314	12315	12316
Lanes	L	RT	L	T	R	L	T	R	L	T	R
Volume	9	32	79	357	14	266	28	59	5	304	292

Saturation Flow Rate											
Approach	N		E			S			W		
Lane Group	12312	12313	12309	12310	12311	12306	12307	12308	12314	12315	12316
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1
Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600

Capacity Analysis												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	9	23	9	79	357	14	266	28	59	5	304	292
Volume / Saturation Flow R	0.006	0.020	0.020	0.049	0.223	0.009	0.166	0.018	0.037	0.003	0.190	0.183
Overlap adjusted Volume /	0.006	0.020	0.020	0.049	0.223	0.009	0.166	0.018	0.037	0.003	0.190	0.183
Critical Movement		Y		Y			Y				Y	

Node 279:Calle Real & Los Caneros	
Control Type	Roundabout
Method	HCM 6th Edition
Average Delay	4.98
Average LOS	A
Worst Case Delay	5.49
Worst Case LOS	A

Volume by Movement						
Approach	N		E		S	
Movement	L1	T	L1	R1	T	R1
Base Volume (veh/h)	19.00	197.00	241.00	14.00	118.00	162.00
PHF	0.92	0.92	0.92	0.92	0.92	0.92
Volume, Lane Flow Rate (v	20.65	214.13	261.96	15.22	128.26	176.09

Volume			
Approach	N	E	S
Lane	Lane 1	Lane 1	Lane 1
Movements	L1, T	L1, R1	T, R1
Volume, Lane Flow Rate (v	234.783	277.174	304.348
P_T, Share of Heavy Vehic	0.00	0.00	0.00
f_HV, Heavy-Vehicle Adjus	1.000	1.000	1.000
Adjusted Volume (pc/h)	234.783	277.174	304.348
De-Facto Movements	L1, T	L1, R1	T, R1
Is Bypass Lane			
Uses Bypass			
Bypass Type			
Bypass Volume (pc/h)	0.000	0.000	0.000
Non-Bypass Volume (pc/h)	234.783	277.174	304.348

Capacity			
Approach	N	E	S
Lane	Lane 1	Lane 1	Lane 1
Movements	L1, T	L1, R1	T, R1
v_e, Entry Volume (pc/h)	234.78	277.17	304.35
v_bypass, Bypass Volume			
t_f, Follow Up Headway			
t_c, Critical Headway			
A, Capacity Calibration Fac	1380.00	1380.00	1380.00
B, Capacity Calibration Fac	0.00102	0.00102	0.00102
v_c, Conflicting Volume (pc	261.96	128.26	20.65
v_ex,pce, Conflicting Volum			
c_pce, Capacity (pc/h)	1056.42	1210.77	1351.23
n_ped, Conflicting Pedestri	0.00	0.00	0.00
f_ped, Pedestrian Adjustme	1.000	1.000	1.000
P_T, Share of Heavy Vehic	0.00	0.00	0.00
f_HV, Heavy-Vehicle Adjus	1.000	1.000	1.000
c, Capacity (veh/h)	1056.42	1210.77	1351.23

Delay and Level of Service by Lane			
Approach	N	E	S
Lane	Lane 1	Lane 1	Lane 1
Movements	L1, T	L1, R1	T, R1
v, Volume, Lane Flow Rate	234.78	277.17	304.35
c, Capacity (veh/h)	1056.42	1210.77	1351.23
x, Volume-to-Capacity Rati	0.22	0.23	0.23
Q_95, 95% Queue Length (	0.86	0.89	0.87
d, Delay (s/veh)	5.49	5.00	4.56
LOS	A	A	A
Approach Delay (s/veh)	5.49	5.00	4.56
Approach LOS	A	A	A

Delay and Level of Service by Movement						
Approach	N		E		S	
Movement	L1	T	L1	R1	T	R1
v, Volume, Lane Flow Rate	20.65	214.13	261.96	15.22	128.26	176.09
c, Capacity (veh/h)	1056.42	1056.42	1210.77	1210.77	1351.23	1351.23
x, Volume-to-Capacity Rati	0.02	0.20	0.22	0.01	0.09	0.13
d, Delay (s/veh)	5.49	5.49	5.00	5.00	4.56	4.56
LOS	A	A	A	A	A	A
Approach Delay (s/veh)	5.49		5.00		4.56	
Approach LOS	A		A		A	

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Node 280: Calle Real & La Patera	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	4.24
Worst Case Delay	15.16
Worst Case LOS	C

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	118.00	66.00	216.00	83.00	24.00	161.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	128.26	71.74	234.78	90.22	26.09	175.00

Pedestrians						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Flow (Ped/hr)	0.00	0.00			0.00	
w, Lane Width (ft)	12.00	12.00			12.00	
Sp, Walking Speed (ft/s)	3.50	3.50			3.50	
fpb, Percent Blockage	0.00	0.00			0.00	

Capacity of Movements below Rank 1						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Rank	3	2	1	1	2	1
vx, Volume	128.26	71.74			26.09	
Conflicting Volume (Veh)	507.07	279.89			325.00	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	507.07	279.89			325.00	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces						
cpx, Potential Capacity	528.93	763.78			1246.08	
Capacity	516.67	763.78			1246.08	

Critical Headway and Follow Up Headway						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
tc,base, Base Critical Head	7.10	6.20			4.10	
tc,base,I, Base Critical Hea						
tc,base,II, Base Critical Hea						
tc,HV, Heavy Vehicles Adju	1.00	1.00			1.00	
Phv, % Heavy Vehicles	0.00	0.00			0.00	
tc,G, Grade Adjustment Fac	0.20	0.10			1.00	
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment	0.70	0.00			0.00	
tc, Critical Headway	6.40	6.20			4.10	
tc,I, Critical Headway (Stag						
tc,II, Critical Headway (Stag						
tf,base, Base Follow-Up He	3.50	3.30			2.20	
tf,hv, Heavy Vehicles Adjus	0.90	0.90			0.90	
tf, Follow-Up Headway	3.50	3.30			2.20	

Delay and Level of Service by Movement						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Volume	128.26	71.74	234.78	90.22	26.09	175.00
cmx, Capacity	516.67	763.78			1246.08	
V / C	0.25	0.09			0.02	
d, Delay	15.16	12.91			7.95	
LOS	C	B			A	
dA, Approach Delay	14.35		0.00		1.03	
Approach LOS	B					
dRank1, Rank 1 Delay			0.00		0.18	

Delay and Level of Service by Lane			
Approach	N	E (Major)	W (Major)
Lane	Lane 1	Lane 1	Lane 1
Movements	L1, R1	T, R1	L1, T
vx, Volume	200.00	325.00	201.09
Flared Storage Size			
cmx, Capacity	584.50		1246.08
V / C	0.34		0.16
Q95, 95% Queue Length	1.55		0.58
d, Delay	14.35		7.95
LOS	B		
dA, Approach Delay	14.35	0.00	1.03
Approach LOS	B		

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Node 282: Calle Real & Carlo Dr	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	3.73
Worst Case Delay	20.48
Worst Case LOS	C

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	72.00	83.00	256.00	31.00	68.00	348.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	78.26	90.22	278.26	33.70	73.91	378.26

Pedestrians						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Flow (Ped/hr)	0.00	0.00			0.00	
w, Lane Width (ft)	12.00	12.00			12.00	
Sp, Walking Speed (ft/s)	3.50	3.50			3.50	
fpb, Percent Blockage	0.00	0.00			0.00	

Capacity of Movements below Rank 1						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Rank	3	2	1	1	2	1
vx, Volume	78.26	90.22			73.91	
Conflicting Volume (Veh)	821.20	295.11			311.96	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	821.20	295.11			311.96	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces						
cpx, Potential Capacity	346.82	749.00			1259.86	
Capacity	324.08	749.00			1259.86	

Critical Headway and Follow Up Headway						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
tc,base, Base Critical Head	7.10	6.20			4.10	
tc,base,I, Base Critical Hea						
tc,base,II, Base Critical Hea						
tc,HV, Heavy Vehicles Adju	1.00	1.00			1.00	
Phv, % Heavy Vehicles	0.00	0.00			0.00	
tc,G, Grade Adjustment Fac	0.20	0.10			1.00	
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment	0.70	0.00			0.00	
tc, Critical Headway	6.40	6.20			4.10	
tc,I, Critical Headway (Stag						
tc,II, Critical Headway (Stag						
tf,base, Base Follow-Up He	3.50	3.30			2.20	
tf,hv, Heavy Vehicles Adjus	0.90	0.90			0.90	
tf, Follow-Up Headway	3.50	3.30			2.20	

Delay and Level of Service by Movement						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Volume	78.26	90.22	278.26	33.70	73.91	378.26
cmx, Capacity	324.08	749.00			1259.86	
V / C	0.24	0.12			0.06	
d, Delay	20.48	14.18			8.04	
LOS	C	B			A	
dA, Approach Delay	17.10		0.00		1.31	
Approach LOS	C					
dRank1, Rank 1 Delay			0.00		0.00	

Delay and Level of Service by Lane					
Approach	N	E (Major)	W (Major)		
Lane	Lane 1	Lane 1	Lane 1	Lane 2	Lane 3
Movements	L1, R1	T, R1			
vx, Volume	168.48	311.96	73.91	189.13	189.13
Flared Storage Size					
cmx, Capacity	465.49				
V / C	0.36				
Q95, 95% Queue Length	1.68				
d, Delay	17.10				
LOS	C				
dA, Approach Delay	17.10	0.00	1.31		
Approach LOS	C				

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Node 288: Calle Real & Fairview

Control Type	Signalized
Method	ICU Method 1
LOS	D
Critical V/C	0.829
Loss Time	20
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	71	516	30	188	93	27	239	391	162	27	76	400
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	18	129	8	47	23	7	60	98	41	7	19	100
Adjusted Volume	71	516	30	188	93	27	239	391	162	27	76	400

Volume and Adjustments by Lane Group

Approach	N		E		S		W		
Lane Group	L	C	L	C	C	R	L	C	R
ID	12323	12324	12320	12322	12317	12319	12326	12327	12328
Lanes	L	T, RT	L, L	RT	LT, T	R	L	T	R
Volume	71	546	188	120	630	162	27	76	400

Saturation Flow Rate

Approach	N		E		S		W		
Lane Group	12323	12324	12320	12322	12317	12319	12326	12327	12328
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	2	1	2	1	1	1	1
Saturation Flow Rate	1600	3200	3200	1600	3200	1600	1600	1600	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	71	516	30	188	93	27	239	391	162	27	76	400
Volume / Saturation Flow R	0.044	0.171	0.171	0.059	0.075	0.075	0.149	0.197	0.101	0.017	0.048	0.250
Overlap adjusted Volume /	0.044	0.171	0.171	0.059	0.075	0.075	0.149	0.197	0.101	0.017	0.048	0.250
Critical Movement		Y		Y			Y					Y

Node 289: Fairview & US 101 NB Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.266
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement						
Approach	N	E		S	W	
Movement	T	T	R1		L1	R1
Base Volume	110	720	457		371	129
PHF	1.000	1.000	1.000		1.000	1.000
Peak 15 Volume	28	180	114		93	32
Adjusted Volume	110	720	457		371	129

Volume and Adjustments by Lane Group						
Approach	N	E		S	W	
Lane Group	C	C	R		L	R
ID	12331	12329	12330		12332	12334
Lanes	T	T	R		L, L	R
Volume	110	720	457		371	129

Saturation Flow Rate						
Approach	N	E		S	W	
Lane Group	12331	12329	12330		12332	12334
Base Saturation Flow Rate	1600	1600	1600		1600	1600
Number of Lanes	1	1	1		2	1
Saturation Flow Rate	1600	1600	1600		3200	1600

Capacity Analysis						
Approach	N	E		S	W	
Movement	T	T	R1		L1	R1
Volume	110	720	457		371	129
Volume / Saturation Flow R	0.069	0.450	0.286		0.116	0.081
Overlap adjusted Volume /	0.069	0.450	0.286		0.116	0.081
Critical Movement					Y	

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Node 296: Calle Real & Kellogg	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.418
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement						
Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Base Volume	206	59	307	90	25	323
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	52	15	77	23	6	81
Adjusted Volume	206	59	307	90	25	323

Volume and Adjustments by Lane Group					
Approach	N		E	W	
Lane Group	L	R	C	L	C
ID	12337	12338	12335	12339	12340
Lanes	L	R	T, RT	L	T, T
Volume	206	59	397	25	323

Saturation Flow Rate					
Approach	N		E	W	
Lane Group	12337	12338	12335	12339	12340
Base Saturation Flow Rate	1600	1600	1600	1600	1600
Number of Lanes	1	1	2	1	2
Saturation Flow Rate	1600	1600	3200	1600	3200

Capacity Analysis						
Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Volume	206	59	307	90	25	323
Volume / Saturation Flow R	0.129	0.037	0.124	0.124	0.016	0.101
Overlap adjusted Volume /	0.129	0.037	0.124	0.124	0.016	0.101
Critical Movement	Y			Y	Y	

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Node 305: Patterson & Overpass

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.543
Loss Time	12
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	41	1029	87	8	5	44	11	665	11	64	5	12
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	10	257	22	2	1	11	3	166	3	16	1	3
Adjusted Volume	41	1029	87	8	5	44	11	665	11	64	5	12

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	L	C	C	R	L	C	C	R
ID	12344	12345	12342	12343	12349	12350	12347	12348
Lanes	L	T, RT	LT	R	L	T, RT	LT	R
Volume	41	1116	13	44	11	676	69	12

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	12344	12345	12342	12343	12349	12350	12347	12348
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	1	1	1	2	1	1
Saturation Flow Rate	1600	3200	1600	1600	1600	3200	1600	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	41	1029	87	8	5	44	11	665	11	64	5	12
Volume / Saturation Flow R	0.026	0.349	0.349	0.005	0.008	0.028	0.007	0.211	0.211	0.040	0.043	0.007
Overlap adjusted Volume /	0.026	0.349	0.349	0.005	0.008	0.028	0.007	0.211	0.211	0.040	0.043	0.007
Critical Movement		Y				Y	Y			Y		

Node 306: Patterson & US 101 SB Ramps

Control Type	Signalized
Method	ICU Method 1
LOS	C
Critical V/C	0.743
Loss Time	12
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	571	809		450	331	189	5	350
PHF	1.000	1.000		1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	143	202		113	83	47	1	88
Adjusted Volume	571	809		450	331	189	5	350

Volume and Adjustments by Lane Group

Approach	N		E	S		W
Lane Group	L	C		C	R	C
ID	12352	12353		12357	12359	12355
Lanes	L	T, T		T, T	R	L, LTR
Volume	571	809		450	331	544

Saturation Flow Rate

Approach	N		E	S		W
Lane Group	12352	12353		12357	12359	12355
Base Saturation Flow Rate	1600	1600		1600	1600	1600
Number of Lanes	1	2		2	1	2
Saturation Flow Rate	1600	3200		3200	1600	3200

Capacity Analysis

Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Volume	571	809		450	331	189	5	350
Volume / Saturation Flow R	0.357	0.253		0.141	0.207	0.059	0.170	0.170
Overlap adjusted Volume /	0.357	0.253		0.141	0.207	0.059	0.170	0.170
Critical Movement	Y				Y	Y		

Node 307: Patterson & US 101 NB Ramp	
Control Type	Signalized
Method	ICU Method 1
LOS	C
Critical V/C	0.714
Loss Time	12
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		E			S		W
Movement	T	R1	L1	T	R1	L1	T	
Base Volume	928	469	458	5	318	252	398	
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Peak 15 Volume	232	117	115	1	80	63	100	
Adjusted Volume	928	469	458	5	318	252	398	

Volume and Adjustments by Lane Group

Approach	N		E	S		W
Lane Group	C	R	C	L	C	
ID	12363	12365	12360	12366	12367	
Lanes	T, T	R	L, LTR, R	L	T, T	
Volume	928	469	781	252	398	

Saturation Flow Rate

Approach	N		E	S		W
Lane Group	12363	12365	12360	12366	12367	
Base Saturation Flow Rate	1600	1600	1600	1600	1600	
Number of Lanes	2	1	3	1	2	
Saturation Flow Rate	3200	1600	4800	1600	3200	

Capacity Analysis

Approach	N		E			S		W
Movement	T	R1	L1	T	R1	L1	T	
Volume	928	469	458	5	318	252	398	
Volume / Saturation Flow R	0.290	0.293	0.143	0.163	0.163	0.158	0.124	
Overlap adjusted Volume /	0.290	0.293	0.143	0.163	0.163	0.158	0.124	
Critical Movement		Y	Y			Y		

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Node 319: Turnpike & SB 101 Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	E
Critical V/C	0.925
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	339	750		567	654	247	5	274
PHF	1.000	1.000		1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	85	188		142	164	62	1	69
Adjusted Volume	339	750		567	654	247	5	274

Volume and Adjustments by Lane Group

Approach	N		E	S		W
Lane Group	L	C		C	R	C
ID	12369	12370		12374	12376	12372
Lanes	L	T, T		T, T	R	LT, RT
Volume	339	750		567	654	526

Saturation Flow Rate

Approach	N		E	S		W
Lane Group	12369	12370		12374	12376	12372
Base Saturation Flow Rate	1600	1600		1600	1600	1600
Number of Lanes	1	2		2	1	2
Saturation Flow Rate	1600	3200		3200	1600	3200

Capacity Analysis

Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Volume	339	750		567	654	247	5	274
Volume / Saturation Flow R	0.212	0.234		0.177	0.409	0.154	0.164	0.164
Overlap adjusted Volume /	0.212	0.234		0.177	0.409	0.154	0.164	0.164
Critical Movement	Y				Y	Y		

Node 331: Hollister & Modoc Rd

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.652
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	E		S		W	
Movement	L1	T	L1	R1	T	R1
Base Volume	27	470	278	36	579	242
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	7	118	70	9	145	61
Adjusted Volume	27	470	278	36	579	242

Volume and Adjustments by Lane Group

Approach	E		S		W	
Lane Group	L	C	L	R	C	R
ID	12379	12380	12377	12378	12381	12382
Lanes	L	T	L	R	T	R
Volume	27	470	278	36	579	242

Saturation Flow Rate

Approach	E		S		W	
Lane Group	12379	12380	12377	12378	12381	12382
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	1	1	1
Saturation Flow Rate	1600	1600	1600	1600	1600	1600

Capacity Analysis

Approach	E		S		W	
Movement	L1	T	L1	R1	T	R1
Volume	27	470	278	36	579	242
Volume / Saturation Flow R	0.017	0.294	0.174	0.022	0.362	0.151
Overlap adjusted Volume /	0.017	0.294	0.174	0.022	0.362	0.151
Critical Movement	Y		Y		Y	

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Node 340: San Marcos Pass & Calle Real	
Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.658
Loss Time	20
Cycle Length	120

Volume and Adjustments by Movement												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	66	376	143	180	187	370	62	117	215	47	120	284
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	17	94	36	45	47	93	16	29	54	12	30	71
Adjusted Volume	66	376	143	180	187	370	62	117	215	47	120	284

Volume and Adjustments by Lane Group										
Approach	N		E			S		W		
Lane Group	L	C	L	C	R	L	C	L	C	R
ID	12386	12387	12383	12384	12385	12392	12393	12389	12390	12391
Lanes	L	T, RT	L	T	R	L	T, RT	L	T	R
Volume	66	519	180	187	370	62	332	47	120	284

Saturation Flow Rate										
Approach	N		E			S		W		
Lane Group	12386	12387	12383	12384	12385	12392	12393	12389	12390	12391
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	1	1	1	1	2	1	1	1
Saturation Flow Rate	1600	3200	1600	1600	1600	1600	3200	1600	1600	1600

Capacity Analysis												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	66	376	143	180	187	370	62	117	215	47	120	284
Volume / Saturation Flow R	0.041	0.162	0.162	0.113	0.117	0.231	0.039	0.104	0.104	0.029	0.075	0.177
Overlap adjusted Volume /	0.041	0.162	0.162	0.113	0.117	0.231	0.039	0.104	0.104	0.029	0.075	0.177
Critical Movement		Y		Y			Y					Y

Node 341: San Marcos Pass & State & SB On-Ramp

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.645
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E	S			W		
Movement	L2	L1	R1		T	R1	R2	L2	L1	T
Base Volume	768	33	143		352	28	30	518	218	396
PHF	1.000	1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	192	8	36		88	7	8	130	55	99
Adjusted Volume	768	33	143		352	28	30	518	218	396

Volume and Adjustments by Lane Group

Approach	N			E	S		W	
Lane Group	L	L	R		C	R	L	C
ID	12398	12400	12401		12395	12397	12402	12404
Lanes	L, L	L	R		T, RT	R	L, L	T, T
Volume	768	33	143		380	30	736	396

Saturation Flow Rate

Approach	N			E	S		W	
Lane Group	12398	12400	12401		12395	12397	12402	12404
Base Saturation Flow Rate	1600	1600	1600		1600	1600	1600	1600
Number of Lanes	2	1	1		2	1	2	2
Saturation Flow Rate	3200	1600	1600		3200	1600	3200	3200

Capacity Analysis

Approach	N			E	S			W		
Movement	L2	L1	R1		T	R1	R2	L2	L1	T
Volume	768	33	143		352	28	30	518	218	396
Volume / Saturation Flow R	0.240	0.021	0.089		0.119	0.119	0.019	0.162	0.136	0.124
Overlap adjusted Volume /	0.240	0.021	0.089		0.119	0.119	0.019	0.162	0.136	0.124
Critical Movement	Y					Y			Y	

Node 359: Cathedral Oaks & Winchester Canyon

Control Type	AWSC
Method	HCM 6th Edition
Average Delay	9.27
Average LOS	A

Volume and Adjustments

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	33.00	21.00	50.00	11.00	114.00	12.00	36.00	27.00	51.00	8.00	150.00	12.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
Flow Rate	35.87	22.83	54.35	11.96	123.91	13.04	39.13	29.35	55.43	8.70	163.04	13.04
Geometry Group	4b			5			5			5		

Saturation Headway

Approach	N	E		S		W	
Lanes	Lane 1	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
Total Lane Flow Rate	113.04	11.96	136.96	68.48	55.43	8.70	176.09
Left Turn Flow Rate	35.87	11.96	0.00	39.13	0.00	8.70	0.00
Right Turn Flow Rate	54.35	0.00	13.04	0.00	55.43	0.00	13.04
PLT, Proportion LT	0.32	1.00	0.00	0.57	0.00	1.00	0.00
PRT, Proportion RT	0.48	0.00	0.10	0.00	1.00	0.00	0.07
PHV, Proportion HV	0.00	0.00	0.00	0.00	0.00	0.00	0.00
hLT,adj, Headway adjustme	0.20	0.50		0.50		0.50	
hRT,adj, Headway adjustm	-0.60	-0.70		-0.70		-0.70	
hHV,adj, Headway adjustm	1.70	1.70		1.70		1.70	
hadj, Headway adjustment	-0.22	0.50	-0.07	0.29	-0.70	0.50	-0.05

Departure Headway

Approach	N	E		S		W	
Lanes	Lane 1	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
Total Lane Flow Rate	113.04	11.96	136.96	68.48	55.43	8.70	176.09
hd initial	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x initial	0.10	0.01	0.12	0.06	0.05	0.01	0.16
hd, iteration 1	4.91	5.50	4.93	5.39	4.40	5.48	4.93
Difference, iteration 1	1.71	2.30	1.73	2.19	1.20	2.28	1.73
hd, iteration 2	5.25	5.78	5.22	5.72	4.74	5.75	5.19
Difference, iteration 2	0.34	0.28	0.28	0.34	0.34	0.27	0.27
hd, iteration 3	5.31	5.84	5.27	5.78	4.79	5.80	5.25
Difference, iteration 3	0.06	0.05	0.05	0.06	0.06	0.05	0.05
Convergence	Y	Y	Y	Y	Y	Y	Y
hd final, Departure Headwa	5.31	5.84	5.27	5.78	4.79	5.80	5.25
x final, Degree of Utilization	0.17	0.02	0.20	0.11	0.07	0.01	0.26

Capacity and Level of Service

Approach	N	E		S		W	
Lanes	Lane 1	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
Total Lane Flow Rate	113.04	11.96	136.96	68.48	55.43	8.70	176.09
hd, Departure Headway	5.31	5.84	5.27	5.78	4.79	5.80	5.25
x, Degree of Utilization	0.17	0.02	0.20	0.11	0.07	0.01	0.26
m, Move Up Time	2.00	2.30	2.30	2.30	2.30	2.30	2.30
ts, Service Time	3.31	3.54	2.97	3.48	2.49	3.50	2.95
Capacity	677.93	616.62	682.78	622.19	751.35	620.19	685.78
Delay	9.37	8.65	9.29	9.19	7.87	8.58	9.75
LOS	A	A	A	A	A	A	A
Q95, 95% Queue Length	0.60	0.06	0.75	0.37	0.24	0.04	1.03
Approach Delay	9.37	9.24		8.60		9.70	
Approach LOS	A	A		A		A	
Intersection Delay	9.27						
Intersection LOS	A						

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Node 372: Glen Annie & Del Norte	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	0.96
Worst Case Delay	10.28
Worst Case LOS	B

Volume and Adjustments				
Approach	N (Major)		S (Major)	W
Movement	T	R1	T	R1
Base Volume	397.00	21.00	477.00	92.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920
V, Adjusted Volume	431.52	22.83	518.48	100.00

Pedestrians				
Approach	N (Major)		S (Major)	W
Movement	T	R1	T	R1
vx, Flow (Ped/hr)				0.00
w, Lane Width (ft)				12.00
Sp, Walking Speed (ft/s)				3.50
fpb, Percent Blockage				0.00

Capacity of Movements below Rank 1				
Approach	N (Major)		S (Major)	W
Movement	T	R1	T	R1
Rank	1	1	1	2
vx, Volume				100.00
Conflicting Volume (Veh)				227.17
Conflicting Volume (Ped)				0.00
Conflicting Volume				227.17
Two-Stage Gap Acceptance				
Number of Storage Spaces				
cpx, Potential Capacity				781.85
Capacity				781.85

Critical Headway and Follow Up Headway				
Approach	N (Major)		S (Major)	W
Movement	T	R1	T	R1
tc,base, Base Critical Head				6.90
tc,base,I, Base Critical Hea				
tc,base,II, Base Critical Hea				
tc,HV, Heavy Vehicles Adju				2.00
Phv, % Heavy Vehicles				0.00
tc,G, Grade Adjustment Fac				0.10
G, % Grade	0.00		0.00	0.00
T3,lt, Geometry Adjustment				0.00
tc, Critical Headway				6.90
tc,I, Critical Headway (Stag				
tc,II, Critical Headway (Stag				
tf,base, Base Follow-Up He				3.30
tf,hv, Heavy Vehicles Adjus				1.00
tf, Follow-Up Headway				3.30

Delay and Level of Service by Movement				
Approach	N (Major)		S (Major)	W
Movement	T	R1	T	R1
vx, Volume	431.52	22.83	518.48	100.00
cmx, Capacity				781.85
V / C				0.13
d, Delay				10.28
LOS				B
dA, Approach Delay	0.00		0.00	10.28
Approach LOS				B
dRank1, Rank 1 Delay	0.00		0.00	

Delay and Level of Service by Lane					
Approach	N (Major)		S (Major)		W
Lane	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1
Movements		T, R1			
vx, Volume	227.17	227.17	259.24	259.24	100.00
Flared Storage Size					
cmx, Capacity					
V / C					
Q95, 95% Queue Length					
d, Delay					
LOS					
dA, Approach Delay	0.00		0.00		10.28
Approach LOS					B

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Node 375: Los Caneros & US101 SB Ramps

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.546
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	72	1168		160	357	130	5	216
PHF	1.000	1.000		1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	18	292		40	89	33	1	54
Adjusted Volume	72	1168		160	357	130	5	216

Volume and Adjustments by Lane Group

Approach	N		E	S	W	
Lane Group	L	C		C	C	R
ID	12406	12407		12411	12409	12410
Lanes	L	T, T		T, RT	LT	R
Volume	72	1168		517	135	216

Saturation Flow Rate

Approach	N		E	S	W	
Lane Group	12406	12407		12411	12409	12410
Base Saturation Flow Rate	1600	1600		1600	1600	1600
Number of Lanes	1	2		2	1	1
Saturation Flow Rate	1600	3200		3200	1600	1600

Capacity Analysis

Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Volume	72	1168		160	357	130	5	216
Volume / Saturation Flow R	0.045	0.365		0.162	0.162	0.081	0.084	0.135
Overlap adjusted Volume /	0.045	0.365		0.162	0.162	0.081	0.084	0.135
Critical Movement		Y				Y		

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Node 376: Los Carneros & US 101 NB Ramps

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.581
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		E			S		W
Movement	T	R1	L1	T	R1	L1	T	
Base Volume	423	110	805	5	53	21	276	
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Peak 15 Volume	106	28	201	1	13	5	69	
Adjusted Volume	423	110	805	5	53	21	276	

Volume and Adjustments by Lane Group

Approach	N	E	S		W
Lane Group	C	C	L	C	
ID	12415	12413	12417	12418	
Lanes	T, RT	L, LTR	L	T, T	
Volume	533	863	21	276	

Saturation Flow Rate

Approach	N	E	S		W
Lane Group	12415	12413	12417	12418	
Base Saturation Flow Rate	1600	1600	1600	1600	
Number of Lanes	2	2	1	2	
Saturation Flow Rate	3200	3200	1600	3200	

Capacity Analysis

Approach	N		E			S		W
Movement	T	R1	L1	T	R1	L1	T	
Volume	423	110	805	5	53	21	276	
Volume / Saturation Flow R	0.167	0.167	0.252	0.270	0.270	0.013	0.086	
Overlap adjusted Volume /	0.167	0.167	0.252	0.270	0.270	0.013	0.086	
Critical Movement		Y	Y			Y		

Node 383: Fairview & US 101 SB Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.539
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	447	1108		336	259	148	5	352
PHF	1.000	1.000		1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	112	277		84	65	37	1	88
Adjusted Volume	447	1108		336	259	148	5	352

Volume and Adjustments by Lane Group

Approach	N		E	S		W	
Lane Group	L	C		C	R	C	R
ID	12423	12425		12420	12422	12427	12428
Lanes	L, L	T, T		T, T	R	LT	R
Volume	447	1108		336	259	153	352

Saturation Flow Rate

Approach	N		E	S		W	
Lane Group	12423	12425		12420	12422	12427	12428
Base Saturation Flow Rate	1600	1600		1600	1600	1600	1600
Number of Lanes	2	2		2	1	1	1
Saturation Flow Rate	3200	3200		3200	1600	1600	1600

Capacity Analysis

Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Volume	447	1108		336	259	148	5	352
Volume / Saturation Flow R	0.140	0.346		0.105	0.162	0.092	0.096	0.220
Overlap adjusted Volume /	0.140	0.346		0.105	0.162	0.092	0.096	0.220
Critical Movement		Y				Y		

Node 385: Hollister & Fairview

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.666
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	301	496	501	58	347	267	67	112	33	141	242	100
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	75	124	125	15	87	67	17	28	8	35	61	25
Adjusted Volume	301	496	501	58	347	267	67	112	33	141	242	100

Volume and Adjustments by Lane Group

Approach	N			E			S		W		
Lane Group	L	C	R	L	C	R	L	C	L	C	R
ID	12436	12438	12440	12432	12433	12435	12429	12430	12441	12443	12445
Lanes	L, L	T, T	R	L	T, T	R	L	T, RT	L, L	T, T	R
Volume	301	496	501	58	347	267	67	145	141	242	100

Saturation Flow Rate

Approach	N			E			S		W		
Lane Group	12436	12438	12440	12432	12433	12435	12429	12430	12441	12443	12445
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	2	2	1	1	2	1	1	2	2	2	1
Saturation Flow Rate	3200	3200	1600	1600	3200	1600	1600	3200	3200	3200	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	301	496	501	58	347	267	67	112	33	141	242	100
Volume / Saturation Flow R	0.094	0.155	0.313	0.036	0.108	0.167	0.042	0.045	0.045	0.044	0.076	0.063
Overlap adjusted Volume /	0.094	0.155	0.313	0.036	0.108	0.167	0.042	0.045	0.045	0.044	0.076	0.063
Critical Movement			Y			Y	Y			Y		

Node 386: Fairview & Mandarin	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	5.3
Worst Case Delay	133.53
Worst Case LOS	F

Volume and Adjustments

Approach	E		S (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	57.00	243.00	402.00	39.00	151.00	1337.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	61.96	264.13	436.96	42.39	164.13	1453.26

Pedestrians

Approach	E		S (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Flow (Ped/hr)	0.00	0.00			0.00	
w, Lane Width (ft)	12.00	12.00			12.00	
Sp, Walking Speed (ft/s)	3.50	3.50			3.50	
fpb, Percent Blockage	0.00	0.00			0.00	

Capacity of Movements below Rank 1

Approach	E		S (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Rank	3	2	1	1	2	1
vx, Volume	61.96	264.13			164.13	
Conflicting Volume (Veh)	1491.85	218.48			479.35	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	1491.85	218.48			479.35	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces						
cpx, Potential Capacity	116.40	791.94			1093.57	
Capacity	87.10	791.94			1093.57	

Critical Headway and Follow Up Headway

Approach	E		S (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
tc,base, Base Critical Headway	7.50	6.90			4.10	
tc,base,I, Base Critical Hea						
tc,base,II, Base Critical Hea						
tc,HV, Heavy Vehicles Adju	2.00	2.00			2.00	
Phv, % Heavy Vehicles	0.00	0.00			0.00	
tc,G, Grade Adjustment Fac	0.20	0.10			1.00	
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment	0.70	0.00			0.00	
tc, Critical Headway	6.80	6.90			4.10	
tc,I, Critical Headway (Stag						
tc,II, Critical Headway (Stag						
tf,base, Base Follow-Up He	3.50	3.30			2.20	
tf,hv, Heavy Vehicles Adjus	1.00	1.00			1.00	
tf, Follow-Up Headway	3.50	3.30			2.20	

Delay and Level of Service by Movement

Approach	E		S (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Volume	61.96	264.13	436.96	42.39	164.13	1453.26
cmx, Capacity	87.10	791.94			1093.57	
V / C	0.71	0.33			0.15	
d, Delay	133.53	11.82			8.87	
LOS	F	B			A	
dA, Approach Delay	34.94		0.00		0.90	
Approach LOS	D					
dRank1, Rank 1 Delay			0.00		0.00	

Delay and Level of Service by Lane

Approach	E		S (Major)			W (Major)		
Lane	Lane 1	Lane 2	Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 3
Movements								
vx, Volume	61.96	264.13	218.48	218.48	42.39	164.13	726.63	726.63
Flared Storage Size								
cmx, Capacity								
V / C								
Q95, 95% Queue Length								
d, Delay								
LOS								
dA, Approach Delay	34.94		0.00			0.90		
Approach LOS	D							

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Node 387: Hollister & Orange	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	1.66
Worst Case Delay	39.98
Worst Case LOS	E

Volume and Adjustments												
Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	8.00	5.00	20.00	73.00	631.00	5.00	11.00	5.00	19.00	5.00	537.00	46.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	8.70	5.43	21.74	79.35	685.87	5.43	11.96	5.43	20.65	5.43	583.70	50.00

Pedestrians												
Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
w, Lane Width (ft)	12.00	12.00	12.00	12.00			12.00	12.00	12.00	12.00		
Sp, Walking Speed (ft/s)	3.50	3.50	3.50	3.50			3.50	3.50	3.50	3.50		
fpb, Percent Blockage	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		

Capacity of Movements below Rank 1												
Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	2	1	1	4	3	2	2	1	1
vx, Volume	8.70	5.43	21.74	79.35			11.96	5.43	20.65	5.43		
Conflicting Volume (Veh)	1152.72	1491.85	345.65	633.70			1123.91	1469.57	316.85	691.30		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1152.72	1491.85	345.65	633.70			1123.91	1469.57	316.85	691.30		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces												
cpx, Potential Capacity	154.93	124.66	656.23	959.02			162.64	128.60	684.84	912.98		
Capacity	132.78	111.04	656.23	959.02			138.80	114.54	684.84	912.98		

Critical Headway and Follow Up Headway												
Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Headway	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,base,I, Base Critical Hea												
tc,base,II, Base Critical Hea												
tc,HV, Heavy Vehicles Adju	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00		
Phv, % Heavy Vehicles	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Fac	0.20	0.20	0.10	1.00			0.20	0.20	0.10	1.00		
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc, Critical Headway	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,I, Critical Headway (Stag												
tc,II, Critical Headway (Stag												
tf,base, Base Follow-Up He	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		
tf,hv, Heavy Vehicles Adjus	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00		
tf, Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		

Delay and Level of Service by Movement												
Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	8.70	5.43	21.74	79.35	685.87	5.43	11.96	5.43	20.65	5.43	583.70	50.00
cmx, Capacity	132.78	111.04	656.23	959.02			138.80	114.54	684.84	912.98		
V / C	0.07	0.05	0.03	0.08			0.09	0.05	0.03	0.01		
d, Delay	34.67	39.98	13.05	9.09			33.97	39.46	13.28	8.97		
LOS	D	E	B	A			D	E	B	A		
dA, Approach Delay		22.37			0.94			23.52			0.08	
Approach LOS		C						C				
dRank1, Rank 1 Delay					0.00						0.00	

Delay and Level of Service by Lane								
Approach	N		E (Major)		S		W (Major)	
Lane	Lane 1	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2	Lane 3
Movements	L1, T, R1			T, R1	L1, T, R1			T, R1
vx, Volume	35.87	79.35	345.65	345.65	38.04	5.43	316.85	316.85
Flared Storage Size								
cmx, Capacity	243.08				232.33			
V / C	0.15				0.16			
Q95, 95% Queue Length	0.52				0.58			
d, Delay	22.37				23.52			
LOS	C				C			
dA, Approach Delay	22.37		0.94		23.52		0.08	
Approach LOS	C				C			

Node 390: Hollister & Pine/Nectarine

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.475
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	52	20	18	137	635	25	58	9	92	5	450	53
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	13	5	5	34	159	6	15	2	23	1	113	13
Adjusted Volume	52	20	18	137	635	25	58	9	92	5	450	53

Volume and Adjustments by Lane Group

Approach	N	E		S	W	
Lane Group	C	L	C	C	L	C
ID	12449	12446	12447	12453	12450	12451
Lanes	LTR	L	T, RT	LTR	L	T, RT
Volume	90	137	660	159	5	503

Saturation Flow Rate

Approach	N	E		S	W	
Lane Group	12449	12446	12447	12453	12450	12451
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	2	1	1	2
Saturation Flow Rate	1600	1600	3200	1600	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	52	20	18	137	635	25	58	9	92	5	450	53
Volume / Saturation Flow R	0.033	0.056	0.056	0.086	0.206	0.206	0.036	0.099	0.099	0.003	0.157	0.157
Overlap adjusted Volume /	0.033	0.056	0.056	0.086	0.206	0.206	0.036	0.099	0.099	0.003	0.157	0.157
Critical Movement	Y			Y				Y			Y	

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Node 394: Hollister & Rutherford	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.369
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	E		S		W	
Movement	L1	T	L1	R1	T	R1
Base Volume	51	766	28	19	487	30
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	13	192	7	5	122	8
Adjusted Volume	51	766	28	19	487	30

Volume and Adjustments by Lane Group

Approach	E		S	W
Lane Group	L	C	C	C
ID	12454	12455	12459	12457
Lanes	L	T, T	LTR	T, RT
Volume	51	766	47	517

Saturation Flow Rate

Approach	E		S	W
Lane Group	12454	12455	12459	12457
Base Saturation Flow Rate	1600	1600	1600	1600
Number of Lanes	1	2	1	2
Saturation Flow Rate	1600	3200	1600	3200

Capacity Analysis

Approach	E		S		W	
Movement	L1	T	L1	R1	T	R1
Volume	51	766	28	19	487	30
Volume / Saturation Flow R	0.032	0.239	0.018	0.029	0.162	0.162
Overlap adjusted Volume /	0.032	0.239	0.018	0.029	0.162	0.162
Critical Movement		Y		Y		

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Node 396: Hollister & Community Center West Driveway	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	0.4
Worst Case Delay	8.73
Worst Case LOS	A

Volume and Adjustments					
Approach	E (Major)		S	W (Major)	
Movement	L1	T		T	R1
Base Volume	64.00	816.00		467.00	35.00
PHF, Peak-hour factor	0.920	0.920		0.920	0.920
V, Adjusted Volume	69.57	886.96		507.61	38.04

Pedestrians					
Approach	E (Major)		S	W (Major)	
Movement	L1	T		T	R1
vx, Flow (Ped/hr)	0.00				
w, Lane Width (ft)	12.00				
Sp, Walking Speed (ft/s)	3.50				
fpb, Percent Blockage	0.00				

Capacity of Movements below Rank 1					
Approach	E (Major)		S	W (Major)	
Movement	L1	T		T	R1
Rank	2	1		1	1
vx, Volume	69.57				
Conflicting Volume (Veh)	545.65				
Conflicting Volume (Ped)	0.00				
Conflicting Volume	545.65				
Two-Stage Gap Acceptance					
Number of Storage Spaces					
cpx, Potential Capacity	1033.69				
Capacity	1033.69				

Critical Headway and Follow Up Headway					
Approach	E (Major)		S	W (Major)	
Movement	L1	T		T	R1
tc,base, Base Critical Headw	4.10				
tc,base,I, Base Critical Hea					
tc,base,II, Base Critical Hea					
tc,HV, Heavy Vehicles Adju	2.00				
Phv, % Heavy Vehicles	0.00				
tc,G, Grade Adjustment Fac	1.00				
G, % Grade	0.00		0.00	0.00	
T3,lt, Geometry Adjustment	0.00				
tc, Critical Headway	4.10				
tc,I, Critical Headway (Stag					
tc,II, Critical Headway (Stag					
tf,base, Base Follow-Up He	2.20				
tf,hv, Heavy Vehicles Adjus	1.00				
tf, Follow-Up Headway	2.20				

Delay and Level of Service by Movement					
Approach	E (Major)		S	W (Major)	
Movement	L1	T		T	R1
vx, Volume	69.57	886.96		507.61	38.04
cmx, Capacity	1033.69				
V / C	0.07				
d, Delay	8.73				
LOS	A				
dA, Approach Delay	0.64		0.00	0.00	
Approach LOS			A		
dRank1, Rank 1 Delay	0.00			0.00	

Delay and Level of Service by Lane						
Approach	E (Major)			S	W (Major)	
Lane	Lane 1	Lane 2	Lane 3		Lane 1	Lane 2
Movements						T, R1
vx, Volume	69.57	443.48	443.48		272.83	272.83
Flared Storage Size						
cmx, Capacity						
V / C						
Q95, 95% Queue Length						
d, Delay						
LOS						
dA, Approach Delay	0.64			0.00	0.00	
Approach LOS				A		

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Node 397: Hollister & Kinman	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.575
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	83	5	70	9	993	67	25	5	23	47	426	9
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	21	1	18	2	248	17	6	1	6	12	107	2
Adjusted Volume	83	5	70	9	993	67	25	5	23	47	426	9

Volume and Adjustments by Lane Group

Approach	N	E		S	W	
Lane Group	C	L	C	C	L	C
ID	12463	12460	12461	12467	12464	12465
Lanes	LTR	L	T, RT	LTR	L	T, RT
Volume	158	9	1060	53	47	435

Saturation Flow Rate

Approach	N	E		S	W	
Lane Group	12463	12460	12461	12467	12464	12465
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	2	1	1	2
Saturation Flow Rate	1600	1600	3200	1600	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	83	5	70	9	993	67	25	5	23	47	426	9
Volume / Saturation Flow R	0.052	0.099	0.099	0.006	0.331	0.331	0.016	0.033	0.033	0.029	0.136	0.136
Overlap adjusted Volume /	0.052	0.099	0.099	0.006	0.331	0.331	0.016	0.033	0.033	0.029	0.136	0.136
Critical Movement		Y			Y		Y			Y		

Node 399: Hollister & Kellogg

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.533
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	114	6	27	214	760	80	18	5	43	36	403	71
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	29	2	7	54	190	20	5	1	11	9	101	18
Adjusted Volume	114	6	27	214	760	80	18	5	43	36	403	71

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	12473	12474	12470	12471	12468	12469	12475	12476
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	120	27	214	840	23	43	36	474

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	12473	12474	12470	12471	12468	12469	12475	12476
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	2	1	1	1	2
Saturation Flow Rate	1600	1600	1600	3200	1600	1600	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	114	6	27	214	760	80	18	5	43	36	403	71
Volume / Saturation Flow R	0.071	0.075	0.017	0.134	0.263	0.263	0.011	0.014	0.027	0.022	0.148	0.148
Overlap adjusted Volume /	0.071	0.075	0.017	0.134	0.263	0.263	0.011	0.014	0.027	0.022	0.148	0.148
Critical Movement	Y				Y				Y	Y		

Node 402: Hollister & SR-217 SB Ramps

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.524
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E		S	W	
Movement	L1	T	R1	L1	T		T	R1
Base Volume	167	5	543	103	489		618	38
PHF	1.000	1.000	1.000	1.000	1.000		1.000	1.000
Peak 15 Volume	42	1	136	26	122		155	10
Adjusted Volume	167	5	543	103	489		618	38

Volume and Adjustments by Lane Group

Approach	N	E			S	W
Lane Group	C	L	C	C		C
ID	12483	12478	12479	12480		12485
Lanes	LTR, R	L	T, T	T, T		T, RT
Volume	715	103	188	301		656

Saturation Flow Rate

Approach	N	E			S	W
Lane Group	12483	12478	12479	12480		12485
Base Saturation Flow Rate	1600	1600	1600	1600		1600
Number of Lanes	2	1	2	2		2
Saturation Flow Rate	3200	1600	3200	3200		3200

Capacity Analysis

Approach	N			E		S	W	
Movement	L1	T	R1	L1	T		T	R1
Volume	167	5	543	103	489		618	38
Volume / Saturation Flow R	0.104	0.223	0.223	0.064	0.059		0.205	0.205
Overlap adjusted Volume /	0.104	0.223	0.223	0.064	0.059		0.205	0.205
Critical Movement	Y			Y			Y	

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Node 405: Hollister & SR-217 NB Ramps

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.446
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N	E			S			W		
Movement		L1	T	R1	L1	T	R1	L1	T	R1
Base Volume		69	542	73	48	56	58	310	314	148
PHF		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume		17	136	18	12	14	15	78	79	37
Adjusted Volume		69	542	73	48	56	58	310	314	148

Volume and Adjustments by Lane Group

Approach	N	E			S		W	
Lane Group		L	C	R	C	R	L	C
ID		12489	12490	12492	12487	12488	12493	12495
Lanes		L	T, T	R	LT	R	L, L	T, RT
Volume		69	542	73	104	58	310	462

Saturation Flow Rate

Approach	N	E			S		W	
Lane Group		12489	12490	12492	12487	12488	12493	12495
Base Saturation Flow Rate		1600	1600	1600	1600	1600	1600	1600
Number of Lanes		1	2	1	1	1	2	2
Saturation Flow Rate		1600	3200	1600	1600	1600	3200	3200

Capacity Analysis

Approach	N	E			S			W		
Movement		L1	T	R1	L1	T	R1	L1	T	R1
Volume		69	542	73	48	56	58	310	314	148
Volume / Saturation Flow R		0.043	0.169	0.046	0.030	0.065	0.036	0.097	0.144	0.144
Overlap adjusted Volume /		0.043	0.169	0.046	0.030	0.065	0.036	0.097	0.144	0.144
Critical Movement			Y		Y			Y		

Node 416: Hollister & Turnpike

Control Type	Signalized
Method	ICU Method 1
LOS	C
Critical V/C	0.71
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	297	59	315	21	367	297	36	152	29	427	303	6
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	74	15	79	5	92	74	9	38	7	107	76	2
Adjusted Volume	297	59	315	21	367	297	36	152	29	427	303	6

Volume and Adjustments by Lane Group

Approach	N			E		S		W	
Lane Group	L	C	R	L	C	L	C	L	C
ID	12500	12502	12503	12497	12498	12508	12509	12504	12506
Lanes	L, L	T	R	L	T, RT	L	RT	L, L	T, RT
Volume	297	59	315	21	664	36	181	427	309

Saturation Flow Rate

Approach	N			E		S		W	
Lane Group	12500	12502	12503	12497	12498	12508	12509	12504	12506
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	2	1	1	1	2	1	1	2	2
Saturation Flow Rate	3200	1600	1600	1600	3200	1600	1600	3200	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	297	59	315	21	367	297	36	152	29	427	303	6
Volume / Saturation Flow R	0.093	0.037	0.197	0.013	0.208	0.207	0.022	0.113	0.113	0.133	0.097	0.097
Overlap adjusted Volume /	0.093	0.037	0.197	0.013	0.208	0.207	0.022	0.113	0.113	0.133	0.097	0.097
Critical Movement			Y		Y		Y			Y		

Node 441: Calle Real & NB 101 OnRamp	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	4.97
Worst Case Delay	10.12
Worst Case LOS	B

Volume and Adjustments					
Approach	E (Major)		S (Major)	W	
Movement	L1	T		T	R1
Base Volume	39.00	68.00		99.00	5.00
PHF, Peak-hour factor	0.920	0.920		0.920	0.920
V, Adjusted Volume	42.39	73.91		107.61	5.43

Pedestrians					
Approach	E (Major)		S (Major)	W	
Movement	L1	T		T	R1
vx, Flow (Ped/hr)				0.00	0.00
w, Lane Width (ft)				12.00	12.00
Sp, Walking Speed (ft/s)				3.50	3.50
fpb, Percent Blockage				0.00	0.00

Capacity of Movements below Rank 1					
Approach	E (Major)		S (Major)	W	
Movement	L1	T		T	R1
Rank	1	1		3	2
vx, Volume				107.61	5.43
Conflicting Volume (Veh)				79.35	79.35
Conflicting Volume (Ped)				0.00	0.00
Conflicting Volume				79.35	79.35
Two-Stage Gap Acceptance				No	
Number of Storage Spaces					
cpx, Potential Capacity				814.75	986.59
Capacity				814.39	986.59

Critical Headway and Follow Up Headway					
Approach	E (Major)		S (Major)	W	
Movement	L1	T		T	R1
tc,base, Base Critical Head				6.50	6.20
tc,base,I, Base Critical Hea					
tc,base,II, Base Critical Hea					
tc,HV, Heavy Vehicles Adju				1.00	1.00
Phv, % Heavy Vehicles				0.00	0.00
tc,G, Grade Adjustment Fac				0.20	0.10
G, % Grade	0.00		0.00	0.00	
T3,lt, Geometry Adjustment				0.00	0.00
tc, Critical Headway				6.50	6.20
tc,I, Critical Headway (Stag					
tc,II, Critical Headway (Stag					
tf,base, Base Follow-Up He				4.00	3.30
tf,hv, Heavy Vehicles Adjus				0.90	0.90
tf, Follow-Up Headway				4.00	3.30

Delay and Level of Service by Movement					
Approach	E (Major)		S (Major)	W	
Movement	L1	T		T	R1
vx, Volume	42.39	73.91		107.61	5.43
cmx, Capacity				814.39	986.59
V / C				0.13	0.01
d, Delay				10.12	9.35
LOS				B	A
dA, Approach Delay	0.00		0.00	10.08	
Approach LOS				B	
dRank1, Rank 1 Delay	0.00		0.00		

Delay and Level of Service by Lane			
Approach	E (Major)	S (Major)	W
Lane	Lane 1		Lane 1
Movements	L1, T		T, R1
vx, Volume	116.30		113.04
Flared Storage Size			
cmx, Capacity			821.29
V / C			0.14
Q95, 95% Queue Length			0.48
d, Delay			10.08
LOS			B
dA, Approach Delay	0.00	0.00	10.08
Approach LOS			B

Node 445: Calle Real & Winchester Canyon	
Control Type	AWSC
Method	HCM 6th Edition
Average Delay	7.86
Average LOS	A

Volume and Adjustments				
Approach	N	E		W
Movement	R1	T	R1	T
Base Volume	166.00	161.00	49.00	33.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920
Flow Rate	180.43	175.00	53.26	35.87
Geometry Group	1	1		1

Saturation Headway			
Approach	N	E	W
Lanes	Lane 1	Lane 1	Lane 1
Total Lane Flow Rate	180.43	228.26	35.87
Left Turn Flow Rate	0.00	0.00	0.00
Right Turn Flow Rate	180.43	53.26	0.00
PLT, Proportion LT	0.00	0.00	0.00
PRT, Proportion RT	1.00	0.23	0.00
PHV, Proportion HV	0.00	0.00	0.00
hLT,adj, Headway adjustme	0.20	0.20	0.20
hRT,adj, Headway adjustm	-0.60	-0.60	-0.60
hHV,adj, Headway adjustm	1.70	1.70	1.70
hadj, Headway adjustment	-0.60	-0.14	0.00

Departure Headway			
Approach	N	E	W
Lanes	Lane 1	Lane 1	Lane 1
Total Lane Flow Rate	180.43	228.26	35.87
hd initial	3.20	3.20	3.20
x initial	0.16	0.20	0.03
hd, iteration 1	3.36	4.10	4.03
Difference, iteration 1	0.16	0.90	0.83
hd, iteration 2	3.38	4.13	4.04
Difference, iteration 2	0.02	0.02	0.01
Convergence	Y	Y	Y
hd final, Departure Headwa	3.38	4.13	4.04
x final, Degree of Utilization	0.17	0.26	0.04

Capacity and Level of Service			
Approach	N	E	W
Lanes	Lane 1	Lane 1	Lane 1
Total Lane Flow Rate	180.43	228.26	35.87
hd, Departure Headway	3.38	4.13	4.04
x, Degree of Utilization	0.17	0.26	0.04
m, Move Up Time	2.00	2.00	2.00
ts, Service Time	1.38	2.13	2.04
Capacity	1065.43	872.25	890.47
Delay	7.07	8.59	7.21
LOS	A	A	A
Q95, 95% Queue Length	0.61	1.06	0.13
Approach Delay	7.07	8.59	7.21
Approach LOS	A	A	A
Intersection Delay	7.86		
Intersection LOS	A		

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Node 450: Calle Real & Brandon Dr.	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	4.5
Worst Case Delay	12.72
Worst Case LOS	B

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	176.00	7.00	64.00	73.00	5.00	198.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	191.30	7.61	69.57	79.35	5.43	215.22

Pedestrians						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Flow (Ped/hr)	0.00	0.00			0.00	
w, Lane Width (ft)	12.00	12.00			12.00	
Sp, Walking Speed (ft/s)	3.50	3.50			3.50	
fpb, Percent Blockage	0.00	0.00			0.00	

Capacity of Movements below Rank 1						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Rank	3	2	1	1	2	1
vx, Volume	191.30	7.61			5.43	
Conflicting Volume (Veh)	335.33	109.24			148.91	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	335.33	109.24			148.91	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces						
cpx, Potential Capacity	664.06	949.83			1444.90	
Capacity	661.22	949.83			1444.90	

Critical Headway and Follow Up Headway						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
tc,base, Base Critical Head	7.10	6.20			4.10	
tc,base,I, Base Critical Hea						
tc,base,II, Base Critical Hea						
tc,HV, Heavy Vehicles Adju	1.00	1.00			1.00	
Phv, % Heavy Vehicles	0.00	0.00			0.00	
tc,G, Grade Adjustment Fac	0.20	0.10			1.00	
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment	0.70	0.00			0.00	
tc, Critical Headway	6.40	6.20			4.10	
tc,I, Critical Headway (Stag						
tc,II, Critical Headway (Stag						
tf,base, Base Follow-Up He	3.50	3.30			2.20	
tf,hv, Heavy Vehicles Adjus	0.90	0.90			0.90	
tf, Follow-Up Headway	3.50	3.30			2.20	

Delay and Level of Service by Movement						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Volume	191.30	7.61	69.57	79.35	5.43	215.22
cmx, Capacity	661.22	949.83			1444.90	
V / C	0.29	0.01			0.00	
d, Delay	12.72	11.06			7.50	
LOS	B	B			A	
dA, Approach Delay	12.65		0.00		0.18	
Approach LOS	B					
dRank1, Rank 1 Delay			0.00		0.03	

Delay and Level of Service by Lane			
Approach	N	E (Major)	W (Major)
Lane	Lane 1	Lane 1	Lane 1
Movements	L1, R1	T, R1	L1, T
vx, Volume	198.91	148.91	220.65
Flared Storage Size			
cmx, Capacity	669.00		1444.90
V / C	0.30		0.15
Q95, 95% Queue Length	1.26		0.54
d, Delay	12.65		7.50
LOS	B		
dA, Approach Delay	12.65	0.00	0.18
Approach LOS	B		

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Node 452: Calle Real & Elwood Station	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	3.26
Worst Case Delay	12.77
Worst Case LOS	B

Volume and Adjustments

Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	102.00	17.00	99.00	22.00	23.00	244.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	110.87	18.48	107.61	23.91	25.00	265.22

Pedestrians

Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Flow (Ped/hr)	0.00	0.00			0.00	
w, Lane Width (ft)	12.00	12.00			12.00	
Sp, Walking Speed (ft/s)	3.50	3.50			3.50	
fpb, Percent Blockage	0.00	0.00			0.00	

Capacity of Movements below Rank 1

Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Rank	3	2	1	1	2	1
vx, Volume	110.87	18.48			25.00	
Conflicting Volume (Veh)	422.83	107.61			131.52	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	422.83	107.61			131.52	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces						
cpx, Potential Capacity	591.55	951.80			1466.10	
Capacity	579.72	951.80			1466.10	

Critical Headway and Follow Up Headway

Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
tc,base, Base Critical Headw	7.10	6.20			4.10	
tc,base,I, Base Critical Hea						
tc,base,II, Base Critical Hea						
tc,HV, Heavy Vehicles Adju	1.00	1.00			1.00	
Phv, % Heavy Vehicles	0.00	0.00			0.00	
tc,G, Grade Adjustment Fac	0.20	0.10			1.00	
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment	0.70	0.00			0.00	
tc, Critical Headway	6.40	6.20			4.10	
tc,I, Critical Headway (Stag						
tc,II, Critical Headway (Stag						
tf,base, Base Follow-Up He	3.50	3.30			2.20	
tf,hv, Heavy Vehicles Adjus	0.90	0.90			0.90	
tf, Follow-Up Headway	3.50	3.30			2.20	

Delay and Level of Service by Movement

Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Volume	110.87	18.48	107.61	23.91	25.00	265.22
cmx, Capacity	579.72	951.80			1466.10	
V / C	0.19	0.02			0.02	
d, Delay	12.77	10.35			7.50	
LOS	B	B			A	
dA, Approach Delay	12.43		0.00		0.65	
Approach LOS	B					
dRank1, Rank 1 Delay			0.00		0.15	

Delay and Level of Service by Lane

Approach	N	E (Major)		W (Major)
Lane	Lane 1	Lane 1	Lane 2	Lane 1
Movements	L1, R1			L1, T
vx, Volume	129.35	107.61	23.91	290.22
Flared Storage Size				
cmx, Capacity	614.01			1466.10
V / C	0.21			0.20
Q95, 95% Queue Length	0.80			0.74
d, Delay	12.43			7.50
LOS	B			
dA, Approach Delay	12.43	0.00		0.65
Approach LOS	B			

Node 461: Storke & US 101 NB Ramps

Control Type	Signalized
Method	ICU Method 1
LOS	D
Critical V/C	0.813
Loss Time	14
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	5	477	7	683	353	260	160	175	28	36	7	818
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	1	119	2	171	88	65	40	44	7	9	2	205
Adjusted Volume	5	477	7	683	353	260	160	175	28	36	7	818

Volume and Adjustments by Lane Group

Approach	N		E	S		W	
Lane Group	L	C	C	L	C	L	C
ID	12517	12518	12514	12510	12512	12520	12521
Lanes	L	T, RT	L, LT, RT	L, L	T, RT	L	RT, R
Volume	5	484	1296	160	203	36	825

Saturation Flow Rate

Approach	N		E	S		W	
Lane Group	12517	12518	12514	12510	12512	12520	12521
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	3	2	2	1	2
Saturation Flow Rate	1600	3200	4800	3200	3200	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	5	477	7	683	353	260	160	175	28	36	7	818
Volume / Saturation Flow R	0.003	0.151	0.151	0.213	0.270	0.270	0.050	0.063	0.063	0.022	0.258	0.258
Overlap adjusted Volume /	0.003	0.151	0.151	0.213	0.270	0.270	0.050	0.063	0.063	0.022	0.258	0.258
Critical Movement		Y		Y			Y					Y

Node 462: Storke & US 101 SB Ramp

Control Type	Signalized
Method	ICU Method 1
LOS	E
Critical V/C	0.922
Loss Time	12
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	817	1174		350	857	18	5	152
PHF	1.000	1.000		1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	204	294		88	214	5	1	38
Adjusted Volume	817	1174		350	857	18	5	152

Volume and Adjustments by Lane Group

Approach	N		E	S		W	
Lane Group	L	C		C	R	C	R
ID	12526	12528		12523	12525	12530	12531
Lanes	L, L	T, T		T, T	R	LT	R
Volume	817	1174		350	857	23	152

Saturation Flow Rate

Approach	N		E	S		W	
Lane Group	12526	12528		12523	12525	12530	12531
Base Saturation Flow Rate	1600	1600		1600	1600	1600	1600
Number of Lanes	2	2		2	1	1	1
Saturation Flow Rate	3200	3200		3200	1600	1600	1600

Capacity Analysis

Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Volume	817	1174		350	857	18	5	152
Volume / Saturation Flow R	0.255	0.367		0.109	0.536	0.011	0.014	0.095
Overlap adjusted Volume /	0.255	0.367		0.109	0.536	0.011	0.014	0.095
Critical Movement	Y				Y	Y		

Node 466: Los Carneros & Cremona

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.374
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N	E			S			W		
Movement	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	5	227	799	24	5	5	17	20	385	5
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	1	57	200	6	1	1	4	5	96	1
Adjusted Volume	5	227	799	24	5	5	17	20	385	5

Volume and Adjustments by Lane Group

Approach	N	E		S	W	
Lane Group	R	L	C	C	L	C
ID	12536	12533	12534	12532	12538	12539
Lanes	R, R	L	T, RT	LTR	L	T, RT
Volume	5	227	823	27	20	390

Saturation Flow Rate

Approach	N	E		S	W	
Lane Group	12536	12533	12534	12532	12538	12539
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600
Number of Lanes	2	1	2	1	1	2
Saturation Flow Rate	3200	1600	3200	1600	1600	3200

Capacity Analysis

Approach	N	E			S			W		
Movement	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	5	227	799	24	5	5	17	20	385	5
Volume / Saturation Flow R	0.002	0.142	0.257	0.257	0.003	0.017	0.017	0.013	0.122	0.122
Overlap adjusted Volume /	0.002	0.142	0.257	0.257	0.003	0.017	0.017	0.013	0.122	0.122
Critical Movement	Y		Y		Y			Y		

Node 467: Los Carneros & Calle Koral

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.55
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	246	1137	64	13	10	120	24	399	5	7	5	7
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	62	284	16	3	3	30	6	100	1	2	1	2
Adjusted Volume	246	1137	64	13	10	120	24	399	5	7	5	7

Volume and Adjustments by Lane Group

Approach	N			E			S		W	
Lane Group	L	C	R	L	C	R	L	C	L	C
ID	12544	12545	12547	12541	12542	12543	12550	12551	12548	12549
Lanes	L	T, T	R	L	T	R	L	T, T, RT	L	RT
Volume	246	1137	64	13	10	120	24	404	7	12

Saturation Flow Rate

Approach	N			E			S		W	
Lane Group	12544	12545	12547	12541	12542	12543	12550	12551	12548	12549
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	1	1	1	1	1	3	1	1
Saturation Flow Rate	1600	3200	1600	1600	1600	1600	1600	4800	1600	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	246	1137	64	13	10	120	24	399	5	7	5	7
Volume / Saturation Flow R	0.154	0.355	0.040	0.008	0.006	0.075	0.015	0.084	0.084	0.004	0.007	0.007
Overlap adjusted Volume /	0.154	0.355	0.040	0.008	0.006	0.075	0.015	0.084	0.084	0.004	0.007	0.007
Critical Movement		Y				Y	Y			Y		

Node 489: Hollister & Patterson	
Control Type	Signalized
Method	ICU Method 1
LOS	C
Critical V/C	0.707
Loss Time	20
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	238	308	274	67	472	432	28	133	47	80	221	31
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	60	77	69	17	118	108	7	33	12	20	55	8
Adjusted Volume	238	308	274	67	472	432	28	133	47	80	221	31

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	L	C	L	C	L	C	L	C
ID	12557	12559	12554	12555	12565	12566	12561	12563
Lanes	L, L	T, RT	L	T, RT	L	T, RT	L, L	T, RT
Volume	238	582	67	904	28	180	80	252

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	12557	12559	12554	12555	12565	12566	12561	12563
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	2	2	1	2	1	2	2	2
Saturation Flow Rate	3200	3200	1600	3200	1600	3200	3200	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	238	308	274	67	472	432	28	133	47	80	221	31
Volume / Saturation Flow R	0.074	0.182	0.182	0.042	0.282	0.282	0.018	0.056	0.056	0.025	0.079	0.079
Overlap adjusted Volume /	0.074	0.182	0.182	0.042	0.282	0.282	0.018	0.056	0.056	0.025	0.079	0.079
Critical Movement			Y		Y		Y			Y		

Node 493: Hollister & Walnut

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.52
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	46	10	84	56	491	24	194	7	135	56	290	73
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	12	3	21	14	123	6	49	2	34	14	73	18
Adjusted Volume	46	10	84	56	491	24	194	7	135	56	290	73

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	12571	12572	12568	12569	12576	12577	12573	12574
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	56	84	56	515	201	135	56	363

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	12571	12572	12568	12569	12576	12577	12573	12574
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	2	1	1	1	2
Saturation Flow Rate	1600	1600	1600	3200	1600	1600	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	46	10	84	56	491	24	194	7	135	56	290	73
Volume / Saturation Flow R	0.029	0.035	0.052	0.035	0.161	0.161	0.121	0.126	0.084	0.035	0.113	0.113
Overlap adjusted Volume /	0.029	0.035	0.052	0.035	0.161	0.161	0.121	0.126	0.084	0.035	0.113	0.113
Critical Movement			Y			Y	Y			Y		

Node 506: Cathedral Oaks 101 SB-Ramp	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	5.88
Worst Case Delay	55.15
Worst Case LOS	F

Volume and Adjustments								
Approach	N (Major)		E	S (Major)		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	284.00	270.00		148.00	181.00	45.00	5.00	70.00
PHF, Peak-hour factor	0.920	0.920		0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	308.70	293.48		160.87	196.74	48.91	5.43	76.09

Pedestrians								
Approach	N (Major)		E	S (Major)		W		
Movement	L1	T		T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00					0.00	0.00	0.00
w, Lane Width (ft)	12.00					12.00	12.00	12.00
Sp, Walking Speed (ft/s)	3.50					3.50	3.50	3.50
fpb, Percent Blockage	0.00					0.00	0.00	0.00

Capacity of Movements below Rank 1								
Approach	N (Major)		E	S (Major)		W		
Movement	L1	T		T	R1	L1	T	R1
Rank	2	1		1	1	4	3	2
vx, Volume	308.70					48.91	5.43	76.09
Conflicting Volume (Veh)	357.61					1170.11	1268.48	293.48
Conflicting Volume (Ped)	0.00					0.00	0.00	0.00
Conflicting Volume	357.61					1170.11	1268.48	293.48
Two-Stage Gap Acceptance						No	No	
Number of Storage Spaces								
cpx, Potential Capacity	1212.25					171.34	169.92	750.57
Capacity	1212.25					130.98	118.22	750.57

Critical Headway and Follow Up Headway								
Approach	N (Major)		E	S (Major)		W		
Movement	L1	T		T	R1	L1	T	R1
tc,base, Base Critical Head	4.10					7.10	6.50	6.20
tc,base,I, Base Critical Hea								
tc,base,II, Base Critical Hea								
tc,HV, Heavy Vehicles Adju	1.00					1.00	1.00	1.00
Phv, % Heavy Vehicles	0.00					0.00	0.00	0.00
tc,G, Grade Adjustment Fac	1.00					0.20	0.20	0.10
G, % Grade	0.00		0.00	0.00		0.00		
T3,lt, Geometry Adjustment	0.00					0.00	0.00	0.00
tc, Critical Headway	4.10					7.10	6.50	6.20
tc,I, Critical Headway (Stag								
tc,II, Critical Headway (Stag								
tf,base, Base Follow-Up He	2.20					3.50	4.00	3.30
tf,hv, Heavy Vehicles Adjus	0.90					0.90	0.90	0.90
tf, Follow-Up Headway	2.20					3.50	4.00	3.30

Delay and Level of Service by Movement								
Approach	N (Major)		E	S (Major)		W		
Movement	L1	T		T	R1	L1	T	R1
vx, Volume	308.70	293.48		160.87	196.74	48.91	5.43	76.09
cmx, Capacity	1212.25					130.98	118.22	750.57
V / C	0.25					0.37	0.05	0.10
d, Delay	8.98					52.18	55.15	10.34
LOS	A					F	F	B
dA, Approach Delay	4.61		0.00	0.00		27.90		
Approach LOS			A			D		
dRank1, Rank 1 Delay	0.00			0.00				

Delay and Level of Service by Lane						
Approach	N (Major)		E	S (Major)	W	
Lane	Lane 1	Lane 2		Lane 1	Lane 1	Lane 2
Movements				T, R1	L1, T	
vx, Volume	308.70	293.48		357.61	54.35	76.09
Flared Storage Size						
cmx, Capacity					129.58	
V / C					0.42	
Q95, 95% Queue Length					2.05	
d, Delay					52.48	
LOS					F	
dA, Approach Delay	4.61		0.00	0.00	27.90	
Approach LOS			A		D	

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Node 511: Hollister & Pebble Beach Rd	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	2.21
Worst Case Delay	17.56
Worst Case LOS	C

Volume and Adjustments												
Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	42.00	5.00	26.00	5.00	330.00	13.00	14.00	5.00	8.00	9.00	286.00	5.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	45.65	5.43	28.26	5.43	358.70	14.13	15.22	5.43	8.70	9.78	310.87	5.43

Pedestrians												
Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
w, Lane Width (ft)	12.00	12.00	12.00	12.00			12.00	12.00	12.00	12.00		
Sp, Walking Speed (ft/s)	3.50	3.50	3.50	3.50			3.50	3.50	3.50	3.50		
fpb, Percent Blockage	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		

Capacity of Movements below Rank 1												
Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	2	1	1	4	3	2	2	1	1
vx, Volume	45.65	5.43	28.26	5.43			15.22	5.43	8.70	9.78		
Conflicting Volume (Veh)	705.43	705.43	358.70	316.30			726.63	716.85	313.59	372.83		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	705.43	705.43	358.70	316.30			726.63	716.85	313.59	372.83		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces												
cpx, Potential Capacity	353.56	363.26	690.15	1255.25			342.19	357.82	731.42	1196.77		
Capacity	341.48	358.06	690.15	1255.25			320.84	352.69	731.42	1196.77		

Critical Headway and Follow Up Headway												
Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Head	7.10	6.50	6.20	4.10			7.10	6.50	6.20	4.10		
tc,base,I, Base Critical Hea												
tc,base,II, Base Critical Hea												
tc,HV, Heavy Vehicles Adju	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00		
Phv, % Heavy Vehicles	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Fac	0.20	0.20	0.10	1.00			0.20	0.20	0.10	1.00		
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc, Critical Headway	7.10	6.50	6.20	4.10			7.10	6.50	6.20	4.10		
tc,I, Critical Headway (Stag												
tc,II, Critical Headway (Stag												
tf,base, Base Follow-Up He	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		
tf,hv, Heavy Vehicles Adjus	0.90	0.90	0.90	0.90			0.90	0.90	0.90	0.90		
tf, Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		

Delay and Level of Service by Movement												
Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	45.65	5.43	28.26	5.43	358.70	14.13	15.22	5.43	8.70	9.78	310.87	5.43
cmx, Capacity	341.48	358.06	690.15	1255.25			320.84	352.69	731.42	1196.77		
V / C	0.13	0.02	0.04	0.00			0.05	0.02	0.01	0.01		
d, Delay	17.56	17.07	12.23	7.88			16.96	15.95	10.66	8.03		
LOS	C	C	B	A			C	C	B	A		
dA, Approach Delay		15.63			0.11			14.91			0.24	
Approach LOS		C						B				
dRank1, Rank 1 Delay					0.00						0.00	

Delay and Level of Service by Lane								
Approach	N		E (Major)		S		W (Major)	
Lane	Lane 1	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2	Lane 3
Movements	L1, T, R1				L1, T, R1			T, R1
vx, Volume	79.35	5.43	358.70	14.13	29.35	9.78	158.15	158.15
Flared Storage Size								
cmx, Capacity	418.02				392.73			
V / C	0.19				0.07			
Q95, 95% Queue Length	0.70				0.24			
d, Delay	15.63				14.91			
LOS	C				B			
dA, Approach Delay	15.63		0.11		14.91		0.24	
Approach LOS	C				B			

Node 512: Hollister & Palo Alto Dr

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	1.33
Worst Case Delay	18.04
Worst Case LOS	C

Volume and Adjustments

Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	12.00	5.00	5.00	5.00	353.00	47.00	14.00	5.00	32.00	14.00	342.00	7.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	13.04	5.43	5.43	5.43	383.70	51.09	15.22	5.43	34.78	15.22	371.74	7.61

Pedestrians

Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
w, Lane Width (ft)	12.00	12.00	12.00	12.00			12.00	12.00	12.00	12.00		
Sp, Walking Speed (ft/s)	3.50	3.50	3.50	3.50			3.50	3.50	3.50	3.50		
fpb, Percent Blockage	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		

Capacity of Movements below Rank 1

Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	2	1	1	4	3	2	2	1	1
vx, Volume	13.04	5.43	5.43	5.43			15.22	5.43	34.78	15.22		
Conflicting Volume (Veh)	639.13	829.89	217.39	379.35			611.41	851.63	189.67	434.78		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	639.13	829.89	217.39	379.35			611.41	851.63	189.67	434.78		
Two-Stage Gap Acceptanc	No	No					No	No				
Number of Storage Spaces												
cpx, Potential Capacity	364.69	307.92	793.21	1190.19			381.72	299.11	826.25	1135.66		
Capacity	339.09	301.68	793.21	1190.19			368.13	293.05	826.25	1135.66		

Critical Headway and Follow Up Headway

Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Head	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,base,I, Base Critical Hea												
tc,base,II, Base Critical Hea												
tc,HV, Heavy Vehicles Adju	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00		
Phv, % Heavy Vehicles	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Fac	0.20	0.20	0.10	1.00			0.20	0.20	0.10	1.00		
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc, Critical Headway	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,I, Critical Headway (Stag												
tc,II, Critical Headway (Stag												
tf,base, Base Follow-Up He	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		
tf,hv, Heavy Vehicles Adjus	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00		
tf, Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		

Delay and Level of Service by Movement

Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	13.04	5.43	5.43	5.43	383.70	51.09	15.22	5.43	34.78	15.22	371.74	7.61
cmx, Capacity	339.09	301.68	793.21	1190.19			368.13	293.05	826.25	1135.66		
V / C	0.04	0.02	0.01	0.00			0.04	0.02	0.04	0.01		
d, Delay	16.26	17.58	10.18	8.04			15.53	18.04	10.11	8.21		
LOS	C	C	B	A			C	C	B	A		
dA, Approach Delay		15.18			0.10			12.37			0.32	
Approach LOS		C						B				
dRank1, Rank 1 Delay					0.00						0.00	

Delay and Level of Service by Lane

Approach	N		E (Major)		S		W (Major)	
Lane	Lane 1	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2	Lane 3
Movements	L1, T, R1			T, R1	L1, T, R1			T, R1
vx, Volume	23.91	5.43	217.39	217.39	55.43	15.22	189.67	189.67
Flared Storage Size								
cmx, Capacity	377.58				543.59			
V / C	0.06				0.10			
Q95, 95% Queue Length	0.20				0.34			
d, Delay	15.18				12.37			
LOS	C				B			
dA, Approach Delay	15.18		0.10		12.37		0.32	
Approach LOS	C				B			

Node 513: Hollister & Coronado	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	2.15
Worst Case Delay	15.44
Worst Case LOS	C

Volume and Adjustments						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	22.00	312.00	45.00	83.00	363.00	14.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	23.91	339.13	48.91	90.22	394.57	15.22

Pedestrians						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Flow (Ped/hr)	0.00		0.00	0.00		
w, Lane Width (ft)	12.00		12.00	12.00		
Sp, Walking Speed (ft/s)	3.50		3.50	3.50		
fpb, Percent Blockage	0.00		0.00	0.00		

Capacity of Movements below Rank 1						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Rank	2	1	3	2	1	1
vx, Volume	23.91		48.91	90.22		
Conflicting Volume (Veh)	409.78		619.57	204.89		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	409.78		619.57	204.89		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces						
cpx, Potential Capacity	1159.95		424.85	807.95		
Capacity	1159.95		415.18	807.95		

Critical Headway and Follow Up Headway						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
tc,base, Base Critical Head	4.10		7.50	6.90		
tc,base,I, Base Critical Hea						
tc,base,II, Base Critical Hea						
tc,HV, Heavy Vehicles Adju	2.00		2.00	2.00		
Phv, % Heavy Vehicles	0.00		0.00	0.00		
tc,G, Grade Adjustment Fac	1.00		0.20	0.10		
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment	0.00		0.70	0.00		
tc, Critical Headway	4.10		6.80	6.90		
tc,I, Critical Headway (Stag						
tc,II, Critical Headway (Stag						
tf,base, Base Follow-Up He	2.20		3.50	3.30		
tf,hv, Heavy Vehicles Adjus	1.00		1.00	1.00		
tf, Follow-Up Headway	2.20		3.50	3.30		

Delay and Level of Service by Movement						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Volume	23.91	339.13	48.91	90.22	394.57	15.22
cmx, Capacity	1159.95		415.18	807.95		
V / C	0.02		0.12	0.11		
d, Delay	8.17		15.44	11.22		
LOS	A		C	B		
dA, Approach Delay	0.54		12.70		0.00	
Approach LOS			B			
dRank1, Rank 1 Delay	0.00				0.00	

Delay and Level of Service by Lane						
Approach	E (Major)			S	W (Major)	
Lane	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2
Movements				L1, R1		T, R1
vx, Volume	23.91	169.57	169.57	139.13	204.89	204.89
Flared Storage Size						
cmx, Capacity				606.30		
V / C				0.23		
Q95, 95% Queue Length				0.89		
d, Delay				12.70		
LOS				B		
dA, Approach Delay	0.54			12.70	0.00	
Approach LOS				B		

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Node 515: Hollister & Cannon Green	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	4.29
Worst Case Delay	34.32
Worst Case LOS	D

Volume and Adjustments						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	45.00	366.00	52.00	161.00	710.00	22.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	48.91	397.83	56.52	175.00	771.74	23.91

Pedestrians						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Flow (Ped/hr)	0.00		0.00	0.00		
w, Lane Width (ft)	12.00		12.00	12.00		
Sp, Walking Speed (ft/s)	3.50		3.50	3.50		
fpb, Percent Blockage	0.00		0.00	0.00		

Capacity of Movements below Rank 1						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Rank	2	1	3	2	1	1
vx, Volume	48.91		56.52	175.00		
Conflicting Volume (Veh)	795.65		1080.43	397.83		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	795.65		1080.43	397.83		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces						
cpx, Potential Capacity	834.94		215.89	607.33		
Capacity	834.94		201.67	607.33		

Critical Headway and Follow Up Headway						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
tc,base, Base Critical Head	4.10		7.50	6.90		
tc,base,I, Base Critical Hea						
tc,base,II, Base Critical Hea						
tc,HV, Heavy Vehicles Adju	2.00		2.00	2.00		
Phv, % Heavy Vehicles	0.00		0.00	0.00		
tc,G, Grade Adjustment Fac	1.00		0.20	0.10		
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment	0.00		0.70	0.00		
tc, Critical Headway	4.10		6.80	6.90		
tc,I, Critical Headway (Stag						
tc,II, Critical Headway (Stag						
tf,base, Base Follow-Up He	2.20		3.50	3.30		
tf,hv, Heavy Vehicles Adjus	1.00		1.00	1.00		
tf, Follow-Up Headway	2.20		3.50	3.30		

Delay and Level of Service by Movement						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Volume	48.91	397.83	56.52	175.00	771.74	23.91
cmx, Capacity	834.94		201.67	607.33		
V / C	0.06		0.28	0.29		
d, Delay	9.58		34.32	22.40		
LOS	A		D	C		
dA, Approach Delay	1.05		25.31		0.00	
Approach LOS			D			
dRank1, Rank 1 Delay	0.00				0.00	

Delay and Level of Service by Lane						
Approach	E (Major)			S	W (Major)	
Lane	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2
Movements				L1, R1		T, R1
vx, Volume	48.91	198.91	198.91	231.52	397.83	397.83
Flared Storage Size						
cmx, Capacity				407.31		
V / C				0.57		
Q95, 95% Queue Length				3.79		
d, Delay				25.31		
LOS				D		
dA, Approach Delay	1.05			25.31	0.00	
Approach LOS				D		

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Node 517: Hollister & Pacific Oaks

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.488
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E		S		W		
Movement	L1	T	R1	L1	T	L1	R1	L1	T	R1
Base Volume	7	5	5	40	356	60	141	43	784	81
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	2	1	1	10	89	15	35	11	196	20
Adjusted Volume	7	5	5	40	356	60	141	43	784	81

Volume and Adjustments by Lane Group

Approach	N	E		S		W	
Lane Group	C	L	C	L	R	L	C
ID	12581	12578	12579	12585	12586	12582	12583
Lanes	LTR	L	T, T	L	R	L	T, RT
Volume	17	40	356	60	141	43	865

Saturation Flow Rate

Approach	N	E		S		W	
Lane Group	12581	12578	12579	12585	12586	12582	12583
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	2	1	1	1	2
Saturation Flow Rate	1600	1600	3200	1600	1600	1600	3200

Capacity Analysis

Approach	N			E		S		W		
Movement	L1	T	R1	L1	T	L1	R1	L1	T	R1
Volume	7	5	5	40	356	60	141	43	784	81
Volume / Saturation Flow R	0.004	0.011	0.011	0.025	0.111	0.037	0.088	0.027	0.270	0.270
Overlap adjusted Volume /	0.004	0.011	0.011	0.025	0.111	0.037	0.088	0.027	0.270	0.270
Critical Movement	Y			Y			Y		Y	

Node 518: Hollister & Santa Felicia

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	2.24
Worst Case Delay	54.66
Worst Case LOS	F

Volume and Adjustments

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	21.00	5.00	20.00	49.00	416.00	36.00	5.00	5.00	48.00	26.00	921.00	25.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	22.83	5.43	21.74	53.26	452.17	39.13	5.43	5.43	52.17	28.26	1001.09	27.17

Pedestrians

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
w, Lane Width (ft)	12.00	12.00	12.00	12.00			12.00	12.00	12.00	12.00		
Sp, Walking Speed (ft/s)	3.50	3.50	3.50	3.50			3.50	3.50	3.50	3.50		
fpb, Percent Blockage	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		

Capacity of Movements below Rank 1

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	2	1	1	4	3	2	2	1	1
vx, Volume	22.83	5.43	21.74	53.26			5.43	5.43	52.17	28.26		
Conflicting Volume (Veh)	1138.04	1663.04	245.65	1028.26			1406.52	1669.02	514.13	491.30		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1138.04	1663.04	245.65	1028.26			1406.52	1669.02	514.13	491.30		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces												
cpx, Potential Capacity	158.81	98.02	760.83	683.31			100.75	97.20	510.69	1082.53		
Capacity	122.70	85.71	760.83	683.31			84.26	84.99	510.69	1082.53		

Critical Headway and Follow Up Headway

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Head	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,base,I, Base Critical Hea												
tc,base,II, Base Critical Hea												
tc,HV, Heavy Vehicles Adju	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00		
Phv, % Heavy Vehicles	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Fac	0.20	0.20	0.10	1.00			0.20	0.20	0.10	1.00		
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc, Critical Headway	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,I, Critical Headway (Stag												
tc,II, Critical Headway (Stag												
tf,base, Base Follow-Up He	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		
tf,hv, Heavy Vehicles Adjus	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00		
tf, Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		

Delay and Level of Service by Movement

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	22.83	5.43	21.74	53.26	452.17	39.13	5.43	5.43	52.17	28.26	1001.09	27.17
cmx, Capacity	122.70	85.71	760.83	683.31			84.26	84.99	510.69	1082.53		
V / C	0.19	0.06	0.03	0.08			0.06	0.06	0.10	0.03		
d, Delay	42.00	54.66	17.39	10.71			51.66	51.29	15.99	8.41		
LOS	E	F	C	B			F	F	C	A		
dA, Approach Delay		32.68			1.05			22.10			0.23	
Approach LOS		D						C				
dRank1, Rank 1 Delay					0.00						0.00	

Delay and Level of Service by Lane

Approach	N	E (Major)			S	W (Major)		
Lane	Lane 1	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2	Lane 3
Movements	L1, T, R1			T, R1	L1, T, R1			T, R1
vx, Volume	50.00	53.26	245.65	245.65	63.04	28.26	514.13	514.13
Flared Storage Size								
cmx, Capacity	179.85				273.37			
V / C	0.28				0.23			
Q95, 95% Queue Length	1.14				0.89			
d, Delay	32.68				22.10			
LOS	D				C			
dA, Approach Delay	32.68		1.05		22.10		0.23	
Approach LOS	D				C			

Node 521: Storke & Marketplace

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.428
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	12	542	203	8	7	12	58	604	15	170	10	36
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	3	136	51	2	2	3	15	151	4	43	3	9
Adjusted Volume	12	542	203	8	7	12	58	604	15	170	10	36

Volume and Adjustments by Lane Group

Approach	N				E		S			W
Lane Group	L		C	R	C	R	L		C	C
ID	12589		12590	12592	12587	12588	12595		12596	12593
Lanes	L		T, T	R	LT	R	L		T, RT	L, LTR
Volume	12		542	203	15	12	58		619	216

Saturation Flow Rate

Approach	N				E		S			W
Lane Group	12589		12590	12592	12587	12588	12595		12596	12593
Base Saturation Flow Rate	1600		1600	1600	1600	1600	1600		1600	1600
Number of Lanes	1		2	1	1	1	1		2	2
Saturation Flow Rate	1520	701	3200	1600	1600	1600	1520	754	3200	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	12	542	203	8	7	12	58	604	15	170	10	36
Volume / Saturation Flow R	0.007	0.169	0.127	0.005	0.009	0.007	0.036	0.193	0.193	0.053	0.068	0.068
Overlap adjusted Volume /	0.007	0.169	0.127	0.005	0.009	0.007	0.036	0.193	0.193	0.053	0.068	0.068
Critical Movement		Y		Y			Y					Y

Node 522: Hollister & Storke	
Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.687
Loss Time	20
Cycle Length	100

Volume and Adjustments by Movement												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	319	580	369	98	120	83	27	552	193	520	367	74
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	80	145	92	25	30	21	7	138	48	130	92	19
Adjusted Volume	319	580	369	98	120	83	27	552	193	520	367	74

Volume and Adjustments by Lane Group												
Approach	N			E			S			W		
Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
ID	12603	12605	12607	12598	12600	12602	12613	12615	12617	12608	12610	12612
Lanes	L, L	T, T	R	L, L	T, T	R	L, L	T, T	R	L, L	T, T	R
Volume	319	580	369	98	120	83	27	552	193	520	367	74

Saturation Flow Rate												
Approach	N			E			S			W		
Lane Group	12603	12605	12607	12598	12600	12602	12613	12615	12617	12608	12610	12612
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Saturation Flow Rate	3200	3200	1600	3200	3200	1600	3200	3200	1600	3200	3200	1600

Capacity Analysis												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	319	580	369	98	120	83	27	552	193	520	367	74
Volume / Saturation Flow R	0.100	0.181	0.231	0.031	0.037	0.052	0.008	0.172	0.121	0.163	0.115	0.046
Overlap adjusted Volume /	0.100	0.181	0.231	0.031	0.037	0.052	0.008	0.172	0.121	0.163	0.115	0.046
Critical Movement	Y					Y		Y		Y		

Node 524: Hollister & Coromar Project Access

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.342
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	5	5	31	57	394	22	5	5	10	30	568	43
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	1	1	8	14	99	6	1	1	3	8	142	11
Adjusted Volume	5	5	31	57	394	22	5	5	10	30	568	43

Volume and Adjustments by Lane Group

Approach	N	E		S		W		
Lane Group	C	L	C	C	R	L	C	R
ID	12623	12620	12621	12618	12619	12624	12625	12627
Lanes	LTR	L	T, RT	LT	R	L	T, T	R
Volume	41	57	416	10	10	30	568	43

Saturation Flow Rate

Approach	N	E		S		W		
Lane Group	12623	12620	12621	12618	12619	12624	12625	12627
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	2	1	1	1	2	1
Saturation Flow Rate	1600	1600	3200	1600	1600	1600	3200	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	5	5	31	57	394	22	5	5	10	30	568	43
Volume / Saturation Flow R	0.003	0.026	0.026	0.036	0.130	0.130	0.003	0.006	0.006	0.019	0.177	0.027
Overlap adjusted Volume /	0.003	0.026	0.026	0.036	0.130	0.130	0.003	0.006	0.006	0.019	0.177	0.027
Critical Movement		Y		Y			Y				Y	

Node 525: Hollister & Los Carneros	
Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.653
Loss Time	20
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	12	376	99	108	235	32	76	216	153	162	427	356
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	3	94	25	27	59	8	19	54	38	41	107	89
Adjusted Volume	12	376	99	108	235	32	76	216	153	162	427	356

Volume and Adjustments by Lane Group

Approach	N			E		S			W	
Lane Group	L	C	R	L	C	L	C	R	L	C
ID	12631	12632	12634	12628	12629	12639	12641	12643	12635	12637
Lanes	L	T, T	R	L	T, RT	L, L	T, T	R	L, L	T, RT
Volume	12	376	99	108	267	76	216	153	162	783

Saturation Flow Rate

Approach	N			E		S			W	
Lane Group	12631	12632	12634	12628	12629	12639	12641	12643	12635	12637
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	1	1	2	2	2	1	2	2
Saturation Flow Rate	1600	3200	1600	1600	3200	3200	3200	1600	3200	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	12	376	99	108	235	32	76	216	153	162	427	356
Volume / Saturation Flow R	0.007	0.117	0.062	0.068	0.083	0.083	0.024	0.068	0.096	0.051	0.245	0.245
Overlap adjusted Volume /	0.007	0.117	0.062	0.068	0.083	0.083	0.024	0.068	0.096	0.051	0.245	0.245
Critical Movement		Y		Y			Y				Y	

Node 528: Hollister & Los Carneros Way	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.29
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement						
Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Base Volume	111	40	369	38	24	496
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	28	10	92	10	6	124
Adjusted Volume	111	40	369	38	24	496

Volume and Adjustments by Lane Group					
Approach	N		E	W	
Lane Group	L	R	C	L	C
ID	12646	12648	12644	12649	12650
Lanes	L, L	R	T, RT	L	T, T
Volume	111	40	407	24	496

Saturation Flow Rate					
Approach	N		E	W	
Lane Group	12646	12648	12644	12649	12650
Base Saturation Flow Rate	1600	1600	1600	1600	1600
Number of Lanes	2	1	2	1	2
Saturation Flow Rate	3200	1600	3200	1600	3200

Capacity Analysis						
Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Volume	111	40	369	38	24	496
Volume / Saturation Flow R	0.035	0.025	0.127	0.127	0.015	0.155
Overlap adjusted Volume /	0.035	0.025	0.127	0.127	0.015	0.155
Critical Movement	Y					Y

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Node 530: Hollister & Aero Camino

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.349
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	38	5	34	5	340	86	6	5	5	57	480	21
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	10	1	9	1	85	22	2	1	1	14	120	5
Adjusted Volume	38	5	34	5	340	86	6	5	5	57	480	21

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	12657	12658	12654	12655	12652	12653	12659	12660
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	43	34	5	426	11	5	57	501

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	12657	12658	12654	12655	12652	12653	12659	12660
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	2	1	1	1	2
Saturation Flow Rate	1600	1600	1600	3200	1600	1600	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	38	5	34	5	340	86	6	5	5	57	480	21
Volume / Saturation Flow R	0.024	0.027	0.021	0.003	0.133	0.133	0.004	0.007	0.003	0.036	0.157	0.157
Overlap adjusted Volume /	0.024	0.027	0.021	0.003	0.133	0.133	0.004	0.007	0.003	0.036	0.157	0.157
Critical Movement		Y			Y		Y			Y		

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Node 553: Storke & Santa Felicia	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	0.59
Worst Case Delay	18.98
Worst Case LOS	C

Volume and Adjustments						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
Base Volume	459.00	22.00	25.00	632.00	10.00	28.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	498.91	23.91	27.17	686.96	10.87	30.43

Pedestrians						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
vx, Flow (Ped/hr)			0.00		0.00	0.00
w, Lane Width (ft)			12.00		12.00	12.00
Sp, Walking Speed (ft/s)			3.50		3.50	3.50
fpb, Percent Blockage			0.00		0.00	0.00

Capacity of Movements below Rank 1						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
Rank	1	1	2	1	3	2
vx, Volume			27.17		10.87	30.43
Conflicting Volume (Veh)			522.83		908.70	261.41
Conflicting Volume (Ped)			0.00		0.00	0.00
Conflicting Volume			522.83		908.70	261.41
Two-Stage Gap Acceptance					No	
Number of Storage Spaces						
cpx, Potential Capacity			1053.94		278.36	743.34
Capacity			1053.94		269.49	743.34

Critical Headway and Follow Up Headway						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
tc,base, Base Critical Head			4.10		7.50	6.90
tc,base,I, Base Critical Hea						
tc,base,II, Base Critical Hea						
tc,HV, Heavy Vehicles Adju			2.00		2.00	2.00
Phv, % Heavy Vehicles			0.00		0.00	0.00
tc,G, Grade Adjustment Fac			1.00		0.20	0.10
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment			0.00		0.70	0.00
tc, Critical Headway			4.10		6.80	6.90
tc,I, Critical Headway (Stag						
tc,II, Critical Headway (Stag						
tf,base, Base Follow-Up He			2.20		3.50	3.30
tf,hv, Heavy Vehicles Adjus			1.00		1.00	1.00
tf, Follow-Up Headway			2.20		3.50	3.30

Delay and Level of Service by Movement						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
vx, Volume	498.91	23.91	27.17	686.96	10.87	30.43
cmx, Capacity			1053.94		269.49	743.34
V / C			0.03		0.04	0.04
d, Delay			8.51		18.98	10.47
LOS			A		C	B
dA, Approach Delay	0.00		0.32		12.71	
Approach LOS					B	
dRank1, Rank 1 Delay	0.00		0.00			

Delay and Level of Service by Lane						
Approach	N (Major)		S (Major)			W
Lane	Lane 1	Lane 2	Lane 1	Lane 2	Lane 3	Lane 1
Movements		T, R1				L1, R1
vx, Volume	261.41	261.41	27.17	343.48	343.48	41.30
Flared Storage Size						
cmx, Capacity						508.19
V / C						0.08
Q95, 95% Queue Length						0.27
d, Delay						12.71
LOS						B
dA, Approach Delay	0.00		0.32			12.71
Approach LOS						B

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Node 562: Storke & Phelps

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.501
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	55	305	46	27	5	115	16	355	20	172	15	71
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	14	76	12	7	1	29	4	89	5	43	4	18
Adjusted Volume	55	305	46	27	5	115	16	355	20	172	15	71

Volume and Adjustments by Lane Group

Approach	N		E	S		W	
Lane Group	L	C	C	L	C	L	C
ID	12663	12664	12662	12668	12669	12666	12667
Lanes	L	T, RT	LTR	L	T, RT	L	RT
Volume	55	351	147	16	375	172	86

Saturation Flow Rate

Approach	N		E	S		W	
Lane Group	12663	12664	12662	12668	12669	12666	12667
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	1	1	2	1	1
Saturation Flow Rate	1600	3200	1600	1600	3200	1600	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	55	305	46	27	5	115	16	355	20	172	15	71
Volume / Saturation Flow R	0.034	0.110	0.110	0.017	0.092	0.092	0.010	0.117	0.117	0.108	0.054	0.054
Overlap adjusted Volume /	0.034	0.110	0.110	0.017	0.092	0.092	0.010	0.117	0.117	0.108	0.054	0.054
Critical Movement	Y				Y			Y		Y		

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Node 564: Mesa & Los Carneros

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.623
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	266	227	22	19	7	24	11	358	56	26	31	34
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	67	57	6	5	2	6	3	90	14	7	8	9
Adjusted Volume	266	227	22	19	7	24	11	358	56	26	31	34

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	L	C	C	R	L	C	C	R
ID	12673	12674	12671	12672	12677	12678	12675	12676
Lanes	L	RT	LT	R	L	RT	LT	R
Volume	266	249	26	24	11	414	57	34

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	12673	12674	12671	12672	12677	12678	12675	12676
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	1	1	1	1	1
Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	266	227	22	19	7	24	11	358	56	26	31	34
Volume / Saturation Flow R	0.166	0.156	0.156	0.012	0.016	0.015	0.007	0.259	0.259	0.016	0.036	0.021
Overlap adjusted Volume /	0.166	0.156	0.156	0.012	0.016	0.015	0.007	0.259	0.259	0.016	0.036	0.021
Critical Movement	Y			Y				Y			Y	

Node 592: Los Caneros & El Collegio

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.365
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Base Volume	158	128	99	170	252	240
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	40	32	25	43	63	60
Adjusted Volume	158	128	99	170	252	240

Volume and Adjustments by Lane Group

Approach	N		E		W	
Lane Group	L	R	C	R	L	C
ID	12682	12684	12679	12681	12685	12687
Lanes	L, L	R	T, T	R	L, L	T, T
Volume	158	128	99	170	252	240

Saturation Flow Rate

Approach	N		E		W	
Lane Group	12682	12684	12679	12681	12685	12687
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600
Number of Lanes	2	1	2	1	2	2
Saturation Flow Rate	3200	1600	3200	1600	3200	3200

Capacity Analysis

Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Volume	158	128	99	170	252	240
Volume / Saturation Flow R	0.049	0.080	0.031	0.106	0.079	0.075
Overlap adjusted Volume /	0.049	0.080	0.031	0.106	0.079	0.075
Critical Movement		Y		Y	Y	

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Node 596: El Colegio & Stadium	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.189
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement						
Approach	N		E		W	
Movement	T	R1	T	R1	L1	T
Base Volume	49	41	93	25	51	286
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	12	10	23	6	13	72
Adjusted Volume	49	41	93	25	51	286

Volume and Adjustments by Lane Group				
Approach	N	E	W	
Lane Group	C	C	L	C
ID	12691	12689	12692	12693
Lanes	RT	T, RT	L	T, T
Volume	90	118	51	286

Saturation Flow Rate				
Approach	N	E	W	
Lane Group	12691	12689	12692	12693
Base Saturation Flow Rate	1600	1600	1600	1600
Number of Lanes	1	2	1	2
Saturation Flow Rate	1600	3200	1600	3200

Capacity Analysis						
Approach	N		E		W	
Movement	T	R1	T	R1	L1	T
Volume	49	41	93	25	51	286
Volume / Saturation Flow R	0.056	0.056	0.037	0.037	0.032	0.089
Overlap adjusted Volume /	0.056	0.056	0.037	0.037	0.032	0.089
Critical Movement						Y

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Node 617: Los Caneros & Castilian

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.435
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	45	363	379	5	5	6	32	376	11	37	5	19
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	11	91	95	1	1	2	8	94	3	9	1	5
Adjusted Volume	45	363	379	5	5	6	32	376	11	37	5	19

Volume and Adjustments by Lane Group

Approach	N		E	S		W	
Lane Group	L	C	C	L	C	C	R
ID	12696	12697	12695	12701	12702	12699	12700
Lanes	L	T, RT	LTR	L	T, RT	LT	R
Volume	45	742	16	32	387	42	19

Saturation Flow Rate

Approach	N		E	S		W	
Lane Group	12696	12697	12695	12701	12702	12699	12700
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	1	1	2	1	1
Saturation Flow Rate	1600	3200	1600	1600	3200	1600	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	45	363	379	5	5	6	32	376	11	37	5	19
Volume / Saturation Flow R	0.028	0.232	0.232	0.003	0.010	0.010	0.020	0.121	0.121	0.023	0.026	0.012
Overlap adjusted Volume /	0.028	0.232	0.232	0.003	0.010	0.010	0.020	0.121	0.121	0.023	0.026	0.012
Critical Movement		Y				Y	Y			Y		

Node 620: Hollister & St Joseph	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	0.87
Worst Case Delay	19.88
Worst Case LOS	C

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	14.00	42.00	632.00	27.00	19.00	349.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	15.22	45.65	686.96	29.35	20.65	379.35

Pedestrians						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Flow (Ped/hr)	0.00	0.00			0.00	
w, Lane Width (ft)	12.00	12.00			12.00	
Sp, Walking Speed (ft/s)	3.50	3.50			3.50	
fpb, Percent Blockage	0.00	0.00			0.00	

Capacity of Movements below Rank 1						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Rank	3	2	1	1	2	1
vx, Volume	15.22	45.65			20.65	
Conflicting Volume (Veh)	932.61	358.15			716.30	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	932.61	358.15			716.30	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces						
cpx, Potential Capacity	268.72	644.18			893.67	
Capacity	261.78	644.18			893.67	

Critical Headway and Follow Up Headway						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
tc,base, Base Critical Head	7.50	6.90			4.10	
tc,base,I, Base Critical Hea						
tc,base,II, Base Critical Hea						
tc,HV, Heavy Vehicles Adju	2.00	2.00			2.00	
Phv, % Heavy Vehicles	0.00	0.00			0.00	
tc,G, Grade Adjustment Fac	0.20	0.10			1.00	
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment	0.70	0.00			0.00	
tc, Critical Headway	6.80	6.90			4.10	
tc,I, Critical Headway (Stag						
tc,II, Critical Headway (Stag						
tf,base, Base Follow-Up He	3.50	3.30			2.20	
tf,hv, Heavy Vehicles Adjus	1.00	1.00			1.00	
tf, Follow-Up Headway	3.50	3.30			2.20	

Delay and Level of Service by Movement						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Volume	15.22	45.65	686.96	29.35	20.65	379.35
cmx, Capacity	261.78	644.18			893.67	
V / C	0.06	0.07			0.02	
d, Delay	19.88	11.72			9.12	
LOS	C	B			A	
dA, Approach Delay	13.76		0.00		0.47	
Approach LOS	B					
dRank1, Rank 1 Delay			0.00		0.00	

Delay and Level of Service by Lane						
Approach	N	E (Major)		W (Major)		
Lane	Lane 1	Lane 1	Lane 2	Lane 1	Lane 2	Lane 3
Movements	L1, R1		T, R1			
vx, Volume	60.87	358.15	358.15	20.65	189.67	189.67
Flared Storage Size						
cmx, Capacity	471.86					
V / C	0.13					
Q95, 95% Queue Length	0.44					
d, Delay	13.76					
LOS	B					
dA, Approach Delay	13.76	0.00		0.47		
Approach LOS	B					

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Node 624: Cathedral Oaks & Calle Real	
Control Type	AWSC
Method	HCM 6th Edition
Average Delay	14.2
Average LOS	B

Volume and Adjustments

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	5.00	189.00	18.00	306.00	36.00	5.00	24.00	130.00	26.00	17.00	5.00	74.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
Flow Rate	5.43	205.43	19.57	332.61	39.13	5.43	26.09	141.30	28.26	18.48	5.43	80.43
Geometry Group	5			5			5			4b		

Saturation Headway

Approach	N		E		S		W
Lanes	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1
Total Lane Flow Rate	5.43	225.00	332.61	44.57	26.09	169.57	104.35
Left Turn Flow Rate	5.43	0.00	332.61	0.00	26.09	0.00	18.48
Right Turn Flow Rate	0.00	19.57	0.00	5.43	0.00	28.26	80.43
PLT, Proportion LT	1.00	0.00	1.00	0.00	1.00	0.00	0.18
PRT, Proportion RT	0.00	0.09	0.00	0.12	0.00	0.17	0.77
PHV, Proportion HV	0.00	0.00	0.00	0.00	0.00	0.00	0.00
hLT,adj, Headway adjustme	0.50		0.50		0.50		0.20
hRT,adj, Headway adjustm	-0.70		-0.70		-0.70		-0.60
hHV,adj, Headway adjustm	1.70		1.70		1.70		1.70
hadj, Headway adjustment	0.50	-0.06	0.50	-0.09	0.50	-0.12	-0.43

Departure Headway

Approach	N		E		S		W
Lanes	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1
Total Lane Flow Rate	5.43	225.00	332.61	44.57	26.09	169.57	104.35
hd initial	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x initial	0.00	0.20	0.30	0.04	0.02	0.15	0.09
hd, iteration 1	5.93	5.36	5.74	5.16	5.96	5.34	5.07
Difference, iteration 1	2.73	2.16	2.54	1.96	2.76	2.14	1.87
hd, iteration 2	6.62	6.05	6.24	5.66	6.69	6.07	5.82
Difference, iteration 2	0.69	0.69	0.50	0.50	0.73	0.73	0.75
hd, iteration 3	6.80	6.23	6.41	5.82	6.88	6.25	6.05
Difference, iteration 3	0.17	0.17	0.17	0.17	0.19	0.19	0.22
hd, iteration 4	6.85	6.28	6.45	5.87	6.94	6.31	6.11
Difference, iteration 4	0.05	0.05	0.04	0.04	0.06	0.06	0.06
Convergence	Y	Y	Y	Y	Y	Y	Y
hd final, Departure Headwa	6.85	6.28	6.45	5.87	6.94	6.31	6.11
x final, Degree of Utilization	0.01	0.39	0.60	0.07	0.05	0.30	0.18

Capacity and Level of Service

Approach	N		E		S		W
Lanes	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1
Total Lane Flow Rate	5.43	225.00	332.61	44.57	26.09	169.57	104.35
hd, Departure Headway	6.85	6.28	6.45	5.87	6.94	6.31	6.11
x, Degree of Utilization	0.01	0.39	0.60	0.07	0.05	0.30	0.18
m, Move Up Time	2.30	2.30	2.30	2.30	2.30	2.30	2.00
ts, Service Time	4.55	3.98	4.15	3.57	4.64	4.01	4.11
Capacity	525.12	573.05	557.38	613.16	518.10	569.96	589.40
Delay	9.62	13.03	18.57	9.03	10.01	11.68	10.42
LOS	A	B	C	A	B	B	B
Q95, 95% Queue Length	0.03	1.92	4.27	0.23	0.16	1.26	0.64
Approach Delay	12.95		17.44		11.45		10.42
Approach LOS	B		C		B		B
Intersection Delay	14.2						
Intersection LOS	B						

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Node 630: Hollister & Marketplace/Village Way

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.503
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	5	5	5	55	457	5	25	5	45	5	921	52
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	1	1	1	14	114	1	6	1	11	1	230	13
Adjusted Volume	5	5	5	55	457	5	25	5	45	5	921	52

Volume and Adjustments by Lane Group

Approach	N	E			S		W	
Lane Group	C	L	C	R	C	R	L	C
ID	12711	12706	12708	12710	12704	12705	12712	12713
Lanes	LTR	L, L	T, T	R	LT	R	L	T, RT
Volume	15	55	457	5	30	45	5	973

Saturation Flow Rate

Approach	N	E			S		W	
Lane Group	12711	12706	12708	12710	12704	12705	12712	12713
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	2	1	1	1	1	2
Saturation Flow Rate	1600	3200	3200	1600	1600	1600	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	5	5	5	55	457	5	25	5	45	5	921	52
Volume / Saturation Flow R	0.003	0.009	0.009	0.017	0.143	0.003	0.016	0.019	0.028	0.003	0.304	0.304
Overlap adjusted Volume /	0.003	0.009	0.009	0.017	0.143	0.003	0.016	0.019	0.028	0.003	0.304	0.304
Critical Movement	Y			Y					Y			Y

Node 636: Hollister & Cathedral Oaks	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	1.63
Worst Case Delay	13.47
Worst Case LOS	B

Volume and Adjustments						
Approach	N (Major)		E (Major)		W	
Movement	L1	R1	T	R1	L1	T
Base Volume	227.00	122.00	43.00	219.00	39.00	20.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	246.74	132.61	46.74	238.04	42.39	21.74

Pedestrians						
Approach	N (Major)		E (Major)		W	
Movement	L1	R1	T	R1	L1	T
vx, Flow (Ped/hr)			0.00		0.00	0.00
w, Lane Width (ft)			12.00		12.00	12.00
Sp, Walking Speed (ft/s)			3.50		3.50	3.50
fpb, Percent Blockage			0.00		0.00	0.00

Capacity of Movements below Rank 1						
Approach	N (Major)		E (Major)		W	
Movement	L1	R1	T	R1	L1	T
Rank	1	1	2	1	3	2
vx, Volume			46.74		42.39	21.74
Conflicting Volume (Veh)			313.04		597.83	313.04
Conflicting Volume (Ped)			0.00		0.00	0.00
Conflicting Volume			313.04		597.83	313.04
Two-Stage Gap Acceptance					No	
Number of Storage Spaces						
cpx, Potential Capacity			1258.70		468.58	605.50
Capacity			1258.70		467.42	605.50

Critical Headway and Follow Up Headway						
Approach	N (Major)		E (Major)		W	
Movement	L1	R1	T	R1	L1	T
tc,base, Base Critical Head			4.10		7.10	6.50
tc,base,I, Base Critical Hea						
tc,base,II, Base Critical Hea						
tc,HV, Heavy Vehicles Adju			1.00		1.00	1.00
Phv, % Heavy Vehicles			0.00		0.00	0.00
tc,G, Grade Adjustment Fac			1.00		0.20	0.20
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment			0.00		0.70	0.00
tc, Critical Headway			4.10		6.40	6.50
tc,I, Critical Headway (Stag						
tc,II, Critical Headway (Stag						
tf,base, Base Follow-Up He			2.20		3.50	4.00
tf,hv, Heavy Vehicles Adjus			0.90		0.90	0.90
tf, Follow-Up Headway			2.20		3.50	4.00

Delay and Level of Service by Movement						
Approach	N (Major)		E (Major)		W	
Movement	L1	R1	T	R1	L1	T
vx, Volume	246.74	132.61	46.74	238.04	42.39	21.74
cmx, Capacity			1258.70		467.42	605.50
V / C			0.04		0.09	0.04
d, Delay			7.97		13.47	11.17
LOS			A		B	B
dA, Approach Delay	0.00		1.31		12.69	
Approach LOS					B	
dRank1, Rank 1 Delay	0.00		0.00			

Delay and Level of Service by Lane						
Approach	N (Major)		E (Major)		W	
Lane	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
Movements						
vx, Volume	246.74	132.61	46.74	238.04	42.39	21.74
Flared Storage Size						
cmx, Capacity						
V / C						
Q95, 95% Queue Length						
d, Delay						
LOS						
dA, Approach Delay	0.00		1.31		12.69	
Approach LOS					B	

Node 717: Hollister & Entrance

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.489
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	6	5	5	51	305	62	82	5	244	9	443	39
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	2	1	1	13	76	16	21	1	61	2	111	10
Adjusted Volume	6	5	5	51	305	62	82	5	244	9	443	39

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	12720	12721	12717	12718	12715	12716	12722	12723
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	11	5	51	367	87	244	9	482

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	12720	12721	12717	12718	12715	12716	12722	12723
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	2	1	1	1	2
Saturation Flow Rate	1600	1600	1600	3200	1600	1600	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	6	5	5	51	305	62	82	5	244	9	443	39
Volume / Saturation Flow R	0.004	0.007	0.003	0.032	0.115	0.115	0.051	0.054	0.153	0.006	0.151	0.151
Overlap adjusted Volume /	0.004	0.007	0.003	0.032	0.115	0.115	0.051	0.054	0.153	0.006	0.151	0.151
Critical Movement	Y			Y					Y		Y	

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Node 856: Hollister & Cortona

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	6.02
Worst Case Delay	78.86
Worst Case LOS	F

Volume and Adjustments

Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	5.00	5.00	20.00	16.00	252.00	11.00	50.00	9.00	14.00	154.00	668.00	9.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	5.43	5.43	21.74	17.39	273.91	11.96	54.35	9.78	15.22	167.39	726.09	9.78

Pedestrians

Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
w, Lane Width (ft)	12.00	12.00	12.00	12.00			12.00	12.00	12.00	12.00		
Sp, Walking Speed (ft/s)	3.50	3.50	3.50	3.50			3.50	3.50	3.50	3.50		
fpb, Percent Blockage	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		

Capacity of Movements below Rank 1

Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	2	1	1	4	3	2	2	1	1
vx, Volume	5.43	5.43	21.74	17.39			54.35	9.78	15.22	167.39		
Conflicting Volume (Veh)	1017.39	1385.33	142.93	735.87			1240.22	1386.41	367.93	285.87		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1017.39	1385.33	142.93	735.87			1240.22	1386.41	367.93	285.87		
Two-Stage Gap Acceptanc	No	No					No	No				
Number of Storage Spaces												
cpx, Potential Capacity	194.51	144.59	885.02	878.83			133.64	144.37	634.90	1287.86		
Capacity	153.23	118.24	885.02	878.83			108.29	118.06	634.90	1287.86		

Critical Headway and Follow Up Headway

Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Head	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,base,I, Base Critical Hea												
tc,base,II, Base Critical Hea												
tc,HV, Heavy Vehicles Adju	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00		
Phv, % Heavy Vehicles	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Fac	0.20	0.20	0.10	1.00			0.20	0.20	0.10	1.00		
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc, Critical Headway	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,I, Critical Headway (Stag												
tc,II, Critical Headway (Stag												
tf,base, Base Follow-Up He	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		
tf,hv, Heavy Vehicles Adjus	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00		
tf, Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		

Delay and Level of Service by Movement

Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	5.43	5.43	21.74	17.39	273.91	11.96	54.35	9.78	15.22	167.39	726.09	9.78
cmx, Capacity	153.23	118.24	885.02	878.83			108.29	118.06	634.90	1287.86		
V / C	0.04	0.05	0.02	0.02			0.50	0.08	0.02	0.13		
d, Delay	29.88	36.83	10.45	9.18			78.86	76.11	51.29	8.21		
LOS	D	E	B	A			F	F	F	A		
dA, Approach Delay		18.09			0.53			73.23			1.52	
Approach LOS		C						F				
dRank1, Rank 1 Delay					0.10						0.00	

Delay and Level of Service by Lane

Approach	N	E (Major)		S		W (Major)	
Lane	Lane 1	Lane 1	Lane 2	Lane 1	Lane 1	Lane 2	Lane 3
Movements	L1, T, R1	L1, T	T, R1	L1, T, R1			T, R1
vx, Volume	32.61	151.63	151.63	79.35	167.39	367.93	367.93
Flared Storage Size							
cmx, Capacity	307.65	878.83		130.36			
V / C	0.11	0.17		0.61			
Q95, 95% Queue Length	0.35	0.62		4.03			
d, Delay	18.09	9.18		73.23			
LOS	C			F			
dA, Approach Delay	18.09	0.53		73.23		1.52	
Approach LOS	C			F			

Node 877: Hollister & Sumida Gardens

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.393
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	15	5	61	57	586	20	6	5	6	14	321	9
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	4	1	15	14	147	5	2	1	2	4	80	2
Adjusted Volume	15	5	61	57	586	20	6	5	6	14	321	9

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	L	C	L	C	L	C	L	C
ID	12728	12729	12725	12726	12733	12734	12730	12731
Lanes	L	RT	L	T, RT	L	RT	L	T, RT
Volume	15	66	57	606	6	11	14	330

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	12728	12729	12725	12726	12733	12734	12730	12731
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	2	1	1	1	2
Saturation Flow Rate	1600	1600	1600	3200	1600	1600	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	15	5	61	57	586	20	6	5	6	14	321	9
Volume / Saturation Flow R	0.009	0.041	0.041	0.036	0.189	0.189	0.004	0.007	0.007	0.009	0.103	0.103
Overlap adjusted Volume /	0.009	0.041	0.041	0.036	0.189	0.189	0.004	0.007	0.007	0.009	0.103	0.103
Critical Movement			Y			Y	Y			Y		

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Node 1009: Los Carneros & Raytheon Dr.	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.33
Loss Time	0
Cycle Length	100

Volume and Adjustments by Movement						
Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Base Volume	5	5	1037	111	5	398
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	1	1	259	28	1	100
Adjusted Volume	5	5	1037	111	5	398

Volume and Adjustments by Lane Group						
Approach	N		E		W	
Lane Group	L	R	C	R	L	C
ID	12738	12740	12735	12737	12741	12742
Lanes	L, L	R	T, T	R	L	T, T
Volume	5	5	1037	111	5	398

Saturation Flow Rate						
Approach	N		E		W	
Lane Group	12738	12740	12735	12737	12741	12742
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600
Number of Lanes	2	1	2	1	1	2
Saturation Flow Rate	3200	1600	3200	1600	1600	3200

Capacity Analysis						
Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Volume	5	5	1037	111	5	398
Volume / Saturation Flow R	0.002	0.003	0.324	0.069	0.003	0.124
Overlap adjusted Volume /	0.002	0.003	0.324	0.069	0.003	0.124
Critical Movement		Y	Y		Y	

Node 1042: Hollister & Santa Babara Shores

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	1
Worst Case Delay	13.83
Worst Case LOS	B

Volume and Adjustments						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	10.00	354.00	28.00	29.00	333.00	9.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	10.87	384.78	30.43	31.52	361.96	9.78

Pedestrians						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Flow (Ped/hr)	0.00		0.00	0.00		
w, Lane Width (ft)	12.00		12.00	12.00		
Sp, Walking Speed (ft/s)	3.50		3.50	3.50		
fpb, Percent Blockage	0.00		0.00	0.00		

Capacity of Movements below Rank 1						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Rank	2	1	3	2	1	1
vx, Volume	10.87		30.43	31.52		
Conflicting Volume (Veh)	371.74		580.98	185.87		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	371.74		580.98	185.87		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces						
cpx, Potential Capacity	1197.87		449.30	830.89		
Capacity	1197.87		444.73	830.89		

Critical Headway and Follow Up Headway						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
tc,base, Base Critical Head	4.10		7.50	6.90		
tc,base,I, Base Critical Hea						
tc,base,II, Base Critical Hea						
tc,HV, Heavy Vehicles Adju	2.00		2.00	2.00		
Phv, % Heavy Vehicles	0.00		0.00	0.00		
tc,G, Grade Adjustment Fac	1.00		0.20	0.10		
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment	0.00		0.70	0.00		
tc, Critical Headway	4.10		6.80	6.90		
tc,I, Critical Headway (Stag						
tc,II, Critical Headway (Stag						
tf,base, Base Follow-Up He	2.20		3.50	3.30		
tf,hv, Heavy Vehicles Adjus	1.00		1.00	1.00		
tf, Follow-Up Headway	2.20		3.50	3.30		

Delay and Level of Service by Movement						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Volume	10.87	384.78	30.43	31.52	361.96	9.78
cmx, Capacity	1197.87		444.73	830.89		
V / C	0.01		0.07	0.04		
d, Delay	8.03		13.83	10.07		
LOS	A		B	B		
dA, Approach Delay	0.22		11.92		0.00	
Approach LOS			B			
dRank1, Rank 1 Delay	0.00				0.00	

Delay and Level of Service by Lane						
Approach	E (Major)			S	W (Major)	
Lane	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2
Movements				L1, R1		T, R1
vx, Volume	10.87	192.39	192.39	61.96	185.87	185.87
Flared Storage Size						
cmx, Capacity				582.46		
V / C				0.11		
Q95, 95% Queue Length				0.36		
d, Delay				11.92		
LOS				B		
dA, Approach Delay	0.22			11.92	0.00	
Approach LOS				B		

Node 1159: Hollister & David Love PL

3

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	1.29
Worst Case Delay	68.49
Worst Case LOS	F

Volume and Adjustments

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	10.00	5.00	9.00	5.00	1263.00	44.00	16.00	5.00	5.00	15.00	264.00	20.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	10.87	5.43	9.78	5.43	1372.83	47.83	17.39	5.43	5.43	16.30	286.96	21.74

Pedestrians

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
w, Lane Width (ft)	12.00	12.00	12.00	12.00			12.00	12.00	12.00	12.00		
Sp, Walking Speed (ft/s)	3.50	3.50	3.50	3.50			3.50	3.50	3.50	3.50		
fpb, Percent Blockage	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		

Capacity of Movements below Rank 1

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	2	1	1	4	3	2	2	1	1
vx, Volume	10.87	5.43	9.78	5.43			17.39	5.43	5.43	16.30		
Conflicting Volume (Veh)	1586.41	1748.91	710.33	308.70			1030.43	1761.96	154.35	1420.65		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1586.41	1748.91	710.33	308.70			1030.43	1761.96	154.35	1420.65		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces												
cpx, Potential Capacity	74.06	86.80	380.42	1263.33			190.30	85.21	870.30	485.48		
Capacity	67.51	82.97	380.42	1263.33			170.25	81.44	870.30	485.48		

Critical Headway and Follow Up Headway

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Headway	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,base,I, Base Critical Headway												
tc,base,II, Base Critical Headway												
tc,HV, Heavy Vehicles Adjustment	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00		
Phv, % Heavy Vehicles	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Factor	0.20	0.20	0.10	1.00			0.20	0.20	0.10	1.00		
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc, Critical Headway	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,I, Critical Headway (Stage)												
tc,II, Critical Headway (Stage)												
tf,base, Base Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		
tf,hv, Heavy Vehicles Adjustment	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00		
tf, Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		

Delay and Level of Service by Movement

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	10.87	5.43	9.78	5.43	1372.83	47.83	17.39	5.43	5.43	16.30	286.96	21.74
cmx, Capacity	67.51	82.97	380.42	1263.33			170.25	81.44	870.30	485.48		
V / C	0.16	0.07	0.03	0.00			0.10	0.07	0.01	0.03		
d, Delay	68.49	50.55	16.63	7.86			30.87	53.92	13.86	12.67		
LOS	F	F	C	A			D	F	B	B		
dA, Approach Delay		45.30			0.03			32.03			0.64	
Approach LOS		E						D				
dRank1, Rank 1 Delay					0.00						0.00	

Delay and Level of Service by Lane

Approach	N		E (Major)			S	W (Major)		
Lane	Lane 1	Lane 2	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2	Lane 3
Movements		L1, T, R1			T, R1	L1, T, R1			T, R1
vx, Volume	10.87	15.22	5.43	710.33	710.33	28.26	16.30	154.35	154.35
Flared Storage Size									
cmx, Capacity		166.82				161.38			
V / C		0.09				0.18			
Q95, 95% Queue Length		0.30				0.63			
d, Delay		28.74				32.03			
LOS		D				D			
dA, Approach Delay	45.30			0.03		32.03		0.64	
Approach LOS	E					D			

Node 1182: Ward & Ekwill	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	1.62
Worst Case Delay	12.53
Worst Case LOS	B

Volume and Adjustments						
Approach	N (Major)		E		S (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	63.00	262.00	5.00	21.00	92.00	5.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	68.48	284.78	5.43	22.83	100.00	5.43

Pedestrians						
Approach	N (Major)		E		S (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Flow (Ped/hr)	0.00		0.00	0.00		
w, Lane Width (ft)	12.00		12.00	12.00		
Sp, Walking Speed (ft/s)	3.50		3.50	3.50		
fpb, Percent Blockage	0.00		0.00	0.00		

Capacity of Movements below Rank 1						
Approach	N (Major)		E		S (Major)	
Movement	L1	T	L1	R1	T	R1
Rank	2	1	3	2	1	1
vx, Volume	68.48		5.43	22.83		
Conflicting Volume (Veh)	105.43		524.46	102.72		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	105.43		524.46	102.72		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces						
cpx, Potential Capacity	1498.46		516.82	957.74		
Capacity	1498.46		488.76	957.74		

Critical Headway and Follow Up Headway						
Approach	N (Major)		E		S (Major)	
Movement	L1	T	L1	R1	T	R1
tc,base, Base Critical Head	4.10		7.10	6.20		
tc,base,I, Base Critical Hea						
tc,base,II, Base Critical Hea						
tc,HV, Heavy Vehicles Adju	1.00		1.00	1.00		
Phv, % Heavy Vehicles	0.00		0.00	0.00		
tc,G, Grade Adjustment Fac	1.00		0.20	0.10		
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment	0.00		0.70	0.00		
tc, Critical Headway	4.10		6.40	6.20		
tc,I, Critical Headway (Stag						
tc,II, Critical Headway (Stag						
tf,base, Base Follow-Up He	2.20		3.50	3.30		
tf,hv, Heavy Vehicles Adjus	0.90		0.90	0.90		
tf, Follow-Up Headway	2.20		3.50	3.30		

Delay and Level of Service by Movement						
Approach	N (Major)		E		S (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Volume	68.48	284.78	5.43	22.83	100.00	5.43
cmx, Capacity	1498.46		488.76	957.74		
V / C	0.05		0.01	0.02		
d, Delay	7.52		12.53	8.92		
LOS	A		B	A		
dA, Approach Delay	1.46		9.61		0.00	
Approach LOS			A			
dRank1, Rank 1 Delay	0.41				0.00	

Delay and Level of Service by Lane			
Approach	N (Major)	E	S (Major)
Lane	Lane 1	Lane 1	Lane 1
Movements	L1, T	L1, R1	T, R1
vx, Volume	353.26	28.26	105.43
Flared Storage Size			
cmx, Capacity	1498.46	808.54	
V / C	0.24	0.03	
Q95, 95% Queue Length	0.92	0.11	
d, Delay	7.52	9.61	
LOS		A	
dA, Approach Delay	1.46	9.61	0.00
Approach LOS		A	

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Intersection Capacity Analysis Summary Page

Analysis Time:	Tue Aug 22 12:00:30
Driving Side:	Right
Analysis Period:	1 Hours

Number		Name	Control Type	V/C	Avg Delay	Avg LOS	Max Delay	Max LOS
164	Node 164	Cathedral Oaks & La Patera	TWSC	0.00	1.26	A	30.66	D
188	Node 188	Cathedral Oaks & SB 154 Ramps	TWSC	0.00	218.13	F	1998.43	F
189	Node 189	Cathedral Oaks & NB 154 Ramps	TWSC	0.00	2553.56	F	8338.66	F
195	Node 195	Cathedral Oaks & Los Carneros	TWSC	0.00	2.23	A	27.41	D
203	Node 203	Stow Canyon & Fairview	TWSC	0.00	9.74	A	52.13	F
204	Node 204	Fairview & Berkeley	TWSC	0.00	2.81	A	31.06	D
288	Node 288	Calle Real & Fairview	Signalized	0.83	39.43	D	66.17	D
319	Node 319	Turnpike & SB 101 Ramps	Signalized	0.93	59.62	E	80.35	E
386	Node 386	Fairview & Mandarin	TWSC	0.00	5.30	A	133.53	F
387	Node 387	Hollister & Orange	TWSC	0.00	1.66	A	39.98	E
461	Node 461	Storke & US 101 NB Ramps	Signalized	0.81	41.29	D	83.97	D
462	Node 462	Storke & US 101 SB Ramp	Signalized	0.92	54.81	E	170.68	E
506	Node 506	Cathedral Oaks 101 SB-Ramp	TWSC	0.00	5.88	A	55.15	F
515	Node 515	Hollister & Cannon Green	TWSC	0.00	4.29	A	34.32	D
518	Node 518	Hollister & Santa Felicia	TWSC	0.00	2.24	A	54.66	F
856	Node 856	Hollister & Cortona	TWSC	0.00	6.02	A	78.86	F
1159	Node 1159	Hollister & David Love PL	TWSC	0.00	1.29	A	68.49	F

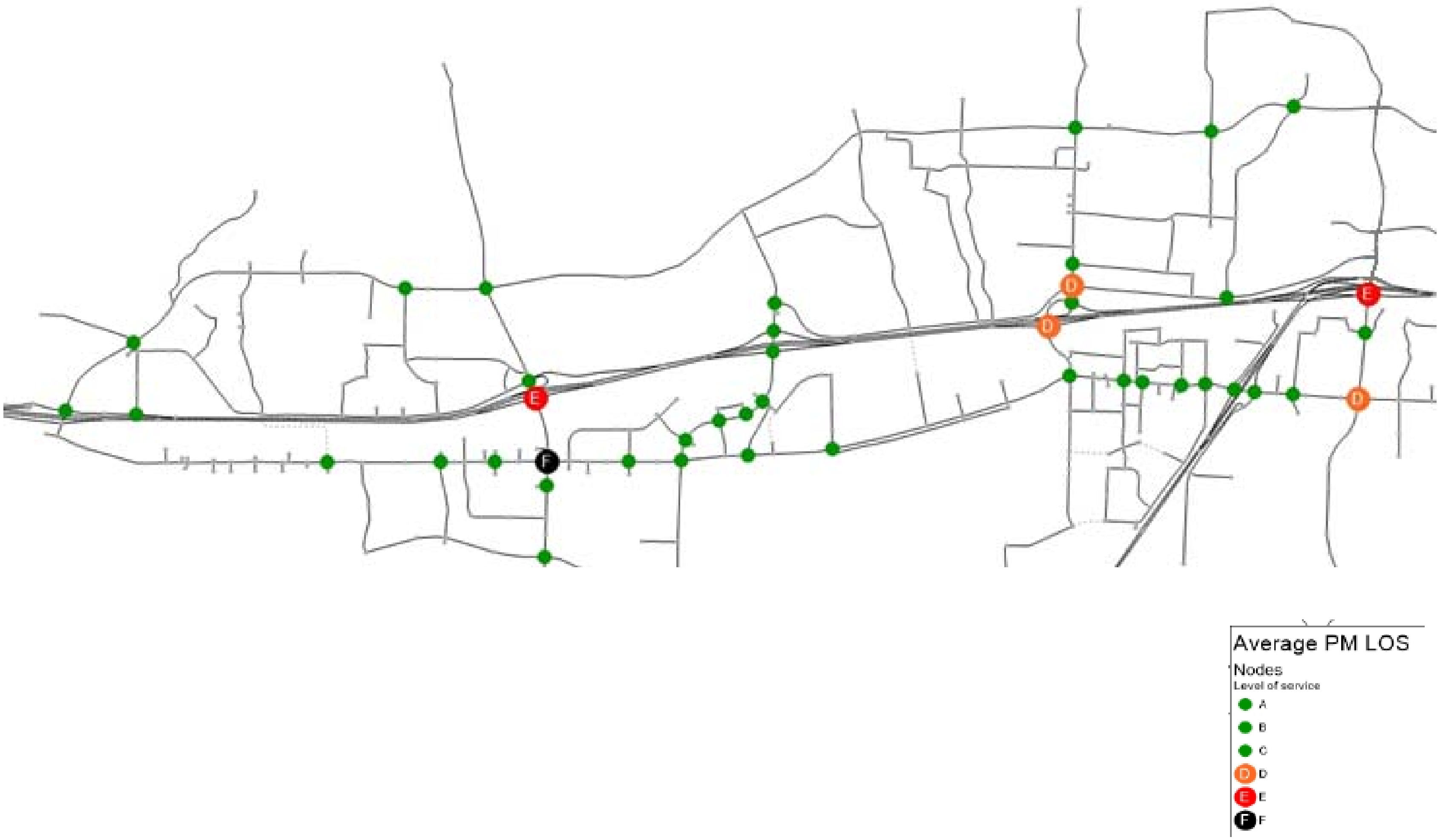
Base Year Conditions– PM Peak Hour Analysis

Intersection Capacity Analysis Summary Page

Analysis Time:	Tue Aug 22 12:10:05 2017
Driving Side:	Right
Analysis Period:	1 Hours

Number	Name	Control Type	V/C	Avg Delay	Avg LOS	Max Delay	Max LOS
151	Cathedral Oaks & Kellogg	Signalized	0.40	17.91	A	41.26	A
164	Cathedral Oaks & La Patera	TWSC	0.00	1.15	A	17.57	C
171	Cathedral Oaks & Fairview	Signalized	0.47	26.30	A	36.51	A
173	Cathedral Oaks & Cambridge	Signalized	0.35	14.64	A	45.25	A
195	Cathedral Oaks & Los Carneros	TWSC	0.00	3.64	A	16.03	C
203	Stow Canyon & Fairview	TWSC	0.00	2.71	A	24.17	C
204	Fairview & Berkeley	TWSC	0.00	1.47	A	21.79	C
240	Fairview & Shirrell Way	TWSC	0.00	3.68	A	24.50	C
241	Encina & Fairview	Signalized	0.45	11.97	A	45.19	A
256	Calle Real & Patterson	Signalized	0.74	26.62	C	39.00	C
257	University & Patterson	Signalized	0.50	10.02	A	39.10	A
273	Cathedral Oaks & Brandon	TWSC	0.00	3.24	A	11.63	B
276	Cathedral Oaks & Alameda	Signalized	0.35	14.87	A	49.34	A
277	Cathedral Oaks & Glen Anne	Signalized	0.51	26.66	A	66.32	A
279	Calle Real & Los Caneros	Roundabout	0.33	6.98	A	7.52	A
280	Calle Real & La Patera	TWSC	0.00	1.55	A	17.87	C
282	Calle Real & Carlo Dr	TWSC	0.00	2.59	A	27.64	D
288	Calle Real & Fairview	Signalized	0.85	37.82	D	54.73	D
289	Fairview & US 101 NB Ramps	Signalized	0.32	38.47	A	75.49	A
296	Calle Real & Kellogg	Signalized	0.53	17.67	A	59.17	A
305	Patterson & Overpass	Signalized	0.67	14.11	B	69.36	B
359	Cathedral Oaks & Winchester Canyon	AWSC	0.09	8.27	A	8.64	A
372	Glen Annie & Del Norte	TWSC	0.00	0.51	A	9.46	A
375	Los Caneros & US101 SB Ramps	Signalized	0.70	19.15	B	108.91	B
376	Los Carneros & US 101 NB Ramps	Signalized	0.55	24.28	A	31.79	A
383	Fairview & US 101 SB Ramps	Signalized	0.85	24.37	D	62.15	D
385	Hollister & Fairview	Signalized	0.76	35.15	C	50.33	C
386	Fairview & Mandarin	TWSC	0.00	12.20	B	456.06	F
387	Hollister & Orange	TWSC	0.00	4.40	A	90.65	F
390	Hollister & Pine/Nectarine	Signalized	0.60	17.46	B	39.38	B
394	Hollister & Rutherford	Signalized	0.49	8.12	A	80.88	A
396	Hollister & Community Center West Driveway	TWSC	0.00	0.37	A	10.88	B
397	Hollister & Kinman	Signalized	0.47	9.32	A	39.06	A
399	Hollister & Kellogg	Signalized	0.60	20.12	B	50.25	B
402	Hollister & SR-217 SB Ramps	Signalized	0.59	24.72	A	44.36	A
405	Hollister & SR-217 NB Ramps	Signalized	0.53	30.51	A	40.13	A
441	Calle Real & NB 101 OnRamp	TWSC	0.00	1.97	A	10.45	B
445	Calle Real & Winchester Canyon	AWSC	0.26	9.00	A	10.00	A
450	Calle Real & Brandon Dr.	TWSC	0.00	1.70	A	10.69	B
452	Calle Real & Elwood Station	TWSC	0.00	1.72	A	12.35	B
461	Storke & US 101 NB Ramps	Signalized	0.76	34.43	C	51.82	C
462	Storke & US 101 SB Ramp	Signalized	0.92	23.62	E	101.67	E
466	Los Carneros & Cremona	Signalized	0.44	13.00	A	32.76	A
467	Los Carneros & Calle Koral	Signalized	0.66	17.93	B	25.20	B
489	Hollister & Patterson	Signalized	0.81	45.22	D	59.36	D
493	Hollister & Walnut	Signalized	0.70	23.80	C	55.85	C
506	Cathedral Oaks 101 SB-Ramp	TWSC	0.00	2.53	A	23.03	C
511	Hollister & Pebble Beach Rd	TWSC	0.00	1.41	A	16.13	C
512	Hollister & Palo Alto Dr	TWSC	0.00	1.24	A	15.96	C
513	Hollister & Coronado	TWSC	0.00	1.61	A	15.56	C
515	Hollister & Cannon Green	TWSC	0.00	1.93	A	35.70	E
517	Hollister & Pacific Oaks	Signalized	0.50	11.37	A	39.44	A
518	Hollister & Santa Felicia	TWSC	0.00	131.71	F	1579.24	F
521	Storke & Marketplace	Signalized	0.57	32.06	A	60.25	A
522	Hollister & Storke	Signalized	1.07	131.98	F	312.29	F
524	Hollister & Coromar Project Access	Signalized	0.45	8.40	A	49.45	A
525	Hollister & Los Carneros	Signalized	0.70	37.57	B	59.86	B
528	Hollister & Los Carneros Way	Signalized	0.48	8.67	A	50.06	A
530	Hollister & Aero Camino	Signalized	0.50	12.99	A	51.66	A
553	Storke & Santa Felicia	TWSC	0.00	3.19	A	60.20	F
562	Storke & Phelps	Signalized	0.53	20.08	A	46.92	A
564	Mesa & Los Carneros	Signalized	0.66	27.65	B	65.03	B
620	Hollister & St Joseph	TWSC	0.00	0.19	A	23.64	C
624	Cathedral Oaks & Calle Real	AWSC	0.33	10.62	B	12.11	B
630	Hollister & Marketplace/Village Way	Signalized	0.71	32.51	C	48.65	C
636	Hollister & Cathedral Oaks	TWSC	0.00	2.75	A	15.86	C
717	Hollister & Entrance	Signalized	0.55	29.86	A	42.02	A
856	Hollister & Cortona	TWSC	0.00	50.58	F	571.17	F
877	Hollister & Sumida Gardens	Signalized	0.47	10.93	A	57.48	A
1009	Los Carneros & Raytheon Dr.	Signalized	0.38	6.29	A	46.88	A
1042	Hollister & Santa Babara Shores	TWSC	0.00	0.62	A	12.26	B
1159	Hollister & David Love PL	TWSC	0.00	3.33	A	71.86	F
1182	Ward & Ekwill	TWSC	0.00	2.02	A	12.80	B

City of Goleta General Plan Update –Average LOS for City Intersections for PM Peak of Base Conditions



Intersection Capacity Analysis Summary Page

Analysis Time:	Tue Aug 22 12:10:05 2017
Driving Side:	Right
Analysis Period:	1 Hours

Number	Name	Control Type	V/C	Avg Delay	Avg LOS	Max Delay	Max LOS
Node 188	Cathedral Oaks & SB 154 Ramps	TWSC	0.00	7.17	A	105.44	F
Node 189	Cathedral Oaks & NB 154 Ramps	TWSC	0.00	1651.80	F	6478.78	F
Node 282	Calle Real & Carlo Dr	TWSC	0.00	2.59	A	27.64	D
Node 288	Calle Real & Fairview	Signalized	0.85	37.82	D	54.73	D
Node 306	Patterson & US 101 SB Ramps	Signalized	0.93	116.66	E	202.94	E
Node 340	San Marcos Pass & Calle Real	Signalized	0.86	60.97	D	192.95	D
Node 383	Fairview & US 101 SB Ramps	Signalized	0.85	24.37	D	62.15	D
Node 386	Fairview & Mandarin	TWSC	0.00	12.20	B	456.06	F
Node 387	Hollister & Orange	TWSC	0.00	4.40	A	90.65	F
Node 416	Hollister & Turnpike	Signalized	0.85	60.89	D	86.34	D
Node 462	Storke & US 101 SB Ramp	Signalized	0.92	23.62	E	101.67	E
Node 489	Hollister & Patterson	Signalized	0.81	45.22	D	59.36	D
Node 515	Hollister & Cannon Green	TWSC	0.00	1.93	A	35.70	E
Node 518	Hollister & Santa Felicia	TWSC	0.00	131.71	F	1579.24	F
Node 522	Hollister & Storke	Signalized	1.07	131.98	F	312.29	F
Node 553	Storke & Santa Felicia	TWSC	0.00	3.19	A	60.20	F
Node 856	Hollister & Cortona	TWSC	0.00	50.58	F	571.17	F
Node 1159	Hollister & David Love PL	TWSC	0.00	3.33	A	71.86	F

Node 151: Cathedral Oaks & Kellogg

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.399
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	42	9	11	69	383	67	10	14	59	16	444	12
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	11	2	3	17	96	17	3	4	15	4	111	3
Adjusted Volume	42	9	11	69	383	67	10	14	59	16	444	12

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	15753	15754	15750	15751	15758	15759	15755	15756
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	51	11	69	450	24	59	16	456

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	15753	15754	15750	15751	15758	15759	15755	15756
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	2	1	1	1	2
Saturation Flow Rate	1600	1600	1600	3200	1600	1600	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	42	9	11	69	383	67	10	14	59	16	444	12
Volume / Saturation Flow R	0.026	0.032	0.007	0.043	0.141	0.141	0.006	0.015	0.037	0.010	0.143	0.143
Overlap adjusted Volume /	0.026	0.032	0.007	0.043	0.141	0.141	0.006	0.015	0.037	0.010	0.143	0.143
Critical Movement	Y			Y					Y		Y	

Node 164: Cathedral Oaks & La Patera

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	1.15
Worst Case Delay	17.57
Worst Case LOS	C

Volume and Adjustments

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	8.00	5.00	6.00	16.00	276.00	5.00	5.00	5.00	20.00	5.00	368.00	17.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	8.70	5.43	6.52	17.39	300.00	5.43	5.43	5.43	21.74	5.43	400.00	18.48

Pedestrians

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
w, Lane Width (ft)	12.00	12.00	12.00	12.00			12.00	12.00	12.00	12.00		
Sp, Walking Speed (ft/s)	3.50	3.50	3.50	3.50			3.50	3.50	3.50	3.50		
fpb, Percent Blockage	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		

Capacity of Movements below Rank 1

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	2	1	1	4	3	2	2	1	1
vx, Volume	8.70	5.43	6.52	17.39			5.43	5.43	21.74	5.43		
Conflicting Volume (Veh)	771.20	766.85	302.72	418.48			763.59	760.33	409.24	305.43		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	771.20	766.85	302.72	418.48			763.59	760.33	409.24	305.43		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces												
cpx, Potential Capacity	319.43	334.88	741.71	1151.45			323.21	337.79	646.57	1266.80		
Capacity	299.31	326.94	741.71	1151.45			310.59	329.78	646.57	1266.80		

Critical Headway and Follow Up Headway

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Head	7.10	6.50	6.20	4.10			7.10	6.50	6.20	4.10		
tc,base,I, Base Critical Hea												
tc,base,II, Base Critical Hea												
tc,HV, Heavy Vehicles Adju	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00		
Phv, % Heavy Vehicles	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Fac	0.20	0.20	0.10	1.00			0.20	0.20	0.10	1.00		
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc, Critical Headway	7.10	6.50	6.20	4.10			7.10	6.50	6.20	4.10		
tc,I, Critical Headway (Stag												
tc,II, Critical Headway (Stag												
tf,base, Base Follow-Up He	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		
tf,hv, Heavy Vehicles Adjus	0.90	0.90	0.90	0.90			0.90	0.90	0.90	0.90		
tf, Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		

Delay and Level of Service by Movement

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	8.70	5.43	6.52	17.39	300.00	5.43	5.43	5.43	21.74	5.43	400.00	18.48
cmx, Capacity	299.31	326.94	741.71	1151.45			310.59	329.78	646.57	1266.80		
V / C	0.03	0.02	0.01	0.02			0.02	0.02	0.03	0.00		
d, Delay	17.57	16.56	10.40	8.17			17.13	16.46	11.11	7.85		
LOS	C	C	B	A			C	C	B	A		
dA, Approach Delay		15.04			0.44			13.00			0.10	
Approach LOS		C						B				
dRank1, Rank 1 Delay					0.00						0.00	

Delay and Level of Service by Lane

Approach	N	E (Major)		S	W (Major)	
Lane	Lane 1	Lane 1	Lane 2	Lane 1	Lane 1	Lane 2
Movements	L1, T, R1		T, R1	L1, T, R1		T, R1
vx, Volume	20.65	17.39	305.43	32.61	5.43	418.48
Flared Storage Size						
cmx, Capacity	379.16			482.38		
V / C	0.05			0.07		
Q95, 95% Queue Length	0.17			0.22		
d, Delay	15.04			13.00		
LOS	C			B		
dA, Approach Delay	15.04	0.44		13.00	0.10	
Approach LOS	C			B		

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Node 171: Cathedral Oaks & Fairview

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.469
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	41	51	11	99	227	38	118	83	183	20	263	111
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	10	13	3	25	57	10	30	21	46	5	66	28
Adjusted Volume	41	51	11	99	227	38	118	83	183	20	263	111

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	L	C	L	C	L	C	L	C
ID	15763	15764	15760	15761	15769	15770	15766	15767
Lanes	L	T, RT	L	T, RT	L	T, RT	L	T, RT
Volume	41	62	99	265	118	266	20	374

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	15763	15764	15760	15761	15769	15770	15766	15767
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	1	2	1	2	1	2
Saturation Flow Rate	1600	3200	1600	3200	1600	3200	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	41	51	11	99	227	38	118	83	183	20	263	111
Volume / Saturation Flow R	0.026	0.019	0.019	0.062	0.083	0.083	0.074	0.083	0.083	0.013	0.117	0.117
Overlap adjusted Volume /	0.026	0.019	0.019	0.062	0.083	0.083	0.074	0.083	0.083	0.013	0.117	0.117
Critical Movement	Y			Y					Y		Y	

Node 173: Cathedral Oaks & Cambridge	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.352
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	23	18	37	18	382	24	11	15	26	49	492	13
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	6	5	9	5	96	6	3	4	7	12	123	3
Adjusted Volume	23	18	37	18	382	24	11	15	26	49	492	13

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	15775	15776	15772	15773	15780	15781	15777	15778
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	41	37	18	406	26	26	49	505

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	15775	15776	15772	15773	15780	15781	15777	15778
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	2	1	1	1	2
Saturation Flow Rate	1600	1600	1600	3200	1600	1600	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	23	18	37	18	382	24	11	15	26	49	492	13
Volume / Saturation Flow R	0.014	0.026	0.023	0.011	0.127	0.127	0.007	0.016	0.016	0.031	0.158	0.158
Overlap adjusted Volume /	0.014	0.026	0.023	0.011	0.127	0.127	0.007	0.016	0.016	0.031	0.158	0.158
Critical Movement		Y		Y			Y				Y	

Node 175: Cathedral Oaks & Patterson

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.668
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	27	52	8	95	293	38	190	96	336	9	371	117
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	7	13	2	24	73	10	48	24	84	2	93	29
Adjusted Volume	27	52	8	95	293	38	190	96	336	9	371	117

Volume and Adjustments by Lane Group

Approach	N		E		S			W		
Lane Group	L	C	L	C	L	C	R	L	C	R
ID	15785	15786	15782	15783	15790	15791	15792	15787	15788	15789
Lanes	L	RT	L	T, RT	L	T	R	L	T	R
Volume	27	60	95	331	190	96	336	9	371	117

Saturation Flow Rate

Approach	N		E		S			W		
Lane Group	15785	15786	15782	15783	15790	15791	15792	15787	15788	15789
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	2	1	1	1	1	1	1
Saturation Flow Rate	1600	1600	1600	3200	1600	1600	1600	1600	1600	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	27	52	8	95	293	38	190	96	336	9	371	117
Volume / Saturation Flow R	0.017	0.037	0.037	0.059	0.103	0.103	0.119	0.060	0.210	0.006	0.232	0.073
Overlap adjusted Volume /	0.017	0.037	0.037	0.059	0.103	0.103	0.119	0.060	0.210	0.006	0.232	0.073
Critical Movement	Y			Y					Y		Y	

Node 179: Cathedral Oaks & San Marcos (West)	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	0.24
Worst Case Delay	22.97
Worst Case LOS	C

Volume and Adjustments						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	7.00	229.00	5.00	5.00	855.00	15.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	7.61	248.91	5.43	5.43	929.35	16.30

Pedestrians						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Flow (Ped/hr)	0.00		0.00	0.00		
w, Lane Width (ft)	12.00		12.00	12.00		
Sp, Walking Speed (ft/s)	3.50		3.50	3.50		
fpb, Percent Blockage	0.00		0.00	0.00		

Capacity of Movements below Rank 1						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Rank	2	1	3	2	1	1
vx, Volume	7.61		5.43	5.43		
Conflicting Volume (Veh)	945.65		1193.48	929.35		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	945.65		1193.48	929.35		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces						
cpx, Potential Capacity	733.86		208.28	327.05		
Capacity	733.86		205.77	327.05		

Critical Headway and Follow Up Headway						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
tc,base, Base Critical Head	4.10		7.10	6.20		
tc,base,I, Base Critical Hea						
tc,base,II, Base Critical Hea						
tc,HV, Heavy Vehicles Adju	1.00		1.00	1.00		
Phv, % Heavy Vehicles	0.00		0.00	0.00		
tc,G, Grade Adjustment Fac	1.00		0.20	0.10		
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment	0.00		0.70	0.00		
tc, Critical Headway	4.10		6.40	6.20		
tc,I, Critical Headway (Stag						
tc,II, Critical Headway (Stag						
tf,base, Base Follow-Up He	2.20		3.50	3.30		
tf,hv, Heavy Vehicles Adjus	0.90		0.90	0.90		
tf, Follow-Up Headway	2.20		3.50	3.30		

Delay and Level of Service by Movement						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Volume	7.61	248.91	5.43	5.43	929.35	16.30
cmx, Capacity	733.86		205.77	327.05		
V / C	0.01		0.03	0.02		
d, Delay	9.96		22.97	16.19		
LOS	A		C	C		
dA, Approach Delay	0.30		19.58		0.00	
Approach LOS			C			
dRank1, Rank 1 Delay	0.00				0.00	

Delay and Level of Service by Lane						
Approach	E (Major)		S		W (Major)	
Lane	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
Movements						
vx, Volume	7.61	248.91	5.43	5.43	929.35	16.30
Flared Storage Size						
cmx, Capacity						
V / C						
Q95, 95% Queue Length						
d, Delay						
LOS						
dA, Approach Delay	0.30		19.58		0.00	
Approach LOS			C			

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Node 181: Turnpike & Cathedral Oaks

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.66
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	5	5	5	117	291	5	220	5	116	5	544	168
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	1	1	1	29	73	1	55	1	29	1	136	42
Adjusted Volume	5	5	5	117	291	5	220	5	116	5	544	168

Volume and Adjustments by Lane Group

Approach	N	E		S		W		
Lane Group	C	L	C	C	R	L	C	R
ID	15797	15795	15796	15793	15794	15798	15799	15800
Lanes	LTR	L	RT	LT	R	L	T	R
Volume	15	117	296	225	116	5	544	168

Saturation Flow Rate

Approach	N	E		S		W		
Lane Group	15797	15795	15796	15793	15794	15798	15799	15800
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	1	1	1	1	1
Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	5	5	5	117	291	5	220	5	116	5	544	168
Volume / Saturation Flow R	0.003	0.009	0.009	0.073	0.185	0.185	0.138	0.141	0.072	0.003	0.340	0.105
Overlap adjusted Volume /	0.003	0.009	0.009	0.073	0.185	0.185	0.138	0.141	0.072	0.003	0.340	0.105
Critical Movement			Y	Y			Y				Y	

Node 188: Cathedral Oaks & SB 154 Ramps	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	7.17
Worst Case Delay	105.44
Worst Case LOS	F

Volume and Adjustments

Approach	N			E	S (Major)		W (Major)	
Movement	L1	T	R1		T	R1	L1	T
Base Volume	28.00	53.00	5.00		421.00	250.00	127.00	431.00
PHF, Peak-hour factor	0.920	0.920	0.920		0.920	0.920	0.920	0.920
V, Adjusted Volume	30.43	57.61	5.43		457.61	271.74	138.04	468.48

Pedestrians

Approach	N			E	S (Major)		W (Major)	
Movement	L1	T	R1		T	R1	L1	T
vx, Flow (Ped/hr)	0.00	0.00	0.00				0.00	
w, Lane Width (ft)	12.00	12.00	12.00				12.00	
Sp, Walking Speed (ft/s)	3.50	3.50	3.50				3.50	
fpb, Percent Blockage	0.00	0.00	0.00				0.00	

Capacity of Movements below Rank 1

Approach	N			E	S (Major)		W (Major)	
Movement	L1	T	R1		T	R1	L1	T
Rank	4	3	2		1	1	2	1
vx, Volume	30.43	57.61	5.43				138.04	
Conflicting Volume (Veh)	973.37	1473.91	234.24				729.35	
Conflicting Volume (Ped)	0.00	0.00	0.00				0.00	
Conflicting Volume	973.37	1473.91	234.24				729.35	
Two-Stage Gap Acceptanc	No	No						
Number of Storage Spaces								
cpx, Potential Capacity	209.39	127.82	773.75				883.75	
Capacity	180.49	104.87	773.75				883.75	

Critical Headway and Follow Up Headway

Approach	N			E	S (Major)		W (Major)	
Movement	L1	T	R1		T	R1	L1	T
tc,base, Base Critical Head	7.50	6.50	6.90				4.10	
tc,base,I, Base Critical Hea								
tc,base,II, Base Critical Hea								
tc,HV, Heavy Vehicles Adju	2.00	2.00	2.00				2.00	
Phv, % Heavy Vehicles	0.00	0.00	0.00				0.00	
tc,G, Grade Adjustment Fac	0.20	0.20	0.10				1.00	
G, % Grade	0.00			0.00	0.00		0.00	
T3,lt, Geometry Adjustment	0.00	0.00	0.00				0.00	
tc, Critical Headway	7.50	6.50	6.90				4.10	
tc,I, Critical Headway (Stag								
tc,II, Critical Headway (Stag								
tf,base, Base Follow-Up He	3.50	4.00	3.30				2.20	
tf,hv, Heavy Vehicles Adjus	1.00	1.00	1.00				1.00	
tf, Follow-Up Headway	3.50	4.00	3.30				2.20	

Delay and Level of Service by Movement

Approach	N			E	S (Major)		W (Major)	
Movement	L1	T	R1		T	R1	L1	T
vx, Volume	30.43	57.61	5.43		457.61	271.74	138.04	468.48
cmx, Capacity	180.49	104.87	773.75				883.75	
V / C	0.17	0.55	0.01				0.16	
d, Delay	91.06	105.44	9.69				9.83	
LOS	F	F	A				A	
dA, Approach Delay	95.19			0.00	0.00		2.24	
Approach LOS	F			A				
dRank1, Rank 1 Delay					0.00		0.00	

Delay and Level of Service by Lane

Approach	N		E	S (Major)		W (Major)		
Lane	Lane 1	Lane 2		Lane 1	Lane 2	Lane 1	Lane 2	Lane 3
Movements	L1, T				T, R1			
vx, Volume	88.04	5.43		364.67	364.67	138.04	234.24	234.24
Flared Storage Size								
cmx, Capacity	122.63							
V / C	0.72							
Q95, 95% Queue Length	5.73							
d, Delay	100.47							
LOS	F							
dA, Approach Delay	95.19		0.00	0.00		2.24		
Approach LOS	F		A					

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Node 189: Cathedral Oaks & NB 154 Ramps

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	1651.8
Worst Case Delay	6478.78
Worst Case LOS	F

Volume and Adjustments								
Approach	N (Major)		E			S (Major)		W
Movement	T	R1	L1	T	R1	L1	T	
Base Volume	535.00	78.00	128.00	503.00	73.00	60.00	606.00	
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	
V, Adjusted Volume	581.52	84.78	139.13	546.74	79.35	65.22	658.70	

Pedestrians								
Approach	N (Major)		E			S (Major)		W
Movement	T	R1	L1	T	R1	L1	T	
vx, Flow (Ped/hr)			0.00	0.00	0.00	0.00		
w, Lane Width (ft)			12.00	12.00	12.00	12.00		
Sp, Walking Speed (ft/s)			3.50	3.50	3.50	3.50		
fpb, Percent Blockage			0.00	0.00	0.00	0.00		

Capacity of Movements below Rank 1								
Approach	N (Major)		E			S (Major)		W
Movement	T	R1	L1	T	R1	L1	T	
Rank	1	1	4	3	2	2	1	
vx, Volume			139.13	546.74	79.35	65.22		
Conflicting Volume (Veh)			1079.89	1455.43	329.35	666.30		
Conflicting Volume (Ped)			0.00	0.00	0.00	0.00		
Conflicting Volume			1079.89	1455.43	329.35	666.30		
Two-Stage Gap Acceptance			No	No				
Number of Storage Spaces								
cpx, Potential Capacity			175.14	131.16	672.28	932.70		
Capacity			163.67	119.93	672.28	932.70		

Critical Headway and Follow Up Headway								
Approach	N (Major)		E			S (Major)		W
Movement	T	R1	L1	T	R1	L1	T	
tc,base, Base Critical Head			7.50	6.50	6.90	4.10		
tc,base,I, Base Critical Hea								
tc,base,II, Base Critical Hea								
tc,HV, Heavy Vehicles Adju			2.00	2.00	2.00	2.00		
Phv, % Heavy Vehicles			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Fac			0.20	0.20	0.10	1.00		
G, % Grade	0.00			0.00		0.00		0.00
T3,lt, Geometry Adjustment			0.00	0.00	0.00	0.00		
tc, Critical Headway			7.50	6.50	6.90	4.10		
tc,I, Critical Headway (Stag								
tc,II, Critical Headway (Stag								
tf,base, Base Follow-Up He			3.50	4.00	3.30	2.20		
tf,hv, Heavy Vehicles Adjus			1.00	1.00	1.00	1.00		
tf, Follow-Up Headway			3.50	4.00	3.30	2.20		

Delay and Level of Service by Movement								
Approach	N (Major)		E			S (Major)		W
Movement	T	R1	L1	T	R1	L1	T	
vx, Volume	581.52	84.78	139.13	546.74	79.35	65.22	658.70	
cmx, Capacity			163.67	119.93	672.28	932.70		
V / C			0.85	4.56	0.12	0.07		
d, Delay			119.79	6478.78	11.07	9.15		
LOS			F	F	B	A		
dA, Approach Delay	0.00			4651.95		0.82		0.00
Approach LOS				F				A
dRank1, Rank 1 Delay	0.00					0.00		

Delay and Level of Service by Lane									
Approach	N (Major)		E			S (Major)			W
Lane	Lane 1	Lane 2	Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 3	
Movements		T, R1							
vx, Volume	333.15	333.15	139.13	546.74	79.35	65.22	329.35	329.35	
Flared Storage Size									
cmx, Capacity									
V / C									
Q95, 95% Queue Length									
d, Delay									
LOS									
dA, Approach Delay	0.00			4651.95			0.82		0.00
Approach LOS				F					A

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Node 195: Cathedral Oaks & Los Carneros	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	3.64
Worst Case Delay	16.03
Worst Case LOS	C

Volume and Adjustments						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	43.00	255.00	43.00	142.00	250.00	24.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	46.74	277.17	46.74	154.35	271.74	26.09

Pedestrians						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Flow (Ped/hr)	0.00		0.00	0.00		
w, Lane Width (ft)	12.00		12.00	12.00		
Sp, Walking Speed (ft/s)	3.50		3.50	3.50		
fpb, Percent Blockage	0.00		0.00	0.00		

Capacity of Movements below Rank 1						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Rank	2	1	3	2	1	1
vx, Volume	46.74		46.74	154.35		
Conflicting Volume (Veh)	297.83		642.39	271.74		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	297.83		642.39	271.74		
Two-Stage Gap Acceptanc			No			
Number of Storage Spaces						
cpx, Potential Capacity	1274.95		441.41	771.81		
Capacity	1274.95		422.28	771.81		

Critical Headway and Follow Up Headway						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
tc,base, Base Critical Head	4.10		7.10	6.20		
tc,base,I, Base Critical Hea						
tc,base,II, Base Critical Hea						
tc,HV, Heavy Vehicles Adju	1.00		1.00	1.00		
Phv, % Heavy Vehicles	0.00		0.00	0.00		
tc,G, Grade Adjustment Fac	1.00		0.20	0.10		
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment	0.00		0.70	0.00		
tc, Critical Headway	4.10		6.40	6.20		

tc,I, Critical Headway (Stag						
tc,II, Critical Headway (Stag						
tf,base, Base Follow-Up He	2.20		3.50	3.30		
tf,hv, Heavy Vehicles Adjus	0.90		0.90	0.90		
tf, Follow-Up Headway	2.20		3.50	3.30		

Delay and Level of Service by Movement						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Volume	46.74	277.17	46.74	154.35	271.74	26.09
cmx, Capacity	1274.95		422.28	771.81		
V / C	0.04		0.11	0.20		
d, Delay	7.93		16.03	12.17		
LOS	A		C	B		
dA, Approach Delay	1.14		13.06		0.00	
Approach LOS			B			
dRank1, Rank 1 Delay	0.00				0.00	

Delay and Level of Service by Lane					
Approach	E (Major)		S	W (Major)	
Lane	Lane 1	Lane 2	Lane 1	Lane 1	Lane 2
Movements			L1, R1		
vx, Volume	46.74	277.17	201.09	271.74	26.09
Flared Storage Size					
cmx, Capacity			647.28		
V / C			0.31		
Q95, 95% Queue Length			1.34		
d, Delay			13.06		
LOS			B		
dA, Approach Delay	1.14		13.06	0.00	
Approach LOS			B		

Node 203: Stow Canyon & Fairview	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	2.71
Worst Case Delay	24.17
Worst Case LOS	C

Volume and Adjustments

Approach	N (Major)			E			S (Major)			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	5.00	248.00	12.00	10.00	5.00	5.00	103.00	383.00	10.00	11.00	5.00	62.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	5.43	269.57	13.04	10.87	5.43	5.43	111.96	416.30	10.87	11.96	5.43	67.39

Pedestrians

Approach	N (Major)			E			S (Major)			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
w, Lane Width (ft)	12.00			12.00	12.00	12.00	12.00			12.00	12.00	12.00
Sp, Walking Speed (ft/s)	3.50			3.50	3.50	3.50	3.50			3.50	3.50	3.50
fpb, Percent Blockage	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00

Capacity of Movements below Rank 1

Approach	N (Major)			E			S (Major)			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	2	1	1	4	3	2	2	1	1	4	3	2
vx, Volume	5.43			10.87	5.43	5.43	111.96			11.96	5.43	67.39
Conflicting Volume (Veh)	427.17			935.33	939.13	421.74	282.61			935.33	938.04	276.09
Conflicting Volume (Ped)	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
Conflicting Volume	427.17			935.33	939.13	421.74	282.61			935.33	938.04	276.09
Two-Stage Gap Acceptance				No	No					No	No	
Number of Storage Spaces												
cpx, Potential Capacity	1143.00			247.57	266.01	636.20	1291.40			247.57	266.39	767.51
Capacity	1143.00			201.79	234.50	636.20	1291.40			219.31	234.84	767.51

Critical Headway and Follow Up Headway

Approach	N (Major)			E			S (Major)			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Head	4.10			7.10	6.50	6.20	4.10			7.10	6.50	6.20
tc,base,I, Base Critical Hea												
tc,base,II, Base Critical Hea												
tc,HV, Heavy Vehicles Adju	1.00			1.00	1.00	1.00	1.00			1.00	1.00	1.00
Phv, % Heavy Vehicles	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
tc,G, Grade Adjustment Fac	1.00			0.20	0.20	0.10	1.00			0.20	0.20	0.10
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
tc, Critical Headway	4.10			7.10	6.50	6.20	4.10			7.10	6.50	6.20
tc,I, Critical Headway (Stag												
tc,II, Critical Headway (Stag												
tf,base, Base Follow-Up He	2.20			3.50	4.00	3.30	2.20			3.50	4.00	3.30
tf,hv, Heavy Vehicles Adjus	0.90			0.90	0.90	0.90	0.90			0.90	0.90	0.90
tf, Follow-Up Headway	2.20			3.50	4.00	3.30	2.20			3.50	4.00	3.30

Delay and Level of Service by Movement

Approach	N (Major)			E			S (Major)			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	5.43	269.57	13.04	10.87	5.43	5.43	111.96	416.30	10.87	11.96	5.43	67.39
cmx, Capacity	1143.00			201.79	234.50	636.20	1291.40			219.31	234.84	767.51
V / C	0.00			0.05	0.02	0.01	0.09			0.05	0.02	0.09
d, Delay	8.16			24.17	21.68	11.98	8.05			22.81	21.72	11.08
LOS	A			C	C	B	A			C	C	B
dA, Approach Delay		0.15			20.50			1.67			13.42	
Approach LOS					C						B	
dRank1, Rank 1 Delay		0.00						0.00				

Delay and Level of Service by Lane

Approach	N (Major)			E	S (Major)		W
Lane	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2	Lane 1
Movements			T, R1	L1, T, R1		T, R1	L1, T, R1
vx, Volume	5.43	141.30	141.30	21.74	111.96	427.17	84.78
Flared Storage Size							
cmx, Capacity				254.00			512.39
V / C				0.09			0.17
Q95, 95% Queue Length				0.28			0.59
d, Delay				20.50			13.42
LOS				C			B
dA, Approach Delay		0.15		20.50	1.67		13.42
Approach LOS				C			B

Node 204: Fairview & Berkeley	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	1.47
Worst Case Delay	21.79
Worst Case LOS	C

Volume and Adjustments

Approach	N (Major)			E			S (Major)			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	19.00	350.00	6.00	27.00	5.00	29.00	5.00	472.00	58.00	5.00	5.00	5.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	20.65	380.43	6.52	29.35	5.43	31.52	5.43	513.04	63.04	5.43	5.43	5.43

Pedestrians

Approach	N (Major)			E			S (Major)			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
w, Lane Width (ft)	12.00			12.00	12.00	12.00	12.00			12.00	12.00	12.00
Sp, Walking Speed (ft/s)	3.50			3.50	3.50	3.50	3.50			3.50	3.50	3.50
fpb, Percent Blockage	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00

Capacity of Movements below Rank 1

Approach	N (Major)			E			S (Major)			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	2	1	1	4	3	2	2	1	1	4	3	2
vx, Volume	20.65			29.35	5.43	31.52	5.43			5.43	5.43	5.43
Conflicting Volume (Veh)	576.09			789.67	983.70	288.04	386.96			695.11	1011.96	193.48
Conflicting Volume (Ped)	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
Conflicting Volume	576.09			789.67	983.70	288.04	386.96			695.11	1011.96	193.48
Two-Stage Gap Acceptance				No	No					No	No	
Number of Storage Spaces												
cpx, Potential Capacity	1007.27			284.35	250.51	714.66	1182.56			332.53	241.12	821.64
Capacity	1007.27			271.44	243.36	714.66	1182.56			305.66	234.24	821.64

Critical Headway and Follow Up Headway

Approach	N (Major)			E			S (Major)			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Head	4.10			7.50	6.50	6.90	4.10			7.50	6.50	6.90
tc,base,I, Base Critical Hea												
tc,base,II, Base Critical Hea												
tc,HV, Heavy Vehicles Adju	2.00			2.00	2.00	2.00	2.00			2.00	2.00	2.00
Phv, % Heavy Vehicles	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
tc,G, Grade Adjustment Fac	1.00			0.20	0.20	0.10	1.00			0.20	0.20	0.10
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
tc, Critical Headway	4.10			7.50	6.50	6.90	4.10			7.50	6.50	6.90
tc,I, Critical Headway (Stag												
tc,II, Critical Headway (Stag												
tf,base, Base Follow-Up He	2.20			3.50	4.00	3.30	2.20			3.50	4.00	3.30
tf,hv, Heavy Vehicles Adjus	1.00			1.00	1.00	1.00	1.00			1.00	1.00	1.00
tf, Follow-Up Headway	2.20			3.50	4.00	3.30	2.20			3.50	4.00	3.30

Delay and Level of Service by Movement

Approach	N (Major)			E			S (Major)			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	20.65	380.43	6.52	29.35	5.43	31.52	5.43	513.04	63.04	5.43	5.43	5.43
cmx, Capacity	1007.27			271.44	243.36	714.66	1182.56			305.66	234.24	821.64
V / C	0.02			0.11	0.02	0.04	0.00			0.02	0.02	0.01
d, Delay	8.65			20.26	21.79	12.04	8.06			17.30	20.89	9.91
LOS	A			C	C	B	A			C	C	A
dA, Approach Delay		0.44			16.48			0.08			16.03	
Approach LOS					C						C	
dRank1, Rank 1 Delay		0.00						0.00				

Delay and Level of Service by Lane

Approach	N (Major)			E	S (Major)			W
Lane	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2	Lane 3	Lane 1
Movements			T, R1	L1, T, R1			T, R1	L1, T, R1
vx, Volume	20.65	193.48	193.48	66.30	5.43	288.04	288.04	16.30
Flared Storage Size								
cmx, Capacity				379.84				342.55
V / C				0.17				0.05
Q95, 95% Queue Length				0.63				0.15
d, Delay				16.48				16.03
LOS				C				C
dA, Approach Delay		0.44		16.48		0.08		16.03
Approach LOS				C				C

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Node 240: Fairview & Shirrell Way	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	3.68
Worst Case Delay	24.5
Worst Case LOS	C

Volume and Adjustments						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
Base Volume	341.00	45.00	82.00	450.00	94.00	57.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	370.65	48.91	89.13	489.13	102.17	61.96

Pedestrians						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
vx, Flow (Ped/hr)			0.00		0.00	0.00
w, Lane Width (ft)			12.00		12.00	12.00
Sp, Walking Speed (ft/s)			3.50		3.50	3.50
fpb, Percent Blockage			0.00		0.00	0.00

Capacity of Movements below Rank 1						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
Rank	1	1	2	1	3	2
vx, Volume			89.13		102.17	61.96
Conflicting Volume (Veh)			419.57		817.93	209.78
Conflicting Volume (Ped)			0.00		0.00	0.00
Conflicting Volume			419.57		817.93	209.78
Two-Stage Gap Acceptance					No	
Number of Storage Spaces						
cpx, Potential Capacity			1150.39		318.09	802.15
Capacity			1150.39		289.57	802.15

Critical Headway and Follow Up Headway						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
tc,base, Base Critical Head			4.10		7.50	6.90
tc,base,I, Base Critical Hea						
tc,base,II, Base Critical Hea						
tc,HV, Heavy Vehicles Adju			2.00		2.00	2.00
Phv, % Heavy Vehicles			0.00		0.00	0.00
tc,G, Grade Adjustment Fac			1.00		0.20	0.10
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment			0.00		0.70	0.00
tc, Critical Headway			4.10		6.80	6.90
tc,I, Critical Headway (Stag						
tc,II, Critical Headway (Stag						
tf,base, Base Follow-Up He			2.20		3.50	3.30
tf,hv, Heavy Vehicles Adjus			1.00		1.00	1.00
tf, Follow-Up Headway			2.20		3.50	3.30

Delay and Level of Service by Movement						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
vx, Volume	370.65	48.91	89.13	489.13	102.17	61.96
cmx, Capacity			1150.39		289.57	802.15
V / C			0.08		0.35	0.08
d, Delay			8.39		24.50	16.56
LOS			A		C	C
dA, Approach Delay	0.00		1.29		21.50	
Approach LOS					C	
dRank1, Rank 1 Delay	0.00		0.00			

Delay and Level of Service by Lane						
Approach	N (Major)		S (Major)			W
Lane	Lane 1	Lane 2	Lane 1	Lane 2	Lane 3	Lane 1
Movements		T, R1				L1, R1
vx, Volume	209.78	209.78	89.13	244.57	244.57	164.13
Flared Storage Size						
cmx, Capacity						381.62
V / C						0.43
Q95, 95% Queue Length						2.22
d, Delay						21.50
LOS						C
dA, Approach Delay	0.00		1.29			21.50
Approach LOS						C

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Node 241: Encina & Fairview

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.448
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		E		S	
Movement	L1	T	L1	R1	T	R1
Base Volume	139	328	74	159	427	90
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	35	82	19	40	107	23
Adjusted Volume	139	328	74	159	427	90

Volume and Adjustments by Lane Group

Approach	N		E		S
Lane Group	L	C	L	R	C
ID	15803	15804	15801	15802	15806
Lanes	L	T, T	L	R	T, RT
Volume	139	328	74	159	517

Saturation Flow Rate

Approach	N		E		S
Lane Group	15803	15804	15801	15802	15806
Base Saturation Flow Rate	1600	1600	1600	1600	1600
Number of Lanes	1	2	1	1	2
Saturation Flow Rate	1600	3200	1600	1600	3200

Capacity Analysis

Approach	N		E		S	
Movement	L1	T	L1	R1	T	R1
Volume	139	328	74	159	427	90
Volume / Saturation Flow R	0.087	0.102	0.046	0.099	0.162	0.162
Overlap adjusted Volume /	0.087	0.102	0.046	0.099	0.162	0.162
Critical Movement	Y			Y	Y	

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Node 256: Calle Real & Patterson

Control Type	Signalized
Method	ICU Method 1
LOS	C
Critical V/C	0.737
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		S		W	
Movement	T	R1	L1	T	L1	R1
Base Volume	382	108	801	843	196	588
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	96	27	200	211	49	147
Adjusted Volume	382	108	801	843	196	588

Volume and Adjustments by Lane Group

Approach	N	S		W	
Lane Group	C	L	C	L	R
ID	15808	15813	15815	15810	15811
Lanes	T, RT	L, L	T, T	L	R, R
Volume	490	801	843	196	588

Saturation Flow Rate

Approach	N	S		W	
Lane Group	15808	15813	15815	15810	15811
Base Saturation Flow Rate	1600	1600	1600	1600	1600
Number of Lanes	2	2	2	1	2
Saturation Flow Rate	3200	3200	3200	1600	3200

Capacity Analysis

Approach	N		S		W	
Movement	T	R1	L1	T	L1	R1
Volume	382	108	801	843	196	588
Volume / Saturation Flow R	0.153	0.153	0.250	0.263	0.123	0.184
Overlap adjusted Volume /	0.153	0.153	0.250	0.263	0.123	0.184
Critical Movement	Y		Y			Y

Node 257: University & Patterson

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.496
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	8	321	5	116	5	13	29	720	230	5	6	24
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	2	80	1	29	1	3	7	180	58	1	2	6
Adjusted Volume	8	321	5	116	5	13	29	720	230	5	6	24

Volume and Adjustments by Lane Group

Approach	N		E	S		W
Lane Group	L	C	C	L	C	C
ID	15818	15819	15817	15822	15823	15821
Lanes	L	T, RT	LTR	L	T, RT	LTR
Volume	8	326	134	29	950	35

Saturation Flow Rate

Approach	N		E	S		W
Lane Group	15818	15819	15817	15822	15823	15821
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	1	1	2	1
Saturation Flow Rate	1600	3200	1600	1600	3200	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	8	321	5	116	5	13	29	720	230	5	6	24
Volume / Saturation Flow R	0.005	0.102	0.102	0.072	0.084	0.084	0.018	0.297	0.297	0.003	0.022	0.022
Overlap adjusted Volume /	0.005	0.102	0.102	0.072	0.084	0.084	0.018	0.297	0.297	0.003	0.022	0.022
Critical Movement	Y			Y					Y		Y	

Node 261: Turnpike & NB 101 Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	C
Critical V/C	0.763
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		E			S		W
Movement	T	R1	L1	T	R1	L1	T	
Base Volume	505	295	608	5	341	277	590	
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Peak 15 Volume	126	74	152	1	85	69	148	
Adjusted Volume	505	295	608	5	341	277	590	

Volume and Adjustments by Lane Group

Approach	N	E		S		W
Lane Group	C	C	R	L	C	
ID	15828	15825	15827	15830	15831	
Lanes	T, RT	L, LT	R	L	T, T	
Volume	800	613	341	277	590	

Saturation Flow Rate

Approach	N	E		S		W
Lane Group	15828	15825	15827	15830	15831	
Base Saturation Flow Rate	1600	1600	1600	1600	1600	
Number of Lanes	2	2	1	1	2	
Saturation Flow Rate	3200	3200	1600	1600	3200	

Capacity Analysis

Approach	N		E			S		W
Movement	T	R1	L1	T	R1	L1	T	
Volume	505	295	608	5	341	277	590	
Volume / Saturation Flow R	0.250	0.250	0.190	0.192	0.213	0.173	0.184	
Overlap adjusted Volume /	0.250	0.250	0.190	0.192	0.213	0.173	0.184	
Critical Movement	Y		Y			Y		

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Node 262: Turnpike & Calle Real

Control Type	Signalized
Method	ICU Method 1
LOS	C
Critical V/C	0.716
Loss Time	20
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	39	291	34	278	40	37	302	409	193	43	46	207
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	10	73	9	70	10	9	76	102	48	11	12	52
Adjusted Volume	39	291	34	278	40	37	302	409	193	43	46	207

Volume and Adjustments by Lane Group

Approach	N		E			S		W		
Lane Group	L	C	L	C	R	L	C	L	C	R
ID	15836	15837	15833	15834	15835	15842	15844	15839	15840	15841
Lanes	L	T, RT	L	T	R	L, L	T, RT	L	T	R
Volume	39	325	278	40	37	302	602	43	46	207

Saturation Flow Rate

Approach	N		E			S		W		
Lane Group	15836	15837	15833	15834	15835	15842	15844	15839	15840	15841
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	1	1	1	2	2	1	1	1
Saturation Flow Rate	1600	3200	1600	1600	1600	3200	3200	1600	1600	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	39	291	34	278	40	37	302	409	193	43	46	207
Volume / Saturation Flow R	0.024	0.102	0.102	0.174	0.025	0.023	0.094	0.188	0.188	0.027	0.029	0.129
Overlap adjusted Volume /	0.024	0.102	0.102	0.174	0.025	0.023	0.094	0.188	0.188	0.027	0.029	0.129
Critical Movement	Y			Y				Y				Y

Node 273: Cathedral Oaks & Brandon	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	3.24
Worst Case Delay	11.63
Worst Case LOS	B

Volume and Adjustments

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	9.00	5.00	5.00	44.00	96.00	19.00	10.00	5.00	40.00	5.00	88.00	15.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	9.78	5.43	5.43	47.83	104.35	20.65	10.87	5.43	43.48	5.43	95.65	16.30

Pedestrians

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
w, Lane Width (ft)	12.00	12.00	12.00	12.00			12.00	12.00	12.00	12.00		
Sp, Walking Speed (ft/s)	3.50	3.50	3.50	3.50			3.50	3.50	3.50	3.50		
fpb, Percent Blockage	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		

Capacity of Movements below Rank 1

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	2	1	1	4	3	2	2	1	1
vx, Volume	9.78	5.43	5.43	47.83			10.87	5.43	43.48	5.43		
Conflicting Volume (Veh)	339.13	322.83	104.35	111.96			322.28	327.17	95.65	125.00		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	339.13	322.83	104.35	111.96			322.28	327.17	95.65	125.00		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces												
cpx, Potential Capacity	618.57	597.95	955.75	1490.31			634.53	594.62	966.38	1474.13		
Capacity	569.55	575.33	955.75	1490.31			608.31	572.13	966.38	1474.13		

Critical Headway and Follow Up Headway

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Head	7.10	6.50	6.20	4.10			7.10	6.50	6.20	4.10		
tc,base,I, Base Critical Hea												
tc,base,II, Base Critical Hea												
tc,HV, Heavy Vehicles Adju	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00		
Phv, % Heavy Vehicles	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Fac	0.20	0.20	0.10	1.00			0.20	0.20	0.10	1.00		
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc, Critical Headway	7.10	6.50	6.20	4.10			7.10	6.50	6.20	4.10		
tc,I, Critical Headway (Stag												
tc,II, Critical Headway (Stag												
tf,base, Base Follow-Up He	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		
tf,hv, Heavy Vehicles Adjus	0.90	0.90	0.90	0.90			0.90	0.90	0.90	0.90		
tf, Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		

Delay and Level of Service by Movement

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	9.78	5.43	5.43	47.83	104.35	20.65	10.87	5.43	43.48	5.43	95.65	16.30
cmx, Capacity	569.55	575.33	955.75	1490.31			608.31	572.13	966.38	1474.13		
V / C	0.02	0.01	0.01	0.03			0.02	0.01	0.04	0.00		
d, Delay	11.51	11.45	8.95	7.50			11.26	11.63	9.07	7.45		
LOS	B	B	A	A			B	B	A	A		
dA, Approach Delay		10.82			2.07			9.70			0.34	
Approach LOS		B						A				
dRank1, Rank 1 Delay					0.00						0.00	

Delay and Level of Service by Lane

Approach	N	E (Major)			S	W (Major)		
Lane	Lane 1	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2	Lane 3
Movements	L1, T, R1				L1, T, R1			
vx, Volume	20.65	47.83	104.35	20.65	59.78	5.43	95.65	16.30
Flared Storage Size								
cmx, Capacity	639.21				826.20			
V / C	0.03				0.07			
Q95, 95% Queue Length	0.10				0.23			
d, Delay	10.82				9.70			
LOS	B				A			
dA, Approach Delay	10.82		2.07		9.70		0.34	
Approach LOS	B				A			

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Node 276: Cathedral Oaks & Alameda	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.349
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement						
Approach	E		S		W	
Movement	L1	T	L1	R1	T	R1
Base Volume	59	284	16	34	188	14
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	15	71	4	9	47	4
Adjusted Volume	59	284	16	34	188	14

Volume and Adjustments by Lane Group						
Approach	E		S		W	
Lane Group	L	C	L	R	C	R
ID	15846	15847	15850	15851	15848	15849
Lanes	L	T	L	R	T	R
Volume	59	284	16	34	188	14

Saturation Flow Rate						
Approach	E		S		W	
Lane Group	15846	15847	15850	15851	15848	15849
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	1	1	1
Saturation Flow Rate	1600	1600	1600	1600	1600	1600

Capacity Analysis						
Approach	E		S		W	
Movement	L1	T	L1	R1	T	R1
Volume	59	284	16	34	188	14
Volume / Saturation Flow R	0.037	0.177	0.010	0.021	0.117	0.009
Overlap adjusted Volume /	0.037	0.177	0.010	0.021	0.117	0.009
Critical Movement		Y		Y		

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Node 277: Cathedral Oaks & Glen Anne	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.508
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	21	42	6	101	169	10	217	42	92	7	206	165
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	5	11	2	25	42	3	54	11	23	2	52	41
Adjusted Volume	21	42	6	101	169	10	217	42	92	7	206	165

Volume and Adjustments by Lane Group

Approach	N		E			S			W		
Lane Group	L	C	L	C	R	L	C	R	L	C	R
ID	15858	15859	15855	15856	15857	15852	15853	15854	15860	15861	15862
Lanes	L	RT	L	T	R	L	T	R	L	T	R
Volume	21	48	101	169	10	217	42	92	7	206	165

Saturation Flow Rate

Approach	N		E			S			W		
Lane Group	15858	15859	15855	15856	15857	15852	15853	15854	15860	15861	15862
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1
Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	21	42	6	101	169	10	217	42	92	7	206	165
Volume / Saturation Flow R	0.013	0.030	0.030	0.063	0.106	0.006	0.136	0.026	0.058	0.004	0.129	0.103
Overlap adjusted Volume /	0.013	0.030	0.030	0.063	0.106	0.006	0.136	0.026	0.058	0.004	0.129	0.103
Critical Movement		Y		Y			Y				Y	

Node 279:Calle Real & Los Caneros	
Control Type	Roundabout
Method	HCM 6th Edition
Average Delay	6.98
Average LOS	A
Worst Case Delay	7.52
Worst Case LOS	A

Volume by Movement						
Approach	N		E		S	
Movement	L1	T	L1	R1	T	R1
Base Volume (veh/h)	12.00	86.00	318.00	24.00	209.00	396.00
PHF	0.92	0.92	0.92	0.92	0.92	0.92
Volume, Lane Flow Rate (v	13.04	93.48	345.65	26.09	227.17	430.43

Volume			
Approach	N	E	S
Lane	Lane 1	Lane 1	Lane 1
Movements	L1, T	L1, R1	T, R1
Volume, Lane Flow Rate (v	106.522	371.739	657.609
P_T, Share of Heavy Vehic	0.00	0.00	0.00
f_HV, Heavy-Vehicle Adjus	1.000	1.000	1.000
Adjusted Volume (pc/h)	106.522	371.739	657.609
De-Facto Movements	L1, T	L1, R1	T, R1
Is Bypass Lane			
Uses Bypass			
Bypass Type			
Bypass Volume (pc/h)	0.000	0.000	0.000
Non-Bypass Volume (pc/h)	106.522	371.739	657.609

Capacity			
Approach	N	E	S
Lane	Lane 1	Lane 1	Lane 1
Movements	L1, T	L1, R1	T, R1
v_e, Entry Volume (pc/h)	106.52	371.74	657.61
v_bypass, Bypass Volume			
t_f, Follow Up Headway			
t_c, Critical Headway			
A, Capacity Calibration Fac	1380.00	1380.00	1380.00
B, Capacity Calibration Fac	0.00102	0.00102	0.00102
v_c, Conflicting Volume (pc	345.65	227.17	13.04
v_ex,pce, Conflicting Volum			
c_pce, Capacity (pc/h)	969.98	1094.57	1361.76
n_ped, Conflicting Pedestri	0.00	0.00	0.00
f_ped, Pedestrian Adjustme	1.000	1.000	1.000
P_T, Share of Heavy Vehic	0.00	0.00	0.00
f_HV, Heavy-Vehicle Adjus	1.000	1.000	1.000
c, Capacity (veh/h)	969.98	1094.57	1361.76

Delay and Level of Service by Lane			
Approach	N	E	S
Lane	Lane 1	Lane 1	Lane 1
Movements	L1, T	L1, R1	T, R1
v, Volume, Lane Flow Rate	106.52	371.74	657.61
c, Capacity (veh/h)	969.98	1094.57	1361.76
x, Volume-to-Capacity Rati	0.11	0.34	0.48
Q_95, 95% Queue Length (	0.37	1.54	2.78
d, Delay (s/veh)	4.72	6.68	7.52
LOS	A	A	A
Approach Delay (s/veh)	4.72	6.68	7.52
Approach LOS	A	A	A

Delay and Level of Service by Movement						
Approach	N		E		S	
Movement	L1	T	L1	R1	T	R1
v, Volume, Lane Flow Rate	13.04	93.48	345.65	26.09	227.17	430.43
c, Capacity (veh/h)	969.98	969.98	1094.57	1094.57	1361.76	1361.76
x, Volume-to-Capacity Rati	0.01	0.10	0.32	0.02	0.17	0.32
d, Delay (s/veh)	4.72	4.72	6.68	6.68	7.52	7.52
LOS	A	A	A	A	A	A
Approach Delay (s/veh)	4.72		6.68		7.52	
Approach LOS	A		A		A	

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Node 280: Calle Real & La Patera	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	1.55
Worst Case Delay	17.87
Worst Case LOS	C

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	33.00	33.00	294.00	63.00	39.00	375.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	35.87	35.87	319.57	68.48	42.39	407.61

Pedestrians						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Flow (Ped/hr)	0.00	0.00			0.00	
w, Lane Width (ft)	12.00	12.00			12.00	
Sp, Walking Speed (ft/s)	3.50	3.50			3.50	
fpb, Percent Blockage	0.00	0.00			0.00	

Capacity of Movements below Rank 1						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Rank	3	2	1	1	2	1
vx, Volume	35.87	35.87			42.39	
Conflicting Volume (Veh)	846.20	353.80			388.04	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	846.20	353.80			388.04	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces						
cpx, Potential Capacity	335.25	694.52			1181.48	
Capacity	319.70	694.52			1181.48	

Critical Headway and Follow Up Headway						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
tc,base, Base Critical Head	7.10	6.20			4.10	
tc,base,I, Base Critical Hea						
tc,base,II, Base Critical Hea						
tc,HV, Heavy Vehicles Adju	1.00	1.00			1.00	
Phv, % Heavy Vehicles	0.00	0.00			0.00	
tc,G, Grade Adjustment Fac	0.20	0.10			1.00	
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment	0.70	0.00			0.00	
tc, Critical Headway	6.40	6.20			4.10	
tc,I, Critical Headway (Stag						
tc,II, Critical Headway (Stag						
tf,base, Base Follow-Up He	3.50	3.30			2.20	
tf,hv, Heavy Vehicles Adjus	0.90	0.90			0.90	
tf, Follow-Up Headway	3.50	3.30			2.20	

Delay and Level of Service by Movement						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Volume	35.87	35.87	319.57	68.48	42.39	407.61
cmx, Capacity	319.70	694.52			1181.48	
V / C	0.11	0.05			0.04	
d, Delay	17.87	11.79			8.16	
LOS	C	B			A	
dA, Approach Delay	14.83		0.00		0.77	
Approach LOS	B					
dRank1, Rank 1 Delay			0.00		0.38	

Delay and Level of Service by Lane			
Approach	N	E (Major)	W (Major)
Lane	Lane 1	Lane 1	Lane 1
Movements	L1, R1	T, R1	L1, T
vx, Volume	71.74	388.04	450.00
Flared Storage Size			
cmx, Capacity	437.85		1181.48
V / C	0.16		0.38
Q95, 95% Queue Length	0.59		1.84
d, Delay	14.83		8.16
LOS	B		
dA, Approach Delay	14.83	0.00	0.77
Approach LOS	B		

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Node 282: Calle Real & Carlo Dr	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	2.59
Worst Case Delay	27.64
Worst Case LOS	D

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	48.00	49.00	459.00	42.00	68.00	405.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	52.17	53.26	498.91	45.65	73.91	440.22

Pedestrians						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Flow (Ped/hr)	0.00	0.00			0.00	
w, Lane Width (ft)	12.00	12.00			12.00	
Sp, Walking Speed (ft/s)	3.50	3.50			3.50	
fpb, Percent Blockage	0.00	0.00			0.00	

Capacity of Movements below Rank 1						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Rank	3	2	1	1	2	1
vx, Volume	52.17	53.26			73.91	
Conflicting Volume (Veh)	1109.78	521.74			544.57	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	1109.78	521.74			544.57	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces						
cpx, Potential Capacity	233.79	558.82			1034.65	
Capacity	214.76	558.82			1034.65	

Critical Headway and Follow Up Headway						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
tc,base, Base Critical Head	7.10	6.20			4.10	
tc,base,I, Base Critical Hea						
tc,base,II, Base Critical Hea						
tc,HV, Heavy Vehicles Adju	1.00	1.00			1.00	
Phv, % Heavy Vehicles	0.00	0.00			0.00	
tc,G, Grade Adjustment Fac	0.20	0.10			1.00	
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment	0.70	0.00			0.00	
tc, Critical Headway	6.40	6.20			4.10	
tc,I, Critical Headway (Stag						
tc,II, Critical Headway (Stag						
tf,base, Base Follow-Up He	3.50	3.30			2.20	
tf,hv, Heavy Vehicles Adjus	0.90	0.90			0.90	
tf, Follow-Up Headway	3.50	3.30			2.20	

Delay and Level of Service by Movement						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Volume	52.17	53.26	498.91	45.65	73.91	440.22
cmx, Capacity	214.76	558.82			1034.65	
V / C	0.24	0.10			0.07	
d, Delay	27.64	17.32			8.75	
LOS	D	C			A	
dA, Approach Delay	22.42		0.00		1.26	
Approach LOS	C					
dRank1, Rank 1 Delay			0.00		0.00	

Delay and Level of Service by Lane					
Approach	N	E (Major)	W (Major)		
Lane	Lane 1	Lane 1	Lane 1	Lane 2	Lane 3
Movements	L1, R1	T, R1			
vx, Volume	105.43	544.57	73.91	220.11	220.11
Flared Storage Size					
cmx, Capacity	311.71				
V / C	0.34				
Q95, 95% Queue Length	1.51				
d, Delay	22.42				
LOS	C				
dA, Approach Delay	22.42	0.00	1.26		
Approach LOS	C				

Node 288: Calle Real & Fairview

Control Type	Signalized
Method	ICU Method 1
LOS	D
Critical V/C	0.853
Loss Time	20
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	116	327	41	333	245	68	429	442	441	39	229	266
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	29	82	10	83	61	17	107	111	110	10	57	67
Adjusted Volume	116	327	41	333	245	68	429	442	441	39	229	266

Volume and Adjustments by Lane Group

Approach	N		E		S		W		
Lane Group	L	C	L	C	C	R	L	C	R
ID	15869	15870	15866	15868	15863	15865	15872	15873	15874
Lanes	L	T, RT	L, L	RT	LT, T	R	L	T	R
Volume	116	368	333	313	871	441	39	229	266

Saturation Flow Rate

Approach	N		E		S		W		
Lane Group	15869	15870	15866	15868	15863	15865	15872	15873	15874
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	2	1	2	1	1	1	1
Saturation Flow Rate	1600	3200	3200	1600	3200	1600	1600	1600	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	116	327	41	333	245	68	429	442	441	39	229	266
Volume / Saturation Flow R	0.072	0.115	0.115	0.104	0.196	0.196	0.268	0.272	0.276	0.024	0.143	0.166
Overlap adjusted Volume /	0.072	0.115	0.115	0.104	0.196	0.196	0.268	0.272	0.276	0.024	0.143	0.166
Critical Movement		Y		Y			Y					Y

Node 289: Fairview & US 101 NB Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.316
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement						
Approach	N	E		S	W	
Movement	T	T	R1		L1	R1
Base Volume	293	193	637		691	219
PHF	1.000	1.000	1.000		1.000	1.000
Peak 15 Volume	73	48	159		173	55
Adjusted Volume	293	193	637		691	219

Volume and Adjustments by Lane Group						
Approach	N	E		S	W	
Lane Group	C	C	R		L	R
ID	15877	15875	15876		15878	15880
Lanes	T	T	R		L, L	R
Volume	293	193	637		691	219

Saturation Flow Rate						
Approach	N	E		S	W	
Lane Group	15877	15875	15876		15878	15880
Base Saturation Flow Rate	1600	1600	1600		1600	1600
Number of Lanes	1	1	1		2	1
Saturation Flow Rate	1600	1600	1600		3200	1600

Capacity Analysis						
Approach	N	E		S	W	
Movement	T	T	R1		L1	R1
Volume	293	193	637		691	219
Volume / Saturation Flow R	0.183	0.121	0.398		0.216	0.137
Overlap adjusted Volume /	0.183	0.121	0.398		0.216	0.137
Critical Movement					Y	

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Node 296: Calle Real & Kellogg	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.527
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement						
Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Base Volume	101	46	755	138	56	652
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	25	12	189	35	14	163
Adjusted Volume	101	46	755	138	56	652

Volume and Adjustments by Lane Group					
Approach	N		E	W	
Lane Group	L	R	C	L	C
ID	15883	15884	15881	15885	15886
Lanes	L	R	T, RT	L	T, T
Volume	101	46	893	56	652

Saturation Flow Rate					
Approach	N		E	W	
Lane Group	15883	15884	15881	15885	15886
Base Saturation Flow Rate	1600	1600	1600	1600	1600
Number of Lanes	1	1	2	1	2
Saturation Flow Rate	1600	1600	3200	1600	3200

Capacity Analysis						
Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Volume	101	46	755	138	56	652
Volume / Saturation Flow R	0.063	0.029	0.279	0.279	0.035	0.204
Overlap adjusted Volume /	0.063	0.029	0.279	0.279	0.035	0.204
Critical Movement	Y		Y		Y	

Node 305: Patterson & Overpass	
Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.673
Loss Time	12
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	41	933	82	19	5	63	15	1254	23	143	5	25
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	10	233	21	5	1	16	4	314	6	36	1	6
Adjusted Volume	41	933	82	19	5	63	15	1254	23	143	5	25

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	L	C	C	R	L	C	C	R
ID	15890	15891	15888	15889	15895	15896	15893	15894
Lanes	L	T, RT	LT	R	L	T, RT	LT	R
Volume	41	1015	24	63	15	1277	148	25

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	15890	15891	15888	15889	15895	15896	15893	15894
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	1	1	1	2	1	1
Saturation Flow Rate	1600	3200	1600	1600	1600	3200	1600	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	41	933	82	19	5	63	15	1254	23	143	5	25
Volume / Saturation Flow R	0.026	0.317	0.317	0.012	0.015	0.039	0.009	0.399	0.399	0.089	0.092	0.016
Overlap adjusted Volume /	0.026	0.317	0.317	0.012	0.015	0.039	0.009	0.399	0.399	0.089	0.092	0.016
Critical Movement	Y					Y			Y	Y		

Node 306: Patterson & US 101 SB Ramps

Control Type	Signalized
Method	ICU Method 1
LOS	E
Critical V/C	0.931
Loss Time	12
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	434	668		800	573	581	35	433
PHF	1.000	1.000		1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	109	167		200	143	145	9	108
Adjusted Volume	434	668		800	573	581	35	433

Volume and Adjustments by Lane Group

Approach	N		E	S		W
Lane Group	L	C		C	R	C
ID	15898	15899		15903	15905	15901
Lanes	L	T, T		T, T	R	L, LTR
Volume	434	668		800	573	1049

Saturation Flow Rate

Approach	N		E	S		W
Lane Group	15898	15899		15903	15905	15901
Base Saturation Flow Rate	1600	1600		1600	1600	1600
Number of Lanes	1	2		2	1	2
Saturation Flow Rate	1600	3200		3200	1600	3200

Capacity Analysis

Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Volume	434	668		800	573	581	35	433
Volume / Saturation Flow R	0.271	0.209		0.250	0.358	0.182	0.328	0.328
Overlap adjusted Volume /	0.271	0.209		0.250	0.358	0.182	0.328	0.328
Critical Movement	Y				Y	Y		

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Node 307: Patterson & US 101 NB Ramp

Control Type	Signalized
Method	ICU Method 1
LOS	C
Critical V/C	0.717
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		E			S		W
Movement	T	R1	L1	T	R1	L1	T	
Base Volume	786	234	322	8	649	434	959	
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Peak 15 Volume	197	59	81	2	162	109	240	
Adjusted Volume	786	234	322	8	649	434	959	

Volume and Adjustments by Lane Group

Approach	N		E	S		W
Lane Group	C	R	C	L	C	
ID	15909	15911	15906	15912	15913	
Lanes	T, T	R	L, LTR, R	L	T, T	
Volume	786	234	979	434	959	

Saturation Flow Rate

Approach	N		E	S		W
Lane Group	15909	15911	15906	15912	15913	
Base Saturation Flow Rate	1600	1600	1600	1600	1600	
Number of Lanes	2	1	3	1	2	
Saturation Flow Rate	3200	1600	4800	1600	3200	

Capacity Analysis

Approach	N		E			S		W
Movement	T	R1	L1	T	R1	L1	T	
Volume	786	234	322	8	649	434	959	
Volume / Saturation Flow R	0.246	0.146	0.101	0.204	0.204	0.271	0.300	
Overlap adjusted Volume /	0.246	0.146	0.101	0.204	0.204	0.271	0.300	
Critical Movement	Y		Y			Y		

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Node 319: Turnpike & SB 101 Ramps

Control Type	Signalized
Method	ICU Method 1
LOS	C
Critical V/C	0.731
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	247	860		623	410	272	5	283
PHF	1.000	1.000		1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	62	215		156	103	68	1	71
Adjusted Volume	247	860		623	410	272	5	283

Volume and Adjustments by Lane Group

Approach	N		E	S		W
Lane Group	L	C		C	R	C
ID	15915	15916		15920	15922	15918
Lanes	L	T, T		T, T	R	LT, RT
Volume	247	860		623	410	560

Saturation Flow Rate

Approach	N		E	S		W
Lane Group	15915	15916		15920	15922	15918
Base Saturation Flow Rate	1600	1600		1600	1600	1600
Number of Lanes	1	2		2	1	2
Saturation Flow Rate	1600	3200		3200	1600	3200

Capacity Analysis

Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Volume	247	860		623	410	272	5	283
Volume / Saturation Flow R	0.154	0.269		0.195	0.256	0.170	0.175	0.175
Overlap adjusted Volume /	0.154	0.269		0.195	0.256	0.170	0.175	0.175
Critical Movement	Y				Y	Y		

Node 331: Hollister & Modoc Rd	
Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.636
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement						
Approach	E		S		W	
Movement	L1	T	L1	R1	T	R1
Base Volume	39	527	247	37	572	399
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	10	132	62	9	143	100
Adjusted Volume	39	527	247	37	572	399

Volume and Adjustments by Lane Group						
Approach	E		S		W	
Lane Group	L	C	L	R	C	R
ID	15925	15926	15923	15924	15927	15928
Lanes	L	T	L	R	T	R
Volume	39	527	247	37	572	399

Saturation Flow Rate						
Approach	E		S		W	
Lane Group	15925	15926	15923	15924	15927	15928
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	1	1	1
Saturation Flow Rate	1600	1600	1600	1600	1600	1600

Capacity Analysis						
Approach	E		S		W	
Movement	L1	T	L1	R1	T	R1
Volume	39	527	247	37	572	399
Volume / Saturation Flow R	0.024	0.329	0.154	0.023	0.357	0.249
Overlap adjusted Volume /	0.024	0.329	0.154	0.023	0.357	0.249
Critical Movement	Y		Y		Y	

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Node 340: San Marcos Pass & Calle Real

Control Type	Signalized
Method	ICU Method 1
LOS	D
Critical V/C	0.86
Loss Time	20
Cycle Length	120

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	62	515	115	168	248	681	64	207	121	50	120	229
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	16	129	29	42	62	170	16	52	30	13	30	57
Adjusted Volume	62	515	115	168	248	681	64	207	121	50	120	229

Volume and Adjustments by Lane Group

Approach	N		E			S		W		
Lane Group	L	C	L	C	R	L	C	L	C	R
ID	15932	15933	15929	15930	15931	15938	15939	15935	15936	15937
Lanes	L	T, RT	L	T	R	L	T, RT	L	T	R
Volume	62	630	168	248	681	64	328	50	120	229

Saturation Flow Rate

Approach	N		E			S		W		
Lane Group	15932	15933	15929	15930	15931	15938	15939	15935	15936	15937
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	1	1	1	1	2	1	1	1
Saturation Flow Rate	1600	3200	1600	1600	1600	1600	3200	1600	1600	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	62	515	115	168	248	681	64	207	121	50	120	229
Volume / Saturation Flow R	0.039	0.197	0.197	0.105	0.155	0.426	0.040	0.102	0.102	0.031	0.075	0.143
Overlap adjusted Volume /	0.039	0.197	0.197	0.105	0.155	0.426	0.040	0.102	0.102	0.031	0.075	0.143
Critical Movement			Y			Y	Y			Y		

Node 341: San Marcos Pass & State & SB On-Ramp

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.632
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E	S			W		
Movement	L2	L1	R1		T	R1	R2	L2	L1	T
Base Volume	546	48	225		476	82	74	318	220	626
PHF	1.000	1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	137	12	56		119	21	19	80	55	157
Adjusted Volume	546	48	225		476	82	74	318	220	626

Volume and Adjustments by Lane Group

Approach	N			E	S		W	
Lane Group	L	L	R		C	R	L	C
ID	15944	15946	15947		15941	15943	15948	15950
Lanes	L, L	L	R		T, RT	R	L, L	T, T
Volume	546	48	225		558	74	538	626

Saturation Flow Rate

Approach	N			E	S		W	
Lane Group	15944	15946	15947		15941	15943	15948	15950
Base Saturation Flow Rate	1600	1600	1600		1600	1600	1600	1600
Number of Lanes	2	1	1		2	1	2	2
Saturation Flow Rate	3200	1600	1600		3200	1600	3200	3200

Capacity Analysis

Approach	N			E	S			W		
Movement	L2	L1	R1		T	R1	R2	L2	L1	T
Volume	546	48	225		476	82	74	318	220	626
Volume / Saturation Flow R	0.171	0.030	0.141		0.174	0.174	0.046	0.099	0.138	0.196
Overlap adjusted Volume /	0.171	0.030	0.141		0.174	0.174	0.046	0.099	0.138	0.196
Critical Movement	Y				Y				Y	

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Node 359: Cathedral Oaks & Winchester Canyon

Control Type	AWSC
Method	HCM 6th Edition
Average Delay	8.27
Average LOS	A

Volume and Adjustments

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	11.00	16.00	32.00	19.00	60.00	16.00	21.00	55.00	38.00	19.00	57.00	30.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
Flow Rate	11.96	17.39	34.78	20.65	65.22	17.39	22.83	59.78	41.30	20.65	61.96	32.61
Geometry Group	4b			5			5			5		

Saturation Headway

Approach	N	E		S		W	
Lanes	Lane 1	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
Total Lane Flow Rate	64.13	20.65	82.61	82.61	41.30	20.65	94.57
Left Turn Flow Rate	11.96	20.65	0.00	22.83	0.00	20.65	0.00
Right Turn Flow Rate	34.78	0.00	17.39	0.00	41.30	0.00	32.61
PLT, Proportion LT	0.19	1.00	0.00	0.28	0.00	1.00	0.00
PRT, Proportion RT	0.54	0.00	0.21	0.00	1.00	0.00	0.34
PHV, Proportion HV	0.00	0.00	0.00	0.00	0.00	0.00	0.00
hLT,adj, Headway adjustme	0.20	0.50		0.50		0.50	
hRT,adj, Headway adjustm	-0.60	-0.70		-0.70		-0.70	
hHV,adj, Headway adjustm	1.70	1.70		1.70		1.70	
hadj, Headway adjustment	-0.29	0.50	-0.15	0.14	-0.70	0.50	-0.24

Departure Headway

Approach	N	E		S		W	
Lanes	Lane 1	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
Total Lane Flow Rate	64.13	20.65	82.61	82.61	41.30	20.65	94.57
hd initial	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x initial	0.06	0.02	0.07	0.07	0.04	0.02	0.08
hd, iteration 1	4.65	5.38	4.73	5.02	4.18	5.37	4.63
Difference, iteration 1	1.45	2.18	1.53	1.82	0.98	2.17	1.43
hd, iteration 2	4.87	5.56	4.91	5.21	4.37	5.55	4.81
Difference, iteration 2	0.21	0.18	0.18	0.19	0.19	0.18	0.18
hd, iteration 3	4.89	5.58	4.93	5.23	4.39	5.57	4.83
Difference, iteration 3	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Convergence	Y	Y	Y	Y	Y	Y	Y
hd final, Departure Headwa	4.89	5.58	4.93	5.23	4.39	5.57	4.83
x final, Degree of Utilization	0.09	0.03	0.11	0.12	0.05	0.03	0.13

Capacity and Level of Service

Approach	N	E		S		W	
Lanes	Lane 1	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
Total Lane Flow Rate	64.13	20.65	82.61	82.61	41.30	20.65	94.57
hd, Departure Headway	4.89	5.58	4.93	5.23	4.39	5.57	4.83
x, Degree of Utilization	0.09	0.03	0.11	0.12	0.05	0.03	0.13
m, Move Up Time	2.00	2.30	2.30	2.30	2.30	2.30	2.30
ts, Service Time	2.89	3.28	2.63	2.93	2.09	3.27	2.53
Capacity	734.87	644.61	729.40	688.26	819.07	645.24	744.89
Delay	8.36	8.47	8.26	8.64	7.33	8.46	8.23
LOS	A	A	A	A	A	A	A
Q95, 95% Queue Length	0.29	0.10	0.38	0.41	0.16	0.10	0.44
Approach Delay	8.36	8.30		8.20		8.27	
Approach LOS	A	A		A		A	
Intersection Delay	8.27						
Intersection LOS	A						

Node 372: Glen Annie & Del Norte	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	0.51
Worst Case Delay	9.46
Worst Case LOS	A

Volume and Adjustments

Approach	N (Major)		S (Major)	W
Movement	T	R1	T	R1
Base Volume	290.00	22.00	388.00	40.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920
V, Adjusted Volume	315.22	23.91	421.74	43.48

Pedestrians

Approach	N (Major)		S (Major)	W
Movement	T	R1	T	R1
vx, Flow (Ped/hr)				0.00
w, Lane Width (ft)				12.00
Sp, Walking Speed (ft/s)				3.50
fpb, Percent Blockage				0.00

Capacity of Movements below Rank 1

Approach	N (Major)		S (Major)	W
Movement	T	R1	T	R1
Rank	1	1	1	2
vx, Volume				43.48
Conflicting Volume (Veh)				169.57
Conflicting Volume (Ped)				0.00
Conflicting Volume				169.57
Two-Stage Gap Acceptance				
Number of Storage Spaces				
cpx, Potential Capacity				851.06
Capacity				851.06

Critical Headway and Follow Up Headway

Approach	N (Major)		S (Major)	W
Movement	T	R1	T	R1
tc,base, Base Critical Head				6.90
tc,base,I, Base Critical Hea				
tc,base,II, Base Critical Hea				
tc,HV, Heavy Vehicles Adju				2.00
Phv, % Heavy Vehicles				0.00
tc,G, Grade Adjustment Fac				0.10
G, % Grade	0.00		0.00	0.00
T3,lt, Geometry Adjustment				0.00
tc, Critical Headway				6.90
tc,I, Critical Headway (Stag				
tc,II, Critical Headway (Stag				
tf,base, Base Follow-Up He				3.30
tf,hv, Heavy Vehicles Adjus				1.00
tf, Follow-Up Headway				3.30

Delay and Level of Service by Movement

Approach	N (Major)		S (Major)	W
Movement	T	R1	T	R1
vx, Volume	315.22	23.91	421.74	43.48
cmx, Capacity				851.06
V / C				0.05
d, Delay				9.46
LOS				A
dA, Approach Delay	0.00		0.00	9.46
Approach LOS				A
dRank1, Rank 1 Delay	0.00		0.00	

Delay and Level of Service by Lane

Approach	N (Major)		S (Major)		W
Lane	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1
Movements		T, R1			
vx, Volume	169.57	169.57	210.87	210.87	43.48
Flared Storage Size					
cmx, Capacity					
V / C					
Q95, 95% Queue Length					
d, Delay					
LOS					
dA, Approach Delay	0.00		0.00		9.46
Approach LOS					A

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Node 375: Los Caneros & US101 SB Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.698
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	57	671		656	837	73	5	45
PHF	1.000	1.000		1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	14	168		164	209	18	1	11
Adjusted Volume	57	671		656	837	73	5	45

Volume and Adjustments by Lane Group

Approach	N		E	S	W	
Lane Group	L	C		C	C	R
ID	15952	15953		15957	15955	15956
Lanes	L	T, T		T, RT	LT	R
Volume	57	671		1493	78	45

Saturation Flow Rate

Approach	N		E	S	W	
Lane Group	15952	15953		15957	15955	15956
Base Saturation Flow Rate	1600	1600		1600	1600	1600
Number of Lanes	1	2		2	1	1
Saturation Flow Rate	1600	3200		3200	1600	1600

Capacity Analysis

Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Volume	57	671		656	837	73	5	45
Volume / Saturation Flow R	0.036	0.210		0.467	0.467	0.046	0.049	0.028
Overlap adjusted Volume /	0.036	0.210		0.467	0.467	0.046	0.049	0.028
Critical Movement	Y			Y		Y		

Node 376: Los Carneros & US 101 NB Ramps

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.553
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		E			S		W
Movement	T	R1	L1	T	R1	L1	T	
Base Volume	308	120	407	9	56	227	513	
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Peak 15 Volume	77	30	102	2	14	57	128	
Adjusted Volume	308	120	407	9	56	227	513	

Volume and Adjustments by Lane Group

Approach	N	E	S		W
Lane Group	C	C	L	C	
ID	15961	15959	15963	15964	
Lanes	T, RT	L, LTR	L	T, T	
Volume	428	472	227	513	

Saturation Flow Rate

Approach	N	E	S		W
Lane Group	15961	15959	15963	15964	
Base Saturation Flow Rate	1600	1600	1600	1600	
Number of Lanes	2	2	1	2	
Saturation Flow Rate	3200	3200	1600	3200	

Capacity Analysis

Approach	N		E			S		W
Movement	T	R1	L1	T	R1	L1	T	
Volume	308	120	407	9	56	227	513	
Volume / Saturation Flow R	0.134	0.134	0.127	0.147	0.147	0.142	0.160	
Overlap adjusted Volume /	0.134	0.134	0.127	0.147	0.147	0.142	0.160	
Critical Movement	Y		Y			Y		

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Node 383: Fairview & US 101 SB Ramps

Control Type	Signalized
Method	ICU Method 1
LOS	D
Critical V/C	0.85
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	336	537		735	746	206	5	154
PHF	1.000	1.000		1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	84	134		184	187	52	1	39
Adjusted Volume	336	537		735	746	206	5	154

Volume and Adjustments by Lane Group

Approach	N		E	S		W	
Lane Group	L	C		C	R	C	R
ID	15969	15971		15966	15968	15973	15974
Lanes	L, L	T, T		T, T	R	LT	R
Volume	336	537		735	746	211	154

Saturation Flow Rate

Approach	N		E	S		W	
Lane Group	15969	15971		15966	15968	15973	15974
Base Saturation Flow Rate	1600	1600		1600	1600	1600	1600
Number of Lanes	2	2		2	1	1	1
Saturation Flow Rate	3200	3200		3200	1600	1600	1600

Capacity Analysis

Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Volume	336	537		735	746	206	5	154
Volume / Saturation Flow R	0.105	0.168		0.230	0.466	0.129	0.132	0.096
Overlap adjusted Volume /	0.105	0.168		0.230	0.466	0.129	0.132	0.096
Critical Movement	Y				Y	Y		

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Node 385: Hollister & Fairview

Control Type	Signalized
Method	ICU Method 1
LOS	C
Critical V/C	0.763
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	224	136	174	54	414	367	173	447	63	493	486	84
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	56	34	44	14	104	92	43	112	16	123	122	21
Adjusted Volume	224	136	174	54	414	367	173	447	63	493	486	84

Volume and Adjustments by Lane Group

Approach	N			E			S		W		
Lane Group	L	C	R	L	C	R	L	C	L	C	R
ID	15982	15984	15986	15978	15979	15981	15975	15976	15987	15989	15991
Lanes	L, L	T, T	R	L	T, T	R	L	T, RT	L, L	T, T	R
Volume	224	136	174	54	414	367	173	510	493	486	84

Saturation Flow Rate

Approach	N			E			S		W		
Lane Group	15982	15984	15986	15978	15979	15981	15975	15976	15987	15989	15991
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	2	2	1	1	2	1	1	2	2	2	1
Saturation Flow Rate	3200	3200	1600	1600	3200	1600	1600	3200	3200	3200	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	224	136	174	54	414	367	173	447	63	493	486	84
Volume / Saturation Flow R	0.070	0.043	0.109	0.034	0.129	0.229	0.108	0.159	0.159	0.154	0.152	0.052
Overlap adjusted Volume /	0.070	0.043	0.109	0.034	0.129	0.229	0.108	0.159	0.159	0.154	0.152	0.052
Critical Movement	Y					Y		Y		Y		

Node 386: Fairview & Mandarin	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	12.2
Worst Case Delay	456.06
Worst Case LOS	F

Volume and Adjustments						
Approach	E		S (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	40.00	231.00	1193.00	62.00	134.00	499.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	43.48	251.09	1296.74	67.39	145.65	542.39

Pedestrians						
Approach	E		S (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Flow (Ped/hr)	0.00	0.00			0.00	
w, Lane Width (ft)	12.00	12.00			12.00	
Sp, Walking Speed (ft/s)	3.50	3.50			3.50	
fpb, Percent Blockage	0.00	0.00			0.00	

Capacity of Movements below Rank 1						
Approach	E		S (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Rank	3	2	1	1	2	1
vx, Volume	43.48	251.09			145.65	
Conflicting Volume (Veh)	1859.24	648.37			1364.13	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	1859.24	648.37			1364.13	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces						
cpx, Potential Capacity	66.37	417.61			510.13	
Capacity	44.06	417.61			510.13	

Critical Headway and Follow Up Headway						
Approach	E		S (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
tc,base, Base Critical Head	7.50	6.90			4.10	
tc,base,I, Base Critical Hea						
tc,base,II, Base Critical Hea						
tc,HV, Heavy Vehicles Adju	2.00	2.00			2.00	
Phv, % Heavy Vehicles	0.00	0.00			0.00	
tc,G, Grade Adjustment Fac	0.20	0.10			1.00	
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment	0.70	0.00			0.00	
tc, Critical Headway	6.80	6.90			4.10	
tc,I, Critical Headway (Stag						
tc,II, Critical Headway (Stag						
tf,base, Base Follow-Up He	3.50	3.30			2.20	
tf,hv, Heavy Vehicles Adjus	1.00	1.00			1.00	
tf, Follow-Up Headway	3.50	3.30			2.20	

Delay and Level of Service by Movement						
Approach	E		S (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Volume	43.48	251.09	1296.74	67.39	145.65	542.39
cmx, Capacity	44.06	417.61			510.13	
V / C	0.99	0.60			0.29	
d, Delay	456.06	26.39			14.87	
LOS	F	D			B	
dA, Approach Delay	89.81		0.00		3.15	
Approach LOS	F					
dRank1, Rank 1 Delay			0.00		0.00	

Delay and Level of Service by Lane								
Approach	E		S (Major)			W (Major)		
Lane	Lane 1	Lane 2	Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 3
Movements								
vx, Volume	43.48	251.09	648.37	648.37	67.39	145.65	271.20	271.20
Flared Storage Size								
cmx, Capacity								
V / C								
Q95, 95% Queue Length								
d, Delay								
LOS								
dA, Approach Delay	89.81		0.00			3.15		
Approach LOS	F							

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Node 387: Hollister & Orange

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	4.4
Worst Case Delay	90.65
Worst Case LOS	F

Volume and Adjustments												
Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	5.00	5.00	44.00	59.00	761.00	31.00	30.00	5.00	68.00	22.00	718.00	37.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	5.43	5.43	47.83	64.13	827.17	33.70	32.61	5.43	73.91	23.91	780.43	40.22

Pedestrians												
Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
w, Lane Width (ft)	12.00	12.00	12.00	12.00			12.00	12.00	12.00	12.00		
Sp, Walking Speed (ft/s)	3.50	3.50	3.50	3.50			3.50	3.50	3.50	3.50		
fpb, Percent Blockage	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		

Capacity of Movements below Rank 1												
Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	2	1	1	4	3	2	2	1	1
vx, Volume	5.43	5.43	47.83	64.13			32.61	5.43	73.91	23.91		
Conflicting Volume (Veh)	1413.04	1840.76	430.43	820.65			1392.93	1837.50	410.33	860.87		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1413.04	1840.76	430.43	820.65			1392.93	1837.50	410.33	860.87		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces												
cpx, Potential Capacity	99.64	76.16	578.58	817.21			103.11	76.52	596.15	789.45		
Capacity	73.05	65.44	578.58	817.21			79.14	65.74	596.15	789.45		

Critical Headway and Follow Up Headway												
Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Head	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,base,I, Base Critical Hea												
tc,base,II, Base Critical Hea												
tc,HV, Heavy Vehicles Adju	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00		
Phv, % Heavy Vehicles	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Fac	0.20	0.20	0.10	1.00			0.20	0.20	0.10	1.00		
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc, Critical Headway	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,I, Critical Headway (Stag												
tc,II, Critical Headway (Stag												
tf,base, Base Follow-Up He	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		
tf,hv, Heavy Vehicles Adjus	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00		
tf, Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		

Delay and Level of Service by Movement												
Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	5.43	5.43	47.83	64.13	827.17	33.70	32.61	5.43	73.91	23.91	780.43	40.22
cmx, Capacity	73.05	65.44	578.58	817.21			79.14	65.74	596.15	789.45		
V / C	0.07	0.08	0.08	0.08			0.41	0.08	0.12	0.03		
d, Delay	58.92	64.65	15.86	9.78			81.38	90.65	41.93	9.70		
LOS	F	F	C	A			F	F	E	A		
dA, Approach Delay		24.36			0.68			55.78			0.27	
Approach LOS		C						F				
dRank1, Rank 1 Delay					0.00						0.00	

Delay and Level of Service by Lane								
Approach	N		E (Major)		S		W (Major)	
Lane	Lane 1	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2	Lane 3
Movements	L1, T, R1			T, R1	L1, T, R1			T, R1
vx, Volume	58.70	64.13	430.43	430.43	111.96	23.91	410.33	410.33
Flared Storage Size								
cmx, Capacity	244.45				180.96			
V / C	0.24				0.62			
Q95, 95% Queue Length	0.94				4.33			
d, Delay	24.36				55.78			
LOS	C				F			
dA, Approach Delay	24.36		0.68		55.78		0.27	
Approach LOS	C				F			

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Node 390: Hollister & Pine/Nectarine

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.604
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	114	9	102	11	651	25	111	8	199	37	687	41
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	29	2	26	3	163	6	28	2	50	9	172	10
Adjusted Volume	114	9	102	11	651	25	111	8	199	37	687	41

Volume and Adjustments by Lane Group

Approach	N	E		S	W	
Lane Group	C	L	C	C	L	C
ID	15995	15992	15993	15999	15996	15997
Lanes	LTR	L	T, RT	LTR	L	T, RT
Volume	225	11	676	318	37	728

Saturation Flow Rate

Approach	N	E		S	W	
Lane Group	15995	15992	15993	15999	15996	15997
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	2	1	1	2
Saturation Flow Rate	1600	1600	3200	1600	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	114	9	102	11	651	25	111	8	199	37	687	41
Volume / Saturation Flow R	0.071	0.141	0.141	0.007	0.211	0.211	0.069	0.199	0.199	0.023	0.228	0.227
Overlap adjusted Volume /	0.071	0.141	0.141	0.007	0.211	0.211	0.069	0.199	0.199	0.023	0.228	0.227
Critical Movement	Y			Y				Y			Y	

Node 394: Hollister & Rutherford	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.494
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement						
Approach	E		S		W	
Movement	L1	T	L1	R1	T	R1
Base Volume	40	760	41	81	895	42
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	10	190	10	20	224	11
Adjusted Volume	40	760	41	81	895	42

Volume and Adjustments by Lane Group				
Approach	E		S	W
Lane Group	L	C	C	C
ID	16000	16001	16005	16003
Lanes	L	T, T	LTR	T, RT
Volume	40	760	122	937

Saturation Flow Rate				
Approach	E		S	W
Lane Group	16000	16001	16005	16003
Base Saturation Flow Rate	1600	1600	1600	1600
Number of Lanes	1	2	1	2
Saturation Flow Rate	1600	3200	1600	3200

Capacity Analysis						
Approach	E		S		W	
Movement	L1	T	L1	R1	T	R1
Volume	40	760	41	81	895	42
Volume / Saturation Flow R	0.025	0.237	0.026	0.076	0.293	0.293
Overlap adjusted Volume /	0.025	0.237	0.026	0.076	0.293	0.293
Critical Movement	Y			Y		Y

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Node 396: Hollister & Community Center West Driveway	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	0.37
Worst Case Delay	10.88
Worst Case LOS	B

Volume and Adjustments					
Approach	E (Major)		S	W (Major)	
Movement	L1	T		T	R1
Base Volume	62.00	833.00		902.00	50.00
PHF, Peak-hour factor	0.920	0.920		0.920	0.920
V, Adjusted Volume	67.39	905.43		980.43	54.35

Pedestrians					
Approach	E (Major)		S	W (Major)	
Movement	L1	T		T	R1
vx, Flow (Ped/hr)	0.00				
w, Lane Width (ft)	12.00				
Sp, Walking Speed (ft/s)	3.50				
fpb, Percent Blockage	0.00				

Capacity of Movements below Rank 1					
Approach	E (Major)		S	W (Major)	
Movement	L1	T		T	R1
Rank	2	1		1	1
vx, Volume	67.39				
Conflicting Volume (Veh)	1034.78				
Conflicting Volume (Ped)	0.00				
Conflicting Volume	1034.78				
Two-Stage Gap Acceptance					
Number of Storage Spaces					
cpx, Potential Capacity	679.47				
Capacity	679.47				

Critical Headway and Follow Up Headway					
Approach	E (Major)		S	W (Major)	
Movement	L1	T		T	R1
tc,base, Base Critical Head	4.10				
tc,base,I, Base Critical Hea					
tc,base,II, Base Critical Hea					
tc,HV, Heavy Vehicles Adju	2.00				
Phv, % Heavy Vehicles	0.00				
tc,G, Grade Adjustment Fac	1.00				
G, % Grade	0.00		0.00	0.00	
T3,lt, Geometry Adjustment	0.00				
tc, Critical Headway	4.10				
tc,I, Critical Headway (Stag					
tc,II, Critical Headway (Stag					
tf,base, Base Follow-Up He	2.20				
tf,hv, Heavy Vehicles Adjus	1.00				
tf, Follow-Up Headway	2.20				

Delay and Level of Service by Movement					
Approach	E (Major)		S	W (Major)	
Movement	L1	T		T	R1
vx, Volume	67.39	905.43		980.43	54.35
cmx, Capacity	679.47				
V / C	0.10				
d, Delay	10.88				
LOS	B				
dA, Approach Delay	0.75		0.00	0.00	
Approach LOS			A		
dRank1, Rank 1 Delay	0.00			0.00	

Delay and Level of Service by Lane						
Approach	E (Major)			S	W (Major)	
Lane	Lane 1	Lane 2	Lane 3		Lane 1	Lane 2
Movements						T, R1
vx, Volume	67.39	452.72	452.72		517.39	517.39
Flared Storage Size						
cmx, Capacity						
V / C						
Q95, 95% Queue Length						
d, Delay						
LOS						
dA, Approach Delay	0.75			0.00	0.00	
Approach LOS				A		

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Node 397: Hollister & Kinman	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.465
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	62	5	72	20	655	66	14	5	11	71	785	24
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	16	1	18	5	164	17	4	1	3	18	196	6
Adjusted Volume	62	5	72	20	655	66	14	5	11	71	785	24

Volume and Adjustments by Lane Group						
Approach	N	E		S	W	
Lane Group	C	L	C	C	L	C
ID	16009	16006	16007	16013	16010	16011
Lanes	LTR	L	T, RT	LTR	L	T, RT
Volume	139	20	721	30	71	809

Saturation Flow Rate						
Approach	N	E		S	W	
Lane Group	16009	16006	16007	16013	16010	16011
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	2	1	1	2
Saturation Flow Rate	1600	1600	3200	1600	1600	3200

Capacity Analysis												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	62	5	72	20	655	66	14	5	11	71	785	24
Volume / Saturation Flow R	0.039	0.087	0.087	0.013	0.225	0.225	0.009	0.019	0.019	0.044	0.253	0.253
Overlap adjusted Volume /	0.039	0.087	0.087	0.013	0.225	0.225	0.009	0.019	0.019	0.044	0.253	0.253
Critical Movement		Y			Y		Y			Y		

Node 399: Hollister & Kellogg

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.602
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	116	10	43	95	795	106	73	12	94	39	795	40
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	29	3	11	24	199	27	18	3	24	10	199	10
Adjusted Volume	116	10	43	95	795	106	73	12	94	39	795	40

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	16019	16020	16016	16017	16014	16015	16021	16022
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	126	43	95	901	85	94	39	835

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	16019	16020	16016	16017	16014	16015	16021	16022
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	2	1	1	1	2
Saturation Flow Rate	1600	1600	1600	3200	1600	1600	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	116	10	43	95	795	106	73	12	94	39	795	40
Volume / Saturation Flow R	0.072	0.079	0.027	0.059	0.282	0.282	0.046	0.053	0.059	0.024	0.261	0.261
Overlap adjusted Volume /	0.072	0.079	0.027	0.059	0.282	0.282	0.046	0.053	0.059	0.024	0.261	0.261
Critical Movement	Y			Y					Y		Y	

Node 402: Hollister & SR-217 SB Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.589
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E		S	W	
Movement	L1	T	R1	L1	T		T	R1
Base Volume	66	5	405	55	607		1124	38
PHF	1.000	1.000	1.000	1.000	1.000		1.000	1.000
Peak 15 Volume	17	1	101	14	152		281	10
Adjusted Volume	66	5	405	55	607		1124	38

Volume and Adjustments by Lane Group

Approach	N	E			S	W
Lane Group	C	L	C	C		C
ID	16029	16024	16025	16026		16031
Lanes	LTR, R	L	T, T	T, T		T, RT
Volume	476	55	345	262		1162

Saturation Flow Rate

Approach	N	E			S	W
Lane Group	16029	16024	16025	16026		16031
Base Saturation Flow Rate	1600	1600	1600	1600		1600
Number of Lanes	2	1	2	2		2
Saturation Flow Rate	3200	1600	3200	3200		3200

Capacity Analysis

Approach	N			E		S	W	
Movement	L1	T	R1	L1	T		T	R1
Volume	66	5	405	55	607		1124	38
Volume / Saturation Flow R	0.041	0.149	0.149	0.034	0.108		0.363	0.363
Overlap adjusted Volume /	0.041	0.149	0.149	0.034	0.108		0.363	0.363
Critical Movement	Y			Y			Y	

Node 405: Hollister & SR-217 NB Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.526
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N	E			S			W		
Movement		L1	T	R1	L1	T	R1	L1	T	R1
Base Volume		28	515	36	125	111	116	437	681	43
PHF		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume		7	129	9	31	28	29	109	170	11
Adjusted Volume		28	515	36	125	111	116	437	681	43

Volume and Adjustments by Lane Group

Approach	N	E			S		W	
Lane Group		L	C	R	C	R	L	C
ID		16035	16036	16038	16033	16034	16039	16041
Lanes		L	T, T	R	LT	R	L, L	T, RT
Volume		28	515	36	236	116	437	724

Saturation Flow Rate

Approach	N	E			S		W	
Lane Group		16035	16036	16038	16033	16034	16039	16041
Base Saturation Flow Rate		1600	1600	1600	1600	1600	1600	1600
Number of Lanes		1	2	1	1	1	2	2
Saturation Flow Rate		1600	3200	1600	1600	1600	3200	3200

Capacity Analysis

Approach	N	E			S			W		
Movement		L1	T	R1	L1	T	R1	L1	T	R1
Volume		28	515	36	125	111	116	437	681	43
Volume / Saturation Flow R		0.018	0.161	0.022	0.078	0.147	0.072	0.137	0.226	0.226
Overlap adjusted Volume /		0.018	0.161	0.022	0.078	0.147	0.072	0.137	0.226	0.226
Critical Movement			Y		Y			Y		

Node 416: Hollister & Turnpike

Control Type	Signalized
Method	ICU Method 1
LOS	D
Critical V/C	0.853
Loss Time	20
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	328	161	451	34	388	332	35	87	32	396	668	22
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	82	40	113	9	97	83	9	22	8	99	167	6
Adjusted Volume	328	161	451	34	388	332	35	87	32	396	668	22

Volume and Adjustments by Lane Group

Approach	N			E		S		W	
Lane Group	L	C	R	L	C	L	C	L	C
ID	16046	16048	16049	16043	16044	16054	16055	16050	16052
Lanes	L, L	T	R	L	T, RT	L	RT	L, L	T, RT
Volume	328	161	451	34	720	35	119	396	690

Saturation Flow Rate

Approach	N			E		S		W	
Lane Group	16046	16048	16049	16043	16044	16054	16055	16050	16052
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	2	1	1	1	2	1	1	2	2
Saturation Flow Rate	3200	1600	1600	1600	3200	1600	1600	3200	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	328	161	451	34	388	332	35	87	32	396	668	22
Volume / Saturation Flow R	0.102	0.101	0.282	0.021	0.225	0.225	0.022	0.074	0.074	0.124	0.216	0.216
Overlap adjusted Volume /	0.102	0.101	0.282	0.021	0.225	0.225	0.022	0.074	0.074	0.124	0.216	0.216
Critical Movement			Y		Y		Y			Y		

Node 441: Calle Real & NB 101 OnRamp	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	1.97
Worst Case Delay	10.45
Worst Case LOS	B

Volume and Adjustments					
Approach	E (Major)		S (Major)	W	
Movement	L1	T		T	R1
Base Volume	68.00	183.00		54.00	5.00
PHF, Peak-hour factor	0.920	0.920		0.920	0.920
V, Adjusted Volume	73.91	198.91		58.70	5.43

Pedestrians					
Approach	E (Major)		S (Major)	W	
Movement	L1	T		T	R1
vx, Flow (Ped/hr)				0.00	0.00
w, Lane Width (ft)				12.00	12.00
Sp, Walking Speed (ft/s)				3.50	3.50
fpb, Percent Blockage				0.00	0.00

Capacity of Movements below Rank 1					
Approach	E (Major)		S (Major)	W	
Movement	L1	T		T	R1
Rank	1	1		3	2
vx, Volume				58.70	5.43
Conflicting Volume (Veh)				173.37	173.37
Conflicting Volume (Ped)				0.00	0.00
Conflicting Volume				173.37	173.37
Two-Stage Gap Acceptance				No	
Number of Storage Spaces					
cpx, Potential Capacity				723.53	875.32
Capacity				722.93	875.32

Critical Headway and Follow Up Headway					
Approach	E (Major)		S (Major)	W	
Movement	L1	T		T	R1
tc,base, Base Critical Head				6.50	6.20
tc,base,I, Base Critical Hea					
tc,base,II, Base Critical Hea					
tc,HV, Heavy Vehicles Adju				1.00	1.00
Phv, % Heavy Vehicles				0.00	0.00
tc,G, Grade Adjustment Fac				0.20	0.10
G, % Grade	0.00		0.00	0.00	
T3,lt, Geometry Adjustment				0.00	0.00
tc, Critical Headway				6.50	6.20
tc,I, Critical Headway (Stag					
tc,II, Critical Headway (Stag					
tf,base, Base Follow-Up He				4.00	3.30
tf,hv, Heavy Vehicles Adjus				0.90	0.90
tf, Follow-Up Headway				4.00	3.30

Delay and Level of Service by Movement					
Approach	E (Major)		S (Major)	W	
Movement	L1	T		T	R1
vx, Volume	73.91	198.91		58.70	5.43
cmx, Capacity				722.93	875.32
V / C				0.08	0.01
d, Delay				10.45	9.58
LOS				B	A
dA, Approach Delay	0.00		0.00	10.38	
Approach LOS				B	
dRank1, Rank 1 Delay	0.00		0.00		

Delay and Level of Service by Lane			
Approach	E (Major)	S (Major)	W
Lane	Lane 1		Lane 1
Movements	L1, T		T, R1
vx, Volume	272.83		64.13
Flared Storage Size			
cmx, Capacity			733.75
V / C			0.09
Q95, 95% Queue Length			0.29
d, Delay			10.38
LOS			B
dA, Approach Delay	0.00	0.00	10.38
Approach LOS			B

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Node 445: Calle Real & Winchester Canyon	
Control Type	AWSC
Method	HCM 6th Edition
Average Delay	9
Average LOS	A

Volume and Adjustments				
Approach	N	E		W
Movement	R1	T	R1	T
Base Volume	134.00	155.00	223.00	71.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920
Flow Rate	145.65	168.48	242.39	77.17
Geometry Group	1	1		1

Saturation Headway			
Approach	N	E	W
Lanes	Lane 1	Lane 1	Lane 1
Total Lane Flow Rate	145.65	410.87	77.17
Left Turn Flow Rate	0.00	0.00	0.00
Right Turn Flow Rate	145.65	242.39	0.00
PLT, Proportion LT	0.00	0.00	0.00
PRT, Proportion RT	1.00	0.59	0.00
PHV, Proportion HV	0.00	0.00	0.00
hLT,adj, Headway adjustme	0.20	0.20	0.20
hRT,adj, Headway adjustm	-0.60	-0.60	-0.60
hHV,adj, Headway adjustm	1.70	1.70	1.70
hadj, Headway adjustment	-0.60	-0.35	0.00

Departure Headway			
Approach	N	E	W
Lanes	Lane 1	Lane 1	Lane 1
Total Lane Flow Rate	145.65	410.87	77.17
hd initial	3.20	3.20	3.20
x initial	0.13	0.37	0.07
hd, iteration 1	3.43	3.86	4.01
Difference, iteration 1	0.23	0.66	0.81
hd, iteration 2	3.47	3.89	4.01
Difference, iteration 2	0.03	0.03	0.01
Convergence	Y	Y	Y
hd final, Departure Headwa	3.47	3.89	4.01
x final, Degree of Utilization	0.14	0.44	0.09

Capacity and Level of Service			
Approach	N	E	W
Lanes	Lane 1	Lane 1	Lane 1
Total Lane Flow Rate	145.65	410.87	77.17
hd, Departure Headway	3.47	3.89	4.01
x, Degree of Utilization	0.14	0.44	0.09
m, Move Up Time	2.00	2.00	2.00
ts, Service Time	1.47	1.89	2.01
Capacity	1037.77	924.26	896.77
Delay	7.03	10.00	7.39
LOS	A	A	A
Q95, 95% Queue Length	0.49	2.38	0.28
Approach Delay	7.03	10.00	7.39
Approach LOS	A	A	A
Intersection Delay		9	
Intersection LOS		A	

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Node 450: Calle Real & Brandon Dr.	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	1.7
Worst Case Delay	10.69
Worst Case LOS	B

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	50.00	5.00	141.00	75.00	5.00	90.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	54.35	5.43	153.26	81.52	5.43	97.83

Pedestrians						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Flow (Ped/hr)	0.00	0.00			0.00	
w, Lane Width (ft)	12.00	12.00			12.00	
Sp, Walking Speed (ft/s)	3.50	3.50			3.50	
fpb, Percent Blockage	0.00	0.00			0.00	

Capacity of Movements below Rank 1						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Rank	3	2	1	1	2	1
vx, Volume	54.35	5.43			5.43	
Conflicting Volume (Veh)	302.72	194.02			234.78	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	302.72	194.02			234.78	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces						
cpx, Potential Capacity	693.19	852.55			1344.43	
Capacity	690.23	852.55			1344.43	

Critical Headway and Follow Up Headway						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
tc,base, Base Critical Head	7.10	6.20			4.10	
tc,base,I, Base Critical Hea						
tc,base,II, Base Critical Hea						
tc,HV, Heavy Vehicles Adju	1.00	1.00			1.00	
Phv, % Heavy Vehicles	0.00	0.00			0.00	
tc,G, Grade Adjustment Fac	0.20	0.10			1.00	
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment	0.70	0.00			0.00	
tc, Critical Headway	6.40	6.20			4.10	
tc,I, Critical Headway (Stag						
tc,II, Critical Headway (Stag						
tf,base, Base Follow-Up He	3.50	3.30			2.20	
tf,hv, Heavy Vehicles Adjus	0.90	0.90			0.90	
tf, Follow-Up Headway	3.50	3.30			2.20	

Delay and Level of Service by Movement						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Volume	54.35	5.43	153.26	81.52	5.43	97.83
cmx, Capacity	690.23	852.55			1344.43	
V / C	0.08	0.01			0.00	
d, Delay	10.69	9.70			7.69	
LOS	B	A			A	
dA, Approach Delay	10.60		0.00		0.40	
Approach LOS	B					
dRank1, Rank 1 Delay			0.00		0.03	

Delay and Level of Service by Lane			
Approach	N	E (Major)	W (Major)
Lane	Lane 1	Lane 1	Lane 1
Movements	L1, R1	T, R1	L1, T
vx, Volume	59.78	234.78	103.26
Flared Storage Size			
cmx, Capacity	702.39		1344.43
V / C	0.09		0.08
Q95, 95% Queue Length	0.28		0.25
d, Delay	10.60		7.69
LOS	B		
dA, Approach Delay	10.60	0.00	0.40
Approach LOS	B		

Node 452: Calle Real & Elwood Station	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	1.72
Worst Case Delay	12.35
Worst Case LOS	B

Volume and Adjustments

Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	69.00	9.00	230.00	140.00	13.00	150.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	75.00	9.78	250.00	152.17	14.13	163.04

Pedestrians

Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Flow (Ped/hr)	0.00	0.00			0.00	
w, Lane Width (ft)	12.00	12.00			12.00	
Sp, Walking Speed (ft/s)	3.50	3.50			3.50	
fpb, Percent Blockage	0.00	0.00			0.00	

Capacity of Movements below Rank 1

Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Rank	3	2	1	1	2	1
vx, Volume	75.00	9.78			14.13	
Conflicting Volume (Veh)	441.30	250.00			402.17	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	441.30	250.00			402.17	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces						
cpx, Potential Capacity	577.24	793.62			1167.44	
Capacity	569.55	793.62			1167.44	

Critical Headway and Follow Up Headway

Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
tc,base, Base Critical Head	7.10	6.20			4.10	
tc,base,I, Base Critical Hea						
tc,base,II, Base Critical Hea						
tc,HV, Heavy Vehicles Adju	1.00	1.00			1.00	
Phv, % Heavy Vehicles	0.00	0.00			0.00	
tc,G, Grade Adjustment Fac	0.20	0.10			1.00	
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment	0.70	0.00			0.00	
tc, Critical Headway	6.40	6.20			4.10	
tc,I, Critical Headway (Stag						
tc,II, Critical Headway (Stag						
tf,base, Base Follow-Up He	3.50	3.30			2.20	
tf,hv, Heavy Vehicles Adjus	0.90	0.90			0.90	
tf, Follow-Up Headway	3.50	3.30			2.20	

Delay and Level of Service by Movement

Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Volume	75.00	9.78	250.00	152.17	14.13	163.04
cmx, Capacity	569.55	793.62			1167.44	
V / C	0.13	0.01			0.01	
d, Delay	12.35	10.56			8.12	
LOS	B	B			A	
dA, Approach Delay	12.14		0.00		0.65	
Approach LOS	B					
dRank1, Rank 1 Delay			0.00		0.11	

Delay and Level of Service by Lane

Approach	N	E (Major)		W (Major)
Lane	Lane 1	Lane 1	Lane 2	Lane 1
Movements	L1, R1			L1, T
vx, Volume	84.78	250.00	152.17	177.17
Flared Storage Size				
cmx, Capacity	588.73			1167.44
V / C	0.14			0.15
Q95, 95% Queue Length	0.50			0.54
d, Delay	12.14			8.12
LOS	B			
dA, Approach Delay	12.14	0.00		0.65
Approach LOS	B			

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Node 461: Storke & US 101 NB Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	C
Critical V/C	0.757
Loss Time	14
Cycle Length	100

Volume and Adjustments by Movement												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	5	312	13	1045	394	137	290	212	151	23	7	306
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	1	78	3	261	99	34	73	53	38	6	2	77
Adjusted Volume	5	312	13	1045	394	137	290	212	151	23	7	306

Volume and Adjustments by Lane Group							
Approach	N		E	S		W	
Lane Group	L	C	C	L	C	L	C
ID	16063	16064	16060	16056	16058	16066	16067
Lanes	L	T, RT	L, LT, RT	L, L	T, RT	L	RT, R
Volume	5	325	1576	290	363	23	313

Saturation Flow Rate							
Approach	N		E	S		W	
Lane Group	16063	16064	16060	16056	16058	16066	16067
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	3	2	2	1	2
Saturation Flow Rate	1600	3200	4800	3200	3200	1600	3200

Capacity Analysis												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	5	312	13	1045	394	137	290	212	151	23	7	306
Volume / Saturation Flow R	0.003	0.102	0.102	0.327	0.328	0.328	0.091	0.113	0.113	0.014	0.098	0.098
Overlap adjusted Volume /	0.003	0.102	0.102	0.327	0.328	0.328	0.091	0.113	0.113	0.014	0.098	0.098
Critical Movement		Y		Y			Y				Y	

Node 462: Storke & US 101 SB Ramp	
Control Type	Signalized
Method	ICU Method 1
LOS	E
Critical V/C	0.922
Loss Time	12
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	317	1356		645	1117	8	5	52
PHF	1.000	1.000		1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	79	339		161	279	2	1	13
Adjusted Volume	317	1356		645	1117	8	5	52

Volume and Adjustments by Lane Group

Approach	N		E	S		W	
Lane Group	L	C		C	R	C	R
ID	16072	16074		16069	16071	16076	16077
Lanes	L, L	T, T		T, T	R	LT	R
Volume	317	1356		645	1117	13	52

Saturation Flow Rate

Approach	N		E	S		W	
Lane Group	16072	16074		16069	16071	16076	16077
Base Saturation Flow Rate	1600	1600		1600	1600	1600	1600
Number of Lanes	2	2		2	1	1	1
Saturation Flow Rate	3200	3200		3200	1600	1600	1600

Capacity Analysis

Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Volume	317	1356		645	1117	8	5	52
Volume / Saturation Flow R	0.099	0.424		0.202	0.698	0.005	0.008	0.033
Overlap adjusted Volume /	0.099	0.424		0.202	0.698	0.005	0.008	0.033
Critical Movement	Y				Y	Y		

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Node 466: Los Carneros & Cremona

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.438
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N	E			S			W		
Movement	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	23	78	529	5	5	5	195	5	876	17
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	6	20	132	1	1	1	49	1	219	4
Adjusted Volume	23	78	529	5	5	5	195	5	876	17

Volume and Adjustments by Lane Group

Approach	N	E		S	W	
Lane Group	R	L	C	C	L	C
ID	16082	16079	16080	16078	16084	16085
Lanes	R, R	L	T, RT	LTR	L	T, RT
Volume	23	78	534	205	5	893

Saturation Flow Rate

Approach	N	E		S	W	
Lane Group	16082	16079	16080	16078	16084	16085
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600
Number of Lanes	2	1	2	1	1	2
Saturation Flow Rate	3200	1600	3200	1600	1600	3200

Capacity Analysis

Approach	N	E			S			W		
Movement	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	23	78	529	5	5	5	195	5	876	17
Volume / Saturation Flow R	0.007	0.049	0.167	0.167	0.003	0.128	0.128	0.003	0.279	0.279
Overlap adjusted Volume /	0.007	0.049	0.167	0.167	0.003	0.128	0.128	0.003	0.279	0.279
Critical Movement	Y	Y			Y				Y	

Node 467: Los Carneros & Calle Koral

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.663
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	118	594	10	7	5	317	9	1172	15	70	6	26
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	30	149	3	2	1	79	2	293	4	18	2	7
Adjusted Volume	118	594	10	7	5	317	9	1172	15	70	6	26

Volume and Adjustments by Lane Group

Approach	N			E			S		W	
Lane Group	L	C	R	L	C	R	L	C	L	C
ID	16090	16091	16093	16087	16088	16089	16096	16097	16094	16095
Lanes	L	T, T	R	L	T	R	L	T, T, RT	L	RT
Volume	118	594	10	7	5	317	9	1187	70	32

Saturation Flow Rate

Approach	N			E			S		W	
Lane Group	16090	16091	16093	16087	16088	16089	16096	16097	16094	16095
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	1	1	1	1	1	3	1	1
Saturation Flow Rate	1600	3200	1600	1600	1600	1600	1600	4800	1600	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	118	594	10	7	5	317	9	1172	15	70	6	26
Volume / Saturation Flow R	0.074	0.186	0.006	0.004	0.003	0.198	0.006	0.247	0.247	0.044	0.020	0.020
Overlap adjusted Volume /	0.074	0.186	0.006	0.004	0.003	0.198	0.006	0.247	0.247	0.044	0.020	0.020
Critical Movement	Y					Y		Y		Y		

Node 489: Hollister & Patterson

Control Type	Signalized
Method	ICU Method 1
LOS	D
Critical V/C	0.812
Loss Time	20
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	578	139	169	29	313	369	41	270	82	345	779	20
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	145	35	42	7	78	92	10	68	21	86	195	5
Adjusted Volume	578	139	169	29	313	369	41	270	82	345	779	20

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	L	C	L	C	L	C	L	C
ID	16103	16105	16100	16101	16111	16112	16107	16109
Lanes	L, L	T, RT	L	T, RT	L	T, RT	L, L	T, RT
Volume	578	308	29	682	41	352	345	799

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	16103	16105	16100	16101	16111	16112	16107	16109
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	2	2	1	2	1	2	2	2
Saturation Flow Rate	3200	3200	1600	3200	1600	3200	3200	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	578	139	169	29	313	369	41	270	82	345	779	20
Volume / Saturation Flow R	0.181	0.096	0.096	0.018	0.213	0.213	0.026	0.110	0.110	0.108	0.250	0.250
Overlap adjusted Volume /	0.181	0.096	0.096	0.018	0.213	0.213	0.026	0.110	0.110	0.108	0.250	0.250
Critical Movement	Y				Y				Y	Y		

Node 493: Hollister & Walnut	
Control Type	Signalized
Method	ICU Method 1
LOS	C
Critical V/C	0.703
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	41	5	40	169	391	55	121	6	82	79	906	189
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	10	1	10	42	98	14	30	2	21	20	227	47
Adjusted Volume	41	5	40	169	391	55	121	6	82	79	906	189

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	16117	16118	16114	16115	16122	16123	16119	16120
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	46	40	169	446	127	82	79	1095

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	16117	16118	16114	16115	16122	16123	16119	16120
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	2	1	1	1	2
Saturation Flow Rate	1600	1600	1600	3200	1600	1600	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	41	5	40	169	391	55	121	6	82	79	906	189
Volume / Saturation Flow R	0.026	0.029	0.025	0.106	0.139	0.139	0.076	0.079	0.051	0.049	0.342	0.342
Overlap adjusted Volume /	0.026	0.029	0.025	0.106	0.139	0.139	0.076	0.079	0.051	0.049	0.342	0.342
Critical Movement	Y			Y				Y				Y

Node 506: Cathedral Oaks 101 SB-Ramp	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	2.53
Worst Case Delay	23.03
Worst Case LOS	C

Volume and Adjustments								
Approach	N (Major)		E	S (Major)		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	120.00	191.00		269.00	172.00	25.00	5.00	40.00
PHF, Peak-hour factor	0.920	0.920		0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	130.43	207.61		292.39	186.96	27.17	5.43	43.48

Pedestrians								
Approach	N (Major)		E	S (Major)		W		
Movement	L1	T		T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00					0.00	0.00	0.00
w, Lane Width (ft)	12.00					12.00	12.00	12.00
Sp, Walking Speed (ft/s)	3.50					3.50	3.50	3.50
fpb, Percent Blockage	0.00					0.00	0.00	0.00

Capacity of Movements below Rank 1								
Approach	N (Major)		E	S (Major)		W		
Movement	L1	T		T	R1	L1	T	R1
Rank	2	1		1	1	4	3	2
vx, Volume	130.43					27.17	5.43	43.48
Conflicting Volume (Veh)	479.35					854.35	947.83	207.61
Conflicting Volume (Ped)	0.00					0.00	0.00	0.00
Conflicting Volume	479.35					854.35	947.83	207.61
Two-Stage Gap Acceptance						No	No	
Number of Storage Spaces								
cpx, Potential Capacity	1093.57					280.81	262.91	837.87
Capacity	1093.57					251.78	227.46	837.87

Critical Headway and Follow Up Headway								
Approach	N (Major)		E	S (Major)		W		
Movement	L1	T		T	R1	L1	T	R1
tc,base, Base Critical Head	4.10					7.10	6.50	6.20
tc,base,I, Base Critical Hea								
tc,base,II, Base Critical Hea								
tc,HV, Heavy Vehicles Adju	1.00					1.00	1.00	1.00
Phv, % Heavy Vehicles	0.00					0.00	0.00	0.00
tc,G, Grade Adjustment Fac	1.00					0.20	0.20	0.10
G, % Grade	0.00		0.00	0.00		0.00		
T3,lt, Geometry Adjustment	0.00					0.00	0.00	0.00
tc, Critical Headway	4.10					7.10	6.50	6.20
tc,I, Critical Headway (Stag								
tc,II, Critical Headway (Stag								
tf,base, Base Follow-Up He	2.20					3.50	4.00	3.30
tf,hv, Heavy Vehicles Adjus	0.90					0.90	0.90	0.90
tf, Follow-Up Headway	2.20					3.50	4.00	3.30

Delay and Level of Service by Movement								
Approach	N (Major)		E	S (Major)		W		
Movement	L1	T		T	R1	L1	T	R1
vx, Volume	130.43	207.61		292.39	186.96	27.17	5.43	43.48
cmx, Capacity	1093.57					251.78	227.46	837.87
V / C	0.12					0.11	0.02	0.05
d, Delay	8.74					21.50	23.03	9.53
LOS	A					C	C	A
dA, Approach Delay	3.37		0.00	0.00		14.77		
Approach LOS			A			B		
dRank1, Rank 1 Delay	0.00			0.00				

Delay and Level of Service by Lane						
Approach	N (Major)		E	S (Major)	W	
Lane	Lane 1	Lane 2		Lane 1	Lane 1	Lane 2
Movements				T, R1	L1, T	
vx, Volume	130.43	207.61		479.35	32.61	43.48
Flared Storage Size						
cmx, Capacity					247.37	
V / C					0.13	
Q95, 95% Queue Length					0.45	
d, Delay					21.76	
LOS					C	
dA, Approach Delay	3.37		0.00	0.00	14.77	
Approach LOS			A		B	

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Node 511: Hollister & Pebble Beach Rd	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	1.41
Worst Case Delay	16.13
Worst Case LOS	C

Volume and Adjustments												
Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	19.00	5.00	16.00	8.00	333.00	28.00	5.00	5.00	5.00	17.00	237.00	10.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	20.65	5.43	17.39	8.70	361.96	30.43	5.43	5.43	5.43	18.48	257.61	10.87

Pedestrians												
Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
w, Lane Width (ft)	12.00	12.00	12.00	12.00			12.00	12.00	12.00	12.00		
Sp, Walking Speed (ft/s)	3.50	3.50	3.50	3.50			3.50	3.50	3.50	3.50		
fpb, Percent Blockage	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		

Capacity of Movements below Rank 1												
Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	2	1	1	4	3	2	2	1	1
vx, Volume	20.65	5.43	17.39	8.70			5.43	5.43	5.43	18.48		
Conflicting Volume (Veh)	682.07	684.78	361.96	268.48			705.98	709.78	263.04	392.39		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	682.07	684.78	361.96	268.48			705.98	709.78	263.04	392.39		
Two-Stage Gap Acceptanc	No	No					No	No				
Number of Storage Spaces												
cpx, Potential Capacity	366.52	373.31	687.26	1306.85			353.26	361.18	780.46	1177.14		
Capacity	352.77	363.89	687.26	1306.85			333.86	352.07	780.46	1177.14		

Critical Headway and Follow Up Headway												
Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Head	7.10	6.50	6.20	4.10			7.10	6.50	6.20	4.10		
tc,base,I, Base Critical Hea												
tc,base,II, Base Critical Hea												
tc,HV, Heavy Vehicles Adju	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00		
Phv, % Heavy Vehicles	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Fac	0.20	0.20	0.10	1.00			0.20	0.20	0.10	1.00		
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc, Critical Headway	7.10	6.50	6.20	4.10			7.10	6.50	6.20	4.10		
tc,I, Critical Headway (Stag												
tc,II, Critical Headway (Stag												
tf,base, Base Follow-Up He	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		
tf,hv, Heavy Vehicles Adjus	0.90	0.90	0.90	0.90			0.90	0.90	0.90	0.90		
tf, Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		

Delay and Level of Service by Movement												
Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	20.65	5.43	17.39	8.70	361.96	30.43	5.43	5.43	5.43	18.48	257.61	10.87
cmx, Capacity	352.77	363.89	687.26	1306.85			333.86	352.07	780.46	1177.14		
V / C	0.06	0.01	0.03	0.01			0.02	0.02	0.01	0.02		
d, Delay	16.10	15.79	11.13	7.77			16.13	15.57	9.96	8.11		
LOS	C	C	B	A			C	C	A	A		
dA, Approach Delay		14.08			0.17			13.88			0.52	
Approach LOS		B						B				
dRank1, Rank 1 Delay					0.00						0.00	

Delay and Level of Service by Lane								
Approach	N		E (Major)		S		W (Major)	
Lane	Lane 1	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2	Lane 3
Movements	L1, T, R1				L1, T, R1			T, R1
vx, Volume	43.48	8.70	361.96	30.43	16.30	18.48	134.24	134.24
Flared Storage Size								
cmx, Capacity	440.14				421.53			
V / C	0.10				0.04			
Q95, 95% Queue Length	0.33				0.12			
d, Delay	14.08				13.88			
LOS	B				B			
dA, Approach Delay	14.08		0.17		13.88		0.52	
Approach LOS	B				B			

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Node 512: Hollister & Palo Alto Dr

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	1.24
Worst Case Delay	15.96
Worst Case LOS	C

Volume and Adjustments

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	5.00	5.00	14.00	27.00	376.00	5.00	5.00	5.00	18.00	5.00	226.00	6.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	5.43	5.43	15.22	29.35	408.70	5.43	5.43	5.43	19.57	5.43	245.65	6.52

Pedestrians

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
w, Lane Width (ft)	12.00	12.00	12.00	12.00			12.00	12.00	12.00	12.00		
Sp, Walking Speed (ft/s)	3.50	3.50	3.50	3.50			3.50	3.50	3.50	3.50		
fpb, Percent Blockage	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		

Capacity of Movements below Rank 1

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	2	1	1	4	3	2	2	1	1
vx, Volume	5.43	5.43	15.22	29.35			5.43	5.43	19.57	5.43		
Conflicting Volume (Veh)	606.52	733.15	207.07	252.17			525.54	732.61	126.09	414.13		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	606.52	733.15	207.07	252.17			525.54	732.61	126.09	414.13		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces												
cpx, Potential Capacity	384.80	350.18	805.37	1324.91			439.51	350.44	907.17	1155.69		
Capacity	363.41	339.67	805.37	1324.91			416.20	339.91	907.17	1155.69		

Critical Headway and Follow Up Headway

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Head	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,base,I, Base Critical Hea												
tc,base,II, Base Critical Hea												
tc,HV, Heavy Vehicles Adju	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00		
Phv, % Heavy Vehicles	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Fac	0.20	0.20	0.10	1.00			0.20	0.20	0.10	1.00		
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc, Critical Headway	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,I, Critical Headway (Stag												
tc,II, Critical Headway (Stag												
tf,base, Base Follow-Up He	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		
tf,hv, Heavy Vehicles Adjus	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00		
tf, Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		

Delay and Level of Service by Movement

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	5.43	5.43	15.22	29.35	408.70	5.43	5.43	5.43	19.57	5.43	245.65	6.52
cmx, Capacity	363.41	339.67	805.37	1324.91			416.20	339.91	907.17	1155.69		
V / C	0.01	0.02	0.02	0.02			0.01	0.02	0.02	0.00		
d, Delay	15.27	15.96	9.83	7.78			13.97	15.91	9.29	8.13		
LOS	C	C	A	A			B	C	A	A		
dA, Approach Delay		12.24			0.51			11.31			0.17	
Approach LOS		B						B				
dRank1, Rank 1 Delay					0.00						0.00	

Delay and Level of Service by Lane

Approach	N	E (Major)			S	W (Major)		
Lane	Lane 1	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2	Lane 3
Movements	L1, T, R1			T, R1	L1, T, R1			T, R1
vx, Volume	26.09	29.35	207.07	207.07	30.43	5.43	126.09	126.09
Flared Storage Size								
cmx, Capacity	523.30				601.31			
V / C	0.05				0.05			
Q95, 95% Queue Length	0.16				0.16			
d, Delay	12.24				11.31			
LOS	B				B			
dA, Approach Delay	12.24		0.51		11.31		0.17	
Approach LOS	B				B			

Node 513: Hollister & Coronado	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	1.61
Worst Case Delay	15.56
Worst Case LOS	C

Volume and Adjustments						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	91.00	399.00	10.00	41.00	235.00	16.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	98.91	433.70	10.87	44.57	255.43	17.39

Pedestrians						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Flow (Ped/hr)	0.00		0.00	0.00		
w, Lane Width (ft)	12.00		12.00	12.00		
Sp, Walking Speed (ft/s)	3.50		3.50	3.50		
fpb, Percent Blockage	0.00		0.00	0.00		

Capacity of Movements below Rank 1						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Rank	2	1	3	2	1	1
vx, Volume	98.91		10.87	44.57		
Conflicting Volume (Veh)	272.83		678.80	136.41		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	272.83		678.80	136.41		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces						
cpx, Potential Capacity	1302.08		389.80	893.53		
Capacity	1302.08		356.13	893.53		

Critical Headway and Follow Up Headway						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
tc,base, Base Critical Head	4.10		7.50	6.90		
tc,base,I, Base Critical Hea						
tc,base,II, Base Critical Hea						
tc,HV, Heavy Vehicles Adju	2.00		2.00	2.00		
Phv, % Heavy Vehicles	0.00		0.00	0.00		
tc,G, Grade Adjustment Fac	1.00		0.20	0.10		
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment	0.00		0.70	0.00		
tc, Critical Headway	4.10		6.80	6.90		
tc,I, Critical Headway (Stag						
tc,II, Critical Headway (Stag						
tf,base, Base Follow-Up He	2.20		3.50	3.30		
tf,hv, Heavy Vehicles Adjus	1.00		1.00	1.00		
tf, Follow-Up Headway	2.20		3.50	3.30		

Delay and Level of Service by Movement						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Volume	98.91	433.70	10.87	44.57	255.43	17.39
cmx, Capacity	1302.08		356.13	893.53		
V / C	0.08		0.03	0.05		
d, Delay	7.99		15.56	9.49		
LOS	A		C	A		
dA, Approach Delay	1.48		10.68		0.00	
Approach LOS			B			
dRank1, Rank 1 Delay	0.00				0.00	

Delay and Level of Service by Lane						
Approach	E (Major)			S	W (Major)	
Lane	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2
Movements				L1, R1		T, R1
vx, Volume	98.91	216.85	216.85	55.43	136.41	136.41
Flared Storage Size						
cmx, Capacity				689.52		
V / C				0.08		
Q95, 95% Queue Length				0.26		
d, Delay				10.68		
LOS				B		
dA, Approach Delay	1.48			10.68	0.00	
Approach LOS				B		

Node 515: Hollister & Cannon Green	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	1.93
Worst Case Delay	35.7
Worst Case LOS	E

Volume and Adjustments						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	151.00	759.00	13.00	86.00	482.00	23.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	164.13	825.00	14.13	93.48	523.91	25.00

Pedestrians						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Flow (Ped/hr)	0.00		0.00	0.00		
w, Lane Width (ft)	12.00		12.00	12.00		
Sp, Walking Speed (ft/s)	3.50		3.50	3.50		
fpb, Percent Blockage	0.00		0.00	0.00		

Capacity of Movements below Rank 1						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Rank	2	1	3	2	1	1
vx, Volume	164.13		14.13	93.48		
Conflicting Volume (Veh)	548.91		1277.17	274.46		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	548.91		1277.17	274.46		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces						
cpx, Potential Capacity	1030.83		160.92	729.15		
Capacity	1030.83		127.68	729.15		

Critical Headway and Follow Up Headway						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
tc,base, Base Critical Head	4.10		7.50	6.90		
tc,base,I, Base Critical Hea						
tc,base,II, Base Critical Hea						
tc,HV, Heavy Vehicles Adju	2.00		2.00	2.00		
Phv, % Heavy Vehicles	0.00		0.00	0.00		
tc,G, Grade Adjustment Fac	1.00		0.20	0.10		
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment	0.00		0.70	0.00		
tc, Critical Headway	4.10		6.80	6.90		
tc,I, Critical Headway (Stag						
tc,II, Critical Headway (Stag						
tf,base, Base Follow-Up He	2.20		3.50	3.30		
tf,hv, Heavy Vehicles Adjus	1.00		1.00	1.00		
tf, Follow-Up Headway	2.20		3.50	3.30		

Delay and Level of Service by Movement						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Volume	164.13	825.00	14.13	93.48	523.91	25.00
cmx, Capacity	1030.83		127.68	729.15		
V / C	0.16		0.11	0.13		
d, Delay	9.15		35.70	12.44		
LOS	A		E	B		
dA, Approach Delay	1.52		15.49		0.00	
Approach LOS			C			
dRank1, Rank 1 Delay	0.00				0.00	

Delay and Level of Service by Lane						
Approach	E (Major)			S	W (Major)	
Lane	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2
Movements				L1, R1		T, R1
vx, Volume	164.13	412.50	412.50	107.61	274.46	274.46
Flared Storage Size						
cmx, Capacity				450.49		
V / C				0.24		
Q95, 95% Queue Length				0.94		
d, Delay				15.49		
LOS				C		
dA, Approach Delay	1.52			15.49	0.00	
Approach LOS				C		

Node 517: Hollister & Pacific Oaks

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.498
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E		S		W		
Movement	L1	T	R1	L1	T	L1	R1	L1	T	R1
Base Volume	5	7	5	124	737	182	68	25	572	89
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	1	2	1	31	184	46	17	6	143	22
Adjusted Volume	5	7	5	124	737	182	68	25	572	89

Volume and Adjustments by Lane Group

Approach	N	E		S		W	
Lane Group	C	L	C	L	R	L	C
ID	16127	16124	16125	16131	16132	16128	16129
Lanes	LTR	L	T, T	L	R	L	T, RT
Volume	17	124	737	182	68	25	661

Saturation Flow Rate

Approach	N	E		S		W	
Lane Group	16127	16124	16125	16131	16132	16128	16129
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	2	1	1	1	2
Saturation Flow Rate	1600	1600	3200	1600	1600	1600	3200

Capacity Analysis

Approach	N			E		S		W		
Movement	L1	T	R1	L1	T	L1	R1	L1	T	R1
Volume	5	7	5	124	737	182	68	25	572	89
Volume / Saturation Flow R	0.003	0.011	0.011	0.077	0.230	0.114	0.043	0.016	0.207	0.207
Overlap adjusted Volume /	0.003	0.011	0.011	0.077	0.230	0.114	0.043	0.016	0.207	0.207
Critical Movement				Y		Y			Y	

Node 518: Hollister & Santa Felicia

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	131.71
Worst Case Delay	1579.24
Worst Case LOS	F

Volume and Adjustments

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	59.00	5.00	20.00	152.00	820.00	47.00	54.00	5.00	126.00	13.00	600.00	60.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	64.13	5.43	21.74	165.22	891.30	51.09	58.70	5.43	136.96	14.13	652.17	65.22

Pedestrians

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
w, Lane Width (ft)	12.00	12.00	12.00	12.00			12.00	12.00	12.00	12.00		
Sp, Walking Speed (ft/s)	3.50	3.50	3.50	3.50			3.50	3.50	3.50	3.50		
fpb, Percent Blockage	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		

Capacity of Movements below Rank 1

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	2	1	1	4	3	2	2	1	1
vx, Volume	64.13	5.43	21.74	165.22			58.70	5.43	136.96	14.13		
Conflicting Volume (Veh)	1604.35	1992.93	471.20	717.39			1491.85	1985.87	358.70	942.39		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1604.35	1992.93	471.20	717.39			1491.85	1985.87	358.70	942.39		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces												
cpx, Potential Capacity	71.81	61.23	544.49	892.84			87.09	61.86	643.66	735.92		
Capacity	40.54	44.33	544.49	892.84			59.90	44.79	643.66	735.92		

Critical Headway and Follow Up Headway

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Head	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,base,I, Base Critical Hea												
tc,base,II, Base Critical Hea												
tc,HV, Heavy Vehicles Adju	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00		
Phv, % Heavy Vehicles	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Fac	0.20	0.20	0.10	1.00			0.20	0.20	0.10	1.00		
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc, Critical Headway	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,I, Critical Headway (Stag												
tc,II, Critical Headway (Stag												
tf,base, Base Follow-Up He	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		
tf,hv, Heavy Vehicles Adjus	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00		
tf, Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		

Delay and Level of Service by Movement

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	64.13	5.43	21.74	165.22	891.30	51.09	58.70	5.43	136.96	14.13	652.17	65.22
cmx, Capacity	40.54	44.33	544.49	892.84			59.90	44.79	643.66	735.92		
V / C	1.58	0.12	0.04	0.19			0.98	0.12	0.21	0.02		
d, Delay	1579.24	1571.64	1497.05	9.95			715.85	736.13	661.34	9.99		
LOS	F	F	F	A			F	F	F	A		
dA, Approach Delay		1559.22			1.48			679.28			0.19	
Approach LOS		F						F				
dRank1, Rank 1 Delay					0.00						0.00	

Delay and Level of Service by Lane

Approach	N	E (Major)			S	W (Major)		
Lane	Lane 1	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2	Lane 3
Movements	L1, T, R1			T, R1	L1, T, R1			T, R1
vx, Volume	91.30	165.22	471.20	471.20	201.09	14.13	358.70	358.70
Flared Storage Size								
cmx, Capacity	52.34				153.03			
V / C	1.74				1.31			
Q95, 95% Queue Length	24.97				33.13			
d, Delay	1559.22				679.28			
LOS	F				F			
dA, Approach Delay	1559.22		1.48		679.28		0.19	
Approach LOS	F				F			

Node 521: Storke & Marketplace

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.57
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	49	556	288	72	39	56	133	636	59	231	31	96
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	12	139	72	18	10	14	33	159	15	58	8	24
Adjusted Volume	49	556	288	72	39	56	133	636	59	231	31	96

Volume and Adjustments by Lane Group

Approach	N			E		S		W
Lane Group	L	C	R	C	R	L	C	C
ID	16135	16136	16138	16133	16134	16141	16142	16139
Lanes	L	T, T	R	LT	R	L	T, RT	L, LTR
Volume	49	556	288	111	56	133	695	358

Saturation Flow Rate

Approach	N				E		S			W
Lane Group	16135		16136	16138	16133	16134	16141		16142	16139
Base Saturation Flow Rate	1600		1600	1600	1600	1600	1600		1600	1600
Number of Lanes	1		2	1	1	1	1		2	2
Saturation Flow Rate	1520	500	3200	1600	1600	1600	1520	632	3200	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	49	556	288	72	39	56	133	636	59	231	31	96
Volume / Saturation Flow R	0.031	0.174	0.180	0.045	0.069	0.035	0.083	0.217	0.217	0.072	0.112	0.112
Overlap adjusted Volume /	0.031	0.174	0.180	0.045	0.069	0.035	0.083	0.217	0.217	0.072	0.112	0.112
Critical Movement			Y	Y			Y					Y

Node 522: Hollister & Storke

Control Type	Signalized
Method	ICU Method 1
LOS	F
Critical V/C	1.066
Loss Time	20
Cycle Length	100

Volume and Adjustments by Movement												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	110	588	685	227	466	311	80	728	145	699	334	53
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	28	147	171	57	117	78	20	182	36	175	84	13
Adjusted Volume	110	588	685	227	466	311	80	728	145	699	334	53

Volume and Adjustments by Lane Group												
Approach	N			E			S			W		
Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
ID	16149	16151	16153	16144	16146	16148	16159	16161	16163	16154	16156	16158
Lanes	L, L	T, T	R	L, L	T, T	R	L, L	T, T	R	L, L	T, T	R
Volume	110	588	685	227	466	311	80	728	145	699	334	53

Saturation Flow Rate												
Approach	N			E			S			W		
Lane Group	16149	16151	16153	16144	16146	16148	16159	16161	16163	16154	16156	16158
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Saturation Flow Rate	3200	3200	1600	3200	3200	1600	3200	3200	1600	3200	3200	1600

Capacity Analysis												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	110	588	685	227	466	311	80	728	145	699	334	53
Volume / Saturation Flow R	0.034	0.184	0.428	0.071	0.146	0.194	0.025	0.228	0.091	0.218	0.104	0.033
Overlap adjusted Volume /	0.034	0.184	0.428	0.071	0.146	0.194	0.025	0.228	0.091	0.218	0.104	0.033
Critical Movement			Y			Y	Y			Y		

Node 524: Hollister & Coromar Project Access

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.453
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	11	5	65	12	829	11	40	5	67	24	558	11
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	3	1	16	3	207	3	10	1	17	6	140	3
Adjusted Volume	11	5	65	12	829	11	40	5	67	24	558	11

Volume and Adjustments by Lane Group

Approach	N	E		S		W		
Lane Group	C	L	C	C	R	L	C	R
ID	16169	16166	16167	16164	16165	16170	16171	16173
Lanes	LTR	L	T, RT	LT	R	L	T, T	R
Volume	81	12	840	45	67	24	558	11

Saturation Flow Rate

Approach	N	E		S		W		
Lane Group	16169	16166	16167	16164	16165	16170	16171	16173
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	2	1	1	1	2	1
Saturation Flow Rate	1600	1600	3200	1600	1600	1600	3200	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	11	5	65	12	829	11	40	5	67	24	558	11
Volume / Saturation Flow R	0.007	0.051	0.051	0.007	0.263	0.263	0.025	0.028	0.042	0.015	0.174	0.007
Overlap adjusted Volume /	0.007	0.051	0.051	0.007	0.263	0.263	0.025	0.028	0.042	0.015	0.174	0.007
Critical Movement		Y			Y		Y			Y		

Node 525: Hollister & Los Carneros	
Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.696
Loss Time	20
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	44	443	127	127	642	29	229	546	110	243	385	87
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	11	111	32	32	161	7	57	137	28	61	96	22
Adjusted Volume	44	443	127	127	642	29	229	546	110	243	385	87

Volume and Adjustments by Lane Group

Approach	N			E		S			W	
Lane Group	L	C	R	L	C	L	C	R	L	C
ID	16177	16178	16180	16174	16175	16185	16187	16189	16181	16183
Lanes	L	T, T	R	L	T, RT	L, L	T, T	R	L, L	T, RT
Volume	44	443	127	127	671	229	546	110	243	472

Saturation Flow Rate

Approach	N			E		S			W	
Lane Group	16177	16178	16180	16174	16175	16185	16187	16189	16181	16183
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	1	1	2	2	2	1	2	2
Saturation Flow Rate	1600	3200	1600	1600	3200	3200	3200	1600	3200	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	44	443	127	127	642	29	229	546	110	243	385	87
Volume / Saturation Flow R	0.028	0.138	0.079	0.079	0.210	0.210	0.072	0.171	0.069	0.076	0.147	0.147
Overlap adjusted Volume /	0.028	0.138	0.079	0.079	0.210	0.210	0.072	0.171	0.069	0.076	0.147	0.147
Critical Movement		Y			Y		Y			Y		

Node 528: Hollister & Los Carneros Way	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.479
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement						
Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Base Volume	46	51	696	187	53	354
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	12	13	174	47	13	89
Adjusted Volume	46	51	696	187	53	354

Volume and Adjustments by Lane Group				
Approach	N	E	W	
Lane Group	C	C	L	C
ID	16192	16190	16195	16196
Lanes	L, LTR, R	T, RT	L	T, T
Volume	97	883	53	354

Saturation Flow Rate				
Approach	N	E	W	
Lane Group	16192	16190	16195	16196
Base Saturation Flow Rate	1600	1600	1600	1600
Number of Lanes	3	2	1	2
Saturation Flow Rate	4800	3200	1600	3200

Capacity Analysis						
Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Volume	46	51	696	187	53	354
Volume / Saturation Flow R	0.014	0.020	0.276	0.276	0.033	0.111
Overlap adjusted Volume /	0.014	0.020	0.276	0.276	0.033	0.111
Critical Movement		Y	Y		Y	

Node 530: Hollister & Aero Camino	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.497
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	72	5	91	5	825	21	24	5	6	17	525	13
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	18	1	23	1	206	5	6	1	2	4	131	3
Adjusted Volume	72	5	91	5	825	21	24	5	6	17	525	13

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	16203	16204	16200	16201	16198	16199	16205	16206
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	77	91	5	846	29	6	17	538

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	16203	16204	16200	16201	16198	16199	16205	16206
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	2	1	1	1	2
Saturation Flow Rate	1600	1600	1600	3200	1600	1600	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	72	5	91	5	825	21	24	5	6	17	525	13
Volume / Saturation Flow R	0.045	0.048	0.057	0.003	0.264	0.264	0.015	0.018	0.004	0.011	0.168	0.168
Overlap adjusted Volume /	0.045	0.048	0.057	0.003	0.264	0.264	0.015	0.018	0.004	0.011	0.168	0.168
Critical Movement			Y		Y		Y			Y		

Node 553: Storke & Santa Felicia	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	3.19
Worst Case Delay	60.2
Worst Case LOS	F

Volume and Adjustments						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
Base Volume	689.00	36.00	170.00	731.00	16.00	148.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	748.91	39.13	184.78	794.57	17.39	160.87

Pedestrians						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
vx, Flow (Ped/hr)			0.00		0.00	0.00
w, Lane Width (ft)			12.00		12.00	12.00
Sp, Walking Speed (ft/s)			3.50		3.50	3.50
fpb, Percent Blockage			0.00		0.00	0.00

Capacity of Movements below Rank 1						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
Rank	1	1	2	1	3	2
vx, Volume			184.78		17.39	160.87
Conflicting Volume (Veh)			788.04		1535.33	394.02
Conflicting Volume (Ped)			0.00		0.00	0.00
Conflicting Volume			788.04		1535.33	394.02
Two-Stage Gap Acceptance					No	
Number of Storage Spaces						
cpx, Potential Capacity			840.41		108.97	610.77
Capacity			840.41		78.22	610.77

Critical Headway and Follow Up Headway						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
tc,base, Base Critical Head			4.10		7.50	6.90
tc,base,I, Base Critical Hea						
tc,base,II, Base Critical Hea						
tc,HV, Heavy Vehicles Adju			2.00		2.00	2.00
Phv, % Heavy Vehicles			0.00		0.00	0.00
tc,G, Grade Adjustment Fac			1.00		0.20	0.10
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment			0.00		0.70	0.00
tc, Critical Headway			4.10		6.80	6.90
tc,I, Critical Headway (Stag						
tc,II, Critical Headway (Stag						
tf,base, Base Follow-Up He			2.20		3.50	3.30
tf,hv, Heavy Vehicles Adjus			1.00		1.00	1.00
tf, Follow-Up Headway			2.20		3.50	3.30

Delay and Level of Service by Movement						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
vx, Volume	748.91	39.13	184.78	794.57	17.39	160.87
cmx, Capacity			840.41		78.22	610.77
V / C			0.22		0.22	0.26
d, Delay			10.49		60.20	20.07
LOS			B		F	C
dA, Approach Delay	0.00		1.98		23.98	
Approach LOS					C	
dRank1, Rank 1 Delay	0.00		0.00			

Delay and Level of Service by Lane						
Approach	N (Major)		S (Major)			W
Lane	Lane 1	Lane 2	Lane 1	Lane 2	Lane 3	Lane 1
Movements		T, R1				L1, R1
vx, Volume	394.02	394.02	184.78	397.28	397.28	178.26
Flared Storage Size						
cmx, Capacity						367.00
V / C						0.49
Q95, 95% Queue Length						2.75
d, Delay						23.98
LOS						C
dA, Approach Delay	0.00		1.98			23.98
Approach LOS						C

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Node 562: Storke & Phelps	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.526
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	77	543	140	5	11	68	50	625	6	125	7	37
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	19	136	35	1	3	17	13	156	2	31	2	9
Adjusted Volume	77	543	140	5	11	68	50	625	6	125	7	37

Volume and Adjustments by Lane Group

Approach	N		E	S		W	
Lane Group	L	C	C	L	C	L	C
ID	16209	16210	16208	16214	16215	16212	16213
Lanes	L	T, RT	LTR	L	T, RT	L	RT
Volume	77	683	84	50	631	125	44

Saturation Flow Rate

Approach	N		E	S		W	
Lane Group	16209	16210	16208	16214	16215	16212	16213
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	1	1	2	1	1
Saturation Flow Rate	1600	3200	1600	1600	3200	1600	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	77	543	140	5	11	68	50	625	6	125	7	37
Volume / Saturation Flow R	0.048	0.213	0.213	0.003	0.052	0.053	0.031	0.197	0.197	0.078	0.028	0.028
Overlap adjusted Volume /	0.048	0.213	0.213	0.003	0.052	0.053	0.031	0.197	0.197	0.078	0.028	0.028
Critical Movement	Y				Y			Y		Y		

Node 564: Mesa & Los Carneros	
Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.661
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	93	517	39	124	22	221	24	379	50	16	16	16
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	23	129	10	31	6	55	6	95	13	4	4	4
Adjusted Volume	93	517	39	124	22	221	24	379	50	16	16	16

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	L	C	C	R	L	C	C	R
ID	16219	16220	16217	16218	16223	16224	16221	16222
Lanes	L	RT	LT	R	L	RT	LT	R
Volume	93	556	146	221	24	429	32	16

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	16219	16220	16217	16218	16223	16224	16221	16222
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	1	1	1	1	1
Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	93	517	39	124	22	221	24	379	50	16	16	16
Volume / Saturation Flow R	0.058	0.347	0.348	0.077	0.091	0.138	0.015	0.268	0.268	0.010	0.020	0.010
Overlap adjusted Volume /	0.058	0.347	0.348	0.077	0.091	0.138	0.015	0.268	0.268	0.010	0.020	0.010
Critical Movement			Y			Y	Y			Y		

Node 592: Los Caneros & El Collegio	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.597
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement						
Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Base Volume	291	363	418	250	203	389
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	73	91	105	63	51	97
Adjusted Volume	291	363	418	250	203	389

Volume and Adjustments by Lane Group						
Approach	N		E		W	
Lane Group	L	R	C	R	L	C
ID	16228	16230	16225	16227	16231	16233
Lanes	L, L	R	T, T	R	L, L	T, T
Volume	291	363	418	250	203	389

Saturation Flow Rate						
Approach	N		E		W	
Lane Group	16228	16230	16225	16227	16231	16233
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600
Number of Lanes	2	1	2	1	2	2
Saturation Flow Rate	3200	1600	3200	1600	3200	3200

Capacity Analysis						
Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Volume	291	363	418	250	203	389
Volume / Saturation Flow R	0.091	0.227	0.131	0.156	0.063	0.122
Overlap adjusted Volume /	0.091	0.227	0.131	0.156	0.063	0.122
Critical Movement		Y		Y	Y	

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Node 596: El Colegio & Stadium

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.285
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		E		W	
Movement	T	R1	T	R1	L1	T
Base Volume	17	86	361	41	95	388
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	4	22	90	10	24	97
Adjusted Volume	17	86	361	41	95	388

Volume and Adjustments by Lane Group

Approach	N	E	W	
Lane Group	C	C	L	C
ID	16237	16235	16238	16239
Lanes	RT	T, RT	L	T, T
Volume	103	402	95	388

Saturation Flow Rate

Approach	N	E	W	
Lane Group	16237	16235	16238	16239
Base Saturation Flow Rate	1600	1600	1600	1600
Number of Lanes	1	2	1	2
Saturation Flow Rate	1600	3200	1600	3200

Capacity Analysis

Approach	N		E		W	
Movement	T	R1	T	R1	L1	T
Volume	17	86	361	41	95	388
Volume / Saturation Flow R	0.064	0.064	0.126	0.126	0.059	0.121
Overlap adjusted Volume /	0.064	0.064	0.126	0.126	0.059	0.121
Critical Movement			Y		Y	

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Node 617: Los Caneros & Castilian

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.552
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	6	477	66	5	5	28	18	566	5	313	5	32
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	2	119	17	1	1	7	5	142	1	78	1	8
Adjusted Volume	6	477	66	5	5	28	18	566	5	313	5	32

Volume and Adjustments by Lane Group

Approach	N		E	S		W	
Lane Group	L	C	C	L	C	C	R
ID	16242	16243	16241	16247	16248	16245	16246
Lanes	L	T, RT	LTR	L	T, RT	LT	R
Volume	6	543	38	18	571	318	32

Saturation Flow Rate

Approach	N		E	S		W	
Lane Group	16242	16243	16241	16247	16248	16245	16246
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	1	1	2	1	1
Saturation Flow Rate	1600	3200	1600	1600	3200	1600	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	6	477	66	5	5	28	18	566	5	313	5	32
Volume / Saturation Flow R	0.004	0.170	0.170	0.003	0.024	0.024	0.011	0.178	0.178	0.196	0.199	0.020
Overlap adjusted Volume /	0.004	0.170	0.170	0.003	0.024	0.024	0.011	0.178	0.178	0.196	0.199	0.020
Critical Movement	Y					Y		Y		Y		

Node 620: Hollister & St Joseph	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	0.19
Worst Case Delay	23.64
Worst Case LOS	C

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	5.00	9.00	559.00	5.00	9.00	921.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	5.43	9.78	607.61	5.43	9.78	1001.09

Pedestrians						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Flow (Ped/hr)	0.00	0.00			0.00	
w, Lane Width (ft)	12.00	12.00			12.00	
Sp, Walking Speed (ft/s)	3.50	3.50			3.50	
fpb, Percent Blockage	0.00	0.00			0.00	

Capacity of Movements below Rank 1						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Rank	3	2	1	1	2	1
vx, Volume	5.43	9.78			9.78	
Conflicting Volume (Veh)	1130.43	306.52			613.04	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	1130.43	306.52			613.04	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces						
cpx, Potential Capacity	200.41	695.39			976.06	
Capacity	197.62	695.39			976.06	

Critical Headway and Follow Up Headway						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
tc,base, Base Critical Head	7.50	6.90			4.10	
tc,base,I, Base Critical Hea						
tc,base,II, Base Critical Hea						
tc,HV, Heavy Vehicles Adju	2.00	2.00			2.00	
Phv, % Heavy Vehicles	0.00	0.00			0.00	
tc,G, Grade Adjustment Fac	0.20	0.10			1.00	
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment	0.70	0.00			0.00	
tc, Critical Headway	6.80	6.90			4.10	
tc,I, Critical Headway (Stag						
tc,II, Critical Headway (Stag						
tf,base, Base Follow-Up He	3.50	3.30			2.20	
tf,hv, Heavy Vehicles Adjus	1.00	1.00			1.00	
tf, Follow-Up Headway	3.50	3.30			2.20	

Delay and Level of Service by Movement						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Volume	5.43	9.78	607.61	5.43	9.78	1001.09
cmx, Capacity	197.62	695.39			976.06	
V / C	0.03	0.01			0.01	
d, Delay	23.64	10.60			8.73	
LOS	C	B			A	
dA, Approach Delay	15.26		0.00		0.08	
Approach LOS	C					
dRank1, Rank 1 Delay			0.00		0.00	

Delay and Level of Service by Lane						
Approach	N	E (Major)		W (Major)		
Lane	Lane 1	Lane 1	Lane 2	Lane 1	Lane 2	Lane 3
Movements	L1, R1		T, R1			
vx, Volume	15.22	306.52	306.52	9.78	500.54	500.54
Flared Storage Size						
cmx, Capacity	366.08					
V / C	0.04					
Q95, 95% Queue Length	0.13					
d, Delay	15.26					
LOS	C					
dA, Approach Delay	15.26	0.00		0.08		
Approach LOS	C					

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Node 624: Cathedral Oaks & Calle Real

Control Type	AWSC
Method	HCM 6th Edition
Average Delay	10.62
Average LOS	B

Volume and Adjustments

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	5.00	81.00	25.00	173.00	74.00	5.00	155.00	87.00	77.00	12.00	5.00	37.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
Flow Rate	5.43	88.04	27.17	188.04	80.43	5.43	168.48	94.57	83.70	13.04	5.43	40.22
Geometry Group	5			5			5			4b		

Saturation Headway

Approach	N		E		S		W
Lanes	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1
Total Lane Flow Rate	5.43	115.22	188.04	85.87	168.48	178.26	58.70
Left Turn Flow Rate	5.43	0.00	188.04	0.00	168.48	0.00	13.04
Right Turn Flow Rate	0.00	27.17	0.00	5.43	0.00	83.70	40.22
PLT, Proportion LT	1.00	0.00	1.00	0.00	1.00	0.00	0.22
PRT, Proportion RT	0.00	0.24	0.00	0.06	0.00	0.47	0.69
PHV, Proportion HV	0.00	0.00	0.00	0.00	0.00	0.00	0.00
hLT,adj, Headway adjustme	0.50		0.50		0.50		0.20
hRT,adj, Headway adjustm	-0.70		-0.70		-0.70		-0.60
hHV,adj, Headway adjustm	1.70		1.70		1.70		1.70
hadj, Headway adjustment	0.50	-0.17	0.50	-0.04	0.50	-0.33	-0.37

Departure Headway

Approach	N		E		S		W
Lanes	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1
Total Lane Flow Rate	5.43	115.22	188.04	85.87	168.48	178.26	58.70
hd initial	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x initial	0.00	0.10	0.17	0.08	0.15	0.16	0.05
hd, iteration 1	5.76	5.10	5.76	5.22	5.62	4.79	5.07
Difference, iteration 1	2.56	1.90	2.56	2.02	2.42	1.59	1.87
hd, iteration 2	6.32	5.65	6.19	5.65	6.05	5.22	5.64
Difference, iteration 2	0.55	0.55	0.43	0.43	0.43	0.43	0.57
hd, iteration 3	6.43	5.76	6.29	5.75	6.14	5.31	5.76
Difference, iteration 3	0.11	0.11	0.10	0.10	0.09	0.09	0.12
hd, iteration 4	6.46	5.78	6.31	5.77	6.16	5.33	5.79
Difference, iteration 4	0.02	0.02	0.02	0.02	0.02	0.02	0.03
Convergence	Y	Y	Y	Y	Y	Y	Y
hd final, Departure Headwa	6.46	5.78	6.31	5.77	6.16	5.33	5.79
x final, Degree of Utilization	0.01	0.19	0.33	0.14	0.29	0.26	0.09

Capacity and Level of Service

Approach	N		E		S		W
Lanes	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1
Total Lane Flow Rate	5.43	115.22	188.04	85.87	168.48	178.26	58.70
hd, Departure Headway	6.46	5.78	6.31	5.77	6.16	5.33	5.79
x, Degree of Utilization	0.01	0.19	0.33	0.14	0.29	0.26	0.09
m, Move Up Time	2.30	2.30	2.30	2.30	2.30	2.30	2.00
ts, Service Time	4.16	3.48	4.01	3.47	3.86	3.03	3.79
Capacity	557.47	621.66	569.82	623.56	584.08	675.44	621.00
Delay	9.22	9.80	12.11	9.39	11.36	9.93	9.39
LOS	A	A	B	A	B	A	A
Q95, 95% Queue Length	0.03	0.68	1.47	0.48	1.21	1.07	0.31
Approach Delay	9.77		11.26		10.62		9.39
Approach LOS	A		B		B		A
Intersection Delay	10.62						
Intersection LOS	B						

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Node 630: Hollister & Marketplace/Village Way

Control Type	Signalized
Method	ICU Method 1
LOS	C
Critical V/C	0.714
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	5	5	5	371	925	5	73	5	333	5	712	47
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	1	1	1	93	231	1	18	1	83	1	178	12
Adjusted Volume	5	5	5	371	925	5	73	5	333	5	712	47

Volume and Adjustments by Lane Group

Approach	N	E			S		W	
Lane Group	C	L	C	R	C	R	L	C
ID	16257	16252	16254	16256	16250	16251	16258	16259
Lanes	LTR	L, L	T, T	R	LT	R	L	T, RT
Volume	15	371	925	5	78	333	5	759

Saturation Flow Rate

Approach	N	E			S		W	
Lane Group	16257	16252	16254	16256	16250	16251	16258	16259
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	2	1	1	1	1	2
Saturation Flow Rate	1600	3200	3200	1600	1600	1600	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	5	5	5	371	925	5	73	5	333	5	712	47
Volume / Saturation Flow R	0.003	0.009	0.009	0.116	0.289	0.003	0.046	0.049	0.208	0.003	0.237	0.237
Overlap adjusted Volume /	0.003	0.009	0.009	0.116	0.289	0.003	0.046	0.049	0.208	0.003	0.237	0.237
Critical Movement	Y			Y					Y			Y

Node 636: Hollister & Cathedral Oaks	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	2.75
Worst Case Delay	15.86
Worst Case LOS	C

Volume and Adjustments						
Approach	N (Major)		E (Major)		W	
Movement	L1	R1	T	R1	L1	T
Base Volume	208.00	70.00	35.00	348.00	80.00	59.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	226.09	76.09	38.04	378.26	86.96	64.13

Pedestrians						
Approach	N (Major)		E (Major)		W	
Movement	L1	R1	T	R1	L1	T
vx, Flow (Ped/hr)			0.00		0.00	0.00
w, Lane Width (ft)			12.00		12.00	12.00
Sp, Walking Speed (ft/s)			3.50		3.50	3.50
fpb, Percent Blockage			0.00		0.00	0.00

Capacity of Movements below Rank 1						
Approach	N (Major)		E (Major)		W	
Movement	L1	R1	T	R1	L1	T
Rank	1	1	2	1	3	2
vx, Volume			38.04		86.96	64.13
Conflicting Volume (Veh)			264.13		680.43	264.13
Conflicting Volume (Ped)			0.00		0.00	0.00
Conflicting Volume			264.13		680.43	264.13
Two-Stage Gap Acceptance					No	
Number of Storage Spaces						
cpx, Potential Capacity			1311.65		419.42	644.61
Capacity			1311.65		418.47	644.61

Critical Headway and Follow Up Headway						
Approach	N (Major)		E (Major)		W	
Movement	L1	R1	T	R1	L1	T
tc,base, Base Critical Head			4.10		7.10	6.50
tc,base,I, Base Critical Hea						
tc,base,II, Base Critical Hea						
tc,HV, Heavy Vehicles Adju			1.00		1.00	1.00
Phv, % Heavy Vehicles			0.00		0.00	0.00
tc,G, Grade Adjustment Fac			1.00		0.20	0.20
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment			0.00		0.70	0.00
tc, Critical Headway			4.10		6.40	6.50
tc,I, Critical Headway (Stag						
tc,II, Critical Headway (Stag						
tf,base, Base Follow-Up He			2.20		3.50	4.00
tf,hv, Heavy Vehicles Adjus			0.90		0.90	0.90
tf, Follow-Up Headway			2.20		3.50	4.00

Delay and Level of Service by Movement						
Approach	N (Major)		E (Major)		W	
Movement	L1	R1	T	R1	L1	T
vx, Volume	226.09	76.09	38.04	378.26	86.96	64.13
cmx, Capacity			1311.65		418.47	644.61
V / C			0.03		0.21	0.10
d, Delay			7.83		15.86	11.20
LOS			A		C	B
dA, Approach Delay	0.00		0.72		13.88	
Approach LOS					B	
dRank1, Rank 1 Delay	0.00		0.00			

Delay and Level of Service by Lane						
Approach	N (Major)		E (Major)		W	
Lane	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
Movements						
vx, Volume	226.09	76.09	38.04	378.26	86.96	64.13
Flared Storage Size						
cmx, Capacity						
V / C						
Q95, 95% Queue Length						
d, Delay						
LOS						
dA, Approach Delay	0.00		0.72		13.88	
Approach LOS					B	

Node 717: Hollister & Entrance	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.55
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	91	5	17	250	509	11	20	5	142	5	268	47
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	23	1	4	63	127	3	5	1	36	1	67	12
Adjusted Volume	91	5	17	250	509	11	20	5	142	5	268	47

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	16266	16267	16263	16264	16261	16262	16268	16269
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	96	17	250	520	25	142	5	315

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	16266	16267	16263	16264	16261	16262	16268	16269
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	2	1	1	1	2
Saturation Flow Rate	1600	1600	1600	3200	1600	1600	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	91	5	17	250	509	11	20	5	142	5	268	47
Volume / Saturation Flow R	0.057	0.060	0.011	0.156	0.163	0.163	0.013	0.016	0.089	0.003	0.098	0.098
Overlap adjusted Volume /	0.057	0.060	0.011	0.156	0.163	0.163	0.013	0.016	0.089	0.003	0.098	0.098
Critical Movement	Y			Y					Y		Y	

Node 856: Hollister & Cortona

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	50.58
Worst Case Delay	571.17
Worst Case LOS	F

Volume and Adjustments

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	7.00	6.00	137.00	5.00	854.00	5.00	133.00	5.00	5.00	25.00	469.00	18.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	7.61	6.52	148.91	5.43	928.26	5.43	144.57	5.43	5.43	27.17	509.78	19.57

Pedestrians

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
w, Lane Width (ft)	12.00	12.00	12.00	12.00			12.00	12.00	12.00	12.00		
Sp, Walking Speed (ft/s)	3.50	3.50	3.50	3.50			3.50	3.50	3.50	3.50		
fpb, Percent Blockage	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		

Capacity of Movements below Rank 1

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	2	1	1	4	3	2	2	1	1
vx, Volume	7.61	6.52	148.91	5.43			144.57	5.43	5.43	27.17		
Conflicting Volume (Veh)	1253.80	1525.54	466.85	529.35			1052.17	1518.48	264.67	933.70		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1253.80	1525.54	466.85	529.35			1052.17	1518.48	264.67	933.70		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces												
cpx, Potential Capacity	130.60	118.92	548.03	1048.12			183.49	120.11	739.76	741.46		
Capacity	120.18	112.97	548.03	1048.12			122.89	114.09	739.76	741.46		

Critical Headway and Follow Up Headway

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Head	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,base,I, Base Critical Hea												
tc,base,II, Base Critical Hea												
tc,HV, Heavy Vehicles Adju	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00		
Phv, % Heavy Vehicles	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Fac	0.20	0.20	0.10	1.00			0.20	0.20	0.10	1.00		
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc, Critical Headway	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,I, Critical Headway (Stag												
tc,II, Critical Headway (Stag												
tf,base, Base Follow-Up He	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		
tf,hv, Heavy Vehicles Adjus	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00		
tf, Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		

Delay and Level of Service by Movement

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	7.61	6.52	148.91	5.43	928.26	5.43	144.57	5.43	5.43	27.17	509.78	19.57
cmx, Capacity	120.18	112.97	548.03	1048.12			122.89	114.09	739.76	741.46		
V / C	0.06	0.06	0.27	0.01			1.18	0.05	0.01	0.04		
d, Delay	40.53	42.45	17.15	8.45			568.91	571.17	544.48	10.04		
LOS	E	E	C	A			F	F	F	B		
dA, Approach Delay		19.25			0.05			568.13			0.49	
Approach LOS		C						F				
dRank1, Rank 1 Delay					0.03						0.00	

Delay and Level of Service by Lane

Approach	N	E (Major)		S	W (Major)		
Lane	Lane 1	Lane 1	Lane 2	Lane 1	Lane 1	Lane 2	Lane 3
Movements	L1, T, R1	L1, T	T, R1	L1, T, R1			T, R1
vx, Volume	163.04	469.57	469.57	155.43	27.17	264.67	264.67
Flared Storage Size							
cmx, Capacity	415.12	1048.12		126.23			
V / C	0.39	0.45		1.23			
Q95, 95% Queue Length	1.91	2.41		24.22			
d, Delay	19.25	8.45		568.13			
LOS	C	E		F			
dA, Approach Delay	19.25	0.05		568.13		0.49	
Approach LOS	C			F			

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Node 877: Hollister & Sumida Gardens

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.473
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	18	5	35	10	530	22	19	5	47	37	866	7
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	5	1	9	3	133	6	5	1	12	9	217	2
Adjusted Volume	18	5	35	10	530	22	19	5	47	37	866	7

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	L	C	L	C	L	C	L	C
ID	16274	16275	16271	16272	16279	16280	16276	16277
Lanes	L	RT	L	T, RT	L	RT	L	T, RT
Volume	18	40	10	552	19	52	37	873

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	16274	16275	16271	16272	16279	16280	16276	16277
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	2	1	1	1	2
Saturation Flow Rate	1600	1600	1600	3200	1600	1600	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	18	5	35	10	530	22	19	5	47	37	866	7
Volume / Saturation Flow R	0.011	0.025	0.025	0.006	0.173	0.173	0.012	0.032	0.033	0.023	0.273	0.273
Overlap adjusted Volume /	0.011	0.025	0.025	0.006	0.173	0.173	0.012	0.032	0.033	0.023	0.273	0.273
Critical Movement	Y			Y					Y		Y	

Node 1009: Los Carneros & Raytheon Dr.	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.375
Loss Time	0
Cycle Length	100

Volume and Adjustments by Movement						
Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Base Volume	127	8	604	5	5	1074
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	32	2	151	1	1	269
Adjusted Volume	127	8	604	5	5	1074

Volume and Adjustments by Lane Group						
Approach	N		E		W	
Lane Group	L	R	C	R	L	C
ID	16284	16286	16281	16283	16287	16288
Lanes	L, L	R	T, T	R	L	T, T
Volume	127	8	604	5	5	1074

Saturation Flow Rate						
Approach	N		E		W	
Lane Group	16284	16286	16281	16283	16287	16288
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600
Number of Lanes	2	1	2	1	1	2
Saturation Flow Rate	3200	1600	3200	1600	1600	3200

Capacity Analysis						
Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Volume	127	8	604	5	5	1074
Volume / Saturation Flow R	0.040	0.005	0.189	0.003	0.003	0.336
Overlap adjusted Volume /	0.040	0.005	0.189	0.003	0.003	0.336
Critical Movement	Y					Y

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Node 1042: Hollister & Santa Babara Shores	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	0.62
Worst Case Delay	12.26
Worst Case LOS	B

Volume and Adjustments						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	18.00	380.00	10.00	15.00	212.00	9.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	19.57	413.04	10.87	16.30	230.43	9.78

Pedestrians						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Flow (Ped/hr)	0.00		0.00	0.00		
w, Lane Width (ft)	12.00		12.00	12.00		
Sp, Walking Speed (ft/s)	3.50		3.50	3.50		
fpb, Percent Blockage	0.00		0.00	0.00		

Capacity of Movements below Rank 1						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Rank	2	1	3	2	1	1
vx, Volume	19.57		10.87	16.30		
Conflicting Volume (Veh)	240.22		480.98	120.11		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	240.22		480.98	120.11		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces						
cpx, Potential Capacity	1338.30		519.12	915.16		
Capacity	1338.30		510.54	915.16		

Critical Headway and Follow Up Headway						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
tc,base, Base Critical Head	4.10		7.50	6.90		
tc,base,I, Base Critical Hea						
tc,base,II, Base Critical Hea						
tc,HV, Heavy Vehicles Adju	2.00		2.00	2.00		
Phv, % Heavy Vehicles	0.00		0.00	0.00		
tc,G, Grade Adjustment Fac	1.00		0.20	0.10		
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment	0.00		0.70	0.00		
tc, Critical Headway	4.10		6.80	6.90		
tc,I, Critical Headway (Stag						
tc,II, Critical Headway (Stag						
tf,base, Base Follow-Up He	2.20		3.50	3.30		
tf,hv, Heavy Vehicles Adjus	1.00		1.00	1.00		
tf, Follow-Up Headway	2.20		3.50	3.30		

Delay and Level of Service by Movement						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Volume	19.57	413.04	10.87	16.30	230.43	9.78
cmx, Capacity	1338.30		510.54	915.16		
V / C	0.01		0.02	0.02		
d, Delay	7.73		12.26	9.14		
LOS	A		B	A		
dA, Approach Delay	0.35		10.39		0.00	
Approach LOS			B			
dRank1, Rank 1 Delay	0.00				0.00	

Delay and Level of Service by Lane						
Approach	E (Major)			S	W (Major)	
Lane	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2
Movements				L1, R1		T, R1
vx, Volume	19.57	206.52	206.52	27.17	120.11	120.11
Flared Storage Size						
cmx, Capacity				694.88		
V / C				0.04		
Q95, 95% Queue Length				0.12		
d, Delay				10.39		
LOS				B		
dA, Approach Delay	0.35			10.39	0.00	
Approach LOS				B		

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Node 1159: Hollister & David Love PL

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	3.33
Worst Case Delay	71.86
Worst Case LOS	F

Volume and Adjustments

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	58.00	5.00	29.00	5.00	474.00	33.00	24.00	5.00	5.00	26.00	1012.00	23.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	63.04	5.43	31.52	5.43	515.22	35.87	26.09	5.43	5.43	28.26	1100.00	25.00

Pedestrians

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
w, Lane Width (ft)	12.00	12.00	12.00	12.00			12.00	12.00	12.00	12.00		
Sp, Walking Speed (ft/s)	3.50	3.50	3.50	3.50			3.50	3.50	3.50	3.50		
fpb, Percent Blockage	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		

Capacity of Movements below Rank 1

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	2	1	1	4	3	2	2	1	1
vx, Volume	63.04	5.43	31.52	5.43			26.09	5.43	5.43	28.26		
Conflicting Volume (Veh)	1153.26	1725.54	275.54	1125.00			1440.22	1730.98	562.50	551.09		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1153.26	1725.54	275.54	1125.00			1440.22	1730.98	562.50	551.09		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces												
cpx, Potential Capacity	154.79	89.72	727.98	628.36			95.12	89.04	475.04	1028.93		
Capacity	139.95	85.19	727.98	628.36			83.26	84.54	475.04	1028.93		

Critical Headway and Follow Up Headway

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Head	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,base,I, Base Critical Hea												
tc,base,II, Base Critical Hea												
tc,HV, Heavy Vehicles Adju	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00		
Phv, % Heavy Vehicles	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Fac	0.20	0.20	0.10	1.00			0.20	0.20	0.10	1.00		
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc, Critical Headway	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,I, Critical Headway (Stag												
tc,II, Critical Headway (Stag												
tf,base, Base Follow-Up He	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		
tf,hv, Heavy Vehicles Adjus	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00		
tf, Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		

Delay and Level of Service by Movement

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	63.04	5.43	31.52	5.43	515.22	35.87	26.09	5.43	5.43	28.26	1100.00	25.00
cmx, Capacity	139.95	85.19	727.98	628.36			83.26	84.54	475.04	1028.93		
V / C	0.45	0.06	0.04	0.01			0.31	0.06	0.01	0.03		
d, Delay	42.67	50.86	13.55	10.78			71.86	71.21	36.20	8.60		
LOS	E	F	B	B			F	F	E	A		
dA, Approach Delay		33.94			0.11			66.52			0.21	
Approach LOS		D						F				
dRank1, Rank 1 Delay					0.00						0.00	

Delay and Level of Service by Lane

Approach	N		E (Major)			S	W (Major)		
Lane	Lane 1	Lane 2	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2	Lane 3
Movements		L1, T, R1			T, R1	L1, T, R1			T, R1
vx, Volume	50.00	50.00	5.43	275.54	275.54	36.96	28.26	562.50	562.50
Flared Storage Size									
cmx, Capacity		249.63				95.00			
V / C		0.20				0.39			
Q95, 95% Queue Length		0.75				1.80			
d, Delay		23.02				66.52			
LOS		C				F			
dA, Approach Delay	33.94			0.11		66.52		0.21	
Approach LOS	D					F			

Node 1182: Ward & Ekwill	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	2.02
Worst Case Delay	12.8
Worst Case LOS	B

Volume and Adjustments						
Approach	N (Major)		E		S (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	26.00	114.00	5.00	74.00	307.00	5.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	28.26	123.91	5.43	80.43	333.70	5.43

Pedestrians						
Approach	N (Major)		E		S (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Flow (Ped/hr)	0.00		0.00	0.00		
w, Lane Width (ft)	12.00		12.00	12.00		
Sp, Walking Speed (ft/s)	3.50		3.50	3.50		
fpb, Percent Blockage	0.00		0.00	0.00		

Capacity of Movements below Rank 1						
Approach	N (Major)		E		S (Major)	
Movement	L1	T	L1	R1	T	R1
Rank	2	1	3	2	1	1
vx, Volume	28.26		5.43	80.43		
Conflicting Volume (Veh)	339.13		516.85	336.41		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	339.13		516.85	336.41		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces						
cpx, Potential Capacity	1231.31		522.09	710.25		
Capacity	1231.31		509.22	710.25		

Critical Headway and Follow Up Headway						
Approach	N (Major)		E		S (Major)	
Movement	L1	T	L1	R1	T	R1
tc,base, Base Critical Head	4.10		7.10	6.20		
tc,base,I, Base Critical Hea						
tc,base,II, Base Critical Hea						
tc,HV, Heavy Vehicles Adju	1.00		1.00	1.00		
Phv, % Heavy Vehicles	0.00		0.00	0.00		
tc,G, Grade Adjustment Fac	1.00		0.20	0.10		
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment	0.00		0.70	0.00		
tc, Critical Headway	4.10		6.40	6.20		
tc,I, Critical Headway (Stag						
tc,II, Critical Headway (Stag						
tf,base, Base Follow-Up He	2.20		3.50	3.30		
tf,hv, Heavy Vehicles Adjus	0.90		0.90	0.90		
tf, Follow-Up Headway	2.20		3.50	3.30		

Delay and Level of Service by Movement						
Approach	N (Major)		E		S (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Volume	28.26	123.91	5.43	80.43	333.70	5.43
cmx, Capacity	1231.31		509.22	710.25		
V / C	0.02		0.01	0.11		
d, Delay	7.99		12.80	10.80		
LOS	A		B	B		
dA, Approach Delay	1.48		10.93		0.00	
Approach LOS			B			
dRank1, Rank 1 Delay	0.20				0.00	

Delay and Level of Service by Lane			
Approach	N (Major)	E	S (Major)
Lane	Lane 1	Lane 1	Lane 1
Movements	L1, T	L1, R1	T, R1
vx, Volume	152.17	85.87	339.13
Flared Storage Size			
cmx, Capacity	1231.31	692.94	
V / C	0.12	0.12	
Q95, 95% Queue Length	0.42	0.42	
d, Delay	7.99	10.93	
LOS		B	
dA, Approach Delay	1.48	10.93	0.00
Approach LOS		B	

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ATTACHMENT D

Future Year Analysis

AM Peak Hour Analysis

PM Peak Hour Analysis

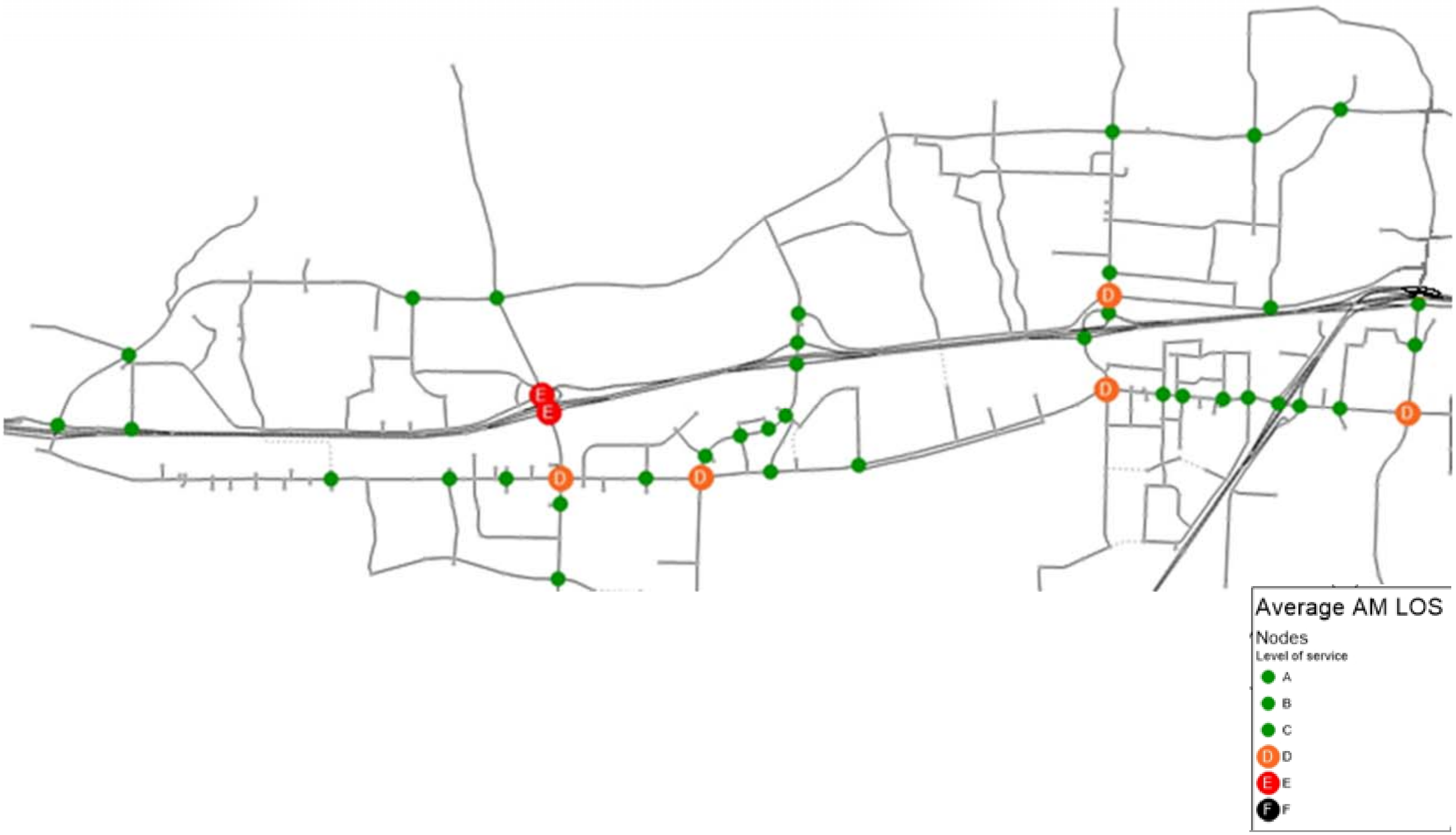
Future Year Conditions– AM Peak Hour Analysis

Intersection Capacity Analysis Summary Page

Analysis Time:	Wed Sep 13 11:20:49 2017
Driving Side:	Right
Analysis Period:	1 Hours

Number	Name	Control Type	V/C (pc/pl/mi)	Avg Delay (sec)	Avg LOS	Max Delay	Max LOS
151	Cathedral Oaks & Kellogg	Signalized	0.55	18.80	A	55.94	A
164	Cathedral Oaks & La Patera	TWSC	0.00	1.78	A	69.56	F
171	Cathedral Oaks & Fairview	Signalized	0.56	28.84	A	50.63	A
173	Cathedral Oaks & Cambridge	Signalized	0.49	16.81	A	49.63	A
175	Cathedral Oaks & Patterson	Signalized	0.71	30.29	C	41.95	C
181	Turnpike & Cathedral Oaks	Signalized	0.66	17.27	B	38.73	B
195	Cathedral Oaks & Los Carneros	TWSC	0.00	3.80	A	65.60	F
203	Stow Canyon & Fairview	TWSC	0.00	12.52	B	164.47	F
204	Fairview & Berkeley	TWSC	0.00	6.85	A	65.84	F
240	Fairview & Shirrell Way	TWSC	0.00	2.62	A	37.25	E
241	Encina & Fairview	Signalized	0.39	7.61	A	43.90	A
256	Calle Real & Patterson	Signalized	0.82	29.09	D	50.98	D
273	Cathedral Oaks & Brandon	TWSC	0.00	3.85	A	18.56	C
276	Cathedral Oaks & Alameda	Signalized	0.64	30.21	B	48.33	B
277	Cathedral Oaks & Glen Anne	Signalized	0.67	29.36	B	54.84	B
279	Calle Real & Los Caneros	Roundabout	0.31	6.37	A	8.24	A
280	Calle Real & La Patera	TWSC	0.00	5.29	A	20.79	C
282	Calle Real & Carlo Dr	TWSC	0.00	4.29	A	26.39	D
288	Calle Real & Fairview	Signalized	0.90	45.41	D	76.63	D
289	Fairview & US 101 NB Ramps	Signalized	0.27	34.03	A	86.70	A
296	Calle Real & Kellogg	Signalized	0.45	22.36	A	31.87	A
305	Patterson & Overpass	Signalized	0.60	11.76	A	67.26	A
306	Patterson & US 101 SB Ramps	Signalized	0.77	35.36	C	60.42	C
331	Hollister & Modoc Rd	Signalized	0.76	17.43	C	46.35	C
340	San Marcos Pass & Calle Real	Signalized	0.72	45.34	C	78.97	C
341	San Marcos Pass & State & SB On-Ramp	Signalized	0.75	38.16	C	48.16	C
359	Cathedral Oaks & Winchester Canyon	AWSC	0.35	10.78	B	11.87	B
372	Glen Annie & Del Norte	TWSC	0.00	1.62	A	11.02	B
375	Los Caneros & US101 SB Ramps	Signalized	0.65	91.75	B	629.98	B
376	Los Carneros & US 101 NB Ramps	Signalized	0.72	26.38	C	90.20	C
383	Fairview & US 101 SB Ramps	Signalized	0.62	97.91	B	544.81	B
385	Hollister & Fairview	Signalized	0.84	34.69	D	49.35	D
386	Fairview & Mandarin	TWSC	0.00	17.38	C	831.59	F
387	Hollister & Orange	TWSC	0.00	3.56	A	100.38	F
390	Hollister & Pine/Nectarine	Signalized	0.54	13.91	A	31.46	A
394	Hollister & Rutherford	Signalized	0.43	4.75	A	47.66	A
396	Hollister & Community Center West Driveway	TWSC	0.00	0.36	A	8.78	A
397	Hollister & Kinman	Signalized	0.68	10.71	B	48.11	B
399	Hollister & Kellogg	Signalized	0.65	27.16	B	60.60	B
402	Hollister & SR-217 SB Ramps	Signalized	0.57	31.64	A	43.71	A
405	Hollister & SR-217 NB Ramps	Signalized	0.53	23.98	A	46.02	A
441	Calle Real & NB 101 OnRamp	TWSC	0.00	4.41	A	10.56	B
445	Calle Real & Winchester Canyon	AWSC	0.23	8.20	A	9.07	A
450	Calle Real & Brandon Dr.	TWSC	0.00	4.74	A	12.62	B
452	Calle Real & Elwood Station	TWSC	0.00	3.84	A	13.22	B
461	Storke & US 101 NB Ramps	Signalized	0.92	74.08	E	157.57	E
462	Storke & US 101 SB Ramp	Signalized	0.94	57.43	E	182.42	E
466	Los Carneros & Cremona	Signalized	0.56	4.88	A	65.43	A
467	Los Carneros & Calle Koral	Signalized	0.75	11.62	C	52.27	C
489	Hollister & Patterson	Signalized	0.81	54.68	D	155.94	D
506	Cathedral Oaks 101 SB-Ramp	TWSC	0.00	12.58	B	263.04	F
511	Hollister & Pebble Beach Rd	TWSC	0.00	2.59	A	26.17	D
512	Hollister & Palo Alto Dr	TWSC	0.00	1.32	A	23.29	C
513	Hollister & Coronado	TWSC	0.00	2.02	A	18.77	C
515	Hollister & Cannon Green	TWSC	0.00	7.14	A	59.85	F
517	Hollister & Pacific Oaks	Signalized	0.54	12.00	A	44.27	A
518	Hollister & Santa Felicia	TWSC	0.00	185.35	F	2655.12	F
521	Storke & Marketplace	Signalized	0.51	21.29	A	106.28	A
522	Hollister & Storke	Signalized	0.80	72.42	D	132.13	D
524	Hollister & Coromar Project Access	Signalized	0.53	9.33	A	34.64	A
525	Hollister & Los Carneros	Signalized	0.85	42.55	D	85.18	D
528	Hollister & Los Carneros Way	Signalized	0.44	20.10	A	42.22	A
530	Hollister & Aero Camino	Signalized	0.45	14.91	A	109.88	A
553	Storke & Santa Felicia	TWSC	0.00	1.08	A	29.70	D
562	Storke & Phelps	Signalized	0.60	24.35	B	51.12	B
564	Mesa & Los Carneros	Signalized	0.75	31.50	C	69.24	C
592	Los Caneros & El Collegio	Signalized	0.44	16.14	A	27.03	A
596	El Colegio & Stadium	Signalized	0.23	9.45	A	37.90	A
617	Los Caneros & Castilian	Signalized	0.67	16.21	B	66.96	B
620	Hollister & St Joseph	TWSC	0.00	1.06	A	29.65	D
624	Cathedral Oaks & Calle Real	AWSC	0.75	21.36	C	30.27	D
630	Hollister & Marketplace/Village Way	Signalized	0.57	10.39	A	58.48	A
636	Hollister & Cathedral Oaks	TWSC	0.00	2.05	A	18.05	C
717	Hollister & Entrance	Signalized	0.52	23.68	A	55.07	A
856	Hollister & Cortona	TWSC	0.00	119.65	F	2485.35	F
877	Hollister & Sumida Gardens	Signalized	0.49	14.06	A	51.46	A
1009	Los Carneros & Raytheon Dr.	Signalized	0.56	8.55	A	57.58	A
1042	Hollister & Santa Babara Shores	TWSC	0.00	1.04	A	17.14	C
1159	Hollister & David Love PL	TWSC	0.00	16.62	C	922.69	F
1182	Ward & Ekwill	TWSC	0.00	1.76	A	12.77	B

City of Goleta General Plan Update –Average LOS for City Intersections for AM Peak of Future Conditions



Intersection Capacity Analysis Summary Page

Analysis Time:	Wed Sep 13 11:20:49 2017
Driving Side:	Right
Analysis Period:	1 Hours

Number	Name	Control Type	V/C	Avg Delay	Avg LOS	Max Delay	Max LOS
164	Cathedral Oaks & La Patera	TWSC	0.00	1.78	A	69.56	F
195	Cathedral Oaks & Los Carneros	TWSC	0.00	3.80	A	65.60	F
203	Stow Canyon & Fairview	TWSC	0.00	12.52	B	164.47	F
204	Fairview & Berkeley	TWSC	0.00	6.85	A	65.84	F
240	Fairview & Shirrell Way	TWSC	0.00	2.62	A	37.25	E
256	Calle Real & Patterson	Signalized	0.82	29.09	D	50.98	D
282	Calle Real & Carlo Dr	TWSC	0.00	4.29	A	26.39	D
288	Calle Real & Fairview	Signalized	0.90	45.41	D	76.63	D
385	Hollister & Fairview	Signalized	0.84	34.69	D	49.35	D
386	Fairview & Mandarin	TWSC	0.00	17.38	C	831.59	F
387	Hollister & Orange	TWSC	0.00	3.56	A	100.38	F
461	Storke & US 101 NB Ramps	Signalized	0.92	74.08	E	157.57	E
462	Storke & US 101 SB Ramp	Signalized	0.94	57.43	E	182.42	E
489	Hollister & Patterson	Signalized	0.81	54.68	D	155.94	D
506	Cathedral Oaks 101 SB-Ramp	TWSC	0.00	12.58	B	263.04	F
511	Hollister & Pebble Beach Rd	TWSC	0.00	2.59	A	26.17	D
515	Hollister & Cannon Green	TWSC	0.00	7.14	A	59.85	F
518	Hollister & Santa Felicia	TWSC	0.00	185.35	F	2655.12	F
522	Hollister & Storke	Signalized	0.80	72.42	D	132.13	D
525	Hollister & Los Carneros	Signalized	0.85	42.55	D	85.18	D
553	Storke & Santa Felicia	TWSC	0.00	1.08	A	29.70	D
620	Hollister & St Joseph	TWSC	0.00	1.06	A	29.65	D
856	Hollister & Cortona	TWSC	0.00	119.65	F	2485.35	F
1159	Hollister & David Love PL	TWSC	0.00	16.62	C	922.69	F

Node 151: Cathedral Oaks & Kellogg

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.547
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	134	15	56	58	729	99	19	7	77	11	460	16
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	34	4	14	15	182	25	5	2	19	3	115	4
Adjusted Volume	134	15	56	58	729	99	19	7	77	11	460	16

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	3159	3160	3156	3157	3164	3165	3161	3162
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	149	56	58	828	26	77	11	476

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	3159	3160	3156	3157	3164	3165	3161	3162
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	2	1	1	1	2
Saturation Flow Rate	1600	1600	1600	3200	1600	1600	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	134	15	56	58	729	99	19	7	77	11	460	16
Volume / Saturation Flow Rate	0.084	0.093	0.035	0.036	0.259	0.259	0.012	0.016	0.048	0.007	0.149	0.149
Overlap adjusted Volume / Saturation Flow Rate	0.084	0.093	0.035	0.036	0.259	0.259	0.012	0.016	0.048	0.007	0.149	0.149
Critical Movement	Y				Y				Y	Y		

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Node 164: Cathedral Oaks & La Patera

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	1.78
Worst Case Delay	69.56
Worst Case LOS	F

Volume and Adjustments												
Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	5.00	5.00	7.00	56.00	745.00	6.00	5.00	5.00	47.00	5.00	603.00	19.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	5.43	5.43	7.61	60.87	809.78	6.52	5.43	5.43	51.09	5.43	655.43	20.65

Pedestrians												
Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
w, Lane Width (ft)	12.00	12.00	12.00	12.00			12.00	12.00	12.00	12.00		
Sp, Walking Speed (ft/s)	3.50	3.50	3.50	3.50			3.50	3.50	3.50	3.50		
fpb, Percent Blockage	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		

Capacity of Movements below Rank 1												
Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	2	1	1	4	3	2	2	1	1
vx, Volume	5.43	5.43	7.61	60.87			5.43	5.43	51.09	5.43		
Conflicting Volume (Veh)	1639.67	1621.74	813.04	676.09			1617.93	1614.67	665.76	816.30		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1639.67	1621.74	813.04	676.09			1617.93	1614.67	665.76	816.30		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	81.08	103.90	381.51	924.93			83.97	104.94	463.06	820.27		
Capacity	62.06	90.40	381.51	924.93			70.77	91.30	463.06	820.27		

Critical Headway and Follow Up Headway												
Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Headway	7.10	6.50	6.20	4.10			7.10	6.50	6.20	4.10		
tc,base,I, Base Critical Headway (Stage I)												
tc,base,II, Base Critical Headway (Stage II)												
tc,HV, Heavy Vehicles Adjustment Factor	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00		
Phv, % Heavy Vehicles	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Factor	0.20	0.20	0.10	1.00			0.20	0.20	0.10	1.00		
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment Factor	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc, Critical Headway	7.10	6.50	6.20	4.10			7.10	6.50	6.20	4.10		
tc,I, Critical Headway (Stage I)												
tc,II, Critical Headway (Stage II)												
tf,base, Base Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		
tf,hv, Heavy Vehicles Adjustment Factor	0.90	0.90	0.90	0.90			0.90	0.90	0.90	0.90		
tf, Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		

Delay and Level of Service by Movement												
Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	5.43	5.43	7.61	60.87	809.78	6.52	5.43	5.43	51.09	5.43	655.43	20.65
cmx, Capacity	62.06	90.40	381.51	924.93			70.77	91.30	463.06	820.27		
V / C	0.09	0.06	0.02	0.07			0.08	0.06	0.11	0.01		
d, Delay	69.56	51.37	20.99	9.17			60.55	49.11	17.45	9.42		
LOS	F	F	C	A			F	E	C	A		
dA, Approach Delay		44.21			0.64			24.01			0.08	
Approach LOS		E						C				
dRank1, Rank 1 Delay					0.00						0.00	

Delay and Level of Service by Lane						
Approach	N	E (Major)		S	W (Major)	
Lane	Lane 1	Lane 1	Lane 2	Lane 1	Lane 1	Lane 2
Movements	L1, T, R1		T, R1	L1, T, R1		T, R1
vx, Volume	18.48	60.87	816.30	61.96	5.43	676.09
Flared Storage Size						
cmx, Capacity	110.23			251.19		
V / C	0.17			0.25		
Q95, 95% Queue Length	0.60			0.97		
d, Delay	44.21			24.01		
LOS	E			C		
dA, Approach Delay	44.21	0.64		24.01	0.08	
Approach LOS	E			C		

Node 171: Cathedral Oaks & Fairview

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.558
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	67	117	7	260	607	40	64	35	119	14	316	182
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	17	29	2	65	152	10	16	9	30	4	79	46
Adjusted Volume	67	117	7	260	607	40	64	35	119	14	316	182

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	L	C	L	C	L	C	L	C
ID	3169	3170	3166	3167	3175	3176	3172	3173
Lanes	L	T, RT	L	T, RT	L	T, RT	L	T, RT
Volume	67	124	260	647	64	154	14	498

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	3169	3170	3166	3167	3175	3176	3172	3173
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	1	2	1	2	1	2
Saturation Flow Rate	1600	3200	1600	3200	1600	3200	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	67	117	7	260	607	40	64	35	119	14	316	182
Volume / Saturation Flow Rate	0.042	0.039	0.039	0.163	0.202	0.202	0.040	0.048	0.048	0.009	0.156	0.156
Overlap adjusted Volume / Saturation Flow Rate	0.042	0.039	0.039	0.163	0.202	0.202	0.040	0.048	0.048	0.009	0.156	0.156
Critical Movement	Y			Y				Y				Y

Node 173: Cathedral Oaks & Cambridge

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.493
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	33	18	93	68	781	15	28	9	28	29	444	50
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	8	5	23	17	195	4	7	2	7	7	111	13
Adjusted Volume	33	18	93	68	781	15	28	9	28	29	444	50

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	3181	3182	3178	3179	3186	3187	3183	3184
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	51	93	68	796	37	28	29	494

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	3181	3182	3178	3179	3186	3187	3183	3184
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	2	1	1	1	2
Saturation Flow Rate	1600	1600	1600	3200	1600	1600	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	33	18	93	68	781	15	28	9	28	29	444	50
Volume / Saturation Flow Rate	0.021	0.032	0.058	0.043	0.249	0.249	0.018	0.023	0.018	0.018	0.154	0.154
Overlap adjusted Volume / Saturation Flow Rate	0.021	0.032	0.058	0.043	0.249	0.249	0.018	0.023	0.018	0.018	0.154	0.154
Critical Movement			Y			Y	Y			Y		

Node 175: Cathedral Oaks & Patterson

Control Type	Signalized
Method	ICU Method 1
LOS	C
Critical V/C	0.706
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	49	138	11	220	629	5	181	97	83	5	310	340
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	12	35	3	55	157	1	45	24	21	1	78	85
Adjusted Volume	49	138	11	220	629	5	181	97	83	5	310	340

Volume and Adjustments by Lane Group										
Approach	N		E		S			W		
Lane Group	L	C	L	C	L	C	R	L	C	R
ID	3191	3192	3188	3189	3196	3197	3198	3193	3194	3195
Lanes	L	RT	L	T, RT	L	T	R	L	T	R
Volume	49	149	220	634	181	97	83	5	310	340

Saturation Flow Rate										
Approach	N		E		S			W		
Lane Group	3191	3192	3188	3189	3196	3197	3198	3193	3194	3195
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	2	1	1	1	1	1	1
Saturation Flow Rate	1600	1600	1600	3200	1600	1600	1600	1600	1600	1600

Capacity Analysis												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	49	138	11	220	629	5	181	97	83	5	310	340
Volume / Saturation Flow Rate	0.031	0.093	0.093	0.138	0.198	0.198	0.113	0.061	0.052	0.003	0.194	0.212
Overlap adjusted Volume / Saturation Flow Rate	0.031	0.093	0.093	0.138	0.198	0.198	0.113	0.061	0.052	0.003	0.194	0.212
Critical Movement		Y		Y			Y					Y

Node 181: Turnpike & Cathedral Oaks

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.661
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	5	49	5	223	557	49	175	5	246	5	424	117
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	1	12	1	56	139	12	44	1	62	1	106	29
Adjusted Volume	5	49	5	223	557	49	175	5	246	5	424	117

Volume and Adjustments by Lane Group

Approach	N	E		S		W		
Lane Group	C	L	C	C	R	L	C	R
ID	3203	3201	3202	3199	3200	3204	3205	3206
Lanes	LTR	L	RT	LT	R	L	T	R
Volume	59	223	606	180	246	5	424	117

Saturation Flow Rate

Approach	N	E		S		W		
Lane Group	3203	3201	3202	3199	3200	3204	3205	3206
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	1	1	1	1	1
Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	5	49	5	223	557	49	175	5	246	5	424	117
Volume / Saturation Flow Rate	0.003	0.037	0.037	0.139	0.379	0.379	0.109	0.113	0.154	0.003	0.265	0.073
Overlap adjusted Volume / Saturation Flow Rate	0.003	0.037	0.037	0.139	0.379	0.379	0.109	0.113	0.154	0.003	0.265	0.073
Critical Movement	Y			Y					Y		Y	

Node 195: Cathedral Oaks & Los Carneros	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	3.8
Worst Case Delay	65.6
Worst Case LOS	F

Volume and Adjustments						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	154.00	558.00	40.00	36.00	517.00	123.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	167.39	606.52	43.48	39.13	561.96	133.70

Pedestrians						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Flow (Ped/hr)	0.00		0.00	0.00		
w, Lane Width (ft)	12.00		12.00	12.00		
Sp, Walking Speed (ft/s)	3.50		3.50	3.50		
fpb, Percent Blockage	0.00		0.00	0.00		

Capacity of Movements below Rank 1						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Rank	2	1	3	2	1	1
vx, Volume	167.39		43.48	39.13		
Conflicting Volume (Veh)	695.65		1503.26	561.96		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	695.65		1503.26	561.96		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	909.60		135.20	530.32		
Capacity	909.60		97.67	530.32		

Critical Headway and Follow Up Headway						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
tc,base, Base Critical Headway	4.10		7.10	6.20		
tc,base,I, Base Critical Headway (Stage I)						
tc,base,II, Base Critical Headway (Stage II)						
tc,HV, Heavy Vehicles Adjustment Factor	1.00		1.00	1.00		
Phv, % Heavy Vehicles	0.00		0.00	0.00		
tc,G, Grade Adjustment Factor	1.00		0.20	0.10		
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment Factor	0.00		0.70	0.00		
tc, Critical Headway	4.10		6.40	6.20		
tc,I, Critical Headway (Stage I)						
tc,II, Critical Headway (Stage II)						
tf,base, Base Follow-Up Headway	2.20		3.50	3.30		
tf,hv, Heavy Vehicles Adjustment Factor	0.90		0.90	0.90		
tf, Follow-Up Headway	2.20		3.50	3.30		

Delay and Level of Service by Movement						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Volume	167.39	606.52	43.48	39.13	561.96	133.70
cmx, Capacity	909.60		97.67	530.32		
V / C	0.18		0.45	0.07		
d, Delay	9.85		65.60	35.53		
LOS	A		F	E		
dA, Approach Delay	2.13		51.36		0.00	
Approach LOS			F			
dRank1, Rank 1 Delay	0.00				0.00	

Delay and Level of Service by Lane					
Approach	E (Major)		S	W (Major)	
Lane	Lane 1	Lane 2	Lane 1	Lane 1	Lane 2
Movements			L1, R1		
vx, Volume	167.39	606.52	82.61	561.96	133.70
Flared Storage Size					
cmx, Capacity			159.19		
V / C			0.52		
Q95, 95% Queue Length			3.00		
d, Delay			51.36		
LOS			F		
dA, Approach Delay	2.13		51.36	0.00	
Approach LOS			F		

Node 203: Stow Canyon & Fairview	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	12.52
Worst Case Delay	164.47
Worst Case LOS	F

Volume and Adjustments												
Approach	N (Major)			E			S (Major)			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	5.00	376.00	193.00	14.00	5.00	14.00	262.00	206.00	5.00	5.00	5.00	333.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	5.43	408.70	209.78	15.22	5.43	15.22	284.78	223.91	5.43	5.43	5.43	361.96

Pedestrians												
Approach	N (Major)			E			S (Major)			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
w, Lane Width (ft)	12.00			12.00	12.00	12.00	12.00			12.00	12.00	12.00
Sp, Walking Speed (ft/s)	3.50			3.50	3.50	3.50	3.50			3.50	3.50	3.50
fpb, Percent Blockage	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00

Capacity of Movements below Rank 1												
Approach	N (Major)			E			S (Major)			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	2	1	1	4	3	2	2	1	1	4	3	2
vx, Volume	5.43			15.22	5.43	15.22	284.78			5.43	5.43	361.96
Conflicting Volume (Veh)	229.35			1323.37	1425.54	226.63	618.48			1323.37	1323.37	513.59
Conflicting Volume (Ped)	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
Conflicting Volume	229.35			1323.37	1425.54	226.63	618.48			1323.37	1323.37	513.59
Two-Stage Gap Acceptance				No	No					No	No	
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	1350.58			134.45	136.73	817.73	971.55			134.45	157.54	564.78
Capacity	1350.58			34.22	90.28	817.73	971.55			92.97	104.02	564.78

Critical Headway and Follow Up Headway												
Approach	N (Major)			E			S (Major)			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Headway	4.10			7.10	6.50	6.20	4.10			7.10	6.50	6.20
tc,base,I, Base Critical Headway (Stage I)												
tc,base,II, Base Critical Headway (Stage II)												
tc,HV, Heavy Vehicles Adjustment Factor	1.00			1.00	1.00	1.00	1.00			1.00	1.00	1.00
Phv, % Heavy Vehicles	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
tc,G, Grade Adjustment Factor	1.00			0.20	0.20	0.10	1.00			0.20	0.20	0.10
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment Factor	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
tc, Critical Headway	4.10			7.10	6.50	6.20	4.10			7.10	6.50	6.20
tc,I, Critical Headway (Stage I)												
tc,II, Critical Headway (Stage II)												
tf,base, Base Follow-Up Headway	2.20			3.50	4.00	3.30	2.20			3.50	4.00	3.30
tf,hv, Heavy Vehicles Adjustment Factor	0.90			0.90	0.90	0.90	0.90			0.90	0.90	0.90
tf, Follow-Up Headway	2.20			3.50	4.00	3.30	2.20			3.50	4.00	3.30

Delay and Level of Service by Movement												
Approach	N (Major)			E			S (Major)			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	5.43	408.70	209.78	15.22	5.43	15.22	284.78	223.91	5.43	5.43	5.43	361.96
cmx, Capacity	1350.58			34.22	90.28	817.73	971.55			92.97	104.02	564.78
V / C	0.00			0.44	0.06	0.02	0.29			0.06	0.05	0.64
d, Delay	7.68			164.47	99.15	63.68	10.24			64.70	60.58	32.35
LOS	A			F	F	F	B			F	F	D
dA, Approach Delay		0.07			111.81			5.67			33.23	
Approach LOS					F						D	
dRank1, Rank 1 Delay		0.00						0.00				

Delay and Level of Service by Lane							
Approach	N (Major)			E	S (Major)		W
Lane	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2	Lane 1
Movements			T, R1	L1, T, R1		T, R1	L1, T, R1
vx, Volume	5.43	309.24	309.24	35.87	284.78	229.35	372.83
Flared Storage Size							
cmx, Capacity				68.52			496.05
V / C				0.52			0.75
Q95, 95% Queue Length				2.81			8.03
d, Delay				111.81			33.23
LOS				F			D
dA, Approach Delay		0.07		111.81	5.67		33.23
Approach LOS				F			D

Node 204: Fairview & Berkeley

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	6.85
Worst Case Delay	65.84
Worst Case LOS	F

Volume and Adjustments												
Approach		N (Major)			E			S (Major)			W	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	28.00	699.00	6.00	97.00	5.00	60.00	10.00	472.00	39.00	11.00	5.00	21.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	30.43	759.78	6.52	105.43	5.43	65.22	10.87	513.04	42.39	11.96	5.43	22.83

Pedestrians												
Approach		N (Major)			E			S (Major)			W	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
w, Lane Width (ft)	12.00			12.00	12.00	12.00	12.00			12.00	12.00	12.00
Sp, Walking Speed (ft/s)	3.50			3.50	3.50	3.50	3.50			3.50	3.50	3.50
fpb, Percent Blockage	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00

Capacity of Movements below Rank 1												
Approach		N (Major)			E			S (Major)			W	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	2	1	1	4	3	2	2	1	1	4	3	2
vx, Volume	30.43			105.43	5.43	65.22	10.87			11.96	5.43	22.83
Conflicting Volume (Veh)	555.43			999.46	1383.15	277.72	766.30			1104.89	1401.09	383.15
Conflicting Volume (Ped)	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
Conflicting Volume	555.43			999.46	1383.15	277.72	766.30			1104.89	1401.09	383.15
Two-Stage Gap Acceptance				No	No					No	No	
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	1025.13			200.44	145.03	725.65	856.22			167.93	141.46	620.71
Capacity	1025.13			179.63	137.40	725.65	856.22			142.31	134.02	620.71

Critical Headway and Follow Up Headway												
Approach		N (Major)			E			S (Major)			W	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Headway	4.10			7.50	6.50	6.90	4.10			7.50	6.50	6.90
tc,base,I, Base Critical Headway (Stage I)												
tc,base,II, Base Critical Headway (Stage II)												
tc,HV, Heavy Vehicles Adjustment Factor	2.00			2.00	2.00	2.00	2.00			2.00	2.00	2.00
Phv, % Heavy Vehicles	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
tc,G, Grade Adjustment Factor	1.00			0.20	0.20	0.10	1.00			0.20	0.20	0.10
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment Factor	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
tc, Critical Headway	4.10			7.50	6.50	6.90	4.10			7.50	6.50	6.90
tc,I, Critical Headway (Stage I)												
tc,II, Critical Headway (Stage II)												
tf,base, Base Follow-Up Headway	2.20			3.50	4.00	3.30	2.20			3.50	4.00	3.30
tf,hv, Heavy Vehicles Adjustment Factor	1.00			1.00	1.00	1.00	1.00			1.00	1.00	1.00
tf, Follow-Up Headway	2.20			3.50	4.00	3.30	2.20			3.50	4.00	3.30

Delay and Level of Service by Movement												
Approach		N (Major)			E			S (Major)			W	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	30.43	759.78	6.52	105.43	5.43	65.22	10.87	513.04	42.39	11.96	5.43	22.83
cmx, Capacity	1025.13			179.63	137.40	725.65	856.22			142.31	134.02	620.71
V / C	0.03			0.59	0.04	0.09	0.01			0.08	0.04	0.04
d, Delay	8.62			59.69	65.84	44.61	9.26			33.07	34.63	13.57
LOS	A			F	F	E	A			D	D	B
dA, Approach Delay		0.33			54.29			0.18			22.22	
Approach LOS					F						C	
dRank1, Rank 1 Delay		0.00						0.00				

Delay and Level of Service by Lane								
Approach		N (Major)		E		S (Major)		W
Lane	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2	Lane 3	Lane 1
Movements			T, R1	L1, T, R1			T, R1	L1, T, R1
vx, Volume	30.43	383.15	383.15	176.09	10.87	277.72	277.72	40.22
Flared Storage Size								
cmx, Capacity				245.80				249.26
V / C				0.72				0.16
Q95, 95% Queue Length				6.40				0.57
d, Delay				54.29				22.22
LOS				F				C
dA, Approach Delay		0.33		54.29		0.18		22.22
Approach LOS				F				C

Node 240: Fairview & Shirrell Way

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	2.62
Worst Case Delay	37.25
Worst Case LOS	E

Volume and Adjustments

Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
Base Volume	795.00	44.00	31.00	483.00	48.00	81.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	864.13	47.83	33.70	525.00	52.17	88.04

Pedestrians

Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
vx, Flow (Ped/hr)			0.00		0.00	0.00
w, Lane Width (ft)			12.00		12.00	12.00
Sp, Walking Speed (ft/s)			3.50		3.50	3.50
fpb, Percent Blockage			0.00		0.00	0.00

Capacity of Movements below Rank 1

Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
Rank	1	1	2	1	3	2
vx, Volume			33.70		52.17	88.04
Conflicting Volume (Veh)			911.96		1217.93	455.98
Conflicting Volume (Ped)			0.00		0.00	0.00
Conflicting Volume			911.96		1217.93	455.98
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity			755.49		175.86	556.98
Capacity			755.49		166.68	556.98

Critical Headway and Follow Up Headway

Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
tc,base, Base Critical Headway			4.10		7.50	6.90
tc,base,I, Base Critical Headway (Stage I)						
tc,base,II, Base Critical Headway (Stage II)						
tc,HV, Heavy Vehicles Adjustment Factor			2.00		2.00	2.00
Phv, % Heavy Vehicles			0.00		0.00	0.00
tc,G, Grade Adjustment Factor			1.00		0.20	0.10
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment Factor			0.00		0.70	0.00
tc, Critical Headway			4.10		6.80	6.90
tc,I, Critical Headway (Stage I)						
tc,II, Critical Headway (Stage II)						
tf,base, Base Follow-Up Headway			2.20		3.50	3.30
tf,hv, Heavy Vehicles Adjustment Factor			1.00		1.00	1.00
tf, Follow-Up Headway			2.20		3.50	3.30

Delay and Level of Service by Movement

Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
vx, Volume	864.13	47.83	33.70	525.00	52.17	88.04
cmx, Capacity			755.49		166.68	556.98
V / C			0.04		0.31	0.16
d, Delay			9.99		37.25	22.12
LOS			A		E	C
dA, Approach Delay	0.00		0.60		27.75	
Approach LOS					D	
dRank1, Rank 1 Delay	0.00		0.00			

Delay and Level of Service by Lane

Approach	N (Major)		S (Major)			W
Lane	Lane 1	Lane 2	Lane 1	Lane 2	Lane 3	Lane 1
Movements		T, R1				L1, R1
vx, Volume	455.98	455.98	33.70	262.50	262.50	140.22
Flared Storage Size						
cmx, Capacity						297.64
V / C						0.47
Q95, 95% Queue Length						2.59
d, Delay						27.75
LOS						D
dA, Approach Delay	0.00		0.60			27.75
Approach LOS						D

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Node 241: Encina & Fairview

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.385
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		E		S	
Movement	L1	T	L1	R1	T	R1
Base Volume	116	752	68	80	449	51
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	29	188	17	20	112	13
Adjusted Volume	116	752	68	80	449	51

Volume and Adjustments by Lane Group

Approach	N		E		S
Lane Group	L	C	L	R	C
ID	3209	3210	3207	3208	3212
Lanes	L	T, T	L	R	T, RT
Volume	116	752	68	80	500

Saturation Flow Rate

Approach	N		E		S
Lane Group	3209	3210	3207	3208	3212
Base Saturation Flow Rate	1600	1600	1600	1600	1600
Number of Lanes	1	2	1	1	2
Saturation Flow Rate	1600	3200	1600	1600	3200

Capacity Analysis

Approach	N		E		S	
Movement	L1	T	L1	R1	T	R1
Volume	116	752	68	80	449	51
Volume / Saturation Flow Rate	0.072	0.235	0.043	0.050	0.156	0.156
Overlap adjusted Volume / Saturation Flow Rate	0.072	0.235	0.043	0.050	0.156	0.156
Critical Movement		Y		Y		

Node 256: Calle Real & Patterson

Control Type	Signalized
Method	ICU Method 1
LOS	D
Critical V/C	0.822
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		S		W	
Movement	T	R1	L1	T	L1	R1
Base Volume	1088	123	375	358	61	564
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	272	31	94	90	15	141
Adjusted Volume	1088	123	375	358	61	564

Volume and Adjustments by Lane Group

Approach	N	S		W	
Lane Group	C	L	C	L	R
ID	3214	3219	3221	3216	3217
Lanes	T, RT	L, L	T, T	L	R, R
Volume	1211	375	358	61	564

Saturation Flow Rate

Approach	N	S		W	
Lane Group	3214	3219	3221	3216	3217
Base Saturation Flow Rate	1600	1600	1600	1600	1600
Number of Lanes	2	2	2	1	2
Saturation Flow Rate	3200	3200	3200	1600	3200

Capacity Analysis

Approach	N		S		W	
Movement	T	R1	L1	T	L1	R1
Volume	1088	123	375	358	61	564
Volume / Saturation Flow Rate	0.378	0.378	0.117	0.112	0.038	0.176
Overlap adjusted Volume / Saturation Flow Rate	0.378	0.378	0.117	0.112	0.038	0.176
Critical Movement	Y		Y			Y

Node 273: Cathedral Oaks & Brandon

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	3.85
Worst Case Delay	18.56
Worst Case LOS	C

Volume and Adjustments

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	17.00	5.00	8.00	74.00	117.00	5.00	27.00	5.00	91.00	5.00	291.00	63.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	18.48	5.43	8.70	80.43	127.17	5.43	29.35	5.43	98.91	5.43	316.30	68.48

Pedestrians

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
w, Lane Width (ft)	12.00	12.00	12.00	12.00			12.00	12.00	12.00	12.00		
Sp, Walking Speed (ft/s)	3.50	3.50	3.50	3.50			3.50	3.50	3.50	3.50		
fpb, Percent Blockage	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		

Capacity of Movements below Rank 1

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	2	1	1	4	3	2	2	1	1
vx, Volume	18.48	5.43	8.70	80.43			29.35	5.43	98.91	5.43		
Conflicting Volume (Veh)	701.63	683.70	127.17	384.78			625.00	620.65	316.30	132.61		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	701.63	683.70	127.17	384.78			625.00	620.65	316.30	132.61		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	355.64	373.85	928.40	1184.74			400.12	406.20	728.87	1464.77		
Capacity	286.06	344.98	928.40	1184.74			368.54	374.83	728.87	1464.77		

Critical Headway and Follow Up Headway

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Headway	7.10	6.50	6.20	4.10			7.10	6.50	6.20	4.10		
tc,base,I, Base Critical Headway (Stage I)												
tc,base,II, Base Critical Headway (Stage II)												
tc,HV, Heavy Vehicles Adjustment Factor	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00		
Phv, % Heavy Vehicles	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Factor	0.20	0.20	0.10	1.00			0.20	0.20	0.10	1.00		
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment Factor	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc, Critical Headway	7.10	6.50	6.20	4.10			7.10	6.50	6.20	4.10		
tc,I, Critical Headway (Stage I)												
tc,II, Critical Headway (Stage II)												
tf,base, Base Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		
tf,hv, Heavy Vehicles Adjustment Factor	0.90	0.90	0.90	0.90			0.90	0.90	0.90	0.90		
tf, Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		

Delay and Level of Service by Movement

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	18.48	5.43	8.70	80.43	127.17	5.43	29.35	5.43	98.91	5.43	316.30	68.48
cmx, Capacity	286.06	344.98	928.40	1184.74			368.54	374.83	728.87	1464.77		
V / C	0.06	0.02	0.01	0.07			0.08	0.01	0.14	0.00		
d, Delay	18.56	16.41	9.85	8.26			16.61	16.45	11.78	7.47		
LOS	C	C	A	A			C	C	B	A		
dA, Approach Delay		15.88			3.12			13.03			0.10	
Approach LOS		C						B				
dRank1, Rank 1 Delay					0.00						0.00	

Delay and Level of Service by Lane

Approach	N	E (Major)			S	W (Major)		
Lane	Lane 1	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2	Lane 3
Movements	L1, T, R1				L1, T, R1			
vx, Volume	32.61	80.43	127.17	5.43	133.70	5.43	316.30	68.48
Flared Storage Size								
cmx, Capacity	363.47				581.69			
V / C	0.09				0.23			
Q95, 95% Queue Length	0.30				0.89			
d, Delay	15.88				13.03			
LOS	C				B			
dA, Approach Delay	15.88		3.12		13.03		0.10	
Approach LOS	C				B			

Node 276: Cathedral Oaks & Alameda

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.636
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	E		S		W	
Movement	L1	T	L1	R1	T	R1
Base Volume	246	150	84	146	385	165
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	62	38	21	37	96	41
Adjusted Volume	246	150	84	146	385	165

Volume and Adjustments by Lane Group

Approach	E		S		W	
Lane Group	L	C	L	R	C	R
ID	3252	3253	3256	3257	3254	3255
Lanes	L	T	L	R	T	R
Volume	246	150	84	146	385	165

Saturation Flow Rate

Approach	E		S		W	
Lane Group	3252	3253	3256	3257	3254	3255
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	1	1	1
Saturation Flow Rate	1600	1600	1600	1600	1600	1600

Capacity Analysis

Approach	E		S		W	
Movement	L1	T	L1	R1	T	R1
Volume	246	150	84	146	385	165
Volume / Saturation Flow Rate	0.154	0.094	0.052	0.091	0.241	0.103
Overlap adjusted Volume / Saturation Flow Rate	0.154	0.094	0.052	0.091	0.241	0.103
Critical Movement	Y			Y	Y	

Node 277: Cathedral Oaks & Glen Anne

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.671
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	18	33	14	141	450	17	274	32	117	8	371	224
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	5	8	4	35	113	4	69	8	29	2	93	56
Adjusted Volume	18	33	14	141	450	17	274	32	117	8	371	224

Volume and Adjustments by Lane Group

Approach	N		E			S			W		
Lane Group	L	C	L	C	R	L	C	R	L	C	R
ID	3264	3265	3261	3262	3263	3258	3259	3260	3266	3267	3268
Lanes	L	RT	L	T	R	L	T	R	L	T	R
Volume	18	47	141	450	17	274	32	117	8	371	224

Saturation Flow Rate

Approach	N		E			S			W		
Lane Group	3264	3265	3261	3262	3263	3258	3259	3260	3266	3267	3268
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1
Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	18	33	14	141	450	17	274	32	117	8	371	224
Volume / Saturation Flow Rate	0.011	0.029	0.029	0.088	0.281	0.011	0.171	0.020	0.073	0.005	0.232	0.140
Overlap adjusted Volume / Saturation Flow Rate	0.011	0.029	0.029	0.088	0.281	0.011	0.171	0.020	0.073	0.005	0.232	0.140
Critical Movement		Y		Y			Y				Y	

Node 279:Calle Real & Los Caneros

Control Type	Roundabout
Method	HCM 6th Edition
Average Delay	6.37
Average LOS	A
Worst Case Delay	8.24
Worst Case LOS	A

Volume by Movement						
Approach	N		E		S	
Movement	L1	T	L1	R1	T	R1
Base Volume (veh/h)	27.00	304.00	356.00	12.00	110.00	177.00
PHF	0.92	0.92	0.92	0.92	0.92	0.92
Volume, Lane Flow Rate (veh/h)	29.35	330.43	386.96	13.04	119.57	192.39

Volume			
Approach	N	E	S
Lane	Lane 1	Lane 1	Lane 1
Movements	L1, T	L1, R1	T, R1
Volume, Lane Flow Rate (veh/h)	359.783	400.000	311.957
P_T, Share of Heavy Vehicles	0.00	0.00	0.00
f_HV, Heavy-Vehicle Adjustment Factor	1.000	1.000	1.000
Adjusted Volume (pc/h)	359.783	400.000	311.957
De-Facto Movements	L1, T	L1, R1	T, R1
Is Bypass Lane			
Uses Bypass			
Bypass Type			
Bypass Volume (pc/h)	0.000	0.000	0.000
Non-Bypass Volume (pc/h)	359.783	400.000	311.957

Capacity			
Approach	N	E	S
Lane	Lane 1	Lane 1	Lane 1
Movements	L1, T	L1, R1	T, R1
v_e, Entry Volume (pc/h)	359.78	400.00	311.96
v_bypass, Bypass Volume (pc/h)			
t_f, Follow Up Headway			
t_c, Critical Headway			
A, Capacity Calibration Factor	1380.00	1380.00	1380.00
B, Capacity Calibration Factor	0.00102	0.00102	0.00102
v_c, Conflicting Volume (pc/h)	386.96	119.57	29.35
v_ex,pce, Conflicting Volume for Bypass Lane (pc/h)			
c_pce, Capacity (pc/h)	929.96	1221.56	1339.30
n_ped, Conflicting Pedestrian Volume	0.00	0.00	0.00
f_ped, Pedestrian Adjustment Factor	1.000	1.000	1.000
P_T, Share of Heavy Vehicles	0.00	0.00	0.00
f_HV, Heavy-Vehicle Adjustment Factor	1.000	1.000	1.000
c, Capacity (veh/h)	929.96	1221.56	1339.30

Delay and Level of Service by Lane			
Approach	N	E	S
Lane	Lane 1	Lane 1	Lane 1
Movements	L1, T	L1, R1	T, R1
v, Volume, Lane Flow Rate (veh/h)	359.78	400.00	311.96
c, Capacity (veh/h)	929.96	1221.56	1339.30
x, Volume-to-Capacity Ratio	0.39	0.33	0.23
Q_95, 95% Queue Length (veh)	1.88	1.46	0.91
d, Delay (s/veh)	8.24	6.02	4.67
LOS	A	A	A
Approach Delay (s/veh)	8.24	6.02	4.67
Approach LOS	A	A	A

Delay and Level of Service by Movement						
Approach	N		E		S	
Movement	L1	T	L1	R1	T	R1
v, Volume, Lane Flow Rate (veh/h)	29.35	330.43	386.96	13.04	119.57	192.39
c, Capacity (veh/h)	929.96	929.96	1221.56	1221.56	1339.30	1339.30
x, Volume-to-Capacity Ratio	0.03	0.36	0.32	0.01	0.09	0.14
d, Delay (s/veh)	8.24	8.24	6.02	6.02	4.67	4.67
LOS	A	A	A	A	A	A
Approach Delay (s/veh)	8.24		6.02		4.67	
Approach LOS	A		A		A	

Node 280: Calle Real & La Patera	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	5.29
Worst Case Delay	20.79
Worst Case LOS	C

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	142.00	70.00	351.00	71.00	24.00	174.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	154.35	76.09	381.52	77.17	26.09	189.13

Pedestrians						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Flow (Ped/hr)	0.00	0.00			0.00	
w, Lane Width (ft)	12.00	12.00			12.00	
Sp, Walking Speed (ft/s)	3.50	3.50			3.50	
fpb, Percent Blockage	0.00	0.00			0.00	

Capacity of Movements below Rank 1						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Rank	3	2	1	1	2	1
vx, Volume	154.35	76.09			26.09	
Conflicting Volume (Veh)	661.41	420.11			458.70	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	661.41	420.11			458.70	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	430.28	637.54			1112.89	
Capacity	419.01	637.54			1112.89	

Critical Headway and Follow Up Headway						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
tc,base, Base Critical Headway	7.10	6.20			4.10	
tc,base,I, Base Critical Headway (Stage I)						
tc,base,II, Base Critical Headway (Stage II)						
tc,HV, Heavy Vehicles Adjustment Factor	1.00	1.00			1.00	
Phv, % Heavy Vehicles	0.00	0.00			0.00	
tc,G, Grade Adjustment Factor	0.20	0.10			1.00	
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment Factor	0.70	0.00			0.00	
tc, Critical Headway	6.40	6.20			4.10	
tc,I, Critical Headway (Stage I)						
tc,II, Critical Headway (Stage II)						
tf,base, Base Follow-Up Headway	3.50	3.30			2.20	
tf,hv, Heavy Vehicles Adjustment Factor	0.90	0.90			0.90	
tf, Follow-Up Headway	3.50	3.30			2.20	

Delay and Level of Service by Movement						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Volume	154.35	76.09	381.52	77.17	26.09	189.13
cmx, Capacity	419.01	637.54			1112.89	
V / C	0.37	0.12			0.02	
d, Delay	20.79	17.84			8.31	
LOS	C	C			A	
dA, Approach Delay	19.82		0.00		1.01	
Approach LOS	C					
dRank1, Rank 1 Delay			0.00		0.22	

Delay and Level of Service by Lane			
Approach	N	E (Major)	W (Major)
Lane	Lane 1	Lane 1	Lane 1
Movements	L1, R1	T, R1	L1, T
vx, Volume	230.43	458.70	215.22
Flared Storage Size			
cmx, Capacity	472.48		1112.89
V / C	0.49		0.19
Q95, 95% Queue Length	2.79		0.72
d, Delay	19.82		8.31
LOS	C		
dA, Approach Delay	19.82	0.00	1.01
Approach LOS	C		

Node 282: Calle Real & Carlo Dr	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	4.29
Worst Case Delay	26.39
Worst Case LOS	D

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	74.00	99.00	343.00	32.00	69.00	391.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	80.43	107.61	372.83	34.78	75.00	425.00

Pedestrians						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Flow (Ped/hr)	0.00	0.00			0.00	
w, Lane Width (ft)	12.00	12.00			12.00	
Sp, Walking Speed (ft/s)	3.50	3.50			3.50	
fpb, Percent Blockage	0.00	0.00			0.00	

Capacity of Movements below Rank 1						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Rank	3	2	1	1	2	1
vx, Volume	80.43	107.61			75.00	
Conflicting Volume (Veh)	965.22	390.22			407.61	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	965.22	390.22			407.61	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	285.08	662.65			1162.09	
Capacity	264.22	662.65			1162.09	

Critical Headway and Follow Up Headway						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
tc,base, Base Critical Headway	7.10	6.20			4.10	
tc,base,I, Base Critical Headway (Stage I)						
tc,base,II, Base Critical Headway (Stage II)						
tc,HV, Heavy Vehicles Adjustment Factor	1.00	1.00			1.00	
Phv, % Heavy Vehicles	0.00	0.00			0.00	
tc,G, Grade Adjustment Factor	0.20	0.10			1.00	
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment Factor	0.70	0.00			0.00	
tc, Critical Headway	6.40	6.20			4.10	
tc,I, Critical Headway (Stage I)						
tc,II, Critical Headway (Stage II)						
tf,base, Base Follow-Up Headway	3.50	3.30			2.20	
tf,hv, Heavy Vehicles Adjustment Factor	0.90	0.90			0.90	
tf, Follow-Up Headway	3.50	3.30			2.20	

Delay and Level of Service by Movement						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Volume	80.43	107.61	372.83	34.78	75.00	425.00
cmx, Capacity	264.22	662.65			1162.09	
V / C	0.30	0.16			0.06	
d, Delay	26.39	18.19			8.31	
LOS	D	C			A	
dA, Approach Delay	21.70		0.00		1.25	
Approach LOS	C					
dRank1, Rank 1 Delay			0.00		0.00	

Delay and Level of Service by Lane					
Approach	N	E (Major)	W (Major)		
Lane	Lane 1	Lane 1	Lane 1	Lane 2	Lane 3
Movements	L1, R1	T, R1			
vx, Volume	188.04	407.61	75.00	212.50	212.50
Flared Storage Size					
cmx, Capacity	402.82				
V / C	0.47				
Q95, 95% Queue Length	2.57				
d, Delay	21.70				
LOS	C				
dA, Approach Delay	21.70	0.00	1.25		
Approach LOS	C				

Node 288: Calle Real & Fairview

Control Type	Signalized
Method	ICU Method 1
LOS	D
Critical V/C	0.897
Loss Time	20
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	89	651	76	232	145	55	235	427	121	28	127	401
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	22	163	19	58	36	14	59	107	30	7	32	100
Adjusted Volume	89	651	76	232	145	55	235	427	121	28	127	401

Volume and Adjustments by Lane Group

Approach	N		E		S		W		
Lane Group	L	C	L	C	C	R	L	C	R
ID	3275	3276	3272	3274	3269	3271	3278	3279	3280
Lanes	L	T, RT	L, L	RT	LT, T	R	L	T	R
Volume	89	727	232	200	662	121	28	127	401

Saturation Flow Rate

Approach	N		E		S		W		
Lane Group	3275	3276	3272	3274	3269	3271	3278	3279	3280
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	2	1	2	1	1	1	1
Saturation Flow Rate	1600	3200	3200	1600	3200	1600	1600	1600	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	89	651	76	232	145	55	235	427	121	28	127	401
Volume / Saturation Flow Rate	0.056	0.227	0.227	0.072	0.125	0.125	0.147	0.207	0.076	0.018	0.079	0.251
Overlap adjusted Volume / Saturation Flow Rate	0.056	0.227	0.227	0.072	0.125	0.125	0.147	0.207	0.076	0.018	0.079	0.251
Critical Movement		Y		Y			Y					Y

Node 289: Fairview & US 101 NB Ramps

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.271
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement						
Approach	N	E		S	W	
Movement	T	T	R1		L1	R1
Base Volume	157	852	433		387	163
PHF	1.000	1.000	1.000		1.000	1.000
Peak 15 Volume	39	213	108		97	41
Adjusted Volume	157	852	433		387	163

Volume and Adjustments by Lane Group						
Approach	N	E		S	W	
Lane Group	C	C	R		L	R
ID	3283	3281	3282		3284	3286
Lanes	T	T	R		L, L	R
Volume	157	852	433		387	163

Saturation Flow Rate						
Approach	N	E		S	W	
Lane Group	3283	3281	3282		3284	3286
Base Saturation Flow Rate	1600	1600	1600		1600	1600
Number of Lanes	1	1	1		2	1
Saturation Flow Rate	1600	1600	1600		3200	1600

Capacity Analysis						
Approach	N	E		S	W	
Movement	T	T	R1		L1	R1
Volume	157	852	433		387	163
Volume / Saturation Flow Rate	0.098	0.532	0.271		0.121	0.102
Overlap adjusted Volume / Saturation Flow Rate	0.098	0.532	0.271		0.121	0.102
Critical Movement					Y	

Node 296: Calle Real & Kellogg

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.45
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Base Volume	210	110	397	77	33	393
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	53	28	99	19	8	98
Adjusted Volume	210	110	397	77	33	393

Volume and Adjustments by Lane Group

Approach	N		E	W	
Lane Group	L	R	C	L	C
ID	3289	3290	3287	3291	3292
Lanes	L	R	T, RT	L	T, T
Volume	210	110	474	33	393

Saturation Flow Rate

Approach	N		E	W	
Lane Group	3289	3290	3287	3291	3292
Base Saturation Flow Rate	1600	1600	1600	1600	1600
Number of Lanes	1	1	2	1	2
Saturation Flow Rate	1600	1600	3200	1600	3200

Capacity Analysis

Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Volume	210	110	397	77	33	393
Volume / Saturation Flow Rate	0.131	0.069	0.148	0.148	0.021	0.123
Overlap adjusted Volume / Saturation Flow Rate	0.131	0.069	0.148	0.148	0.021	0.123
Critical Movement	Y		Y		Y	

Node 305: Patterson & Overpass

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.595
Loss Time	12
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	52	1097	124	8	7	47	20	772	19	83	5	20
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	13	274	31	2	2	12	5	193	5	21	1	5
Adjusted Volume	52	1097	124	8	7	47	20	772	19	83	5	20

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	L	C	C	R	L	C	C	R
ID	3296	3297	3294	3295	3301	3302	3299	3300
Lanes	L	T, RT	LT	R	L	T, RT	LT	R
Volume	52	1221	15	47	20	791	88	20

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	3296	3297	3294	3295	3301	3302	3299	3300
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	1	1	1	2	1	1
Saturation Flow Rate	1600	3200	1600	1600	1600	3200	1600	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	52	1097	124	8	7	47	20	772	19	83	5	20
Volume / Saturation Flow Rate	0.033	0.382	0.382	0.005	0.009	0.029	0.013	0.247	0.247	0.052	0.055	0.013
Overlap adjusted Volume / Saturation Flow Rate	0.033	0.382	0.382	0.005	0.009	0.029	0.013	0.247	0.247	0.052	0.055	0.013
Critical Movement			Y			Y	Y			Y		

Node 306: Patterson & US 101 SB Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	C
Critical V/C	0.774
Loss Time	12
Cycle Length	100

Volume and Adjustments by Movement								
Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	583	890		557	353	220	5	386
PHF	1.000	1.000		1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	146	223		139	88	55	1	97
Adjusted Volume	583	890		557	353	220	5	386

Volume and Adjustments by Lane Group						
Approach	N		E	S		W
Lane Group	L	C		C	R	C
ID	3304	3305		3309	3311	3307
Lanes	L	T, T		T, T	R	L, LTR
Volume	583	890		557	353	611

Saturation Flow Rate						
Approach	N		E	S		W
Lane Group	3304	3305		3309	3311	3307
Base Saturation Flow Rate	1600	1600		1600	1600	1600
Number of Lanes	1	2		2	1	2
Saturation Flow Rate	1600	3200		3200	1600	3200

Capacity Analysis								
Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Volume	583	890		557	353	220	5	386
Volume / Saturation Flow Rate	0.364	0.278		0.174	0.221	0.069	0.191	0.191
Overlap adjusted Volume / Saturation Flow Rate	0.364	0.278		0.174	0.221	0.069	0.191	0.191
Critical Movement	Y				Y	Y		

Node 331: Hollister & Modoc Rd

Control Type	Signalized
Method	ICU Method 1
LOS	C
Critical V/C	0.757
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	E		S		W	
Movement	L1	T	L1	R1	T	R1
Base Volume	138	538	305	90	609	289
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	35	135	76	23	152	72
Adjusted Volume	138	538	305	90	609	289

Volume and Adjustments by Lane Group

Approach	E		S		W	
Lane Group	L	C	L	R	C	R
ID	3331	3332	3329	3330	3333	3334
Lanes	L	T	L	R	T	R
Volume	138	538	305	90	609	289

Saturation Flow Rate

Approach	E		S		W	
Lane Group	3331	3332	3329	3330	3333	3334
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	1	1	1
Saturation Flow Rate	1600	1600	1600	1600	1600	1600

Capacity Analysis

Approach	E		S		W	
Movement	L1	T	L1	R1	T	R1
Volume	138	538	305	90	609	289
Volume / Saturation Flow Rate	0.086	0.336	0.191	0.056	0.381	0.181
Overlap adjusted Volume / Saturation Flow Rate	0.086	0.336	0.191	0.056	0.381	0.181
Critical Movement	Y		Y		Y	

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Node 340: San Marcos Pass & Calle Real

Control Type	Signalized
Method	ICU Method 1
LOS	C
Critical V/C	0.718
Loss Time	20
Cycle Length	120

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	88	449	121	160	254	405	122	67	242	57	161	315
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	22	112	30	40	64	101	31	17	61	14	40	79
Adjusted Volume	88	449	121	160	254	405	122	67	242	57	161	315

Volume and Adjustments by Lane Group

Approach	N		E			S		W		
Lane Group	L	C	L	C	R	L	C	L	C	R
ID	3338	3339	3335	3336	3337	3344	3345	3341	3342	3343
Lanes	L	T, RT	L	T	R	L	T, RT	L	T	R
Volume	88	570	160	254	405	122	309	57	161	315

Saturation Flow Rate

Approach	N		E			S		W		
Lane Group	3338	3339	3335	3336	3337	3344	3345	3341	3342	3343
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	1	1	1	1	2	1	1	1
Saturation Flow Rate	1600	3200	1600	1600	1600	1600	3200	1600	1600	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	88	449	121	160	254	405	122	67	242	57	161	315
Volume / Saturation Flow Rate	0.055	0.178	0.178	0.100	0.159	0.253	0.076	0.097	0.097	0.036	0.101	0.197
Overlap adjusted Volume / Saturation Flow Rate	0.055	0.178	0.178	0.100	0.159	0.253	0.076	0.097	0.097	0.036	0.101	0.197
Critical Movement		Y		Y			Y					Y

Node 341: San Marcos Pass & State & SB On-Ramp

Control Type	Signalized
Method	ICU Method 1
LOS	C
Critical V/C	0.751
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement										
Approach	N			E	S			W		
Movement	L2	L1	R1		T	R1	R2	L2	L1	T
Base Volume	873	45	109		491	56	59	527	252	502
PHF	1.000	1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	218	11	27		123	14	15	132	63	126
Adjusted Volume	873	45	109		491	56	59	527	252	502

Volume and Adjustments by Lane Group								
Approach	N			E	S		W	
Lane Group	L	L	R		C	R	L	C
ID	3350	3352	3353		3347	3349	3354	3356
Lanes	L, L	L	R		T, RT	R	L, L	T, T
Volume	873	45	109		547	59	779	502

Saturation Flow Rate								
Approach	N			E	S		W	
Lane Group	3350	3352	3353		3347	3349	3354	3356
Base Saturation Flow Rate	1600	1600	1600		1600	1600	1600	1600
Number of Lanes	2	1	1		2	1	2	2
Saturation Flow Rate	3200	1600	1600		3200	1600	3200	3200

Capacity Analysis										
Approach	N			E	S			W		
Movement	L2	L1	R1		T	R1	R2	L2	L1	T
Volume	873	45	109		491	56	59	527	252	502
Volume / Saturation Flow Rate	0.273	0.028	0.068		0.171	0.171	0.037	0.165	0.158	0.157
Overlap adjusted Volume / Saturation Flow Rate	0.273	0.028	0.068		0.171	0.171	0.037	0.165	0.158	0.157
Critical Movement	Y				Y				Y	

Node 359: Cathedral Oaks & Winchester Canyon

Control Type	AWSC
Method	HCM 6th Edition
Average Delay	10.78
Average LOS	B

Volume and Adjustments												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	35.00	20.00	49.00	15.00	164.00	12.00	87.00	26.00	100.00	8.00	203.00	15.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
Flow Rate	38.04	21.74	53.26	16.30	178.26	13.04	94.57	28.26	108.70	8.70	220.65	16.30
Geometry Group	4b			5			5			5		

Saturation Headway							
Approach	N	E		S		W	
Lanes	Lane 1	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
Total Lane Flow Rate	113.04	16.30	191.30	122.83	108.70	8.70	236.96
Left Turn Flow Rate	38.04	16.30	0.00	94.57	0.00	8.70	0.00
Right Turn Flow Rate	53.26	0.00	13.04	0.00	108.70	0.00	16.30
PLT, Proportion LT	0.34	1.00	0.00	0.77	0.00	1.00	0.00
PRT, Proportion RT	0.47	0.00	0.07	0.00	1.00	0.00	0.07
PHV, Proportion HV	0.00	0.00	0.00	0.00	0.00	0.00	0.00
hLT,adj, Headway adjustment for left turns	0.20	0.50		0.50		0.50	
hRT,adj, Headway adjustment for right turns	-0.60	-0.70		-0.70		-0.70	
hHV,adj, Headway adjustment for heavy vehicles	1.70	1.70		1.70		1.70	
hadj, Headway adjustment	-0.22	0.50	-0.05	0.38	-0.70	0.50	-0.05

Departure Headway							
Approach	N	E		S		W	
Lanes	Lane 1	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
Total Lane Flow Rate	113.04	16.30	191.30	122.83	108.70	8.70	236.96
hd initial	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x initial	0.10	0.01	0.17	0.11	0.10	0.01	0.21
hd, iteration 1	5.19	5.72	5.17	5.68	4.59	5.69	5.14
Difference, iteration 1	1.99	2.52	1.97	2.48	1.39	2.49	1.94
hd, iteration 2	5.76	6.18	5.63	6.17	5.09	6.13	5.58
Difference, iteration 2	0.56	0.46	0.46	0.50	0.49	0.44	0.44
hd, iteration 3	5.89	6.30	5.75	6.29	5.20	6.25	5.69
Difference, iteration 3	0.13	0.12	0.12	0.12	0.12	0.11	0.11
hd, iteration 4	5.92	6.33	5.77	6.32	5.23	6.27	5.72
Difference, iteration 4	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Convergence	Y	Y	Y	Y	Y	Y	Y
hd final, Departure Headway	5.92	6.33	5.77	6.32	5.23	6.27	5.72
x final, Degree of Utilization	0.19	0.03	0.31	0.22	0.16	0.02	0.38

Capacity and Level of Service							
Approach	N	E		S		W	
Lanes	Lane 1	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
Total Lane Flow Rate	113.04	16.30	191.30	122.83	108.70	8.70	236.96
hd, Departure Headway	5.92	6.33	5.77	6.32	5.23	6.27	5.72
x, Degree of Utilization	0.19	0.03	0.31	0.22	0.16	0.02	0.38
m, Move Up Time	2.00	2.30	2.30	2.30	2.30	2.30	2.30
ts, Service Time	3.92	4.03	3.47	4.02	2.93	3.97	3.42
Capacity	607.61	568.01	623.42	569.51	687.52	572.73	628.49
Delay	10.27	9.21	11.03	10.76	8.91	9.07	11.87
LOS	B	A	B	B	A	A	B
Q95, 95% Queue Length	0.68	0.09	1.32	0.82	0.56	0.05	1.80
Approach Delay	10.27	10.88		9.89		11.77	
Approach LOS	B	B		A		B	
Intersection Delay	10.78						
Intersection LOS	B						

Node 372: Glen Annie & Del Norte

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	1.62
Worst Case Delay	11.02
Worst Case LOS	B

Volume and Adjustments

Approach	N (Major)		S (Major)	W
Movement	T	R1	T	R1
Base Volume	401.00	21.00	548.00	167.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920
V, Adjusted Volume	435.87	22.83	595.65	181.52

Pedestrians

Approach	N (Major)		S (Major)	W
Movement	T	R1	T	R1
vx, Flow (Ped/hr)				0.00
w, Lane Width (ft)				12.00
Sp, Walking Speed (ft/s)				3.50
fpb, Percent Blockage				0.00

Capacity of Movements below Rank 1

Approach	N (Major)		S (Major)	W
Movement	T	R1	T	R1
Rank	1	1	1	2
vx, Volume				181.52
Conflicting Volume (Veh)				229.35
Conflicting Volume (Ped)				0.00
Conflicting Volume				229.35
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median Refuge Area				
cpx, Potential Capacity				779.35
Capacity				779.35

Critical Headway and Follow Up Headway

Approach	N (Major)		S (Major)	W
Movement	T	R1	T	R1
tc,base, Base Critical Headway				6.90
tc,base,I, Base Critical Headway (Stage I)				
tc,base,II, Base Critical Headway (Stage II)				
tc,HV, Heavy Vehicles Adjustment Factor				2.00
Phv, % Heavy Vehicles				0.00
tc,G, Grade Adjustment Factor				0.10
G, % Grade	0.00		0.00	0.00
T3,lt, Geometry Adjustment Factor				0.00
tc, Critical Headway				6.90
tc,I, Critical Headway (Stage I)				
tc,II, Critical Headway (Stage II)				
tf,base, Base Follow-Up Headway				3.30
tf,hv, Heavy Vehicles Adjustment Factor				1.00
tf, Follow-Up Headway				3.30

Delay and Level of Service by Movement

Approach	N (Major)		S (Major)	W
Movement	T	R1	T	R1
vx, Volume	435.87	22.83	595.65	181.52
cmx, Capacity				779.35
V / C				0.23
d, Delay				11.02
LOS				B
dA, Approach Delay	0.00		0.00	11.02
Approach LOS				B
dRank1, Rank 1 Delay	0.00		0.00	

Delay and Level of Service by Lane

Approach	N (Major)		S (Major)		W
Lane	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1
Movements		T, R1			
vx, Volume	229.35	229.35	297.83	297.83	181.52
Flared Storage Size					
cmx, Capacity					
V / C					
Q95, 95% Queue Length					
d, Delay					
LOS					
dA, Approach Delay	0.00		0.00		11.02
Approach LOS					B

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Node 375: Los Caneros & US101 SB Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.654
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement								
Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	32	1552		249	484	110	5	342
PHF	1.000	1.000		1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	8	388		62	121	28	1	86
Adjusted Volume	32	1552		249	484	110	5	342

Volume and Adjustments by Lane Group						
Approach	N		E	S	W	
Lane Group	L	C		C	C	R
ID	3358	3359		3363	3361	3362
Lanes	L	T, T		T, RT	LT	R
Volume	32	1552		733	115	342

Saturation Flow Rate						
Approach	N		E	S	W	
Lane Group	3358	3359		3363	3361	3362
Base Saturation Flow Rate	1600	1600		1600	1600	1600
Number of Lanes	1	2		2	1	1
Saturation Flow Rate	1600	3200		3200	1600	1600

Capacity Analysis								
Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Volume	32	1552		249	484	110	5	342
Volume / Saturation Flow Rate	0.020	0.485		0.229	0.229	0.069	0.072	0.214
Overlap adjusted Volume / Saturation Flow Rate	0.020	0.485		0.229	0.229	0.069	0.072	0.214
Critical Movement		Y				Y		

Node 376: Los Carneros & US 101 NB Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	C
Critical V/C	0.718
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		E			S		W
Movement	T	R1	L1	T	R1	L1	T	
Base Volume	725	138	847	5	143	54	312	
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Peak 15 Volume	181	35	212	1	36	14	78	
Adjusted Volume	725	138	847	5	143	54	312	

Volume and Adjustments by Lane Group

Approach	N	E	S		W
Lane Group	C	C	L	C	
ID	3367	3365	3369	3370	
Lanes	T, RT	L, LTR	L	T, T	
Volume	863	995	54	312	

Saturation Flow Rate

Approach	N	E	S		W
Lane Group	3367	3365	3369	3370	
Base Saturation Flow Rate	1600	1600	1600	1600	
Number of Lanes	2	2	1	2	
Saturation Flow Rate	3200	3200	1600	3200	

Capacity Analysis

Approach	N		E			S		W
Movement	T	R1	L1	T	R1	L1	T	
Volume	725	138	847	5	143	54	312	
Volume / Saturation Flow Rate	0.270	0.270	0.265	0.311	0.311	0.034	0.098	
Overlap adjusted Volume / Saturation Flow Rate	0.270	0.270	0.265	0.311	0.311	0.034	0.098	
Critical Movement	Y		Y			Y		

Node 383: Fairview & US 101 SB Ramps

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.62
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	456	1363		382	318	151	5	467
PHF	1.000	1.000		1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	114	341		96	80	38	1	117
Adjusted Volume	456	1363		382	318	151	5	467

Volume and Adjustments by Lane Group

Approach	N		E	S		W	
Lane Group	L	C		C	R	C	R
ID	3375	3377		3372	3374	3379	3380
Lanes	L, L	T, T		T, T	R	LT	R
Volume	456	1363		382	318	156	467

Saturation Flow Rate

Approach	N		E	S		W	
Lane Group	3375	3377		3372	3374	3379	3380
Base Saturation Flow Rate	1600	1600		1600	1600	1600	1600
Number of Lanes	2	2		2	1	1	1
Saturation Flow Rate	3200	3200		3200	1600	1600	1600

Capacity Analysis

Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Volume	456	1363		382	318	151	5	467
Volume / Saturation Flow Rate	0.142	0.426		0.119	0.199	0.094	0.098	0.292
Overlap adjusted Volume / Saturation Flow Rate	0.142	0.426		0.119	0.199	0.094	0.098	0.292
Critical Movement		Y				Y		

Node 385: Hollister & Fairview

Control Type	Signalized
Method	ICU Method 1
LOS	D
Critical V/C	0.843
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	378	656	614	83	518	301	98	145	40	193	295	107
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	95	164	154	21	130	75	25	36	10	48	74	27
Adjusted Volume	378	656	614	83	518	301	98	145	40	193	295	107

Volume and Adjustments by Lane Group											
Approach	N			E			S		W		
Lane Group	L	C	R	L	C	R	L	C	L	C	R
ID	3388	3390	3392	3384	3385	3387	3381	3382	3393	3395	3397
Lanes	L, L	T, T	R	L	T, T	R	L	T, RT	L, L	T, T	R
Volume	378	656	614	83	518	301	98	185	193	295	107

Saturation Flow Rate											
Approach	N			E			S		W		
Lane Group	3388	3390	3392	3384	3385	3387	3381	3382	3393	3395	3397
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	2	2	1	1	2	1	1	2	2	2	1
Saturation Flow Rate	3200	3200	1600	1600	3200	1600	1600	3200	3200	3200	1600

Capacity Analysis												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	378	656	614	83	518	301	98	145	40	193	295	107
Volume / Saturation Flow Rate	0.118	0.205	0.384	0.052	0.162	0.188	0.061	0.058	0.058	0.060	0.092	0.067
Overlap adjusted Volume / Saturation Flow Rate	0.118	0.205	0.384	0.052	0.162	0.188	0.061	0.058	0.058	0.060	0.092	0.067
Critical Movement			Y			Y	Y			Y		

Node 386: Fairview & Mandarin

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	17.38
Worst Case Delay	831.59
Worst Case LOS	F

Volume and Adjustments

Approach	E		S (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	51.00	243.00	506.00	51.00	165.00	1693.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	55.43	264.13	550.00	55.43	179.35	1840.22

Pedestrians

Approach	E		S (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Flow (Ped/hr)	0.00	0.00			0.00	
w, Lane Width (ft)	12.00	12.00			12.00	
Sp, Walking Speed (ft/s)	3.50	3.50			3.50	
fpb, Percent Blockage	0.00	0.00			0.00	

Capacity of Movements below Rank 1

Approach	E		S (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Rank	3	2	1	1	2	1
vx, Volume	55.43	264.13			179.35	
Conflicting Volume (Veh)	1828.80	275.00			605.43	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	1828.80	275.00			605.43	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	69.55	728.57			982.41	
Capacity	43.58	728.57			982.41	

Critical Headway and Follow Up Headway

Approach	E		S (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
tc,base, Base Critical Headway	7.50	6.90			4.10	
tc,base,I, Base Critical Headway (Stage I)						
tc,base,II, Base Critical Headway (Stage II)						
tc,HV, Heavy Vehicles Adjustment Factor	2.00	2.00			2.00	
Phv, % Heavy Vehicles	0.00	0.00			0.00	
tc,G, Grade Adjustment Factor	0.20	0.10			1.00	
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment Factor	0.70	0.00			0.00	
tc, Critical Headway	6.80	6.90			4.10	
tc,I, Critical Headway (Stage I)						
tc,II, Critical Headway (Stage II)						
tf,base, Base Follow-Up Headway	3.50	3.30			2.20	
tf,hv, Heavy Vehicles Adjustment Factor	1.00	1.00			1.00	
tf, Follow-Up Headway	3.50	3.30			2.20	

Delay and Level of Service by Movement

Approach	E		S (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Volume	55.43	264.13	550.00	55.43	179.35	1840.22
cmx, Capacity	43.58	728.57			982.41	
V / C	1.27	0.36			0.18	
d, Delay	831.59	12.74			9.48	
LOS	F	B			A	
dA, Approach Delay	154.79		0.00		0.84	
Approach LOS	F					
dRank1, Rank 1 Delay			0.00		0.00	

Delay and Level of Service by Lane

Approach	E		S (Major)			W (Major)		
Lane	Lane 1	Lane 2	Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 3
Movements								
vx, Volume	55.43	264.13	275.00	275.00	55.43	179.35	920.11	920.11
Flared Storage Size								
cmx, Capacity								
V / C								
Q95, 95% Queue Length								
d, Delay								
LOS								
dA, Approach Delay	154.79		0.00			0.84		
Approach LOS	F							

Node 387: Hollister & Orange

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	3.56
Worst Case Delay	100.38
Worst Case LOS	F

Volume and Adjustments

Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	10.00	5.00	23.00	107.00	846.00	8.00	23.00	5.00	23.00	5.00	647.00	71.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	10.87	5.43	25.00	116.30	919.57	8.70	25.00	5.43	25.00	5.43	703.26	77.17

Pedestrians

Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
w, Lane Width (ft)	12.00	12.00	12.00	12.00			12.00	12.00	12.00	12.00		
Sp, Walking Speed (ft/s)	3.50	3.50	3.50	3.50			3.50	3.50	3.50	3.50		
fpb, Percent Blockage	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		

Capacity of Movements below Rank 1

Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	2	1	1	4	3	2	2	1	1
vx, Volume	10.87	5.43	25.00	116.30			25.00	5.43	25.00	5.43		
Conflicting Volume (Veh)	1521.74	1947.83	464.13	780.43			1447.83	1913.59	390.22	928.26		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1521.74	1947.83	464.13	780.43			1447.83	1913.59	390.22	928.26		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	82.75	65.34	550.25	845.91			93.90	68.63	614.23	744.94		
Capacity	62.62	52.66	550.25	845.91			70.43	55.31	614.23	744.94		

Critical Headway and Follow Up Headway

Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Headway	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,base,I, Base Critical Headway (Stage I)												
tc,base,II, Base Critical Headway (Stage II)												
tc,HV, Heavy Vehicles Adjustment Factor	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00		
Phv, % Heavy Vehicles	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Factor	0.20	0.20	0.10	1.00			0.20	0.20	0.10	1.00		
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment Factor	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc, Critical Headway	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,I, Critical Headway (Stage I)												
tc,II, Critical Headway (Stage II)												
tf,base, Base Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		
tf,hv, Heavy Vehicles Adjustment Factor	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00		
tf, Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		

Delay and Level of Service by Movement

Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	10.87	5.43	25.00	116.30	919.57	8.70	25.00	5.43	25.00	5.43	703.26	77.17
cmx, Capacity	62.62	52.66	550.25	845.91			70.43	55.31	614.23	744.94		
V / C	0.17	0.10	0.05	0.14			0.35	0.10	0.04	0.01		
d, Delay	75.69	86.57	24.75	9.93			86.41	100.38	41.16	9.87		
LOS	F	F	C	A			F	F	E	A		
dA, Approach Delay		46.29			1.11			67.37			0.07	
Approach LOS		E						F				
dRank1, Rank 1 Delay					0.00						0.00	

Delay and Level of Service by Lane

Approach	N		E (Major)		S		W (Major)	
Lane	Lane 1	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2	Lane 3
Movements	L1, T, R1			T, R1	L1, T, R1			T, R1
vx, Volume	41.30	116.30	464.13	464.13	55.43	5.43	390.22	390.22
Flared Storage Size								
cmx, Capacity	128.19				112.24			
V / C	0.32				0.49			
Q95, 95% Queue Length	1.38				2.68			
d, Delay	46.29				67.37			
LOS	E				F			
dA, Approach Delay	46.29		1.11		67.37		0.07	
Approach LOS	E				F			

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Node 390: Hollister & Pine/Nectarine

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.543
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	50	29	56	154	803	26	100	11	90	7	467	142
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	13	7	14	39	201	7	25	3	23	2	117	36
Adjusted Volume	50	29	56	154	803	26	100	11	90	7	467	142

Volume and Adjustments by Lane Group

Approach	N	E		S	W	
Lane Group	C	L	C	C	L	C
ID	3401	3398	3399	3405	3402	3403
Lanes	LTR	L	T, RT	LTR	L	T, RT
Volume	135	154	829	201	7	609

Saturation Flow Rate

Approach	N	E		S	W	
Lane Group	3401	3398	3399	3405	3402	3403
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	2	1	1	2
Saturation Flow Rate	1600	1600	3200	1600	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	50	29	56	154	803	26	100	11	90	7	467	142
Volume / Saturation Flow Rate	0.031	0.084	0.084	0.096	0.259	0.259	0.063	0.126	0.126	0.004	0.190	0.190
Overlap adjusted Volume / Saturation Flow Rate	0.031	0.084	0.084	0.096	0.259	0.259	0.063	0.126	0.126	0.004	0.190	0.190
Critical Movement	Y			Y				Y			Y	

Node 394: Hollister & Rutherford

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.429
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	E		S		W	
Movement	L1	T	L1	R1	T	R1
Base Volume	152	928	37	25	488	34
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	38	232	9	6	122	9
Adjusted Volume	152	928	37	25	488	34

Volume and Adjustments by Lane Group

Approach	E		S	W
Lane Group	L	C	C	C
ID	3406	3407	3411	3409
Lanes	L	T, T	LTR	T, RT
Volume	152	928	62	522

Saturation Flow Rate

Approach	E		S	W
Lane Group	3406	3407	3411	3409
Base Saturation Flow Rate	1600	1600	1600	1600
Number of Lanes	1	2	1	2
Saturation Flow Rate	1600	3200	1600	3200

Capacity Analysis

Approach	E		S		W	
Movement	L1	T	L1	R1	T	R1
Volume	152	928	37	25	488	34
Volume / Saturation Flow Rate	0.095	0.290	0.023	0.039	0.163	0.163
Overlap adjusted Volume / Saturation Flow Rate	0.095	0.290	0.023	0.039	0.163	0.163
Critical Movement		Y		Y		

Node 396: Hollister & Community Center West Driveway

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	0.36
Worst Case Delay	8.78
Worst Case LOS	A

Volume and Adjustments

Approach	E (Major)		S	W (Major)	
Movement	L1	T		T	R1
Base Volume	67.00	1075.00		475.00	37.00
PHF, Peak-hour factor	0.920	0.920		0.920	0.920
V, Adjusted Volume	72.83	1168.48		516.30	40.22

Pedestrians

Approach	E (Major)		S	W (Major)	
Movement	L1	T		T	R1
vx, Flow (Ped/hr)	0.00				
w, Lane Width (ft)	12.00				
Sp, Walking Speed (ft/s)	3.50				
fpb, Percent Blockage	0.00				

Capacity of Movements below Rank 1

Approach	E (Major)		S	W (Major)	
Movement	L1	T		T	R1
Rank	2	1		1	1
vx, Volume	72.83				
Conflicting Volume (Veh)	556.52				
Conflicting Volume (Ped)	0.00				
Conflicting Volume	556.52				
Two-Stage Gap Acceptance					
Number of Storage Spaces in Median Refuge Area					
cpx, Potential Capacity	1024.18				
Capacity	1024.18				

Critical Headway and Follow Up Headway

Approach	E (Major)		S	W (Major)	
Movement	L1	T		T	R1
tc,base, Base Critical Headway	4.10				
tc,base,I, Base Critical Headway (Stage I)					
tc,base,II, Base Critical Headway (Stage II)					
tc,HV, Heavy Vehicles Adjustment Factor	2.00				
Phv, % Heavy Vehicles	0.00				
tc,G, Grade Adjustment Factor	1.00				
G, % Grade	0.00		0.00	0.00	
T3,lt, Geometry Adjustment Factor	0.00				
tc, Critical Headway	4.10				
tc,I, Critical Headway (Stage I)					
tc,II, Critical Headway (Stage II)					
tf,base, Base Follow-Up Headway	2.20				
tf,hv, Heavy Vehicles Adjustment Factor	1.00				
tf, Follow-Up Headway	2.20				

Delay and Level of Service by Movement

Approach	E (Major)		S	W (Major)	
Movement	L1	T		T	R1
vx, Volume	72.83	1168.48		516.30	40.22
cmx, Capacity	1024.18				
V / C	0.07				
d, Delay	8.78				
LOS	A				
dA, Approach Delay	0.52		0.00	0.00	
Approach LOS			A		
dRank1, Rank 1 Delay	0.00			0.00	

Delay and Level of Service by Lane

Approach	E (Major)			S	W (Major)	
Lane	Lane 1	Lane 2	Lane 3		Lane 1	Lane 2
Movements						T, R1
vx, Volume	72.83	584.24	584.24		278.26	278.26
Flared Storage Size						
cmx, Capacity						
V / C						
Q95, 95% Queue Length						
d, Delay						
LOS						
dA, Approach Delay	0.52			0.00	0.00	
Approach LOS				A		

Node 397: Hollister & Kinman

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.675
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	74	5	89	9	1234	56	27	5	21	80	398	10
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	19	1	22	2	309	14	7	1	5	20	100	3
Adjusted Volume	74	5	89	9	1234	56	27	5	21	80	398	10

Volume and Adjustments by Lane Group

Approach	N	E		S	W	
Lane Group	C	L	C	C	L	C
ID	3415	3412	3413	3419	3416	3417
Lanes	LTR	L	T, RT	LTR	L	T, RT
Volume	168	9	1290	53	80	408

Saturation Flow Rate

Approach	N	E		S	W	
Lane Group	3415	3412	3413	3419	3416	3417
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	2	1	1	2
Saturation Flow Rate	1600	1600	3200	1600	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	74	5	89	9	1234	56	27	5	21	80	398	10
Volume / Saturation Flow Rate	0.046	0.105	0.105	0.006	0.403	0.403	0.017	0.033	0.033	0.050	0.128	0.128
Overlap adjusted Volume / Saturation Flow Rate	0.046	0.105	0.105	0.006	0.403	0.403	0.017	0.033	0.033	0.050	0.128	0.128
Critical Movement		Y			Y		Y			Y		

Node 399: Hollister & Kellogg

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.645
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	128	18	30	235	970	155	35	11	75	27	344	100
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	32	5	8	59	243	39	9	3	19	7	86	25
Adjusted Volume	128	18	30	235	970	155	35	11	75	27	344	100

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	3425	3426	3422	3423	3420	3421	3427	3428
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	146	30	235	1125	46	75	27	444

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	3425	3426	3422	3423	3420	3421	3427	3428
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	2	1	1	1	2
Saturation Flow Rate	1600	1600	1600	3200	1600	1600	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	128	18	30	235	970	155	35	11	75	27	344	100
Volume / Saturation Flow Rate	0.080	0.091	0.019	0.147	0.352	0.352	0.022	0.029	0.047	0.017	0.139	0.139
Overlap adjusted Volume / Saturation Flow Rate	0.080	0.091	0.019	0.147	0.352	0.352	0.022	0.029	0.047	0.017	0.139	0.139
Critical Movement	Y				Y				Y	Y		

Node 402: Hollister & SR-217 SB Ramps

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.568
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E		S	W	
Movement	L1	T	R1	L1	T		T	R1
Base Volume	169	5	668	177	670		605	39
PHF	1.000	1.000	1.000	1.000	1.000		1.000	1.000
Peak 15 Volume	42	1	167	44	168		151	10
Adjusted Volume	169	5	668	177	670		605	39

Volume and Adjustments by Lane Group

Approach	N	E			S	W
Lane Group	C	L	C	C		C
ID	3435	3430	3431	3432		3437
Lanes	LTR, R	L	T, T	T, T		T, RT
Volume	842	177	223	447		644

Saturation Flow Rate

Approach	N	E			S	W
Lane Group	3435	3430	3431	3432		3437
Base Saturation Flow Rate	1600	1600	1600	1600		1600
Number of Lanes	2	1	2	2		2
Saturation Flow Rate	3200	1600	3200	3200		3200

Capacity Analysis

Approach	N			E		S	W	
Movement	L1	T	R1	L1	T		T	R1
Volume	169	5	668	177	670		605	39
Volume / Saturation Flow Rate	0.106	0.263	0.263	0.111	0.070		0.201	0.201
Overlap adjusted Volume / Saturation Flow Rate	0.106	0.263	0.263	0.111	0.070		0.201	0.201
Critical Movement	Y			Y			Y	

Node 405: Hollister & SR-217 NB Ramps

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.531
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N	E			S			W		
Movement		L1	T	R1	L1	T	R1	L1	T	R1
Base Volume		90	789	79	55	65	74	319	307	133
PHF		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume		23	197	20	14	16	19	80	77	33
Adjusted Volume		90	789	79	55	65	74	319	307	133

Volume and Adjustments by Lane Group

Approach	N	E			S		W	
Lane Group		L	C	R	C	R	L	C
ID		3441	3442	3444	3439	3440	3445	3447
Lanes		L	T, T	R	LT	R	L, L	T, RT
Volume		90	789	79	120	74	319	440

Saturation Flow Rate

Approach	N	E			S		W	
Lane Group		3441	3442	3444	3439	3440	3445	3447
Base Saturation Flow Rate		1600	1600	1600	1600	1600	1600	1600
Number of Lanes		1	2	1	1	1	2	2
Saturation Flow Rate		1600	3200	1600	1600	1600	3200	3200

Capacity Analysis

Approach	N	E			S			W		
Movement		L1	T	R1	L1	T	R1	L1	T	R1
Volume		90	789	79	55	65	74	319	307	133
Volume / Saturation Flow Rate		0.056	0.247	0.049	0.034	0.075	0.046	0.100	0.137	0.138
Overlap adjusted Volume / Saturation Flow Rate		0.056	0.247	0.049	0.034	0.075	0.046	0.100	0.137	0.138
Critical Movement			Y		Y			Y		

Node 441: Calle Real & NB 101 OnRamp	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	4.41
Worst Case Delay	10.56
Worst Case LOS	B

Volume and Adjustments					
Approach	E (Major)		S (Major)	W	
Movement	L1	T		T	R1
Base Volume	81.00	73.00		106.00	5.00
PHF, Peak-hour factor	0.920	0.920		0.920	0.920
V, Adjusted Volume	88.04	79.35		115.22	5.43

Pedestrians					
Approach	E (Major)		S (Major)	W	
Movement	L1	T		T	R1
vx, Flow (Ped/hr)				0.00	0.00
w, Lane Width (ft)				12.00	12.00
Sp, Walking Speed (ft/s)				3.50	3.50
fpb, Percent Blockage				0.00	0.00

Capacity of Movements below Rank 1					
Approach	E (Major)		S (Major)	W	
Movement	L1	T		T	R1
Rank	1	1		3	2
vx, Volume				115.22	5.43
Conflicting Volume (Veh)				127.72	127.72
Conflicting Volume (Ped)				0.00	0.00
Conflicting Volume				127.72	127.72
Two-Stage Gap Acceptance				No	
Number of Storage Spaces in Median Refuge Area					
cpx, Potential Capacity				766.56	927.76
Capacity				765.85	927.76

Critical Headway and Follow Up Headway					
Approach	E (Major)		S (Major)	W	
Movement	L1	T		T	R1
tc,base, Base Critical Headway				6.50	6.20
tc,base,I, Base Critical Headway (Stage I)					
tc,base,II, Base Critical Headway (Stage II)					
tc,HV, Heavy Vehicles Adjustment Factor				1.00	1.00
Phv, % Heavy Vehicles				0.00	0.00
tc,G, Grade Adjustment Factor				0.20	0.10
G, % Grade	0.00		0.00	0.00	
T3,lt, Geometry Adjustment Factor				0.00	0.00
tc, Critical Headway				6.50	6.20
tc,I, Critical Headway (Stage I)					
tc,II, Critical Headway (Stage II)					
tf,base, Base Follow-Up Headway				4.00	3.30
tf,hv, Heavy Vehicles Adjustment Factor				0.90	0.90
tf, Follow-Up Headway				4.00	3.30

Delay and Level of Service by Movement					
Approach	E (Major)		S (Major)	W	
Movement	L1	T		T	R1
vx, Volume	88.04	79.35		115.22	5.43
cmx, Capacity				765.85	927.76
V / C				0.15	0.01
d, Delay				10.56	9.74
LOS				B	A
dA, Approach Delay	0.00		0.00	10.53	
Approach LOS				B	
dRank1, Rank 1 Delay	0.00		0.00		

Delay and Level of Service by Lane			
Approach	E (Major)	S (Major)	W
Lane	Lane 1		Lane 1
Movements	L1, T		T, R1
vx, Volume	167.39		120.65
Flared Storage Size			
cmx, Capacity			771.92
V / C			0.16
Q95, 95% Queue Length			0.55
d, Delay			10.53
LOS			B
dA, Approach Delay	0.00	0.00	10.53
Approach LOS			B

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Node 445: Calle Real & Winchester Canyon	
Control Type	AWSC
Method	HCM 6th Edition
Average Delay	8.2
Average LOS	A

Volume and Adjustments				
Approach	N	E		W
Movement	R1	T	R1	T
Base Volume	172.00	184.00	76.00	39.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920
Flow Rate	186.96	200.00	82.61	42.39
Geometry Group	1	1		1

Saturation Headway			
Approach	N	E	W
Lanes	Lane 1	Lane 1	Lane 1
Total Lane Flow Rate	186.96	282.61	42.39
Left Turn Flow Rate	0.00	0.00	0.00
Right Turn Flow Rate	186.96	82.61	0.00
PLT, Proportion LT	0.00	0.00	0.00
PRT, Proportion RT	1.00	0.29	0.00
PHV, Proportion HV	0.00	0.00	0.00
hLT,adj, Headway adjustment for left turns	0.20	0.20	0.20
hRT,adj, Headway adjustment for right turns	-0.60	-0.60	-0.60
hHV,adj, Headway adjustment for heavy vehicles	1.70	1.70	1.70
hadj, Headway adjustment	-0.60	-0.18	0.00

Departure Headway			
Approach	N	E	W
Lanes	Lane 1	Lane 1	Lane 1
Total Lane Flow Rate	186.96	282.61	42.39
hd initial	3.20	3.20	3.20
x initial	0.17	0.25	0.04
hd, iteration 1	3.37	4.08	4.04
Difference, iteration 1	0.17	0.88	0.84
hd, iteration 2	3.39	4.11	4.04
Difference, iteration 2	0.02	0.03	0.01
Convergence	Y	Y	Y
hd final, Departure Headway	3.39	4.11	4.04
x final, Degree of Utilization	0.18	0.32	0.05

Capacity and Level of Service			
Approach	N	E	W
Lanes	Lane 1	Lane 1	Lane 1
Total Lane Flow Rate	186.96	282.61	42.39
hd, Departure Headway	3.39	4.11	4.04
x, Degree of Utilization	0.18	0.32	0.05
m, Move Up Time	2.00	2.00	2.00
ts, Service Time	1.39	2.11	2.04
Capacity	1061.12	875.42	890.03
Delay	7.12	9.07	7.25
LOS	A	A	A
Q95, 95% Queue Length	0.64	1.42	0.15
Approach Delay	7.12	9.07	7.25
Approach LOS	A	A	A
Intersection Delay		8.2	
Intersection LOS		A	

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Node 450: Calle Real & Brandon Dr.

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	4.74
Worst Case Delay	12.62
Worst Case LOS	B

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	185.00	9.00	66.00	85.00	5.00	172.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	201.09	9.78	71.74	92.39	5.43	186.96

Pedestrians						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Flow (Ped/hr)	0.00	0.00			0.00	
w, Lane Width (ft)	12.00	12.00			12.00	
Sp, Walking Speed (ft/s)	3.50	3.50			3.50	
fpb, Percent Blockage	0.00	0.00			0.00	

Capacity of Movements below Rank 1						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Rank	3	2	1	1	2	1
vx, Volume	201.09	9.78			5.43	
Conflicting Volume (Veh)	315.76	117.93			164.13	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	315.76	117.93			164.13	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	681.40	939.38			1426.58	
Capacity	678.50	939.38			1426.58	

Critical Headway and Follow Up Headway						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
tc,base, Base Critical Headway	7.10	6.20			4.10	
tc,base,I, Base Critical Headway (Stage I)						
tc,base,II, Base Critical Headway (Stage II)						
tc,HV, Heavy Vehicles Adjustment Factor	1.00	1.00			1.00	
Phv, % Heavy Vehicles	0.00	0.00			0.00	
tc,G, Grade Adjustment Factor	0.20	0.10			1.00	
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment Factor	0.70	0.00			0.00	
tc, Critical Headway	6.40	6.20			4.10	
tc,I, Critical Headway (Stage I)						
tc,II, Critical Headway (Stage II)						
tf,base, Base Follow-Up Headway	3.50	3.30			2.20	
tf,hv, Heavy Vehicles Adjustment Factor	0.90	0.90			0.90	
tf, Follow-Up Headway	3.50	3.30			2.20	

Delay and Level of Service by Movement						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Volume	201.09	9.78	71.74	92.39	5.43	186.96
cmx, Capacity	678.50	939.38			1426.58	
V / C	0.30	0.01			0.00	
d, Delay	12.62	11.15			7.53	
LOS	B	B			A	
dA, Approach Delay	12.55		0.00		0.21	
Approach LOS	B					
dRank1, Rank 1 Delay			0.00		0.03	

Delay and Level of Service by Lane			
Approach	N	E (Major)	W (Major)
Lane	Lane 1	Lane 1	Lane 1
Movements	L1, R1	T, R1	L1, T
vx, Volume	210.87	164.13	192.39
Flared Storage Size			
cmx, Capacity	687.36		1426.58
V / C	0.31		0.13
Q95, 95% Queue Length	1.32		0.47
d, Delay	12.55		7.53
LOS	B		
dA, Approach Delay	12.55	0.00	0.21
Approach LOS	B		

Node 452: Calle Real & Elwood Station

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	3.84
Worst Case Delay	13.22
Worst Case LOS	B

Volume and Adjustments

Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	121.00	21.00	110.00	24.00	27.00	226.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	131.52	22.83	119.57	26.09	29.35	245.65

Pedestrians

Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Flow (Ped/hr)	0.00	0.00			0.00	
w, Lane Width (ft)	12.00	12.00			12.00	
Sp, Walking Speed (ft/s)	3.50	3.50			3.50	
fpb, Percent Blockage	0.00	0.00			0.00	

Capacity of Movements below Rank 1

Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Rank	3	2	1	1	2	1
vx, Volume	131.52	22.83			29.35	
Conflicting Volume (Veh)	423.91	119.57			145.65	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	423.91	119.57			145.65	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	590.70	937.44			1448.85	
Capacity	576.84	937.44			1448.85	

Critical Headway and Follow Up Headway

Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
tc,base, Base Critical Headway	7.10	6.20			4.10	
tc,base,I, Base Critical Headway (Stage I)						
tc,base,II, Base Critical Headway (Stage II)						
tc,HV, Heavy Vehicles Adjustment Factor	1.00	1.00			1.00	
Phv, % Heavy Vehicles	0.00	0.00			0.00	
tc,G, Grade Adjustment Factor	0.20	0.10			1.00	
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment Factor	0.70	0.00			0.00	
tc, Critical Headway	6.40	6.20			4.10	
tc,I, Critical Headway (Stage I)						
tc,II, Critical Headway (Stage II)						
tf,base, Base Follow-Up Headway	3.50	3.30			2.20	
tf,hv, Heavy Vehicles Adjustment Factor	0.90	0.90			0.90	
tf, Follow-Up Headway	3.50	3.30			2.20	

Delay and Level of Service by Movement

Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Volume	131.52	22.83	119.57	26.09	29.35	245.65
cmx, Capacity	576.84	937.44			1448.85	
V / C	0.23	0.02			0.02	
d, Delay	13.22	10.82			7.54	
LOS	B	B			A	
dA, Approach Delay	12.87		0.00		0.80	
Approach LOS	B					
dRank1, Rank 1 Delay			0.00		0.18	

Delay and Level of Service by Lane

Approach	N	E (Major)		W (Major)
Lane	Lane 1	Lane 1	Lane 2	Lane 1
Movements	L1, R1			L1, T
vx, Volume	154.35	119.57	26.09	275.00
Flared Storage Size				
cmx, Capacity	611.64			1448.85
V / C	0.25			0.19
Q95, 95% Queue Length	1.01			0.70
d, Delay	12.87			7.54
LOS	B			
dA, Approach Delay	12.87	0.00		0.80
Approach LOS	B			

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Node 461: Storke & US 101 NB Ramps

Control Type	Signalized
Method	ICU Method 1
LOS	E
Critical V/C	0.924
Loss Time	14
Cycle Length	100

Volume and Adjustments by Movement												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	11	543	10	701	550	263	215	242	52	36	8	1033
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	3	136	3	175	138	66	54	61	13	9	2	258
Adjusted Volume	11	543	10	701	550	263	215	242	52	36	8	1033

Volume and Adjustments by Lane Group							
Approach	N		E	S		W	
Lane Group	L	C	C	L	C	L	C
ID	3469	3470	3466	3462	3464	3472	3473
Lanes	L	T, RT	L, LT, RT	L, L	T, RT	L	RT, R
Volume	11	553	1514	215	294	36	1041

Saturation Flow Rate							
Approach	N		E	S		W	
Lane Group	3469	3470	3466	3462	3464	3472	3473
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	3	2	2	1	2
Saturation Flow Rate	1600	3200	4800	3200	3200	1600	3200

Capacity Analysis												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	11	543	10	701	550	263	215	242	52	36	8	1033
Volume / Saturation Flow Rate	0.007	0.173	0.173	0.219	0.315	0.315	0.067	0.092	0.092	0.022	0.325	0.325
Overlap adjusted Volume / Saturation Flow Rate	0.007	0.173	0.173	0.219	0.315	0.315	0.067	0.092	0.092	0.022	0.325	0.325
Critical Movement			Y	Y			Y				Y	

Node 462: Storke & US 101 SB Ramp

Control Type	Signalized
Method	ICU Method 1
LOS	E
Critical V/C	0.94
Loss Time	12
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	833	1456		494	877	18	5	142
PHF	1.000	1.000		1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	208	364		124	219	5	1	36
Adjusted Volume	833	1456		494	877	18	5	142

Volume and Adjustments by Lane Group

Approach	N		E	S		W	
Lane Group	L	C		C	R	C	R
ID	3478	3480		3475	3477	3482	3483
Lanes	L, L	T, T		T, T	R	LT	R
Volume	833	1456		494	877	23	142

Saturation Flow Rate

Approach	N		E	S		W	
Lane Group	3478	3480		3475	3477	3482	3483
Base Saturation Flow Rate	1600	1600		1600	1600	1600	1600
Number of Lanes	2	2		2	1	1	1
Saturation Flow Rate	3200	3200		3200	1600	1600	1600

Capacity Analysis

Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Volume	833	1456		494	877	18	5	142
Volume / Saturation Flow Rate	0.260	0.455		0.154	0.548	0.011	0.014	0.089
Overlap adjusted Volume / Saturation Flow Rate	0.260	0.455		0.154	0.548	0.011	0.014	0.089
Critical Movement	Y				Y	Y		

Node 466: Los Carneros & Cremona

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.556
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N	E			S			W		
Movement	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	55	291	1309	31	6	9	31	26	424	11
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	14	73	327	8	2	2	8	7	106	3
Adjusted Volume	55	291	1309	31	6	9	31	26	424	11

Volume and Adjustments by Lane Group

Approach	N	E		S	W	
Lane Group	R	L	C	C	L	C
ID	3488	3485	3486	3484	3490	3491
Lanes	R, R	L	T, RT	LTR	L	T, RT
Volume	55	291	1340	46	26	435

Saturation Flow Rate

Approach	N	E		S	W	
Lane Group	3488	3485	3486	3484	3490	3491
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600
Number of Lanes	2	1	2	1	1	2
Saturation Flow Rate	3200	1600	3200	1600	1600	3200

Capacity Analysis

Approach	N	E			S			W		
Movement	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	55	291	1309	31	6	9	31	26	424	11
Volume / Saturation Flow Rate	0.017	0.182	0.419	0.419	0.004	0.029	0.029	0.016	0.136	0.136
Overlap adjusted Volume / Saturation Flow Rate	0.017	0.182	0.419	0.419	0.004	0.029	0.029	0.016	0.136	0.136
Critical Movement	Y			Y	Y			Y		

Node 467: Los Carneros & Calle Koral

Control Type	Signalized
Method	ICU Method 1
LOS	C
Critical V/C	0.747
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	318	1559	80	24	19	175	28	515	6	52	22	66
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	80	390	20	6	5	44	7	129	2	13	6	17
Adjusted Volume	318	1559	80	24	19	175	28	515	6	52	22	66

Volume and Adjustments by Lane Group

Approach	N			E			S		W	
Lane Group	L	C	R	L	C	R	L	C	L	C
ID	3496	3497	3499	3493	3494	3495	3502	3503	3500	3501
Lanes	L	T, T	R	L	T	R	L	T, T, RT	L	RT
Volume	318	1559	80	24	19	175	28	521	52	88

Saturation Flow Rate

Approach	N			E			S		W	
Lane Group	3496	3497	3499	3493	3494	3495	3502	3503	3500	3501
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	1	1	1	1	1	3	1	1
Saturation Flow Rate	1600	3200	1600	1600	1600	1600	1600	4800	1600	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	318	1559	80	24	19	175	28	515	6	52	22	66
Volume / Saturation Flow Rate	0.199	0.487	0.050	0.015	0.012	0.109	0.018	0.109	0.109	0.033	0.055	0.055
Overlap adjusted Volume / Saturation Flow Rate	0.199	0.487	0.050	0.015	0.012	0.109	0.018	0.109	0.109	0.033	0.055	0.055
Critical Movement		Y				Y	Y			Y		

Node 489: Hollister & Patterson

Control Type	Signalized
Method	ICU Method 1
LOS	D
Critical V/C	0.808
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	246	343	291	107	742	537	54	158	52	85	221	46
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	62	86	73	27	186	134	14	40	13	21	55	12
Adjusted Volume	246	343	291	107	742	537	54	158	52	85	221	46

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	L	C	L	C	L	C	L	C
ID	3509	3511	3506	3507	3517	3518	3513	3515
Lanes	L, L	T, RT	L	T, RT	L	T, RT	L, L	T, RT
Volume	246	634	107	1279	54	210	85	267

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	3509	3511	3506	3507	3517	3518	3513	3515
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	2	2	1	2	1	2	2	2
Saturation Flow Rate	3200	3200	1600	3200	1600	3200	3200	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	246	343	291	107	742	537	54	158	52	85	221	46
Volume / Saturation Flow Rate	0.077	0.198	0.198	0.067	0.400	0.400	0.034	0.066	0.066	0.027	0.083	0.083
Overlap adjusted Volume / Saturation Flow Rate	0.077	0.198	0.198	0.067	0.400	0.400	0.034	0.066	0.066	0.027	0.083	0.083
Critical Movement		Y				Y	Y			Y		

Node 506: Cathedral Oaks 101 SB-Ramp

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	12.58
Worst Case Delay	263.04
Worst Case LOS	F

Volume and Adjustments

Approach	N (Major)		E	S (Major)		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	356.00	319.00		226.00	284.00	42.00	5.00	72.00
PHF, Peak-hour factor	0.920	0.920		0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	386.96	346.74		245.65	308.70	45.65	5.43	78.26

Pedestrians

Approach	N (Major)		E	S (Major)		W		
Movement	L1	T		T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00					0.00	0.00	0.00
w, Lane Width (ft)	12.00					12.00	12.00	12.00
Sp, Walking Speed (ft/s)	3.50					3.50	3.50	3.50
fpb, Percent Blockage	0.00					0.00	0.00	0.00

Capacity of Movements below Rank 1

Approach	N (Major)		E	S (Major)		W		
Movement	L1	T		T	R1	L1	T	R1
Rank	2	1		1	1	4	3	2
vx, Volume	386.96					45.65	5.43	78.26
Conflicting Volume (Veh)	554.35					1520.65	1675.00	346.74
Conflicting Volume (Ped)	0.00					0.00	0.00	0.00
Conflicting Volume	554.35					1520.65	1675.00	346.74
Two-Stage Gap Acceptance						No	No	
Number of Storage Spaces in Median Refuge Area								
cpx, Potential Capacity	1026.08					98.16	96.38	700.87
Capacity	1026.08					62.19	51.36	700.87

Critical Headway and Follow Up Headway

Approach	N (Major)		E	S (Major)		W		
Movement	L1	T		T	R1	L1	T	R1
tc,base, Base Critical Headway	4.10					7.10	6.50	6.20
tc,base,I, Base Critical Headway (Stage I)								
tc,base,II, Base Critical Headway (Stage II)								
tc,HV, Heavy Vehicles Adjustment Factor	1.00					1.00	1.00	1.00
Phv, % Heavy Vehicles	0.00					0.00	0.00	0.00
tc,G, Grade Adjustment Factor	1.00					0.20	0.20	0.10
G, % Grade	0.00		0.00	0.00			0.00	
T3,lt, Geometry Adjustment Factor	0.00					0.00	0.00	0.00
tc, Critical Headway	4.10					7.10	6.50	6.20
tc,I, Critical Headway (Stage I)								
tc,II, Critical Headway (Stage II)								
tf,base, Base Follow-Up Headway	2.20					3.50	4.00	3.30
tf,hv, Heavy Vehicles Adjustment Factor	0.90					0.90	0.90	0.90
tf, Follow-Up Headway	2.20					3.50	4.00	3.30

Delay and Level of Service by Movement

Approach	N (Major)		E	S (Major)		W		
Movement	L1	T		T	R1	L1	T	R1
vx, Volume	386.96	346.74		245.65	308.70	45.65	5.43	78.26
cmx, Capacity	1026.08					62.19	51.36	700.87
V / C	0.38					0.73	0.11	0.11
d, Delay	10.63					250.83	263.04	10.78
LOS	B					F	F	B
dA, Approach Delay	5.61		0.00	0.00			106.10	
Approach LOS			A				F	
dRank1, Rank 1 Delay	0.00			0.00				

Delay and Level of Service by Lane

Approach	N (Major)		E	S (Major)	W	
Lane	Lane 1	Lane 2		Lane 1	Lane 1	Lane 2
Movements				T, R1	L1, T	
vx, Volume	386.96	346.74		554.35	51.09	78.26
Flared Storage Size						
cmx, Capacity					60.82	
V / C					0.84	
Q95, 95% Queue Length					6.65	
d, Delay					252.13	
LOS					F	
dA, Approach Delay	5.61		0.00	0.00	106.10	
Approach LOS			A		F	

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Node 511: Hollister & Pebble Beach Rd

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	2.59
Worst Case Delay	26.17
Worst Case LOS	D

Volume and Adjustments

Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	38.00	5.00	38.00	5.00	466.00	25.00	25.00	5.00	5.00	10.00	391.00	6.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	41.30	5.43	41.30	5.43	506.52	27.17	27.17	5.43	5.43	10.87	425.00	6.52

Pedestrians

Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
w, Lane Width (ft)	12.00	12.00	12.00	12.00			12.00	12.00	12.00	12.00		
Sp, Walking Speed (ft/s)	3.50	3.50	3.50	3.50			3.50	3.50	3.50	3.50		
fpb, Percent Blockage	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		

Capacity of Movements below Rank 1

Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	2	1	1	4	3	2	2	1	1
vx, Volume	41.30	5.43	41.30	5.43			27.17	5.43	5.43	10.87		
Conflicting Volume (Veh)	970.11	970.65	506.52	431.52			1004.35	994.57	428.26	533.70		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	970.11	970.65	506.52	431.52			1004.35	994.57	428.26	533.70		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	234.50	254.95	569.99	1138.80			222.28	246.86	630.86	1044.25		
Capacity	225.30	250.26	569.99	1138.80			199.92	242.31	630.86	1044.25		

Critical Headway and Follow Up Headway

Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Headway	7.10	6.50	6.20	4.10			7.10	6.50	6.20	4.10		
tc,base,I, Base Critical Headway (Stage I)												
tc,base,II, Base Critical Headway (Stage II)												
tc,HV, Heavy Vehicles Adjustment Factor	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00		
Phv, % Heavy Vehicles	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Factor	0.20	0.20	0.10	1.00			0.20	0.20	0.10	1.00		
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment Factor	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc, Critical Headway	7.10	6.50	6.20	4.10			7.10	6.50	6.20	4.10		
tc,I, Critical Headway (Stage I)												
tc,II, Critical Headway (Stage II)												
tf,base, Base Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		
tf,hv, Heavy Vehicles Adjustment Factor	0.90	0.90	0.90	0.90			0.90	0.90	0.90	0.90		
tf, Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		

Delay and Level of Service by Movement

Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	41.30	5.43	41.30	5.43	506.52	27.17	27.17	5.43	5.43	10.87	425.00	6.52
cmx, Capacity	225.30	250.26	569.99	1138.80			199.92	242.31	630.86	1044.25		
V / C	0.18	0.02	0.07	0.00			0.14	0.02	0.01	0.01		
d, Delay	25.32	23.73	15.66	8.18			26.17	23.02	13.87	8.48		
LOS	D	C	C	A			D	C	B	A		
dA, Approach Delay		20.69			0.08			23.96			0.21	
Approach LOS		C						C				
dRank1, Rank 1 Delay					0.00						0.00	

Delay and Level of Service by Lane

Approach	N		E (Major)		S		W (Major)	
Lane	Lane 1	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2	Lane 3
Movements	L1, T, R1				L1, T, R1			T, R1
vx, Volume	88.04	5.43	506.52	27.17	38.04	10.87	215.76	215.76
Flared Storage Size								
cmx, Capacity	317.26				227.84			
V / C	0.28				0.17			
Q95, 95% Queue Length	1.14				0.60			
d, Delay	20.69				23.96			
LOS	C				C			
dA, Approach Delay	20.69		0.08		23.96		0.21	
Approach LOS	C				C			

Node 512: Hollister & Palo Alto Dr

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	1.32
Worst Case Delay	23.29
Worst Case LOS	C

Volume and Adjustments

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	14.00	5.00	5.00	6.00	483.00	55.00	15.00	5.00	33.00	15.00	420.00	8.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	15.22	5.43	5.43	6.52	525.00	59.78	16.30	5.43	35.87	16.30	456.52	8.70

Pedestrians

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
w, Lane Width (ft)	12.00	12.00	12.00	12.00			12.00	12.00	12.00	12.00		
Sp, Walking Speed (ft/s)	3.50	3.50	3.50	3.50			3.50	3.50	3.50	3.50		
fpb, Percent Blockage	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		

Capacity of Movements below Rank 1

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	2	1	1	4	3	2	2	1	1
vx, Volume	15.22	5.43	5.43	6.52			16.30	5.43	35.87	16.30		
Conflicting Volume (Veh)	831.52	1065.76	292.39	465.22			771.74	1091.30	232.61	584.78		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	831.52	1065.76	292.39	465.22			771.74	1091.30	232.61	584.78		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	265.26	224.18	710.08	1106.75			292.93	216.53	775.61	999.84		
Capacity	243.14	218.37	710.08	1106.75			279.55	210.92	775.61	999.84		

Critical Headway and Follow Up Headway

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Headway	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,base,I, Base Critical Headway (Stage I)												
tc,base,II, Base Critical Headway (Stage II)												
tc,HV, Heavy Vehicles Adjustment Factor	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00		
Phv, % Heavy Vehicles	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Factor	0.20	0.20	0.10	1.00			0.20	0.20	0.10	1.00		
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment Factor	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc, Critical Headway	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,I, Critical Headway (Stage I)												
tc,II, Critical Headway (Stage II)												
tf,base, Base Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		
tf,hv, Heavy Vehicles Adjustment Factor	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00		
tf, Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		

Delay and Level of Service by Movement

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	15.22	5.43	5.43	6.52	525.00	59.78	16.30	5.43	35.87	16.30	456.52	8.70
cmx, Capacity	243.14	218.37	710.08	1106.75			279.55	210.92	775.61	999.84		
V / C	0.06	0.02	0.01	0.01			0.06	0.03	0.05	0.02		
d, Delay	21.19	22.86	11.45	8.27			19.10	23.29	10.86	8.66		
LOS	C	C	B	A			C	C	B	A		
dA, Approach Delay		19.51			0.09			14.36			0.29	
Approach LOS		C						B				
dRank1, Rank 1 Delay					0.00						0.00	

Delay and Level of Service by Lane

Approach	N	E (Major)			S	W (Major)		
Lane	Lane 1	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2	Lane 3
Movements	L1, T, R1			T, R1	L1, T, R1			T, R1
vx, Volume	26.09	6.52	292.39	292.39	57.61	16.30	232.61	232.61
Flared Storage Size								
cmx, Capacity	274.23				442.00			
V / C	0.10				0.13			
Q95, 95% Queue Length	0.31				0.45			
d, Delay	19.51				14.36			
LOS	C				B			
dA, Approach Delay	19.51		0.09		14.36		0.29	
Approach LOS	C				B			

Node 513: Hollister & Coronado

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	2.02
Worst Case Delay	18.77
Worst Case LOS	C

Volume and Adjustments

Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	22.00	448.00	48.00	85.00	444.00	15.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	23.91	486.96	52.17	92.39	482.61	16.30

Pedestrians

Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Flow (Ped/hr)	0.00		0.00	0.00		
w, Lane Width (ft)	12.00		12.00	12.00		
Sp, Walking Speed (ft/s)	3.50		3.50	3.50		
fpb, Percent Blockage	0.00		0.00	0.00		

Capacity of Movements below Rank 1

Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Rank	2	1	3	2	1	1
vx, Volume	23.91		52.17	92.39		
Conflicting Volume (Veh)	498.91		782.07	249.46		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	498.91		782.07	249.46		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	1075.56		335.25	756.57		
Capacity	1075.56		326.63	756.57		

Critical Headway and Follow Up Headway

Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
tc,base, Base Critical Headway	4.10		7.50	6.90		
tc,base,I, Base Critical Headway (Stage I)						
tc,base,II, Base Critical Headway (Stage II)						
tc,HV, Heavy Vehicles Adjustment Factor	2.00		2.00	2.00		
Phv, % Heavy Vehicles	0.00		0.00	0.00		
tc,G, Grade Adjustment Factor	1.00		0.20	0.10		
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment Factor	0.00		0.70	0.00		
tc, Critical Headway	4.10		6.80	6.90		
tc,I, Critical Headway (Stage I)						
tc,II, Critical Headway (Stage II)						
tf,base, Base Follow-Up Headway	2.20		3.50	3.30		
tf,hv, Heavy Vehicles Adjustment Factor	1.00		1.00	1.00		
tf, Follow-Up Headway	2.20		3.50	3.30		

Delay and Level of Service by Movement

Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Volume	23.91	486.96	52.17	92.39	482.61	16.30
cmx, Capacity	1075.56		326.63	756.57		
V / C	0.02		0.16	0.12		
d, Delay	8.42		18.77	12.51		
LOS	A		C	B		
dA, Approach Delay	0.39		14.77		0.00	
Approach LOS			B			
dRank1, Rank 1 Delay	0.00				0.00	

Delay and Level of Service by Lane

Approach	E (Major)			S	W (Major)	
Lane	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2
Movements				L1, R1		T, R1
vx, Volume	23.91	243.48	243.48	144.57	249.46	249.46
Flared Storage Size						
cmx, Capacity				512.92		
V / C				0.28		
Q95, 95% Queue Length				1.17		
d, Delay				14.77		
LOS				B		
dA, Approach Delay	0.39			14.77	0.00	
Approach LOS				B		

Node 515: Hollister & Cannon Green

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	7.14
Worst Case Delay	59.85
Worst Case LOS	F

Volume and Adjustments

Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	40.00	543.00	58.00	184.00	797.00	23.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	43.48	590.22	63.04	200.00	866.30	25.00

Pedestrians

Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Flow (Ped/hr)	0.00		0.00	0.00		
w, Lane Width (ft)	12.00		12.00	12.00		
Sp, Walking Speed (ft/s)	3.50		3.50	3.50		
fpb, Percent Blockage	0.00		0.00	0.00		

Capacity of Movements below Rank 1

Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Rank	2	1	3	2	1	1
vx, Volume	43.48		63.04	200.00		
Conflicting Volume (Veh)	891.30		1260.87	445.65		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	891.30		1260.87	445.65		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	769.04		164.90	565.61		
Capacity	769.04		153.75	565.61		

Critical Headway and Follow Up Headway

Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
tc,base, Base Critical Headway	4.10		7.50	6.90		
tc,base,I, Base Critical Headway (Stage I)						
tc,base,II, Base Critical Headway (Stage II)						
tc,HV, Heavy Vehicles Adjustment Factor	2.00		2.00	2.00		
Phv, % Heavy Vehicles	0.00		0.00	0.00		
tc,G, Grade Adjustment Factor	1.00		0.20	0.10		
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment Factor	0.00		0.70	0.00		
tc, Critical Headway	4.10		6.80	6.90		
tc,I, Critical Headway (Stage I)						
tc,II, Critical Headway (Stage II)						
tf,base, Base Follow-Up Headway	2.20		3.50	3.30		
tf,hv, Heavy Vehicles Adjustment Factor	1.00		1.00	1.00		
tf, Follow-Up Headway	2.20		3.50	3.30		

Delay and Level of Service by Movement

Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Volume	43.48	590.22	63.04	200.00	866.30	25.00
cmx, Capacity	769.04		153.75	565.61		
V / C	0.06		0.41	0.35		
d, Delay	9.96		59.85	42.81		
LOS	A		F	E		
dA, Approach Delay	0.68		46.89		0.00	
Approach LOS			E			
dRank1, Rank 1 Delay	0.00				0.00	

Delay and Level of Service by Lane

Approach	E (Major)			S	W (Major)	
Lane	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2
Movements				L1, R1		T, R1
vx, Volume	43.48	295.11	295.11	263.04	445.65	445.65
Flared Storage Size						
cmx, Capacity				344.46		
V / C				0.76		
Q95, 95% Queue Length				8.09		
d, Delay				46.89		
LOS				E		
dA, Approach Delay	0.68			46.89	0.00	
Approach LOS				E		

Node 517: Hollister & Pacific Oaks

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.537
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E		S		W		
Movement	L1	T	R1	L1	T	L1	R1	L1	T	R1
Base Volume	20	5	8	28	564	126	171	81	827	133
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	5	1	2	7	141	32	43	20	207	33
Adjusted Volume	20	5	8	28	564	126	171	81	827	133

Volume and Adjustments by Lane Group

Approach	N	E		S		W	
Lane Group	C	L	C	L	R	L	C
ID	3533	3530	3531	3537	3538	3534	3535
Lanes	LTR	L	T, T	L	R	L	T, RT
Volume	33	28	564	126	171	81	960

Saturation Flow Rate

Approach	N	E		S		W	
Lane Group	3533	3530	3531	3537	3538	3534	3535
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	2	1	1	1	2
Saturation Flow Rate	1600	1600	3200	1600	1600	1600	3200

Capacity Analysis

Approach	N			E		S		W		
Movement	L1	T	R1	L1	T	L1	R1	L1	T	R1
Volume	20	5	8	28	564	126	171	81	827	133
Volume / Saturation Flow Rate	0.013	0.021	0.021	0.018	0.176	0.079	0.107	0.051	0.300	0.300
Overlap adjusted Volume / Saturation Flow Rate	0.013	0.021	0.021	0.018	0.176	0.079	0.107	0.051	0.300	0.300
Critical Movement	Y			Y			Y		Y	

Node 518: Hollister & Santa Felicia

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	185.35
Worst Case Delay	2655.12
Worst Case LOS	F

Volume and Adjustments												
Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	109.00	5.00	30.00	72.00	595.00	126.00	12.00	5.00	57.00	45.00	985.00	28.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	118.48	5.43	32.61	78.26	646.74	136.96	13.04	5.43	61.96	48.91	1070.65	30.43

Pedestrians												
Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
w, Lane Width (ft)	12.00	12.00	12.00	12.00			12.00	12.00	12.00	12.00		
Sp, Walking Speed (ft/s)	3.50	3.50	3.50	3.50			3.50	3.50	3.50	3.50		
fpb, Percent Blockage	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		

Capacity of Movements below Rank 1												
Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	2	1	1	4	3	2	2	1	1
vx, Volume	118.48	5.43	32.61	78.26			13.04	5.43	61.96	48.91		
Conflicting Volume (Veh)	1507.61	2070.65	391.85	1101.09			1666.30	2123.91	550.54	783.70		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1507.61	2070.65	391.85	1101.09			1666.30	2123.91	550.54	783.70		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	84.77	54.74	612.75	641.54			64.55	50.67	483.62	843.54		
Capacity	54.09	41.70	612.75	641.54			45.11	38.61	483.62	843.54		

Critical Headway and Follow Up Headway												
Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Headway	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,base,I, Base Critical Headway (Stage I)												
tc,base,II, Base Critical Headway (Stage II)												
tc,HV, Heavy Vehicles Adjustment Factor	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00		
Phv, % Heavy Vehicles	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Factor	0.20	0.20	0.10	1.00			0.20	0.20	0.10	1.00		
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment Factor	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc, Critical Headway	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,I, Critical Headway (Stage I)												
tc,II, Critical Headway (Stage II)												
tf,base, Base Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		
tf,hv, Heavy Vehicles Adjustment Factor	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00		
tf, Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		

Delay and Level of Service by Movement												
Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	118.48	5.43	32.61	78.26	646.74	136.96	13.04	5.43	61.96	48.91	1070.65	30.43
cmx, Capacity	54.09	41.70	612.75	641.54			45.11	38.61	483.62	843.54		
V / C	2.19	0.13	0.05	0.12			0.29	0.14	0.13	0.06		
d, Delay	2635.35	2655.12	2574.67	11.39			115.17	128.62	42.81	9.53		
LOS	F	F	F	B			F	F	E	A		
dA, Approach Delay		2623.40			1.03			60.35			0.41	
Approach LOS		F						F				
dRank1, Rank 1 Delay					0.00						0.00	

Delay and Level of Service by Lane								
Approach	N		E (Major)		S		W (Major)	
Lane	Lane 1	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2	Lane 3
Movements	L1, T, R1			T, R1	L1, T, R1			T, R1
vx, Volume	156.52	78.26	391.85	391.85	80.43	48.91	550.54	550.54
Flared Storage Size								
cmx, Capacity	65.94				144.15			
V / C	2.37				0.56			
Q95, 95% Queue Length	49.99				3.42			
d, Delay	2623.40				60.35			
LOS	F				F			
dA, Approach Delay	2623.40		1.03		60.35		0.41	
Approach LOS	F				F			

Node 521: Storke & Marketplace

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.512
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	9	662	222	11	7	18	76	824	22	206	11	54
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	2	166	56	3	2	5	19	206	6	52	3	14
Adjusted Volume	9	662	222	11	7	18	76	824	22	206	11	54

Volume and Adjustments by Lane Group

Approach	N			E		S		W
Lane Group	L	C	R	C	R	L	C	C
ID	3541	3542	3544	3539	3540	3547	3548	3545
Lanes	L	T, T	R	LT	R	L	T, RT	L, LTR
Volume	9	662	222	18	18	76	846	271

Saturation Flow Rate

Approach	N				E		S			W
Lane Group	3541		3542	3544	3539	3540	3547		3548	3545
Base Saturation Flow Rate	1600		1600	1600	1600	1600	1600		1600	1600
Number of Lanes	1		2	1	1	1	1		2	2
Saturation Flow Rate	1520	499	3200	1600	1600	1600	1520	631	3200	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	9	662	222	11	7	18	76	824	22	206	11	54
Volume / Saturation Flow Rate	0.006	0.207	0.139	0.007	0.011	0.011	0.048	0.264	0.264	0.064	0.085	0.085
Overlap adjusted Volume / Saturation Flow Rate	0.006	0.207	0.139	0.007	0.011	0.011	0.048	0.264	0.264	0.064	0.085	0.085
Critical Movement	Y			Y				Y				Y

Node 522: Hollister & Storke

Control Type	Signalized
Method	ICU Method 1
LOS	D
Critical V/C	0.803
Loss Time	20
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	369	686	546	165	159	120	41	643	356	556	533	38
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	92	172	137	41	40	30	10	161	89	139	133	10
Adjusted Volume	369	686	546	165	159	120	41	643	356	556	533	38

Volume and Adjustments by Lane Group

Approach	N			E			S			W		
Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
ID	3555	3557	3559	3550	3552	3554	3565	3567	3569	3560	3562	3564
Lanes	L, L	T, T	R	L, L	T, T	R	L, L	T, T	R	L, L	T, T	R
Volume	369	686	546	165	159	120	41	643	356	556	533	38

Saturation Flow Rate

Approach	N			E			S			W		
Lane Group	3555	3557	3559	3550	3552	3554	3565	3567	3569	3560	3562	3564
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Saturation Flow Rate	3200	3200	1600	3200	3200	1600	3200	3200	1600	3200	3200	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	369	686	546	165	159	120	41	643	356	556	533	38
Volume / Saturation Flow Rate	0.115	0.214	0.341	0.052	0.050	0.075	0.013	0.201	0.223	0.174	0.167	0.024
Overlap adjusted Volume / Saturation Flow Rate	0.115	0.214	0.341	0.052	0.050	0.075	0.013	0.201	0.223	0.174	0.167	0.024
Critical Movement			Y			Y	Y			Y		

Node 524: Hollister & Coromar Project Access

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.528
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	33	15	68	217	492	198	19	11	34	61	667	165
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	8	4	17	54	123	50	5	3	9	15	167	41
Adjusted Volume	33	15	68	217	492	198	19	11	34	61	667	165

Volume and Adjustments by Lane Group

Approach	N	E		S		W		
Lane Group	C	L	C	C	R	L	C	R
ID	3575	3572	3573	3570	3571	3576	3577	3579
Lanes	LTR	L	T, RT	LT	R	L	T, T	R
Volume	116	217	690	30	34	61	667	165

Saturation Flow Rate

Approach	N	E		S		W		
Lane Group	3575	3572	3573	3570	3571	3576	3577	3579
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	2	1	1	1	2	1
Saturation Flow Rate	1600	1600	3200	1600	1600	1600	3200	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	33	15	68	217	492	198	19	11	34	61	667	165
Volume / Saturation Flow Rate	0.021	0.072	0.073	0.136	0.216	0.216	0.012	0.019	0.021	0.038	0.208	0.103
Overlap adjusted Volume / Saturation Flow Rate	0.021	0.072	0.073	0.136	0.216	0.216	0.012	0.019	0.021	0.038	0.208	0.103
Critical Movement		Y		Y			Y				Y	

Node 525: Hollister & Los Carneros

Control Type	Signalized
Method	ICU Method 1
LOS	D
Critical V/C	0.851
Loss Time	20
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	42	610	324	198	378	49	142	204	206	203	421	475
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	11	153	81	50	95	12	36	51	52	51	105	119
Adjusted Volume	42	610	324	198	378	49	142	204	206	203	421	475

Volume and Adjustments by Lane Group

Approach	N			E		S			W	
Lane Group	L	C	R	L	C	L	C	R	L	C
ID	3583	3584	3586	3580	3581	3591	3593	3595	3587	3589
Lanes	L	T, T	R	L	T, RT	L, L	T, T	R	L, L	T, RT
Volume	42	610	324	198	427	142	204	206	203	896

Saturation Flow Rate

Approach	N			E		S			W	
Lane Group	3583	3584	3586	3580	3581	3591	3593	3595	3587	3589
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	1	1	2	2	2	1	2	2
Saturation Flow Rate	1600	3200	1600	1600	3200	3200	3200	1600	3200	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	42	610	324	198	378	49	142	204	206	203	421	475
Volume / Saturation Flow Rate	0.026	0.191	0.203	0.124	0.133	0.133	0.044	0.064	0.129	0.063	0.280	0.280
Overlap adjusted Volume / Saturation Flow Rate	0.026	0.191	0.203	0.124	0.133	0.133	0.044	0.064	0.129	0.063	0.280	0.280
Critical Movement			Y	Y			Y				Y	

Node 528: Hollister & Los Carneros Way

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.44
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Base Volume	186	129	560	55	51	545
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	47	32	140	14	13	136
Adjusted Volume	186	129	560	55	51	545

Volume and Adjustments by Lane Group

Approach	N	E	W	
Lane Group	C	C	L	C
ID	3598	3596	3601	3602
Lanes	L, LTR, R	T, RT	L	T, T
Volume	315	615	51	545

Saturation Flow Rate

Approach	N	E	W	
Lane Group	3598	3596	3601	3602
Base Saturation Flow Rate	1600	1600	1600	1600
Number of Lanes	3	2	1	2
Saturation Flow Rate	4800	3200	1600	3200

Capacity Analysis

Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Volume	186	129	560	55	51	545
Volume / Saturation Flow Rate	0.058	0.066	0.192	0.192	0.032	0.170
Overlap adjusted Volume / Saturation Flow Rate	0.058	0.066	0.192	0.192	0.032	0.170
Critical Movement		Y	Y		Y	

Node 530: Hollister & Aero Camino	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.449
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	82	5	35	5	538	94	14	5	5	61	597	21
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	21	1	9	1	135	24	4	1	1	15	149	5
Adjusted Volume	82	5	35	5	538	94	14	5	5	61	597	21

Volume and Adjustments by Lane Group								
Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	3609	3610	3606	3607	3604	3605	3611	3612
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	87	35	5	632	19	5	61	618

Saturation Flow Rate								
Approach	N		E		S		W	
Lane Group	3609	3610	3606	3607	3604	3605	3611	3612
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	2	1	1	1	2
Saturation Flow Rate	1600	1600	1600	3200	1600	1600	1600	3200

Capacity Analysis												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	82	5	35	5	538	94	14	5	5	61	597	21
Volume / Saturation Flow Rate	0.051	0.054	0.022	0.003	0.198	0.198	0.009	0.012	0.003	0.038	0.193	0.193
Overlap adjusted Volume / Saturation Flow Rate	0.051	0.054	0.022	0.003	0.198	0.198	0.009	0.012	0.003	0.038	0.193	0.193
Critical Movement		Y			Y		Y			Y		

Node 553: Storke & Santa Felicia

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	1.08
Worst Case Delay	29.7
Worst Case LOS	D

Volume and Adjustments						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
Base Volume	594.00	28.00	32.00	860.00	28.00	41.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	645.65	30.43	34.78	934.78	30.43	44.57

Pedestrians						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
vx, Flow (Ped/hr)			0.00		0.00	0.00
w, Lane Width (ft)			12.00		12.00	12.00
Sp, Walking Speed (ft/s)			3.50		3.50	3.50
fpb, Percent Blockage			0.00		0.00	0.00

Capacity of Movements below Rank 1						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
Rank	1	1	2	1	3	2
vx, Volume			34.78		30.43	44.57
Conflicting Volume (Veh)			676.09		1197.83	338.04
Conflicting Volume (Ped)			0.00		0.00	0.00
Conflicting Volume			676.09		1197.83	338.04
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity			924.93		181.23	663.67
Capacity			924.93		172.02	663.67

Critical Headway and Follow Up Headway						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
tc,base, Base Critical Headway			4.10		7.50	6.90
tc,base,I, Base Critical Headway (Stage I)						
tc,base,II, Base Critical Headway (Stage II)						
tc,HV, Heavy Vehicles Adjustment Factor			2.00		2.00	2.00
Phv, % Heavy Vehicles			0.00		0.00	0.00
tc,G, Grade Adjustment Factor			1.00		0.20	0.10
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment Factor			0.00		0.70	0.00
tc, Critical Headway			4.10		6.80	6.90
tc,I, Critical Headway (Stage I)						
tc,II, Critical Headway (Stage II)						
tf,base, Base Follow-Up Headway			2.20		3.50	3.30
tf,hv, Heavy Vehicles Adjustment Factor			1.00		1.00	1.00
tf, Follow-Up Headway			2.20		3.50	3.30

Delay and Level of Service by Movement						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
vx, Volume	645.65	30.43	34.78	934.78	30.43	44.57
cmx, Capacity			924.93		172.02	663.67
V / C			0.04		0.18	0.07
d, Delay			9.04		29.70	14.20
LOS			A		D	B
dA, Approach Delay	0.00		0.32		20.49	
Approach LOS					C	
dRank1, Rank 1 Delay	0.00		0.00			

Delay and Level of Service by Lane						
Approach	N (Major)		S (Major)			W
Lane	Lane 1	Lane 2	Lane 1	Lane 2	Lane 3	Lane 1
Movements		T, R1				L1, R1
vx, Volume	338.04	338.04	34.78	467.39	467.39	75.00
Flared Storage Size						
cmx, Capacity						307.29
V / C						0.24
Q95, 95% Queue Length						0.96
d, Delay						20.49
LOS						C
dA, Approach Delay	0.00		0.32			20.49
Approach LOS						C

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Node 562: Storke & Phelps

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.602
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	54	350	101	24	7	116	69	598	20	213	15	89
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	14	88	25	6	2	29	17	150	5	53	4	22
Adjusted Volume	54	350	101	24	7	116	69	598	20	213	15	89

Volume and Adjustments by Lane Group

Approach	N		E	S		W	
Lane Group	L	C	C	L	C	L	C
ID	3615	3616	3614	3620	3621	3618	3619
Lanes	L	T, RT	LTR	L	T, RT	L	RT
Volume	54	451	147	69	618	213	104

Saturation Flow Rate

Approach	N		E	S		W	
Lane Group	3615	3616	3614	3620	3621	3618	3619
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	1	1	2	1	1
Saturation Flow Rate	1600	3200	1600	1600	3200	1600	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	54	350	101	24	7	116	69	598	20	213	15	89
Volume / Saturation Flow Rate	0.034	0.141	0.141	0.015	0.092	0.092	0.043	0.193	0.193	0.133	0.065	0.065
Overlap adjusted Volume / Saturation Flow Rate	0.034	0.141	0.141	0.015	0.092	0.092	0.043	0.193	0.193	0.133	0.065	0.065
Critical Movement	Y				Y				Y	Y		

Node 564: Mesa & Los Carneros	
Control Type	Signalized
Method	ICU Method 1
LOS	C
Critical V/C	0.751
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	296	328	18	82	11	30	11	448	78	26	32	34
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	74	82	5	21	3	8	3	112	20	7	8	9
Adjusted Volume	296	328	18	82	11	30	11	448	78	26	32	34

Volume and Adjustments by Lane Group								
Approach	N		E		S		W	
Lane Group	L	C	C	R	L	C	C	R
ID	3625	3626	3623	3624	3629	3630	3627	3628
Lanes	L	RT	LT	R	L	RT	LT	R
Volume	296	346	93	30	11	526	58	34

Saturation Flow Rate								
Approach	N		E		S		W	
Lane Group	3625	3626	3623	3624	3629	3630	3627	3628
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	1	1	1	1	1
Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600

Capacity Analysis												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	296	328	18	82	11	30	11	448	78	26	32	34
Volume / Saturation Flow Rate	0.185	0.216	0.216	0.051	0.058	0.019	0.007	0.329	0.329	0.016	0.036	0.021
Overlap adjusted Volume / Saturation Flow Rate	0.185	0.216	0.216	0.051	0.058	0.019	0.007	0.329	0.329	0.016	0.036	0.021
Critical Movement	Y			Y					Y		Y	

Node 592: Los Caneros & El Collegio	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.438
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement						
Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Base Volume	294	156	114	236	298	236
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	74	39	29	59	75	59
Adjusted Volume	294	156	114	236	298	236

Volume and Adjustments by Lane Group						
Approach	N		E		W	
Lane Group	L	R	C	R	L	C
ID	3634	3636	3631	3633	3637	3639
Lanes	L, L	R	T, T	R	L, L	T, T
Volume	294	156	114	236	298	236

Saturation Flow Rate						
Approach	N		E		W	
Lane Group	3634	3636	3631	3633	3637	3639
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600
Number of Lanes	2	1	2	1	2	2
Saturation Flow Rate	3200	1600	3200	1600	3200	3200

Capacity Analysis						
Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Volume	294	156	114	236	298	236
Volume / Saturation Flow Rate	0.092	0.098	0.036	0.147	0.093	0.074
Overlap adjusted Volume / Saturation Flow Rate	0.092	0.098	0.036	0.147	0.093	0.074
Critical Movement		Y		Y	Y	

Node 596: El Colegio & Stadium	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.234
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		E		W	
Movement	T	R1	T	R1	L1	T
Base Volume	54	50	98	26	102	429
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	14	13	25	7	26	107
Adjusted Volume	54	50	98	26	102	429

Volume and Adjustments by Lane Group

Approach	N	E	W	
Lane Group	C	C	L	C
ID	3643	3641	3644	3645
Lanes	RT	T, RT	L	T, T
Volume	104	124	102	429

Saturation Flow Rate

Approach	N	E	W	
Lane Group	3643	3641	3644	3645
Base Saturation Flow Rate	1600	1600	1600	1600
Number of Lanes	1	2	1	2
Saturation Flow Rate	1600	3200	1600	3200

Capacity Analysis

Approach	N		E		W	
Movement	T	R1	T	R1	L1	T
Volume	54	50	98	26	102	429
Volume / Saturation Flow Rate	0.065	0.065	0.039	0.039	0.064	0.134
Overlap adjusted Volume / Saturation Flow Rate	0.065	0.065	0.039	0.039	0.064	0.134
Critical Movement						Y

Node 617: Los Caneros & Castilian

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.667
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	52	812	490	5	5	7	71	376	17	88	5	59
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	13	203	123	1	1	2	18	94	4	22	1	15
Adjusted Volume	52	812	490	5	5	7	71	376	17	88	5	59

Volume and Adjustments by Lane Group

Approach	N		E	S		W	
Lane Group	L	C	C	L	C	C	R
ID	3648	3649	3647	3653	3654	3651	3652
Lanes	L	T, RT	LTR	L	T, RT	LT	R
Volume	52	1302	17	71	393	93	59

Saturation Flow Rate

Approach	N		E	S		W	
Lane Group	3648	3649	3647	3653	3654	3651	3652
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	1	1	2	1	1
Saturation Flow Rate	1600	3200	1600	1600	3200	1600	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	52	812	490	5	5	7	71	376	17	88	5	59
Volume / Saturation Flow Rate	0.033	0.407	0.407	0.003	0.011	0.011	0.044	0.123	0.123	0.055	0.058	0.037
Overlap adjusted Volume / Saturation Flow Rate	0.033	0.407	0.407	0.003	0.011	0.011	0.044	0.123	0.123	0.055	0.058	0.037
Critical Movement			Y			Y	Y			Y		

Node 620: Hollister & St Joseph	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	1.06
Worst Case Delay	29.65
Worst Case LOS	D

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	18.00	48.00	900.00	30.00	19.00	359.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	19.57	52.17	978.26	32.61	20.65	390.22

Pedestrians						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Flow (Ped/hr)	0.00	0.00			0.00	
w, Lane Width (ft)	12.00	12.00			12.00	
Sp, Walking Speed (ft/s)	3.50	3.50			3.50	
fpb, Percent Blockage	0.00	0.00			0.00	

Capacity of Movements below Rank 1						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Rank	3	2	1	1	2	1
vx, Volume	19.57	52.17			20.65	
Conflicting Volume (Veh)	1230.98	505.43			1010.87	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	1230.98	505.43			1010.87	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	172.46	517.36			693.67	
Capacity	166.70	517.36			693.67	

Critical Headway and Follow Up Headway						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
tc,base, Base Critical Headway	7.50	6.90			4.10	
tc,base,I, Base Critical Headway (Stage I)						
tc,base,II, Base Critical Headway (Stage II)						
tc,HV, Heavy Vehicles Adjustment Factor	2.00	2.00			2.00	
Phv, % Heavy Vehicles	0.00	0.00			0.00	
tc,G, Grade Adjustment Factor	0.20	0.10			1.00	
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment Factor	0.70	0.00			0.00	
tc, Critical Headway	6.80	6.90			4.10	
tc,I, Critical Headway (Stage I)						
tc,II, Critical Headway (Stage II)						
tf,base, Base Follow-Up Headway	3.50	3.30			2.20	
tf,hv, Heavy Vehicles Adjustment Factor	1.00	1.00			1.00	
tf, Follow-Up Headway	3.50	3.30			2.20	

Delay and Level of Service by Movement						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Volume	19.57	52.17	978.26	32.61	20.65	390.22
cmx, Capacity	166.70	517.36			693.67	
V / C	0.12	0.10			0.03	
d, Delay	29.65	15.01			10.35	
LOS	D	C			B	
dA, Approach Delay	19.00		0.00		0.52	
Approach LOS	C					
dRank1, Rank 1 Delay			0.00		0.00	

Delay and Level of Service by Lane						
Approach	N	E (Major)		W (Major)		
Lane	Lane 1	Lane 1	Lane 2	Lane 1	Lane 2	Lane 3
Movements	L1, R1		T, R1			
vx, Volume	71.74	505.43	505.43	20.65	195.11	195.11
Flared Storage Size						
cmx, Capacity	328.76					
V / C	0.22					
Q95, 95% Queue Length	0.83					
d, Delay	19.00					
LOS	C					
dA, Approach Delay	19.00	0.00		0.52		
Approach LOS	C					

Node 624: Cathedral Oaks & Calle Real

Control Type	AWSC
Method	HCM 6th Edition
Average Delay	21.36
Average LOS	C

Volume and Adjustments

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	5.00	271.00	42.00	339.00	39.00	5.00	45.00	181.00	29.00	18.00	5.00	80.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
Flow Rate	5.43	294.57	45.65	368.48	42.39	5.43	48.91	196.74	31.52	19.57	5.43	86.96
Geometry Group	5			5			5			4b		

Saturation Headway

Approach	N		E		S		W
Lanes	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1
Total Lane Flow Rate	5.43	340.22	368.48	47.83	48.91	228.26	111.96
Left Turn Flow Rate	5.43	0.00	368.48	0.00	48.91	0.00	19.57
Right Turn Flow Rate	0.00	45.65	0.00	5.43	0.00	31.52	86.96
PLT, Proportion LT	1.00	0.00	1.00	0.00	1.00	0.00	0.17
PRT, Proportion RT	0.00	0.13	0.00	0.11	0.00	0.14	0.78
PHV, Proportion HV	0.00	0.00	0.00	0.00	0.00	0.00	0.00
hLT,adj, Headway adjustment for left turns	0.50		0.50		0.50		0.20
hRT,adj, Headway adjustment for right turns	-0.70		-0.70		-0.70		-0.60
hHV,adj, Headway adjustment for heavy vehicles	1.70		1.70		1.70		1.70
hadj, Headway adjustment	0.50	-0.09	0.50	-0.08	0.50	-0.10	-0.43

Departure Headway

Approach	N		E		S		W
Lanes	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1
Total Lane Flow Rate	5.43	340.22	368.48	47.83	48.91	228.26	111.96
hd initial	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x initial	0.00	0.30	0.33	0.04	0.04	0.20	0.10
hd, iteration 1	6.06	5.47	6.06	5.47	6.13	5.52	5.43
Difference, iteration 1	2.86	2.27	2.86	2.27	2.93	2.32	2.23
hd, iteration 2	6.98	6.38	6.81	6.22	7.13	6.52	6.56
Difference, iteration 2	0.91	0.91	0.75	0.75	1.01	1.00	1.14
hd, iteration 3	7.29	6.68	7.12	6.54	7.48	6.87	7.01
Difference, iteration 3	0.31	0.31	0.31	0.31	0.35	0.35	0.44
hd, iteration 4	7.41	6.80	7.23	6.65	7.62	7.00	7.17
Difference, iteration 4	0.12	0.12	0.11	0.11	0.14	0.14	0.16
hd, iteration 5	7.45	6.85	7.27	6.69	7.67	7.05	7.23
Difference, iteration 5	0.04	0.04	0.04	0.04	0.05	0.05	0.06
Convergence	Y	Y	Y	Y	Y	Y	Y
hd final, Departure Headway	7.45	6.85	7.27	6.69	7.67	7.05	7.23
x final, Degree of Utilization	0.01	0.65	0.74	0.09	0.10	0.45	0.22

Capacity and Level of Service

Approach	N		E		S		W
Lanes	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1
Total Lane Flow Rate	5.43	340.22	368.48	47.83	48.91	228.26	111.96
hd, Departure Headway	7.45	6.85	7.27	6.69	7.67	7.05	7.23
x, Degree of Utilization	0.01	0.65	0.74	0.09	0.10	0.45	0.22
m, Move Up Time	2.30	2.30	2.30	2.30	2.30	2.30	2.00
ts, Service Time	5.15	4.55	4.97	4.39	5.37	4.75	5.23
Capacity	482.66	525.61	494.42	537.53	469.50	509.80	497.68
Delay	10.24	21.86	30.27	10.04	11.26	15.43	12.33
LOS	B	C	D	B	B	C	B
Q95, 95% Queue Length	0.03	5.21	7.78	0.29	0.35	2.39	0.87
Approach Delay	21.68		27.95		14.70		12.33
Approach LOS	C		D		B		B
Intersection Delay	21.36						
Intersection LOS	C						

Node 630: Hollister & Marketplace/Village Way	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.568
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	5	5	5	68	744	5	30	5	62	5	1080	54
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	1	1	1	17	186	1	8	1	16	1	270	14
Adjusted Volume	5	5	5	68	744	5	30	5	62	5	1080	54

Volume and Adjustments by Lane Group

Approach	N	E			S		W	
Lane Group	C	L	C	R	C	R	L	C
ID	3663	3658	3660	3662	3656	3657	3664	3665
Lanes	LTR	L, L	T, T	R	LT	R	L	T, RT
Volume	15	68	744	5	35	62	5	1134

Saturation Flow Rate

Approach	N	E			S		W	
Lane Group	3663	3658	3660	3662	3656	3657	3664	3665
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	2	1	1	1	1	2
Saturation Flow Rate	1600	3200	3200	1600	1600	1600	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	5	5	5	68	744	5	30	5	62	5	1080	54
Volume / Saturation Flow Rate	0.003	0.009	0.009	0.021	0.233	0.003	0.019	0.022	0.039	0.003	0.354	0.354
Overlap adjusted Volume / Saturation Flow Rate	0.003	0.009	0.009	0.021	0.233	0.003	0.019	0.022	0.039	0.003	0.354	0.354
Critical Movement	Y			Y					Y		Y	

Node 636: Hollister & Cathedral Oaks	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	2.05
Worst Case Delay	18.05
Worst Case LOS	C

Volume and Adjustments						
Approach	N (Major)		E (Major)		W	
Movement	L1	R1	T	R1	L1	T
Base Volume	269.00	131.00	62.00	388.00	51.00	43.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	292.39	142.39	67.39	421.74	55.43	46.74

Pedestrians						
Approach	N (Major)		E (Major)		W	
Movement	L1	R1	T	R1	L1	T
vx, Flow (Ped/hr)			0.00		0.00	0.00
w, Lane Width (ft)			12.00		12.00	12.00
Sp, Walking Speed (ft/s)			3.50		3.50	3.50
fpb, Percent Blockage			0.00		0.00	0.00

Capacity of Movements below Rank 1						
Approach	N (Major)		E (Major)		W	
Movement	L1	R1	T	R1	L1	T
Rank	1	1	2	1	3	2
vx, Volume			67.39		55.43	46.74
Conflicting Volume (Veh)			363.59		852.72	363.59
Conflicting Volume (Ped)			0.00		0.00	0.00
Conflicting Volume			363.59		852.72	363.59
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity			1206.15		332.30	567.43
Capacity			1206.15		331.32	567.43

Critical Headway and Follow Up Headway						
Approach	N (Major)		E (Major)		W	
Movement	L1	R1	T	R1	L1	T
tc,base, Base Critical Headway			4.10		7.10	6.50
tc,base,I, Base Critical Headway (Stage I)						
tc,base,II, Base Critical Headway (Stage II)						
tc,HV, Heavy Vehicles Adjustment Factor			1.00		1.00	1.00
Phv, % Heavy Vehicles			0.00		0.00	0.00
tc,G, Grade Adjustment Factor			1.00		0.20	0.20
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment Factor			0.00		0.70	0.00
tc, Critical Headway			4.10		6.40	6.50
tc,I, Critical Headway (Stage I)						
tc,II, Critical Headway (Stage II)						
tf,base, Base Follow-Up Headway			2.20		3.50	4.00
tf,hv, Heavy Vehicles Adjustment Factor			0.90		0.90	0.90
tf, Follow-Up Headway			2.20		3.50	4.00

Delay and Level of Service by Movement						
Approach	N (Major)		E (Major)		W	
Movement	L1	R1	T	R1	L1	T
vx, Volume	292.39	142.39	67.39	421.74	55.43	46.74
cmx, Capacity			1206.15		331.32	567.43
V / C			0.06		0.17	0.08
d, Delay			8.16		18.05	11.91
LOS			A		C	B
dA, Approach Delay	0.00		1.12		15.24	
Approach LOS					C	
dRank1, Rank 1 Delay	0.00		0.00			

Delay and Level of Service by Lane						
Approach	N (Major)		E (Major)		W	
Lane	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
Movements						
vx, Volume	292.39	142.39	67.39	421.74	55.43	46.74
Flared Storage Size						
cmx, Capacity						
V / C						
Q95, 95% Queue Length						
d, Delay						
LOS						
dA, Approach Delay	0.00		1.12		15.24	
Approach LOS					C	

Node 717: Hollister & Entrance

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.516
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	11	5	5	52	428	82	102	5	242	12	518	43
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	3	1	1	13	107	21	26	1	61	3	130	11
Adjusted Volume	11	5	5	52	428	82	102	5	242	12	518	43

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	3672	3673	3669	3670	3667	3668	3674	3675
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	16	5	52	510	107	242	12	561

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	3672	3673	3669	3670	3667	3668	3674	3675
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	2	1	1	1	2
Saturation Flow Rate	1600	1600	1600	3200	1600	1600	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	11	5	5	52	428	82	102	5	242	12	518	43
Volume / Saturation Flow Rate	0.007	0.010	0.003	0.033	0.159	0.159	0.064	0.067	0.151	0.007	0.175	0.175
Overlap adjusted Volume / Saturation Flow Rate	0.007	0.010	0.003	0.033	0.159	0.159	0.064	0.067	0.151	0.007	0.175	0.175
Critical Movement	Y			Y					Y		Y	

Node 856: Hollister & Cortona

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	119.65
Worst Case Delay	2485.35
Worst Case LOS	F

Volume and Adjustments

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	21.00	5.00	45.00	12.00	368.00	49.00	53.00	11.00	19.00	246.00	946.00	18.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	22.83	5.43	48.91	13.04	400.00	53.26	57.61	11.96	20.65	267.39	1028.26	19.57

Pedestrians

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
w, Lane Width (ft)	12.00	12.00	12.00	12.00			12.00	12.00	12.00	12.00		
Sp, Walking Speed (ft/s)	3.50	3.50	3.50	3.50			3.50	3.50	3.50	3.50		
fpb, Percent Blockage	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		

Capacity of Movements below Rank 1

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	2	1	1	4	3	2	2	1	1
vx, Volume	22.83	5.43	48.91	13.04			57.61	11.96	20.65	267.39		
Conflicting Volume (Veh)	1507.61	2035.33	226.63	1047.83			1801.63	2052.17	523.91	453.26		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1507.61	2035.33	226.63	1047.83			1801.63	2052.17	523.91	453.26		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	84.77	57.60	782.48	671.84			51.09	56.22	503.27	1118.03		
Capacity	44.61	37.10	782.48	671.84			31.00	36.20	503.27	1118.03		

Critical Headway and Follow Up Headway

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Headway	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,base,I, Base Critical Headway (Stage I)												
tc,base,II, Base Critical Headway (Stage II)												
tc,HV, Heavy Vehicles Adjustment Factor	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00		
Phv, % Heavy Vehicles	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Factor	0.20	0.20	0.10	1.00			0.20	0.20	0.10	1.00		
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment Factor	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc, Critical Headway	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,I, Critical Headway (Stage I)												
tc,II, Critical Headway (Stage II)												
tf,base, Base Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		
tf,hv, Heavy Vehicles Adjustment Factor	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00		
tf, Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		

Delay and Level of Service by Movement

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	22.83	5.43	48.91	13.04	400.00	53.26	57.61	11.96	20.65	267.39	1028.26	19.57
cmx, Capacity	44.61	37.10	782.48	671.84			31.00	36.20	503.27	1118.03		
V / C	0.51	0.15	0.06	0.02			1.86	0.33	0.04	0.24		
d, Delay	161.16	177.50	85.05	10.46			2485.35	2468.66	2376.38	9.23		
LOS	F	F	F	B			F	F	F	A		
dA, Approach Delay		114.07			0.29			2458.19			1.88	
Approach LOS		F						F				
dRank1, Rank 1 Delay					0.11						0.00	

Delay and Level of Service by Lane

Approach	N	E (Major)		S	W (Major)		
Lane	Lane 1	Lane 1	Lane 2	Lane 1	Lane 1	Lane 2	Lane 3
Movements	L1, T, R1	L1, T	T, R1	L1, T, R1			T, R1
vx, Volume	77.17	233.15	233.15	90.22	267.39	523.91	523.91
Flared Storage Size							
cmx, Capacity	107.07	671.84		40.46			
V / C	0.72	0.35		2.23			
Q95, 95% Queue Length	5.63	1.58		29.47			
d, Delay	114.07	10.46		2458.19			
LOS	F			F			
dA, Approach Delay	114.07	0.29		2458.19	1.88		
Approach LOS	F			F			

Node 877: Hollister & Sumida Gardens

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.493
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	13	5	66	65	850	34	8	5	9	27	321	10
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	3	1	17	16	213	9	2	1	2	7	80	3
Adjusted Volume	13	5	66	65	850	34	8	5	9	27	321	10

Volume and Adjustments by Lane Group								
Approach	N		E		S		W	
Lane Group	L	C	L	C	L	C	L	C
ID	3680	3681	3677	3678	3685	3686	3682	3683
Lanes	L	RT	L	T, RT	L	RT	L	T, RT
Volume	13	71	65	884	8	14	27	331

Saturation Flow Rate								
Approach	N		E		S		W	
Lane Group	3680	3681	3677	3678	3685	3686	3682	3683
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	2	1	1	1	2
Saturation Flow Rate	1600	1600	1600	3200	1600	1600	1600	3200

Capacity Analysis												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	13	5	66	65	850	34	8	5	9	27	321	10
Volume / Saturation Flow Rate	0.008	0.044	0.044	0.041	0.276	0.276	0.005	0.009	0.009	0.017	0.103	0.103
Overlap adjusted Volume / Saturation Flow Rate	0.008	0.044	0.044	0.041	0.276	0.276	0.005	0.009	0.009	0.017	0.103	0.103
Critical Movement			Y		Y		Y			Y		

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Node 1009: Los Carneros & Raytheon Dr.	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.556
Loss Time	0
Cycle Length	100

Volume and Adjustments by Movement						
Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Base Volume	95	106	1514	126	26	429
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	24	27	379	32	7	107
Adjusted Volume	95	106	1514	126	26	429

Volume and Adjustments by Lane Group						
Approach	N		E		W	
Lane Group	L	R	C	R	L	C
ID	3690	3692	3687	3689	3693	3694
Lanes	L, L	R	T, T	R	L	T, T
Volume	95	106	1514	126	26	429

Saturation Flow Rate						
Approach	N		E		W	
Lane Group	3690	3692	3687	3689	3693	3694
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600
Number of Lanes	2	1	2	1	1	2
Saturation Flow Rate	3200	1600	3200	1600	1600	3200

Capacity Analysis						
Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Volume	95	106	1514	126	26	429
Volume / Saturation Flow Rate	0.030	0.066	0.473	0.079	0.016	0.134
Overlap adjusted Volume / Saturation Flow Rate	0.030	0.066	0.473	0.079	0.016	0.134
Critical Movement		Y	Y		Y	

Node 1042: Hollister & Santa Babara Shores	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	1.04
Worst Case Delay	17.14
Worst Case LOS	C

Volume and Adjustments						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	10.00	486.00	44.00	17.00	426.00	10.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	10.87	528.26	47.83	18.48	463.04	10.87

Pedestrians						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Flow (Ped/hr)	0.00		0.00	0.00		
w, Lane Width (ft)	12.00		12.00	12.00		
Sp, Walking Speed (ft/s)	3.50		3.50	3.50		
fpb, Percent Blockage	0.00		0.00	0.00		

Capacity of Movements below Rank 1						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Rank	2	1	3	2	1	1
vx, Volume	10.87		47.83	18.48		
Conflicting Volume (Veh)	473.91		754.35	236.96		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	473.91		754.35	236.96		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	1098.62		349.13	770.65		
Capacity	1098.62		345.08	770.65		

Critical Headway and Follow Up Headway						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
tc,base, Base Critical Headway	4.10		7.50	6.90		
tc,base,I, Base Critical Headway (Stage I)						
tc,base,II, Base Critical Headway (Stage II)						
tc,HV, Heavy Vehicles Adjustment Factor	2.00		2.00	2.00		
Phv, % Heavy Vehicles	0.00		0.00	0.00		
tc,G, Grade Adjustment Factor	1.00		0.20	0.10		
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment Factor	0.00		0.70	0.00		
tc, Critical Headway	4.10		6.80	6.90		
tc,I, Critical Headway (Stage I)						
tc,II, Critical Headway (Stage II)						
tf,base, Base Follow-Up Headway	2.20		3.50	3.30		
tf,hv, Heavy Vehicles Adjustment Factor	1.00		1.00	1.00		
tf, Follow-Up Headway	2.20		3.50	3.30		

Delay and Level of Service by Movement						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Volume	10.87	528.26	47.83	18.48	463.04	10.87
cmx, Capacity	1098.62		345.08	770.65		
V / C	0.01		0.14	0.02		
d, Delay	8.31		17.14	11.38		
LOS	A		C	B		
dA, Approach Delay	0.17		15.54		0.00	
Approach LOS			C			
dRank1, Rank 1 Delay	0.00				0.00	

Delay and Level of Service by Lane						
Approach	E (Major)			S	W (Major)	
Lane	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2
Movements				L1, R1		T, R1
vx, Volume	10.87	264.13	264.13	66.30	236.96	236.96
Flared Storage Size						
cmx, Capacity				407.84		
V / C				0.16		
Q95, 95% Queue Length				0.58		
d, Delay				15.54		
LOS				C		
dA, Approach Delay	0.17			15.54	0.00	
Approach LOS				C		

Node 1159: Hollister & David Love PL

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	16.62
Worst Case Delay	922.69
Worst Case LOS	F

Volume and Adjustments

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	34.00	5.00	37.00	5.00	1434.00	131.00	7.00	5.00	5.00	53.00	363.00	23.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	36.96	5.43	40.22	5.43	1558.70	142.39	7.61	5.43	5.43	57.61	394.57	25.00

Pedestrians

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
w, Lane Width (ft)	12.00	12.00	12.00	12.00			12.00	12.00	12.00	12.00		
Sp, Walking Speed (ft/s)	3.50	3.50	3.50	3.50			3.50	3.50	3.50	3.50		
fpb, Percent Blockage	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		

Capacity of Movements below Rank 1

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	2	1	1	4	3	2	2	1	1
vx, Volume	36.96	5.43	40.22	5.43			7.61	5.43	5.43	57.61		
Conflicting Volume (Veh)	1955.98	2175.54	850.54	419.57			1315.22	2234.24	209.78	1701.09		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1955.98	2175.54	850.54	419.57			1315.22	2234.24	209.78	1701.09		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	39.07	47.01	307.72	1150.39			117.68	43.16	802.15	379.19		
Capacity	29.55	38.45	307.72	1150.39			78.73	35.30	802.15	379.19		

Critical Headway and Follow Up Headway

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Headway	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,base,I, Base Critical Headway (Stage I)												
tc,base,II, Base Critical Headway (Stage II)												
tc,HV, Heavy Vehicles Adjustment Factor	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00		
Phv, % Heavy Vehicles	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Factor	0.20	0.20	0.10	1.00			0.20	0.20	0.10	1.00		
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment Factor	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc, Critical Headway	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,I, Critical Headway (Stage I)												
tc,II, Critical Headway (Stage II)												
tf,base, Base Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		
tf,hv, Heavy Vehicles Adjustment Factor	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00		
tf, Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		

Delay and Level of Service by Movement

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	36.96	5.43	40.22	5.43	1558.70	142.39	7.61	5.43	5.43	57.61	394.57	25.00
cmx, Capacity	29.55	38.45	307.72	1150.39			78.73	35.30	802.15	379.19		
V / C	1.25	0.14	0.13	0.00			0.10	0.15	0.01	0.15		
d, Delay	922.69	106.60	24.67	8.14			67.89	124.16	26.65	16.19		
LOS	F	F	C	A			F	F	D	C		
dA, Approach Delay		431.81			0.03			72.31			1.95	
Approach LOS		F						F				
dRank1, Rank 1 Delay					0.00						0.00	

Delay and Level of Service by Lane

Approach	N		E (Major)			S	W (Major)		
Lane	Lane 1	Lane 2	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2	Lane 3
Movements		L1, T, R1			T, R1	L1, T, R1			T, R1
vx, Volume	36.96	45.65	5.43	850.54	850.54	18.48	57.61	209.78	209.78
Flared Storage Size									
cmx, Capacity		167.81				71.79			
V / C		0.27				0.26			
Q95, 95% Queue Length		1.10				1.00			
d, Delay		34.42				72.31			
LOS		D				F			
dA, Approach Delay	431.81			0.03		72.31		1.95	
Approach LOS	F					F			

Node 1182: Ward & Ekwill

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	1.76
Worst Case Delay	12.77
Worst Case LOS	B

Volume and Adjustments

Approach	N (Major)		E		S (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	68.00	260.00	5.00	27.00	100.00	5.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	73.91	282.61	5.43	29.35	108.70	5.43

Pedestrians

Approach	N (Major)		E		S (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Flow (Ped/hr)	0.00		0.00	0.00		
w, Lane Width (ft)	12.00		12.00	12.00		
Sp, Walking Speed (ft/s)	3.50		3.50	3.50		
fpb, Percent Blockage	0.00		0.00	0.00		

Capacity of Movements below Rank 1

Approach	N (Major)		E		S (Major)	
Movement	L1	T	L1	R1	T	R1
Rank	2	1	3	2	1	1
vx, Volume	73.91		5.43	29.35		
Conflicting Volume (Veh)	114.13		541.85	111.41		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	114.13		541.85	111.41		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	1487.60		504.97	947.21		
Capacity	1487.60		475.21	947.21		

Critical Headway and Follow Up Headway

Approach	N (Major)		E		S (Major)	
Movement	L1	T	L1	R1	T	R1
tc,base, Base Critical Headway	4.10		7.10	6.20		
tc,base,I, Base Critical Headway (Stage I)						
tc,base,II, Base Critical Headway (Stage II)						
tc,HV, Heavy Vehicles Adjustment Factor	1.00		1.00	1.00		
Phv, % Heavy Vehicles	0.00		0.00	0.00		
tc,G, Grade Adjustment Factor	1.00		0.20	0.10		
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment Factor	0.00		0.70	0.00		
tc, Critical Headway	4.10		6.40	6.20		
tc,I, Critical Headway (Stage I)						
tc,II, Critical Headway (Stage II)						
tf,base, Base Follow-Up Headway	2.20		3.50	3.30		
tf,hv, Heavy Vehicles Adjustment Factor	0.90		0.90	0.90		
tf, Follow-Up Headway	2.20		3.50	3.30		

Delay and Level of Service by Movement

Approach	N (Major)		E		S (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Volume	73.91	282.61	5.43	29.35	108.70	5.43
cmx, Capacity	1487.60		475.21	947.21		
V / C	0.05		0.01	0.03		
d, Delay	7.55		12.77	9.00		
LOS	A		B	A		
dA, Approach Delay	1.56		9.58		0.00	
Approach LOS			A			
dRank1, Rank 1 Delay	0.44				0.00	

Delay and Level of Service by Lane

Approach	N (Major)	E	S (Major)
Lane	Lane 1	Lane 1	Lane 1
Movements	L1, T	L1, R1	T, R1
vx, Volume	356.52	34.78	114.13
Flared Storage Size			
cmx, Capacity	1487.60	819.96	
V / C	0.24	0.04	
Q95, 95% Queue Length	0.94	0.13	
d, Delay	7.55	9.58	
LOS		A	
dA, Approach Delay	1.56	9.58	0.00
Approach LOS		A	

Future Year Conditions– PM Peak Hour Analysis

Intersection Capacity Analysis Summary Page

Analysis Time:	Wed Sep 13 11:55:37 2017
Driving Side:	Right
Analysis Period:	1 Hours

Number	Name	Control Type	V/C	Avg Delay	Avg LOS	Max Delay	Max LOS
151	Cathedral Oaks & Kellogg	Signalized	0.53	17.43	A	48.89	A
164	Cathedral Oaks & La Patera	TWSC	0.00	1.24	A	28.57	D
171	Cathedral Oaks & Fairview	Signalized	0.59	27.51	A	44.43	A
173	Cathedral Oaks & Cambridge	Signalized	0.47	15.79	A	52.14	A
195	Cathedral Oaks & Los Carneros	TWSC	0.00	9.32	A	29.90	D
203	Stow Canyon & Fairview	TWSC	0.00	4.91	A	47.93	E
204	Fairview & Berkeley	TWSC	0.00	2.12	A	34.71	D
240	Fairview & Shirrell Way	TWSC	0.00	4.94	A	40.21	E
241	Encina & Fairview	Signalized	0.53	12.63	A	64.70	A
256	Calle Real & Patterson	Signalized	0.74	31.70	C	54.02	C
273	Cathedral Oaks & Brandon	TWSC	0.00	2.93	A	12.39	B
276	Cathedral Oaks & Alameda	Signalized	0.40	18.60	A	46.00	A
277	Cathedral Oaks & Glen Anne	Signalized	0.57	27.67	A	52.92	A
279	Calle Real & Los Caneros	Roundabout	0.48	12.27	B	14.08	B
280	Calle Real & La Patera	TWSC	0.00	2.13	A	23.37	C
282	Calle Real & Carlo Dr	TWSC	0.00	3.03	A	38.63	E
288	Calle Real & Fairview	Signalized	0.93	45.75	E	69.04	E
289	Fairview & US 101 NB Ramps	Signalized	0.43	43.20	A	88.44	A
296	Calle Real & Kellogg	Signalized	0.56	19.54	A	70.46	A
305	Patterson & Overpass	Signalized	0.73	16.91	C	77.26	C
359	Cathedral Oaks & Winchester Canyon	AWSC	0.18	9.21	A	9.66	A
372	Glen Annie & Del Norte	TWSC	0.00	0.48	A	9.73	A
375	Los Caneros & US101 SB Ramps	Signalized	0.83	57.82	D	214.59	D
376	Los Carneros & US 101 NB Ramps	Signalized	0.62	24.18	B	41.95	B
383	Fairview & US 101 SB Ramps	Signalized	0.87	24.37	D	72.41	D
385	Hollister & Fairview	Signalized	0.96	41.08	E	69.64	E
386	Fairview & Mandarin	TWSC	0.00	89.11	F	8451.91	F
387	Hollister & Orange	TWSC	0.00	724.52	F	7522.02	F
390	Hollister & Pine/Nectarine	Signalized	0.69	19.15	B	47.09	B
394	Hollister & Rutherford	Signalized	0.61	13.44	B	35.54	B
396	Hollister & Community Center West Drive	TWSC	0.00	0.36	A	12.25	B
397	Hollister & Kinman	Signalized	0.55	10.65	A	59.10	A
399	Hollister & Kellogg	Signalized	0.82	27.63	D	55.50	D
402	Hollister & SR-217 SB Ramps	Signalized	0.70	31.94	C	58.04	C
405	Hollister & SR-217 NB Ramps	Signalized	0.57	33.29	A	50.27	A
441	Calle Real & NB 101 OnRamp	TWSC	0.00	2.00	A	10.81	B
445	Calle Real & Winchester Canyon	AWSC	0.28	10.04	B	11.43	B
450	Calle Real & Brandon Dr.	TWSC	0.00	1.59	A	11.19	B
452	Calle Real & Elwood Station	TWSC	0.00	1.93	A	13.53	B
461	Storke & US 101 NB Ramps	Signalized	0.87	46.72	D	68.61	D
462	Storke & US 101 SB Ramp	Signalized	1.15	208.20	F	538.13	F
466	Los Carneros & Cremona	Signalized	0.58	22.12	A	34.53	A
467	Los Carneros & Calle Koral	Signalized	0.81	17.06	D	31.44	D
489	Hollister & Patterson	Signalized	0.89	74.31	D	120.13	D
506	Cathedral Oaks 101 SB-Ramp	TWSC	0.00	3.29	A	51.71	F
511	Hollister & Pebble Beach Rd	TWSC	0.00	2.07	A	31.72	D
512	Hollister & Palo Alto Dr	TWSC	0.00	1.23	A	24.97	C
513	Hollister & Coronado	TWSC	0.00	1.38	A	21.59	C
515	Hollister & Cannon Green	TWSC	0.00	2.44	A	61.32	F
517	Hollister & Pacific Oaks	Signalized	0.60	13.97	B	63.75	B
518	Hollister & Santa Felicia	TWSC	0.00	1125.03	F	10000.00	F
521	Storke & Marketplace	Signalized	0.66	35.73	B	101.08	B
522	Hollister & Storke	Signalized	1.38	426.98	F	995.58	F
524	Hollister & Coromar Project Access	Signalized	0.68	17.96	B	29.79	B
525	Hollister & Los Carneros	Signalized	0.85	47.73	D	82.47	D
528	Hollister & Los Carneros Way	Signalized	0.65	15.59	B	50.56	B
530	Hollister & Aero Camino	Signalized	0.59	12.87	A	53.93	A
553	Storke & Santa Felicia	TWSC	0.00	287.87	F	2638.13	F
562	Storke & Phelps	Signalized	0.62	21.87	B	49.95	B
564	Mesa & Los Carneros	Signalized	0.80	35.14	C	95.51	C
620	Hollister & St Joseph	TWSC	0.00	0.31	A	29.01	D
624	Cathedral Oaks & Calle Real	AWSC	0.50	13.91	B	16.52	C
630	Hollister & Marketplace/Village Way	Signalized	0.76	35.72	C	63.40	C
636	Hollister & Cathedral Oaks	TWSC	0.00	3.32	A	30.57	D
717	Hollister & Entrance	Signalized	0.59	29.03	A	49.03	A
856	Hollister & Cortona	TWSC	0.00	914.28	F	10000.00	F
877	Hollister & Sumida Gardens	Signalized	0.56	11.25	A	73.05	A
1009	Los Carneros & Raytheon Dr.	Signalized	0.51	7.57	A	53.93	A
1042	Hollister & Santa Babara Shores	TWSC	0.00	0.44	A	16.18	C
1159	Hollister & David Love PL	TWSC	0.00	66.60	F	951.80	F
1182	Ward & Ekwill	TWSC	0.00	2.11	A	12.94	B

City of Goleta General Plan Update –Average LOS for City Intersections for PM Peak of Future Conditions

Node 151: Cathedral Oaks & Kellogg

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.534
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	46	13	15	96	426	72	13	18	74	30	770	26
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	12	3	4	24	107	18	3	5	19	8	193	7
Adjusted Volume	46	13	15	96	426	72	13	18	74	30	770	26

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	10139	10140	10136	10137	10144	10145	10141	10142
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	59	15	96	498	31	74	30	796

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	10139	10140	10136	10137	10144	10145	10141	10142
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	2	1	1	1	2
Saturation Flow Rate	1600	1600	1600	3200	1600	1600	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	46	13	15	96	426	72	13	18	74	30	770	26
Volume / Saturation Flow Rate	0.029	0.037	0.009	0.060	0.156	0.156	0.008	0.019	0.046	0.019	0.249	0.249
Overlap adjusted Volume / Saturation Flow Rate	0.029	0.037	0.009	0.060	0.156	0.156	0.008	0.019	0.046	0.019	0.249	0.249
Critical Movement	Y			Y					Y			Y

Node 164: Cathedral Oaks & La Patera

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	1.24
Worst Case Delay	28.57
Worst Case LOS	D

Volume and Adjustments

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	7.00	5.00	6.00	19.00	337.00	5.00	8.00	5.00	25.00	5.00	634.00	12.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	7.61	5.43	6.52	20.65	366.30	5.43	8.70	5.43	27.17	5.43	689.13	13.04

Pedestrians

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
w, Lane Width (ft)	12.00	12.00	12.00	12.00			12.00	12.00	12.00	12.00		
Sp, Walking Speed (ft/s)	3.50	3.50	3.50	3.50			3.50	3.50	3.50	3.50		
fpb, Percent Blockage	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		

Capacity of Movements below Rank 1

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	2	1	1	4	3	2	2	1	1
vx, Volume	7.61	5.43	6.52	20.65			8.70	5.43	27.17	5.43		
Conflicting Volume (Veh)	1133.15	1123.37	369.02	702.17			1122.83	1119.57	695.65	371.74		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1133.15	1123.37	369.02	702.17			1122.83	1119.57	695.65	371.74		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	181.61	207.28	681.03	904.54			184.59	208.36	445.26	1197.87		
Capacity	162.43	199.81	681.03	904.54			174.12	200.85	445.26	1197.87		

Critical Headway and Follow Up Headway

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Headway	7.10	6.50	6.20	4.10			7.10	6.50	6.20	4.10		
tc,base,I, Base Critical Headway (Stage I)												
tc,base,II, Base Critical Headway (Stage II)												
tc,HV, Heavy Vehicles Adjustment Factor	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00		
Phv, % Heavy Vehicles	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Factor	0.20	0.20	0.10	1.00			0.20	0.20	0.10	1.00		
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment Factor	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc, Critical Headway	7.10	6.50	6.20	4.10			7.10	6.50	6.20	4.10		
tc,I, Critical Headway (Stage I)												
tc,II, Critical Headway (Stage II)												
tf,base, Base Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		
tf,hv, Heavy Vehicles Adjustment Factor	0.90	0.90	0.90	0.90			0.90	0.90	0.90	0.90		
tf, Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		

Delay and Level of Service by Movement

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	7.61	5.43	6.52	20.65	366.30	5.43	8.70	5.43	27.17	5.43	689.13	13.04
cmx, Capacity	162.43	199.81	681.03	904.54			174.12	200.85	445.26	1197.87		
V / C	0.05	0.03	0.01	0.02			0.05	0.03	0.06	0.00		
d, Delay	28.57	24.42	11.69	9.07			27.60	24.85	15.01	8.02		
LOS	D	C	B	A			D	C	C	A		
dA, Approach Delay		21.79			0.48			18.95			0.06	
Approach LOS		C						C				
dRank1, Rank 1 Delay					0.00						0.00	

Delay and Level of Service by Lane

Approach	N	E (Major)		S	W (Major)	
Lane	Lane 1	Lane 1	Lane 2	Lane 1	Lane 1	Lane 2
Movements	L1, T, R1		T, R1	L1, T, R1		T, R1
vx, Volume	19.57	20.65	371.74	41.30	5.43	702.17
Flared Storage Size						
cmx, Capacity	233.98			299.24		
V / C	0.08			0.14		
Q95, 95% Queue Length	0.27			0.48		
d, Delay	21.79			18.95		
LOS	C			C		
dA, Approach Delay	21.79	0.48		18.95	0.06	
Approach LOS	C			C		

Node 171: Cathedral Oaks & Fairview

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.594
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	41	59	15	131	263	39	128	95	358	28	498	126
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	10	15	4	33	66	10	32	24	90	7	125	32
Adjusted Volume	41	59	15	131	263	39	128	95	358	28	498	126

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	L	C	L	C	L	C	L	C
ID	10149	10150	10146	10147	10155	10156	10152	10153
Lanes	L	T, RT	L	T, RT	L	T, RT	L	T, RT
Volume	41	74	131	302	128	453	28	624

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	10149	10150	10146	10147	10155	10156	10152	10153
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	1	2	1	2	1	2
Saturation Flow Rate	1600	3200	1600	3200	1600	3200	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	41	59	15	131	263	39	128	95	358	28	498	126
Volume / Saturation Flow Rate	0.026	0.023	0.023	0.082	0.094	0.094	0.080	0.142	0.142	0.018	0.195	0.195
Overlap adjusted Volume / Saturation Flow Rate	0.026	0.023	0.023	0.082	0.094	0.094	0.080	0.142	0.142	0.018	0.195	0.195
Critical Movement	Y			Y				Y			Y	

Node 173: Cathedral Oaks & Cambridge	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.474
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	26	27	48	21	426	28	18	17	38	87	831	23
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	7	7	12	5	107	7	5	4	10	22	208	6
Adjusted Volume	26	27	48	21	426	28	18	17	38	87	831	23

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	10161	10162	10158	10159	10166	10167	10163	10164
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	53	48	21	454	35	38	87	854

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	10161	10162	10158	10159	10166	10167	10163	10164
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	2	1	1	1	2
Saturation Flow Rate	1600	1600	1600	3200	1600	1600	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	26	27	48	21	426	28	18	17	38	87	831	23
Volume / Saturation Flow Rate	0.016	0.033	0.030	0.013	0.142	0.142	0.011	0.022	0.024	0.054	0.267	0.267
Overlap adjusted Volume / Saturation Flow Rate	0.016	0.033	0.030	0.013	0.142	0.142	0.011	0.022	0.024	0.054	0.267	0.267
Critical Movement		Y		Y			Y				Y	

Node 195: Cathedral Oaks & Los Carneros

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	9.32
Worst Case Delay	29.9
Worst Case LOS	D

Volume and Adjustments						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	65.00	298.00	53.00	345.00	315.00	41.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	70.65	323.91	57.61	375.00	342.39	44.57

Pedestrians						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Flow (Ped/hr)	0.00		0.00	0.00		
w, Lane Width (ft)	12.00		12.00	12.00		
Sp, Walking Speed (ft/s)	3.50		3.50	3.50		
fpb, Percent Blockage	0.00		0.00	0.00		

Capacity of Movements below Rank 1						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Rank	2	1	3	2	1	1
vx, Volume	70.65		57.61	375.00		
Conflicting Volume (Veh)	386.96		807.61	342.39		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	386.96		807.61	342.39		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	1182.56		353.26	704.80		
Capacity	1182.56		327.52	704.80		

Critical Headway and Follow Up Headway						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
tc,base, Base Critical Headway	4.10		7.10	6.20		
tc,base,I, Base Critical Headway (Stage I)						
tc,base,II, Base Critical Headway (Stage II)						
tc,HV, Heavy Vehicles Adjustment Factor	1.00		1.00	1.00		
Phv, % Heavy Vehicles	0.00		0.00	0.00		
tc,G, Grade Adjustment Factor	1.00		0.20	0.10		
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment Factor	0.00		0.70	0.00		
tc, Critical Headway	4.10		6.40	6.20		
tc,I, Critical Headway (Stage I)						
tc,II, Critical Headway (Stage II)						
tf,base, Base Follow-Up Headway	2.20		3.50	3.30		
tf,hv, Heavy Vehicles Adjustment Factor	0.90		0.90	0.90		
tf, Follow-Up Headway	2.20		3.50	3.30		

Delay and Level of Service by Movement						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Volume	70.65	323.91	57.61	375.00	342.39	44.57
cmx, Capacity	1182.56		327.52	704.80		
V / C	0.06		0.18	0.53		
d, Delay	8.24		29.90	24.02		
LOS	A		D	C		
dA, Approach Delay	1.48		24.80		0.00	
Approach LOS			C			
dRank1, Rank 1 Delay	0.00				0.00	

Delay and Level of Service by Lane					
Approach	E (Major)		S	W (Major)	
Lane	Lane 1	Lane 2	Lane 1	Lane 1	Lane 2
Movements			L1, R1		
vx, Volume	70.65	323.91	432.61	342.39	44.57
Flared Storage Size					
cmx, Capacity			611.07		
V / C			0.71		
Q95, 95% Queue Length			6.76		
d, Delay			24.80		
LOS			C		
dA, Approach Delay	1.48		24.80	0.00	
Approach LOS			C		

Node 203: Stow Canyon & Fairview

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	4.91
Worst Case Delay	47.93
Worst Case LOS	E

Volume and Adjustments

Approach	N (Major)			E			S (Major)			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	8.00	290.00	17.00	9.00	5.00	11.00	129.00	543.00	18.00	44.00	5.00	58.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	8.70	315.22	18.48	9.78	5.43	11.96	140.22	590.22	19.57	47.83	5.43	63.04

Pedestrians

Approach	N (Major)			E			S (Major)			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
w, Lane Width (ft)	12.00			12.00	12.00	12.00	12.00			12.00	12.00	12.00
Sp, Walking Speed (ft/s)	3.50			3.50	3.50	3.50	3.50			3.50	3.50	3.50
fpb, Percent Blockage	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00

Capacity of Movements below Rank 1

Approach	N (Major)			E			S (Major)			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	2	1	1	4	3	2	2	1	1	4	3	2
vx, Volume	8.70			9.78	5.43	11.96	140.22			47.83	5.43	63.04
Conflicting Volume (Veh)	609.78			1225.00	1231.52	600.00	333.70			1225.00	1232.07	324.46
Conflicting Volume (Ped)	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
Conflicting Volume	609.78			1225.00	1231.52	600.00	333.70			1225.00	1232.07	324.46
Two-Stage Gap Acceptance				No	No					No	No	
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	978.77			157.12	178.78	504.65	1236.97			157.12	178.65	721.27
Capacity	978.77			120.14	146.57	504.65	1236.97			128.53	146.46	721.27

Critical Headway and Follow Up Headway

Approach	N (Major)			E			S (Major)			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Headway	4.10			7.10	6.50	6.20	4.10			7.10	6.50	6.20
tc,base,I, Base Critical Headway (Stage I)												
tc,base,II, Base Critical Headway (Stage II)												
tc,HV, Heavy Vehicles Adjustment Factor	1.00			1.00	1.00	1.00	1.00			1.00	1.00	1.00
Phv, % Heavy Vehicles	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
tc,G, Grade Adjustment Factor	1.00			0.20	0.20	0.10	1.00			0.20	0.20	0.10
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment Factor	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
tc, Critical Headway	4.10			7.10	6.50	6.20	4.10			7.10	6.50	6.20
tc,I, Critical Headway (Stage I)												
tc,II, Critical Headway (Stage II)												
tf,base, Base Follow-Up Headway	2.20			3.50	4.00	3.30	2.20			3.50	4.00	3.30
tf,hv, Heavy Vehicles Adjustment Factor	0.90			0.90	0.90	0.90	0.90			0.90	0.90	0.90
tf, Follow-Up Headway	2.20			3.50	4.00	3.30	2.20			3.50	4.00	3.30

Delay and Level of Service by Movement

Approach	N (Major)			E			S (Major)			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	8.70	315.22	18.48	9.78	5.43	11.96	140.22	590.22	19.57	47.83	5.43	63.04
cmx, Capacity	978.77			120.14	146.57	504.65	1236.97			128.53	146.46	721.27
V / C	0.01			0.08	0.04	0.02	0.11			0.37	0.04	0.09
d, Delay	8.71			38.08	32.68	15.25	8.28			47.93	44.50	24.91
LOS	A			E	D	C	A			E	E	C
dA, Approach Delay		0.22			26.95			1.55			35.29	
Approach LOS					D						E	
dRank1, Rank 1 Delay		0.00						0.00				

Delay and Level of Service by Lane

Approach	N (Major)			E	S (Major)		W
Lane	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2	Lane 1
Movements			T, R1	L1, T, R1		T, R1	L1, T, R1
vx, Volume	8.70	166.85	166.85	27.17	140.22	609.78	116.30
Flared Storage Size							
cmx, Capacity				191.10			234.20
V / C				0.14			0.50
Q95, 95% Queue Length				0.49			2.82
d, Delay				26.95			35.29
LOS				D			E
dA, Approach Delay		0.22		26.95	1.55		35.29
Approach LOS				D			E

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Node 204: Fairview & Berkeley

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	2.12
Worst Case Delay	34.71
Worst Case LOS	D

Volume and Adjustments

Approach	N (Major)			E			S (Major)			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	23.00	381.00	8.00	32.00	5.00	32.00	23.00	662.00	79.00	7.00	5.00	14.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	25.00	414.13	8.70	34.78	5.43	34.78	25.00	719.57	85.87	7.61	5.43	15.22

Pedestrians

Approach	N (Major)			E			S (Major)			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
w, Lane Width (ft)	12.00			12.00	12.00	12.00	12.00			12.00	12.00	12.00
Sp, Walking Speed (ft/s)	3.50			3.50	3.50	3.50	3.50			3.50	3.50	3.50
fpb, Percent Blockage	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00

Capacity of Movements below Rank 1

Approach	N (Major)			E			S (Major)			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	2	1	1	4	3	2	2	1	1	4	3	2
vx, Volume	25.00			34.78	5.43	34.78	25.00			7.61	5.43	15.22
Conflicting Volume (Veh)	805.43			1072.28	1285.33	402.72	422.83			880.98	1323.91	211.41
Conflicting Volume (Ped)	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
Conflicting Volume	805.43			1072.28	1285.33	402.72	422.83			880.98	1323.91	211.41
Two-Stage Gap Acceptance				No	No					No	No	
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	827.96			177.39	166.03	602.93	1147.22			244.31	157.42	800.22
Capacity	827.96			161.07	155.62	602.93	1147.22			213.40	147.55	800.22

Critical Headway and Follow Up Headway

Approach	N (Major)			E			S (Major)			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Headway	4.10			7.50	6.50	6.90	4.10			7.50	6.50	6.90
tc,base,I, Base Critical Headway (Stage I)												
tc,base,II, Base Critical Headway (Stage II)												
tc,HV, Heavy Vehicles Adjustment Factor	2.00			2.00	2.00	2.00	2.00			2.00	2.00	2.00
Phv, % Heavy Vehicles	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
tc,G, Grade Adjustment Factor	1.00			0.20	0.20	0.10	1.00			0.20	0.20	0.10
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment Factor	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
tc, Critical Headway	4.10			7.50	6.50	6.90	4.10			7.50	6.50	6.90
tc,I, Critical Headway (Stage I)												
tc,II, Critical Headway (Stage II)												
tf,base, Base Follow-Up Headway	2.20			3.50	4.00	3.30	2.20			3.50	4.00	3.30
tf,hv, Heavy Vehicles Adjustment Factor	1.00			1.00	1.00	1.00	1.00			1.00	1.00	1.00
tf, Follow-Up Headway	2.20			3.50	4.00	3.30	2.20			3.50	4.00	3.30

Delay and Level of Service by Movement

Approach	N (Major)			E			S (Major)			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	25.00	414.13	8.70	34.78	5.43	34.78	25.00	719.57	85.87	7.61	5.43	15.22
cmx, Capacity	827.96			161.07	155.62	602.93	1147.22			213.40	147.55	800.22
V / C	0.03			0.22	0.03	0.06	0.02			0.04	0.04	0.02
d, Delay	9.48			33.92	34.71	17.55	8.21			23.04	30.57	10.67
LOS	A			D	D	C	A			C	D	B
dA, Approach Delay		0.53			26.39			0.25			17.83	
Approach LOS					D						C	
dRank1, Rank 1 Delay		0.00						0.00				

Delay and Level of Service by Lane

Approach	N (Major)			E	S (Major)			W
Lane	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2	Lane 3	Lane 1
Movements			T, R1	L1, T, R1			T, R1	L1, T, R1
vx, Volume	25.00	211.41	211.41	75.00	25.00	402.72	402.72	28.26
Flared Storage Size								
cmx, Capacity				243.07				308.85
V / C				0.31				0.09
Q95, 95% Queue Length				1.32				0.30
d, Delay				26.39				17.83
LOS				D				C
dA, Approach Delay		0.53		26.39		0.25		17.83
Approach LOS				D				C

Node 240: Fairview & Shirrell Way	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	4.94
Worst Case Delay	40.21
Worst Case LOS	E

Volume and Adjustments						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
Base Volume	375.00	55.00	93.00	671.00	102.00	65.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	407.61	59.78	101.09	729.35	110.87	70.65

Pedestrians						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
vx, Flow (Ped/hr)			0.00		0.00	0.00
w, Lane Width (ft)			12.00		12.00	12.00
Sp, Walking Speed (ft/s)			3.50		3.50	3.50
fpb, Percent Blockage			0.00		0.00	0.00

Capacity of Movements below Rank 1						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
Rank	1	1	2	1	3	2
vx, Volume			101.09		110.87	70.65
Conflicting Volume (Veh)			467.39		1004.35	233.70
Conflicting Volume (Ped)			0.00		0.00	0.00
Conflicting Volume			467.39		1004.35	233.70
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity			1104.71		241.68	774.37
Capacity			1104.71		213.95	774.37

Critical Headway and Follow Up Headway						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
tc,base, Base Critical Headway			4.10		7.50	6.90
tc,base,I, Base Critical Headway (Stage I)						
tc,base,II, Base Critical Headway (Stage II)						
tc,HV, Heavy Vehicles Adjustment Factor			2.00		2.00	2.00
Phv, % Heavy Vehicles			0.00		0.00	0.00
tc,G, Grade Adjustment Factor			1.00		0.20	0.10
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment Factor			0.00		0.70	0.00
tc, Critical Headway			4.10		6.80	6.90
tc,I, Critical Headway (Stage I)						
tc,II, Critical Headway (Stage II)						
tf,base, Base Follow-Up Headway			2.20		3.50	3.30
tf,hv, Heavy Vehicles Adjustment Factor			1.00		1.00	1.00
tf, Follow-Up Headway			2.20		3.50	3.30

Delay and Level of Service by Movement						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
vx, Volume	407.61	59.78	101.09	729.35	110.87	70.65
cmx, Capacity			1104.71		213.95	774.37
V / C			0.09		0.52	0.09
d, Delay			8.59		40.21	28.03
LOS			A		E	D
dA, Approach Delay	0.00		1.05		35.47	
Approach LOS					E	
dRank1, Rank 1 Delay	0.00		0.00			

Delay and Level of Service by Lane						
Approach	N (Major)		S (Major)			W
Lane	Lane 1	Lane 2	Lane 1	Lane 2	Lane 3	Lane 1
Movements		T, R1				L1, R1
vx, Volume	233.70	233.70	101.09	364.67	364.67	181.52
Flared Storage Size						
cmx, Capacity						297.85
V / C						0.61
Q95, 95% Queue Length						4.36
d, Delay						35.47
LOS						E
dA, Approach Delay	0.00		1.05			35.47
Approach LOS						E

Node 241: Encina & Fairview

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.526
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		E		S	
Movement	L1	T	L1	R1	T	R1
Base Volume	146	363	83	164	655	87
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	37	91	21	41	164	22
Adjusted Volume	146	363	83	164	655	87

Volume and Adjustments by Lane Group

Approach	N		E		S
Lane Group	L	C	L	R	C
ID	10189	10190	10187	10188	10192
Lanes	L	T, T	L	R	T, RT
Volume	146	363	83	164	742

Saturation Flow Rate

Approach	N		E		S
Lane Group	10189	10190	10187	10188	10192
Base Saturation Flow Rate	1600	1600	1600	1600	1600
Number of Lanes	1	2	1	1	2
Saturation Flow Rate	1600	3200	1600	1600	3200

Capacity Analysis

Approach	N		E		S	
Movement	L1	T	L1	R1	T	R1
Volume	146	363	83	164	655	87
Volume / Saturation Flow Rate	0.091	0.113	0.052	0.102	0.232	0.232
Overlap adjusted Volume / Saturation Flow Rate	0.091	0.113	0.052	0.102	0.232	0.232
Critical Movement	Y			Y	Y	

Node 256: Calle Real & Patterson

Control Type	Signalized
Method	ICU Method 1
LOS	C
Critical V/C	0.737
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement						
Approach	N		S		W	
Movement	T	R1	L1	T	L1	R1
Base Volume	428	149	849	1055	232	611
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	107	37	212	264	58	153
Adjusted Volume	428	149	849	1055	232	611

Volume and Adjustments by Lane Group					
Approach	N	S		W	
Lane Group	C	L	C	L	R
ID	10194	10199	10201	10196	10197
Lanes	T, RT	L, L	T, T	L	R, R
Volume	577	849	1055	232	611

Saturation Flow Rate					
Approach	N	S		W	
Lane Group	10194	10199	10201	10196	10197
Base Saturation Flow Rate	1600	1600	1600	1600	1600
Number of Lanes	2	2	2	1	2
Saturation Flow Rate	3200	3200	3200	1600	3200

Capacity Analysis						
Approach	N		S		W	
Movement	T	R1	L1	T	L1	R1
Volume	428	149	849	1055	232	611
Volume / Saturation Flow Rate	0.180	0.180	0.265	0.330	0.145	0.191
Overlap adjusted Volume / Saturation Flow Rate	0.180	0.180	0.265	0.330	0.145	0.191
Critical Movement	Y		Y			Y

Node 273: Cathedral Oaks & Brandon

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	2.93
Worst Case Delay	12.39
Worst Case LOS	B

Volume and Adjustments

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	9.00	5.00	5.00	29.00	128.00	19.00	19.00	5.00	56.00	5.00	137.00	28.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	9.78	5.43	5.43	31.52	139.13	20.65	20.65	5.43	60.87	5.43	148.91	30.43

Pedestrians

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
w, Lane Width (ft)	12.00	12.00	12.00	12.00			12.00	12.00	12.00	12.00		
Sp, Walking Speed (ft/s)	3.50	3.50	3.50	3.50			3.50	3.50	3.50	3.50		
fpb, Percent Blockage	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		

Capacity of Movements below Rank 1

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	2	1	1	4	3	2	2	1	1
vx, Volume	9.78	5.43	5.43	31.52			20.65	5.43	60.87	5.43		
Conflicting Volume (Veh)	410.33	392.39	139.13	179.35			377.72	382.61	148.91	159.78		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	410.33	392.39	139.13	179.35			377.72	382.61	148.91	159.78		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	555.30	546.75	914.38	1408.49			583.46	553.70	903.05	1431.79		
Capacity	502.80	531.28	914.38	1408.49			563.06	538.03	903.05	1431.79		

Critical Headway and Follow Up Headway

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Headway	7.10	6.50	6.20	4.10			7.10	6.50	6.20	4.10		
tc,base,I, Base Critical Headway (Stage I)												
tc,base,II, Base Critical Headway (Stage II)												
tc,HV, Heavy Vehicles Adjustment Factor	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00		
Phv, % Heavy Vehicles	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Factor	0.20	0.20	0.10	1.00			0.20	0.20	0.10	1.00		
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment Factor	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc, Critical Headway	7.10	6.50	6.20	4.10			7.10	6.50	6.20	4.10		
tc,I, Critical Headway (Stage I)												
tc,II, Critical Headway (Stage II)												
tf,base, Base Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		
tf,hv, Heavy Vehicles Adjustment Factor	0.90	0.90	0.90	0.90			0.90	0.90	0.90	0.90		
tf, Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		

Delay and Level of Service by Movement

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	9.78	5.43	5.43	31.52	139.13	20.65	20.65	5.43	60.87	5.43	148.91	30.43
cmx, Capacity	502.80	531.28	914.38	1408.49			563.06	538.03	903.05	1431.79		
V / C	0.02	0.01	0.01	0.02			0.04	0.01	0.07	0.00		
d, Delay	12.39	12.01	9.17	7.61			12.00	12.30	9.60	7.52		
LOS	B	B	A	A			B	B	A	A		
dA, Approach Delay		11.44			1.25			10.34			0.22	
Approach LOS		B						B				
dRank1, Rank 1 Delay					0.00						0.00	

Delay and Level of Service by Lane

Approach	N	E (Major)			S	W (Major)		
Lane	Lane 1	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2	Lane 3
Movements	L1, T, R1				L1, T, R1			
vx, Volume	20.65	31.52	139.13	20.65	86.96	5.43	148.91	30.43
Flared Storage Size								
cmx, Capacity	579.64				761.55			
V / C	0.04				0.11			
Q95, 95% Queue Length	0.11				0.39			
d, Delay	11.44				10.34			
LOS	B				B			
dA, Approach Delay	11.44		1.25		10.34		0.22	
Approach LOS	B				B			

Node 276: Cathedral Oaks & Alameda

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.395
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	E		S		W	
Movement	L1	T	L1	R1	T	R1
Base Volume	85	293	28	56	251	29
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	21	73	7	14	63	7
Adjusted Volume	85	293	28	56	251	29

Volume and Adjustments by Lane Group

Approach	E		S		W	
Lane Group	L	C	L	R	C	R
ID	10232	10233	10236	10237	10234	10235
Lanes	L	T	L	R	T	R
Volume	85	293	28	56	251	29

Saturation Flow Rate

Approach	E		S		W	
Lane Group	10232	10233	10236	10237	10234	10235
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	1	1	1
Saturation Flow Rate	1600	1600	1600	1600	1600	1600

Capacity Analysis

Approach	E		S		W	
Movement	L1	T	L1	R1	T	R1
Volume	85	293	28	56	251	29
Volume / Saturation Flow Rate	0.053	0.183	0.018	0.035	0.157	0.018
Overlap adjusted Volume / Saturation Flow Rate	0.053	0.183	0.018	0.035	0.157	0.018
Critical Movement	Y			Y	Y	

Node 277: Cathedral Oaks & Glen Anne

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.57
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	29	44	11	134	189	12	223	58	117	12	260	197
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	7	11	3	34	47	3	56	15	29	3	65	49
Adjusted Volume	29	44	11	134	189	12	223	58	117	12	260	197

Volume and Adjustments by Lane Group

Approach	N		E			S			W		
Lane Group	L	C	L	C	R	L	C	R	L	C	R
ID	10244	10245	10241	10242	10243	10238	10239	10240	10246	10247	10248
Lanes	L	RT	L	T	R	L	T	R	L	T	R
Volume	29	55	134	189	12	223	58	117	12	260	197

Saturation Flow Rate

Approach	N		E			S			W		
Lane Group	10244	10245	10241	10242	10243	10238	10239	10240	10246	10247	10248
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1
Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	29	44	11	134	189	12	223	58	117	12	260	197
Volume / Saturation Flow Rate	0.018	0.034	0.034	0.084	0.118	0.007	0.139	0.036	0.073	0.007	0.163	0.123
Overlap adjusted Volume / Saturation Flow Rate	0.018	0.034	0.034	0.084	0.118	0.007	0.139	0.036	0.073	0.007	0.163	0.123
Critical Movement		Y		Y			Y				Y	

Node 279:Calle Real & Los Caneros

Control Type	Roundabout
Method	HCM 6th Edition
Average Delay	12.27
Average LOS	B
Worst Case Delay	14.08
Worst Case LOS	B

Volume by Movement

Approach	N		E		S	
Movement	L1	T	L1	R1	T	R1
Base Volume (veh/h)	31.00	91.00	339.00	27.00	430.00	481.00
PHF	0.92	0.92	0.92	0.92	0.92	0.92
Volume, Lane Flow Rate (veh/h)	33.70	98.91	368.48	29.35	467.39	522.83

Volume

Approach	N	E	S
Lane	Lane 1	Lane 1	Lane 1
Movements	L1, T	L1, R1	T, R1
Volume, Lane Flow Rate (veh/h)	132.609	397.826	990.217
P_T, Share of Heavy Vehicles	0.00	0.00	0.00
f_HV, Heavy-Vehicle Adjustment Factor	1.000	1.000	1.000
Adjusted Volume (pc/h)	132.609	397.826	990.217
De-Facto Movements	L1, T	L1, R1	T, R1
Is Bypass Lane			
Uses Bypass			
Bypass Type			
Bypass Volume (pc/h)	0.000	0.000	0.000
Non-Bypass Volume (pc/h)	132.609	397.826	990.217

Capacity

Approach	N	E	S
Lane	Lane 1	Lane 1	Lane 1
Movements	L1, T	L1, R1	T, R1
v_e, Entry Volume (pc/h)	132.61	397.83	990.22
v_bypass, Bypass Volume (pc/h)			
t_f, Follow Up Headway			
t_c, Critical Headway			
A, Capacity Calibration Factor	1380.00	1380.00	1380.00
B, Capacity Calibration Factor	0.00102	0.00102	0.00102
v_c, Conflicting Volume (pc/h)	368.48	467.39	33.70
v_ex,pce, Conflicting Volume for Bypass Lane (pc/h)			
c_pce, Capacity (pc/h)	947.66	856.71	1333.38
n_ped, Conflicting Pedestrian Volume	0.00	0.00	0.00
f_ped, Pedestrian Adjustment Factor	1.000	1.000	1.000
P_T, Share of Heavy Vehicles	0.00	0.00	0.00
f_HV, Heavy-Vehicle Adjustment Factor	1.000	1.000	1.000
c, Capacity (veh/h)	947.66	856.71	1333.38

Delay and Level of Service by Lane

Approach	N	E	S
Lane	Lane 1	Lane 1	Lane 1
Movements	L1, T	L1, R1	T, R1
v, Volume, Lane Flow Rate (veh/h)	132.61	397.83	990.22
c, Capacity (veh/h)	947.66	856.71	1333.38
x, Volume-to-Capacity Ratio	0.14	0.46	0.74
Q_95, 95% Queue Length (veh)	0.49	2.57	8.26
d, Delay (s/veh)	5.12	10.15	14.08
LOS	A	B	B
Approach Delay (s/veh)	5.12	10.15	14.08
Approach LOS	A	B	B

Delay and Level of Service by Movement

Approach	N		E		S	
Movement	L1	T	L1	R1	T	R1
v, Volume, Lane Flow Rate (veh/h)	33.70	98.91	368.48	29.35	467.39	522.83
c, Capacity (veh/h)	947.66	947.66	856.71	856.71	1333.38	1333.38
x, Volume-to-Capacity Ratio	0.04	0.10	0.43	0.03	0.35	0.39
d, Delay (s/veh)	5.12	5.12	10.15	10.15	14.08	14.08
LOS	A	A	B	B	B	B
Approach Delay (s/veh)	5.12		10.15		14.08	
Approach LOS	A		B		B	

Node 280: Calle Real & La Patera

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	2.13
Worst Case Delay	23.37
Worst Case LOS	C

Volume and Adjustments

Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	55.00	33.00	300.00	85.00	45.00	486.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	59.78	35.87	326.09	92.39	48.91	528.26

Pedestrians

Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Flow (Ped/hr)	0.00	0.00			0.00	
w, Lane Width (ft)	12.00	12.00			12.00	
Sp, Walking Speed (ft/s)	3.50	3.50			3.50	
fpb, Percent Blockage	0.00	0.00			0.00	

Capacity of Movements below Rank 1

Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Rank	3	2	1	1	2	1
vx, Volume	59.78	35.87			48.91	
Conflicting Volume (Veh)	998.37	372.28			418.48	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	998.37	372.28			418.48	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	272.44	678.17			1151.45	
Capacity	256.06	678.17			1151.45	

Critical Headway and Follow Up Headway

Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
tc,base, Base Critical Headway	7.10	6.20			4.10	
tc,base,I, Base Critical Headway (Stage I)						
tc,base,II, Base Critical Headway (Stage II)						
tc,HV, Heavy Vehicles Adjustment Factor	1.00	1.00			1.00	
Phv, % Heavy Vehicles	0.00	0.00			0.00	
tc,G, Grade Adjustment Factor	0.20	0.10			1.00	
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment Factor	0.70	0.00			0.00	
tc, Critical Headway	6.40	6.20			4.10	
tc,I, Critical Headway (Stage I)						
tc,II, Critical Headway (Stage II)						
tf,base, Base Follow-Up Headway	3.50	3.30			2.20	
tf,hv, Heavy Vehicles Adjustment Factor	0.90	0.90			0.90	
tf, Follow-Up Headway	3.50	3.30			2.20	

Delay and Level of Service by Movement

Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Volume	59.78	35.87	326.09	92.39	48.91	528.26
cmx, Capacity	256.06	678.17			1151.45	
V / C	0.23	0.05			0.04	
d, Delay	23.37	14.62			8.27	
LOS	C	B			A	
dA, Approach Delay	20.09		0.00		0.70	
Approach LOS	C					
dRank1, Rank 1 Delay			0.00		0.50	

Delay and Level of Service by Lane

Approach	N	E (Major)	W (Major)
Lane	Lane 1	Lane 1	Lane 1
Movements	L1, R1	T, R1	L1, T
vx, Volume	95.65	418.48	577.17
Flared Storage Size			
cmx, Capacity	334.02		1151.45
V / C	0.29		0.50
Q95, 95% Queue Length	1.19		2.98
d, Delay	20.09		8.27
LOS	C		
dA, Approach Delay	20.09	0.00	0.70
Approach LOS	C		

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Node 282: Calle Real & Carlo Dr	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	3.03
Worst Case Delay	38.63
Worst Case LOS	E

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	51.00	49.00	495.00	46.00	74.00	530.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	55.43	53.26	538.04	50.00	80.43	576.09

Pedestrians						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Flow (Ped/hr)	0.00	0.00			0.00	
w, Lane Width (ft)	12.00	12.00			12.00	
Sp, Walking Speed (ft/s)	3.50	3.50			3.50	
fpb, Percent Blockage	0.00	0.00			0.00	

Capacity of Movements below Rank 1						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Rank	3	2	1	1	2	1
vx, Volume	55.43	53.26			80.43	
Conflicting Volume (Veh)	1300.00	563.04			588.04	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	1300.00	563.04			588.04	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	179.66	529.57			997.07	
Capacity	162.41	529.57			997.07	

Critical Headway and Follow Up Headway						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
tc,base, Base Critical Headway	7.10	6.20			4.10	
tc,base,I, Base Critical Headway (Stage I)						
tc,base,II, Base Critical Headway (Stage II)						
tc,HV, Heavy Vehicles Adjustment Factor	1.00	1.00			1.00	
Phv, % Heavy Vehicles	0.00	0.00			0.00	
tc,G, Grade Adjustment Factor	0.20	0.10			1.00	
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment Factor	0.70	0.00			0.00	
tc, Critical Headway	6.40	6.20			4.10	
tc,I, Critical Headway (Stage I)						
tc,II, Critical Headway (Stage II)						
tf,base, Base Follow-Up Headway	3.50	3.30			2.20	
tf,hv, Heavy Vehicles Adjustment Factor	0.90	0.90			0.90	
tf, Follow-Up Headway	3.50	3.30			2.20	

Delay and Level of Service by Movement						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Volume	55.43	53.26	538.04	50.00	80.43	576.09
cmx, Capacity	162.41	529.57			997.07	
V / C	0.34	0.10			0.08	
d, Delay	38.63	23.26			8.93	
LOS	E	C			A	
dA, Approach Delay	31.09		0.00		1.09	
Approach LOS	D					
dRank1, Rank 1 Delay			0.00		0.00	

Delay and Level of Service by Lane					
Approach	N	E (Major)	W (Major)		
Lane	Lane 1	Lane 1	Lane 1	Lane 2	Lane 3
Movements	L1, R1	T, R1			
vx, Volume	108.70	588.04	80.43	288.04	288.04
Flared Storage Size					
cmx, Capacity	245.97				
V / C	0.44				
Q95, 95% Queue Length	2.30				
d, Delay	31.09				
LOS	D				
dA, Approach Delay	31.09	0.00	1.09		
Approach LOS	D				

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Node 288: Calle Real & Fairview

Control Type	Signalized
Method	ICU Method 1
LOS	E
Critical V/C	0.926
Loss Time	20
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	146	322	57	356	266	105	437	589	425	78	325	262
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	37	81	14	89	67	26	109	147	106	20	81	66
Adjusted Volume	146	322	57	356	266	105	437	589	425	78	325	262

Volume and Adjustments by Lane Group

Approach	N		E		S		W		
Lane Group	L	C	L	C	C	R	L	C	R
ID	10255	10256	10252	10254	10249	10251	10258	10259	10260
Lanes	L	T, RT	L, L	RT	LT, T	R	L	T	R
Volume	146	379	356	371	1026	425	78	325	262

Saturation Flow Rate

Approach	N		E		S		W		
Lane Group	10255	10256	10252	10254	10249	10251	10258	10259	10260
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	2	1	2	1	1	1	1
Saturation Flow Rate	1600	3200	3200	1600	3200	1600	1600	1600	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	146	322	57	356	266	105	437	589	425	78	325	262
Volume / Saturation Flow Rate	0.091	0.118	0.118	0.111	0.232	0.232	0.273	0.321	0.266	0.049	0.203	0.164
Overlap adjusted Volume / Saturation Flow Rate	0.091	0.118	0.118	0.111	0.232	0.232	0.273	0.321	0.266	0.049	0.203	0.164
Critical Movement	Y			Y				Y			Y	

Node 289: Fairview & US 101 NB Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.431
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement						
Approach	N	E		S	W	
Movement	T	T	R1		L1	R1
Base Volume	315	316	566		900	316
PHF	1.000	1.000	1.000		1.000	1.000
Peak 15 Volume	79	79	142		225	79
Adjusted Volume	315	316	566		900	316

Volume and Adjustments by Lane Group						
Approach	N	E		S	W	
Lane Group	C	C	R		L	R
ID	10263	10261	10262		10264	10266
Lanes	T	T	R		L, L	R
Volume	315	316	566		900	316

Saturation Flow Rate						
Approach	N	E		S	W	
Lane Group	10263	10261	10262		10264	10266
Base Saturation Flow Rate	1600	1600	1600		1600	1600
Number of Lanes	1	1	1		2	1
Saturation Flow Rate	1600	1600	1600		3200	1600

Capacity Analysis						
Approach	N	E		S	W	
Movement	T	T	R1		L1	R1
Volume	315	316	566		900	316
Volume / Saturation Flow Rate	0.197	0.198	0.354		0.281	0.198
Overlap adjusted Volume / Saturation Flow Rate	0.197	0.198	0.354		0.281	0.198
Critical Movement					Y	

Node 296: Calle Real & Kellogg

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.565
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Base Volume	90	89	853	138	78	737
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	23	22	213	35	20	184
Adjusted Volume	90	89	853	138	78	737

Volume and Adjustments by Lane Group

Approach	N		E	W	
Lane Group	L	R	C	L	C
ID	10269	10270	10267	10271	10272
Lanes	L	R	T, RT	L	T, T
Volume	90	89	991	78	737

Saturation Flow Rate

Approach	N		E	W	
Lane Group	10269	10270	10267	10271	10272
Base Saturation Flow Rate	1600	1600	1600	1600	1600
Number of Lanes	1	1	2	1	2
Saturation Flow Rate	1600	1600	3200	1600	3200

Capacity Analysis

Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Volume	90	89	853	138	78	737
Volume / Saturation Flow Rate	0.056	0.056	0.310	0.310	0.049	0.230
Overlap adjusted Volume / Saturation Flow Rate	0.056	0.056	0.310	0.310	0.049	0.230
Critical Movement	Y		Y		Y	

Node 305: Patterson & Overpass	
Control Type	Signalized
Method	ICU Method 1
LOS	C
Critical V/C	0.729
Loss Time	12
Cycle Length	100

Volume and Adjustments by Movement												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	47	1016	115	20	7	80	24	1301	22	186	5	54
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	12	254	29	5	2	20	6	325	6	47	1	14
Adjusted Volume	47	1016	115	20	7	80	24	1301	22	186	5	54

Volume and Adjustments by Lane Group								
Approach	N		E		S		W	
Lane Group	L	C	C	R	L	C	C	R
ID	10276	10277	10274	10275	10281	10282	10279	10280
Lanes	L	T, RT	LT	R	L	T, RT	LT	R
Volume	47	1131	27	80	24	1323	191	54

Saturation Flow Rate								
Approach	N		E		S		W	
Lane Group	10276	10277	10274	10275	10281	10282	10279	10280
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	1	1	1	2	1	1
Saturation Flow Rate	1600	3200	1600	1600	1600	3200	1600	1600

Capacity Analysis												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	47	1016	115	20	7	80	24	1301	22	186	5	54
Volume / Saturation Flow Rate	0.029	0.353	0.353	0.013	0.017	0.050	0.015	0.413	0.413	0.116	0.119	0.034
Overlap adjusted Volume / Saturation Flow Rate	0.029	0.353	0.353	0.013	0.017	0.050	0.015	0.413	0.413	0.116	0.119	0.034
Critical Movement	Y					Y		Y		Y		

Node 359: Cathedral Oaks & Winchester Canyon

Control Type	AWSC
Method	HCM 6th Edition
Average Delay	9.21
Average LOS	A

Volume and Adjustments

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	13.00	16.00	33.00	25.00	96.00	16.00	44.00	51.00	53.00	25.00	116.00	68.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
Flow Rate	14.13	17.39	35.87	27.17	104.35	17.39	47.83	55.43	57.61	27.17	126.09	73.91
Geometry Group	4b			5			5			5		

Saturation Headway

Approach	N	E		S		W	
Lanes	Lane 1	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
Total Lane Flow Rate	67.39	27.17	121.74	103.26	57.61	27.17	200.00
Left Turn Flow Rate	14.13	27.17	0.00	47.83	0.00	27.17	0.00
Right Turn Flow Rate	35.87	0.00	17.39	0.00	57.61	0.00	73.91
PLT, Proportion LT	0.21	1.00	0.00	0.46	0.00	1.00	0.00
PRT, Proportion RT	0.53	0.00	0.14	0.00	1.00	0.00	0.37
PHV, Proportion HV	0.00	0.00	0.00	0.00	0.00	0.00	0.00
hLT,adj, Headway adjustment for left turns	0.20	0.50		0.50		0.50	
hRT,adj, Headway adjustment for right turns	-0.60	-0.70		-0.70		-0.70	
hHV,adj, Headway adjustment for heavy vehicles	1.70	1.70		1.70		1.70	
hadj, Headway adjustment	-0.28	0.50	-0.10	0.23	-0.70	0.50	-0.26

Departure Headway

Approach	N	E		S		W	
Lanes	Lane 1	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
Total Lane Flow Rate	67.39	27.17	121.74	103.26	57.61	27.17	200.00
hd initial	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x initial	0.06	0.02	0.11	0.09	0.05	0.02	0.18
hd, iteration 1	4.94	5.51	4.91	5.36	4.43	5.46	4.70
Difference, iteration 1	1.74	2.31	1.71	2.16	1.23	2.26	1.50
hd, iteration 2	5.31	5.80	5.20	5.69	4.75	5.73	4.97
Difference, iteration 2	0.37	0.29	0.29	0.32	0.32	0.27	0.27
hd, iteration 3	5.37	5.85	5.25	5.74	4.81	5.78	5.02
Difference, iteration 3	0.06	0.05	0.05	0.05	0.05	0.05	0.05
Convergence	Y	Y	Y	Y	Y	Y	Y
hd final, Departure Headway	5.37	5.85	5.25	5.74	4.81	5.78	5.02
x final, Degree of Utilization	0.10	0.04	0.18	0.16	0.08	0.04	0.28

Capacity and Level of Service

Approach	N	E		S		W	
Lanes	Lane 1	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
Total Lane Flow Rate	67.39	27.17	121.74	103.26	57.61	27.17	200.00
hd, Departure Headway	5.37	5.85	5.25	5.74	4.81	5.78	5.02
x, Degree of Utilization	0.10	0.04	0.18	0.16	0.08	0.04	0.28
m, Move Up Time	2.00	2.30	2.30	2.30	2.30	2.30	2.30
ts, Service Time	3.37	3.55	2.95	3.44	2.51	3.48	2.72
Capacity	669.57	614.54	685.14	627.03	747.90	621.95	716.80
Delay	8.97	8.83	9.09	9.57	7.91	8.74	9.66
LOS	A	A	A	A	A	A	A
Q95, 95% Queue Length	0.34	0.14	0.65	0.59	0.25	0.14	1.15
Approach Delay	8.97	9.04		8.98		9.55	
Approach LOS	A	A		A		A	
Intersection Delay	9.21						
Intersection LOS	A						

Node 372: Glen Annie & Del Norte

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	0.48
Worst Case Delay	9.73
Worst Case LOS	A

Volume and Adjustments

Approach	N (Major)		S (Major)	W
Movement	T	R1	T	R1
Base Volume	357.00	23.00	435.00	42.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920
V, Adjusted Volume	388.04	25.00	472.83	45.65

Pedestrians

Approach	N (Major)		S (Major)	W
Movement	T	R1	T	R1
vx, Flow (Ped/hr)				0.00
w, Lane Width (ft)				12.00
Sp, Walking Speed (ft/s)				3.50
fpb, Percent Blockage				0.00

Capacity of Movements below Rank 1

Approach	N (Major)		S (Major)	W
Movement	T	R1	T	R1
Rank	1	1	1	2
vx, Volume				45.65
Conflicting Volume (Veh)				206.52
Conflicting Volume (Ped)				0.00
Conflicting Volume				206.52
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median Refuge Area				
cpx, Potential Capacity				806.01
Capacity				806.01

Critical Headway and Follow Up Headway

Approach	N (Major)		S (Major)	W
Movement	T	R1	T	R1
tc,base, Base Critical Headway				6.90
tc,base,I, Base Critical Headway (Stage I)				
tc,base,II, Base Critical Headway (Stage II)				
tc,HV, Heavy Vehicles Adjustment Factor				2.00
Phv, % Heavy Vehicles				0.00
tc,G, Grade Adjustment Factor				0.10
G, % Grade	0.00		0.00	0.00
T3,lt, Geometry Adjustment Factor				0.00
tc, Critical Headway				6.90
tc,I, Critical Headway (Stage I)				
tc,II, Critical Headway (Stage II)				
tf,base, Base Follow-Up Headway				3.30
tf,hv, Heavy Vehicles Adjustment Factor				1.00
tf, Follow-Up Headway				3.30

Delay and Level of Service by Movement

Approach	N (Major)		S (Major)	W
Movement	T	R1	T	R1
vx, Volume	388.04	25.00	472.83	45.65
cmx, Capacity				806.01
V / C				0.06
d, Delay				9.73
LOS				A
dA, Approach Delay	0.00		0.00	9.73
Approach LOS				A
dRank1, Rank 1 Delay	0.00		0.00	

Delay and Level of Service by Lane

Approach	N (Major)		S (Major)		W
Lane	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1
Movements		T, R1			
vx, Volume	206.52	206.52	236.41	236.41	45.65
Flared Storage Size					
cmx, Capacity					
V / C					
Q95, 95% Queue Length					
d, Delay					
LOS					
dA, Approach Delay	0.00		0.00		9.73
Approach LOS					A

Node 375: Los Caneros & US101 SB Ramps

Control Type	Signalized
Method	ICU Method 1
LOS	D
Critical V/C	0.831
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement								
Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	52	782		978	902	97	5	117
PHF	1.000	1.000		1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	13	196		245	226	24	1	29
Adjusted Volume	52	782		978	902	97	5	117

Volume and Adjustments by Lane Group						
Approach	N		E	S	W	
Lane Group	L	C		C	C	R
ID	10338	10339		10343	10341	10342
Lanes	L	T, T		T, RT	LT	R
Volume	52	782		1880	102	117

Saturation Flow Rate						
Approach	N		E	S	W	
Lane Group	10338	10339		10343	10341	10342
Base Saturation Flow Rate	1600	1600		1600	1600	1600
Number of Lanes	1	2		2	1	1
Saturation Flow Rate	1600	3200		3200	1600	1600

Capacity Analysis								
Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Volume	52	782		978	902	97	5	117
Volume / Saturation Flow Rate	0.033	0.244		0.588	0.588	0.061	0.064	0.073
Overlap adjusted Volume / Saturation Flow Rate	0.033	0.244		0.588	0.588	0.061	0.064	0.073
Critical Movement	Y			Y		Y		

Node 376: Los Carneros & US 101 NB Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.621
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		E			S		W
Movement	T	R1	L1	T	R1	L1	T	
Base Volume	332	130	490	9	63	278	809	
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Peak 15 Volume	83	33	123	2	16	70	202	
Adjusted Volume	332	130	490	9	63	278	809	

Volume and Adjustments by Lane Group

Approach	N	E	S		W
Lane Group	C	C	L	C	
ID	10347	10345	10349	10350	
Lanes	T, RT	L, LTR	L	T, T	
Volume	462	562	278	809	

Saturation Flow Rate

Approach	N	E	S		W
Lane Group	10347	10345	10349	10350	
Base Saturation Flow Rate	1600	1600	1600	1600	
Number of Lanes	2	2	1	2	
Saturation Flow Rate	3200	3200	1600	3200	

Capacity Analysis

Approach	N		E			S		W
Movement	T	R1	L1	T	R1	L1	T	
Volume	332	130	490	9	63	278	809	
Volume / Saturation Flow Rate	0.144	0.144	0.153	0.176	0.176	0.174	0.253	
Overlap adjusted Volume / Saturation Flow Rate	0.144	0.144	0.153	0.176	0.176	0.174	0.253	
Critical Movement	Y		Y			Y		

Node 383: Fairview & US 101 SB Ramps

Control Type	Signalized
Method	ICU Method 1
LOS	D
Critical V/C	0.87
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	245	744		1041	824	206	5	248
PHF	1.000	1.000		1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	61	186		260	206	52	1	62
Adjusted Volume	245	744		1041	824	206	5	248

Volume and Adjustments by Lane Group

Approach	N		E	S		W	
Lane Group	L	C		C	R	C	R
ID	10355	10357		10352	10354	10359	10360
Lanes	L, L	T, T		T, T	R	LT	R
Volume	245	744		1041	824	211	248

Saturation Flow Rate

Approach	N		E	S		W	
Lane Group	10355	10357		10352	10354	10359	10360
Base Saturation Flow Rate	1600	1600		1600	1600	1600	1600
Number of Lanes	2	2		2	1	1	1
Saturation Flow Rate	3200	3200		3200	1600	1600	1600

Capacity Analysis

Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Volume	245	744		1041	824	206	5	248
Volume / Saturation Flow Rate	0.077	0.233		0.325	0.515	0.129	0.132	0.155
Overlap adjusted Volume / Saturation Flow Rate	0.077	0.233		0.325	0.515	0.129	0.132	0.155
Critical Movement	Y				Y	Y		

Node 385: Hollister & Fairview

Control Type	Signalized
Method	ICU Method 1
LOS	E
Critical V/C	0.963
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	329	225	206	79	493	497	216	670	92	517	650	116
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	82	56	52	20	123	124	54	168	23	129	163	29
Adjusted Volume	329	225	206	79	493	497	216	670	92	517	650	116

Volume and Adjustments by Lane Group

Approach	N			E			S		W		
Lane Group	L	C	R	L	C	R	L	C	L	C	R
ID	10368	10370	10372	10364	10365	10367	10361	10362	10373	10375	10377
Lanes	L, L	T, T	R	L	T, T	R	L	T, RT	L, L	T, T	R
Volume	329	225	206	79	493	497	216	762	517	650	116

Saturation Flow Rate

Approach	N			E			S		W		
Lane Group	10368	10370	10372	10364	10365	10367	10361	10362	10373	10375	10377
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	2	2	1	1	2	1	1	2	2	2	1
Saturation Flow Rate	3200	3200	1600	1600	3200	1600	1600	3200	3200	3200	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	329	225	206	79	493	497	216	670	92	517	650	116
Volume / Saturation Flow Rate	0.103	0.070	0.129	0.049	0.154	0.311	0.135	0.238	0.238	0.162	0.203	0.072
Overlap adjusted Volume / Saturation Flow Rate	0.103	0.070	0.129	0.049	0.154	0.311	0.135	0.238	0.238	0.162	0.203	0.072
Critical Movement	Y					Y		Y		Y		

Node 386: Fairview & Mandarin

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	89.11
Worst Case Delay	8451.91
Worst Case LOS	F

Volume and Adjustments

Approach	E		S (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	26.00	271.00	1537.00	95.00	195.00	738.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	28.26	294.57	1670.65	103.26	211.96	802.17

Pedestrians

Approach	E		S (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Flow (Ped/hr)	0.00	0.00			0.00	
w, Lane Width (ft)	12.00	12.00			12.00	
Sp, Walking Speed (ft/s)	3.50	3.50			3.50	
fpb, Percent Blockage	0.00	0.00			0.00	

Capacity of Movements below Rank 1

Approach	E		S (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Rank	3	2	1	1	2	1
vx, Volume	28.26	294.57			211.96	
Conflicting Volume (Veh)	2495.65	835.33			1773.91	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	2495.65	835.33			1773.91	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	24.55	314.91			355.48	
Capacity	5.72	314.91			355.48	

Critical Headway and Follow Up Headway

Approach	E		S (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
tc,base, Base Critical Headway	7.50	6.90			4.10	
tc,base,I, Base Critical Headway (Stage I)						
tc,base,II, Base Critical Headway (Stage II)						
tc,HV, Heavy Vehicles Adjustment Factor	2.00	2.00			2.00	
Phv, % Heavy Vehicles	0.00	0.00			0.00	
tc,G, Grade Adjustment Factor	0.20	0.10			1.00	
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment Factor	0.70	0.00			0.00	
tc, Critical Headway	6.80	6.90			4.10	
tc,I, Critical Headway (Stage I)						
tc,II, Critical Headway (Stage II)						
tf,base, Base Follow-Up Headway	3.50	3.30			2.20	
tf,hv, Heavy Vehicles Adjustment Factor	1.00	1.00			1.00	
tf, Follow-Up Headway	3.50	3.30			2.20	

Delay and Level of Service by Movement

Approach	E		S (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Volume	28.26	294.57	1670.65	103.26	211.96	802.17
cmx, Capacity	5.72	314.91			355.48	
V / C	4.94	0.94			0.60	
d, Delay	8451.91	108.73			29.79	
LOS	F	F			D	
dA, Approach Delay	839.11		0.00		6.23	
Approach LOS	F					
dRank1, Rank 1 Delay			0.00		0.00	

Delay and Level of Service by Lane

Approach	E		S (Major)			W (Major)		
Lane	Lane 1	Lane 2	Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 3
Movements								
vx, Volume	28.26	294.57	835.33	835.33	103.26	211.96	401.09	401.09
Flared Storage Size								
cmx, Capacity								
V / C								
Q95, 95% Queue Length								
d, Delay								
LOS								
dA, Approach Delay	839.11		0.00			6.23		
Approach LOS	F							

Node 387: Hollister & Orange

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	724.52
Worst Case Delay	7522.02
Worst Case LOS	F

Volume and Adjustments

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	11.00	5.00	53.00	93.00	906.00	29.00	110.00	5.00	117.00	43.00	913.00	120.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	11.96	5.43	57.61	101.09	984.78	31.52	119.57	5.43	127.17	46.74	992.39	130.43

Pedestrians

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
w, Lane Width (ft)	12.00	12.00	12.00	12.00			12.00	12.00	12.00	12.00		
Sp, Walking Speed (ft/s)	3.50	3.50	3.50	3.50			3.50	3.50	3.50	3.50		
fpb, Percent Blockage	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		

Capacity of Movements below Rank 1

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	2	1	1	4	3	2	2	1	1
vx, Volume	11.96	5.43	57.61	101.09			119.57	5.43	127.17	46.74		
Conflicting Volume (Veh)	1795.11	2419.02	508.15	1122.83			1848.37	2369.57	561.41	1016.30		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1795.11	2419.02	508.15	1122.83			1848.37	2369.57	561.41	1016.30		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	51.67	32.91	515.27	629.55			47.11	35.40	475.81	690.41		
Capacity	24.11	22.72	515.27	629.55			26.25	24.44	475.81	690.41		

Critical Headway and Follow Up Headway

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Headway	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,base,I, Base Critical Headway (Stage I)												
tc,base,II, Base Critical Headway (Stage II)												
tc,HV, Heavy Vehicles Adjustment Factor	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00		
Phv, % Heavy Vehicles	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Factor	0.20	0.20	0.10	1.00			0.20	0.20	0.10	1.00		
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment Factor	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc, Critical Headway	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,I, Critical Headway (Stage I)												
tc,II, Critical Headway (Stage II)												
tf,base, Base Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		
tf,hv, Heavy Vehicles Adjustment Factor	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00		
tf, Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		

Delay and Level of Service by Movement

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	11.96	5.43	57.61	101.09	984.78	31.52	119.57	5.43	127.17	46.74	992.39	130.43
cmx, Capacity	24.11	22.72	515.27	629.55			26.25	24.44	475.81	690.41		
V / C	0.50	0.24	0.11	0.16			4.56	0.22	0.27	0.07		
d, Delay	301.10	310.21	158.76	11.81			7511.85	7522.02	7382.26	10.59		
LOS	F	F	F	B			F	F	F	B		
dA, Approach Delay		192.42			1.07			7446.72			0.42	
Approach LOS		F						F				
dRank1, Rank 1 Delay					0.00						0.00	

Delay and Level of Service by Lane

Approach	N	E (Major)			S	W (Major)		
Lane	Lane 1	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2	Lane 3
Movements	L1, T, R1			T, R1	L1, T, R1			T, R1
vx, Volume	75.00	101.09	508.15	508.15	252.17	46.74	561.41	561.41
Flared Storage Size								
cmx, Capacity	88.55				49.99			
V / C	0.85				5.04			
Q95, 95% Queue Length	7.75				104.71			
d, Delay	192.42				7446.72			
LOS	F				F			
dA, Approach Delay	192.42		1.07		7446.72		0.42	
Approach LOS	F				F			

Node 390: Hollister & Pine/Nectarine	
Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.692
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	147	19	161	23	730	38	133	27	148	62	849	78
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	37	5	40	6	183	10	33	7	37	16	212	20
Adjusted Volume	147	19	161	23	730	38	133	27	148	62	849	78

Volume and Adjustments by Lane Group						
Approach	N	E		S	W	
Lane Group	C	L	C	C	L	C
ID	10381	10378	10379	10385	10382	10383
Lanes	LTR	L	T, RT	LTR	L	T, RT
Volume	327	23	768	308	62	927

Saturation Flow Rate						
Approach	N	E		S	W	
Lane Group	10381	10378	10379	10385	10382	10383
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	2	1	1	2
Saturation Flow Rate	1600	1600	3200	1600	1600	3200

Capacity Analysis												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	147	19	161	23	730	38	133	27	148	62	849	78
Volume / Saturation Flow Rate	0.092	0.204	0.204	0.014	0.240	0.240	0.083	0.193	0.193	0.039	0.290	0.290
Overlap adjusted Volume / Saturation Flow Rate	0.092	0.204	0.204	0.014	0.240	0.240	0.083	0.193	0.193	0.039	0.290	0.290
Critical Movement		Y		Y			Y				Y	

Node 394: Hollister & Rutherford

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.614
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	E		S		W	
Movement	L1	T	L1	R1	T	R1
Base Volume	56	843	58	176	1012	53
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	14	211	15	44	253	13
Adjusted Volume	56	843	58	176	1012	53

Volume and Adjustments by Lane Group

Approach	E		S	W
Lane Group	L	C	C	C
ID	10386	10387	10391	10389
Lanes	L	T, T	LTR	T, RT
Volume	56	843	234	1065

Saturation Flow Rate

Approach	E		S	W
Lane Group	10386	10387	10391	10389
Base Saturation Flow Rate	1600	1600	1600	1600
Number of Lanes	1	2	1	2
Saturation Flow Rate	1600	3200	1600	3200

Capacity Analysis

Approach	E		S		W	
Movement	L1	T	L1	R1	T	R1
Volume	56	843	58	176	1012	53
Volume / Saturation Flow Rate	0.035	0.263	0.036	0.146	0.333	0.333
Overlap adjusted Volume / Saturation Flow Rate	0.035	0.263	0.036	0.146	0.333	0.333
Critical Movement	Y			Y	Y	

Node 396: Hollister & Community Center West Driveway

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	0.36
Worst Case Delay	12.25
Worst Case LOS	B

Volume and Adjustments

Approach	E (Major)		S	W (Major)	
Movement	L1	T		T	R1
Base Volume	63.00	928.00		1097.00	51.00
PHF, Peak-hour factor	0.920	0.920		0.920	0.920
V, Adjusted Volume	68.48	1008.70		1192.39	55.43

Pedestrians

Approach	E (Major)		S	W (Major)	
Movement	L1	T		T	R1
vx, Flow (Ped/hr)	0.00				
w, Lane Width (ft)	12.00				
Sp, Walking Speed (ft/s)	3.50				
fpb, Percent Blockage	0.00				

Capacity of Movements below Rank 1

Approach	E (Major)		S	W (Major)	
Movement	L1	T		T	R1
Rank	2	1		1	1
vx, Volume	68.48				
Conflicting Volume (Veh)	1247.83				
Conflicting Volume (Ped)	0.00				
Conflicting Volume	1247.83				
Two-Stage Gap Acceptance					
Number of Storage Spaces in Median Refuge Area					
cpx, Potential Capacity	564.68				
Capacity	564.68				

Critical Headway and Follow Up Headway

Approach	E (Major)		S	W (Major)	
Movement	L1	T		T	R1
tc,base, Base Critical Headway	4.10				
tc,base,I, Base Critical Headway (Stage I)					
tc,base,II, Base Critical Headway (Stage II)					
tc,HV, Heavy Vehicles Adjustment Factor	2.00				
Phv, % Heavy Vehicles	0.00				
tc,G, Grade Adjustment Factor	1.00				
G, % Grade	0.00		0.00	0.00	
T3,lt, Geometry Adjustment Factor	0.00				
tc, Critical Headway	4.10				
tc,I, Critical Headway (Stage I)					
tc,II, Critical Headway (Stage II)					
tf,base, Base Follow-Up Headway	2.20				
tf,hv, Heavy Vehicles Adjustment Factor	1.00				
tf, Follow-Up Headway	2.20				

Delay and Level of Service by Movement

Approach	E (Major)		S	W (Major)	
Movement	L1	T		T	R1
vx, Volume	68.48	1008.70		1192.39	55.43
cmx, Capacity	564.68				
V / C	0.12				
d, Delay	12.25				
LOS	B				
dA, Approach Delay	0.78		0.00	0.00	
Approach LOS			A		
dRank1, Rank 1 Delay	0.00			0.00	

Delay and Level of Service by Lane

Approach	E (Major)			S	W (Major)	
Lane	Lane 1	Lane 2	Lane 3		Lane 1	Lane 2
Movements						T, R1
vx, Volume	68.48	504.35	504.35		623.91	623.91
Flared Storage Size						
cmx, Capacity						
V / C						
Q95, 95% Queue Length						
d, Delay						
LOS						
dA, Approach Delay	0.78			0.00	0.00	
Approach LOS				A		

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Node 397: Hollister & Kinman

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.547
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	70	5	119	19	693	70	16	5	11	106	944	27
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	18	1	30	5	173	18	4	1	3	27	236	7
Adjusted Volume	70	5	119	19	693	70	16	5	11	106	944	27

Volume and Adjustments by Lane Group

Approach	N	E		S	W	
Lane Group	C	L	C	C	L	C
ID	10395	10392	10393	10399	10396	10397
Lanes	LTR	L	T, RT	LTR	L	T, RT
Volume	194	19	763	32	106	971

Saturation Flow Rate

Approach	N	E		S	W	
Lane Group	10395	10392	10393	10399	10396	10397
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	2	1	1	2
Saturation Flow Rate	1600	1600	3200	1600	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	70	5	119	19	693	70	16	5	11	106	944	27
Volume / Saturation Flow Rate	0.044	0.121	0.121	0.012	0.238	0.238	0.010	0.020	0.020	0.066	0.303	0.303
Overlap adjusted Volume / Saturation Flow Rate	0.044	0.121	0.121	0.012	0.238	0.238	0.010	0.020	0.020	0.066	0.303	0.303
Critical Movement		Y		Y			Y				Y	

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Node 399: Hollister & Kellogg

Control Type	Signalized
Method	ICU Method 1
LOS	D
Critical V/C	0.815
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	192	32	59	140	810	148	84	32	238	52	912	77
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	48	8	15	35	203	37	21	8	60	13	228	19
Adjusted Volume	192	32	59	140	810	148	84	32	238	52	912	77

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	10405	10406	10402	10403	10400	10401	10407	10408
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	224	59	140	958	116	238	52	989

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	10405	10406	10402	10403	10400	10401	10407	10408
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	2	1	1	1	2
Saturation Flow Rate	1600	1600	1600	3200	1600	1600	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	192	32	59	140	810	148	84	32	238	52	912	77
Volume / Saturation Flow Rate	0.120	0.140	0.037	0.087	0.299	0.299	0.052	0.073	0.149	0.033	0.309	0.309
Overlap adjusted Volume / Saturation Flow Rate	0.120	0.140	0.037	0.087	0.299	0.299	0.052	0.073	0.149	0.033	0.309	0.309
Critical Movement	Y			Y					Y		Y	

Node 402: Hollister & SR-217 SB Ramps

Control Type	Signalized
Method	ICU Method 1
LOS	C
Critical V/C	0.701
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E		S	W	
Movement	L1	T	R1	L1	T		T	R1
Base Volume	54	5	539	78	577		1453	47
PHF	1.000	1.000	1.000	1.000	1.000		1.000	1.000
Peak 15 Volume	14	1	135	20	144		363	12
Adjusted Volume	54	5	539	78	577		1453	47

Volume and Adjustments by Lane Group

Approach	N	E			S	W
Lane Group	C	L	C	C		C
ID	10415	10410	10411	10412		10417
Lanes	LTR, R	L	T, T	T, T		T, RT
Volume	598	78	342	235		1500

Saturation Flow Rate

Approach	N	E			S	W
Lane Group	10415	10410	10411	10412		10417
Base Saturation Flow Rate	1600	1600	1600	1600		1600
Number of Lanes	2	1	2	2		2
Saturation Flow Rate	3200	1600	3200	3200		3200

Capacity Analysis

Approach	N			E		S	W	
Movement	L1	T	R1	L1	T		T	R1
Volume	54	5	539	78	577		1453	47
Volume / Saturation Flow Rate	0.034	0.187	0.187	0.049	0.107		0.469	0.469
Overlap adjusted Volume / Saturation Flow Rate	0.034	0.187	0.187	0.049	0.107		0.469	0.469
Critical Movement	Y			Y				Y

Node 405: Hollister & SR-217 NB Ramps

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.572
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N	E			S			W		
Movement		L1	T	R1	L1	T	R1	L1	T	R1
Base Volume		44	511	26	122	110	172	596	845	37
PHF		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume		11	128	7	31	28	43	149	211	9
Adjusted Volume		44	511	26	122	110	172	596	845	37

Volume and Adjustments by Lane Group

Approach	N	E			S		W	
Lane Group		L	C	R	C	R	L	C
ID		10421	10422	10424	10419	10420	10425	10427
Lanes		L	T, T	R	LT	R	L, L	T, RT
Volume		44	511	26	232	172	596	882

Saturation Flow Rate

Approach	N	E			S		W	
Lane Group		10421	10422	10424	10419	10420	10425	10427
Base Saturation Flow Rate		1600	1600	1600	1600	1600	1600	1600
Number of Lanes		1	2	1	1	1	2	2
Saturation Flow Rate		1600	3200	1600	1600	1600	3200	3200

Capacity Analysis

Approach	N	E			S			W		
Movement		L1	T	R1	L1	T	R1	L1	T	R1
Volume		44	511	26	122	110	172	596	845	37
Volume / Saturation Flow Rate		0.028	0.160	0.016	0.076	0.145	0.108	0.186	0.276	0.276
Overlap adjusted Volume / Saturation Flow Rate		0.028	0.160	0.016	0.076	0.145	0.108	0.186	0.276	0.276
Critical Movement			Y		Y			Y		

Node 441: Calle Real & NB 101 OnRamp

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	2
Worst Case Delay	10.81
Worst Case LOS	B

Volume and Adjustments					
Approach	E (Major)		S (Major)	W	
Movement	L1	T		T	R1
Base Volume	97.00	192.00		61.00	5.00
PHF, Peak-hour factor	0.920	0.920		0.920	0.920
V, Adjusted Volume	105.43	208.70		66.30	5.43

Pedestrians					
Approach	E (Major)		S (Major)	W	
Movement	L1	T		T	R1
vx, Flow (Ped/hr)				0.00	0.00
w, Lane Width (ft)				12.00	12.00
Sp, Walking Speed (ft/s)				3.50	3.50
fpb, Percent Blockage				0.00	0.00

Capacity of Movements below Rank 1					
Approach	E (Major)		S (Major)	W	
Movement	L1	T		T	R1
Rank	1	1		3	2
vx, Volume				66.30	5.43
Conflicting Volume (Veh)				209.78	209.78
Conflicting Volume (Ped)				0.00	0.00
Conflicting Volume				209.78	209.78
Two-Stage Gap Acceptance				No	
Number of Storage Spaces in Median Refuge Area					
cpx, Potential Capacity				690.84	835.55
Capacity				690.01	835.55

Critical Headway and Follow Up Headway					
Approach	E (Major)		S (Major)	W	
Movement	L1	T		T	R1
tc,base, Base Critical Headway				6.50	6.20
tc,base,I, Base Critical Headway (Stage I)					
tc,base,II, Base Critical Headway (Stage II)					
tc,HV, Heavy Vehicles Adjustment Factor				1.00	1.00
Phv, % Heavy Vehicles				0.00	0.00
tc,G, Grade Adjustment Factor				0.20	0.10
G, % Grade	0.00		0.00	0.00	
T3,lt, Geometry Adjustment Factor				0.00	0.00
tc, Critical Headway				6.50	6.20
tc,I, Critical Headway (Stage I)					
tc,II, Critical Headway (Stage II)					
tf,base, Base Follow-Up Headway				4.00	3.30
tf,hv, Heavy Vehicles Adjustment Factor				0.90	0.90
tf, Follow-Up Headway				4.00	3.30

Delay and Level of Service by Movement					
Approach	E (Major)		S (Major)	W	
Movement	L1	T		T	R1
vx, Volume	105.43	208.70		66.30	5.43
cmx, Capacity				690.01	835.55
V / C				0.10	0.01
d, Delay				10.81	9.90
LOS				B	A
dA, Approach Delay	0.00		0.00	10.74	
Approach LOS				B	
dRank1, Rank 1 Delay	0.00		0.00		

Delay and Level of Service by Lane			
Approach	E (Major)	S (Major)	W
Lane	Lane 1		Lane 1
Movements	L1, T		T, R1
vx, Volume	314.13		71.74
Flared Storage Size			
cmx, Capacity			699.24
V / C			0.10
Q95, 95% Queue Length			0.34
d, Delay			10.74
LOS			B
dA, Approach Delay	0.00	0.00	10.74
Approach LOS			B

Node 445: Calle Real & Winchester Canyon	
Control Type	AWSC
Method	HCM 6th Edition
Average Delay	10.04
Average LOS	B

Volume and Adjustments				
Approach	N	E		W
Movement	R1	T	R1	T
Base Volume	137.00	212.00	234.00	82.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920
Flow Rate	148.91	230.43	254.35	89.13
Geometry Group	1	1		1

Saturation Headway			
Approach	N	E	W
Lanes	Lane 1	Lane 1	Lane 1
Total Lane Flow Rate	148.91	484.78	89.13
Left Turn Flow Rate	0.00	0.00	0.00
Right Turn Flow Rate	148.91	254.35	0.00
PLT, Proportion LT	0.00	0.00	0.00
PRT, Proportion RT	1.00	0.52	0.00
PHV, Proportion HV	0.00	0.00	0.00
hLT,adj, Headway adjustment for left turns	0.20	0.20	0.20
hRT,adj, Headway adjustment for right turns	-0.60	-0.60	-0.60
hHV,adj, Headway adjustment for heavy vehicles	1.70	1.70	1.70
hadj, Headway adjustment	-0.60	-0.31	0.00

Departure Headway			
Approach	N	E	W
Lanes	Lane 1	Lane 1	Lane 1
Total Lane Flow Rate	148.91	484.78	89.13
hd initial	3.20	3.20	3.20
x initial	0.13	0.43	0.08
hd, iteration 1	3.45	3.91	4.01
Difference, iteration 1	0.25	0.71	0.81
hd, iteration 2	3.49	3.95	4.02
Difference, iteration 2	0.04	0.04	0.01
Convergence	Y	Y	Y
hd final, Departure Headway	3.49	3.95	4.02
x final, Degree of Utilization	0.14	0.53	0.10

Capacity and Level of Service			
Approach	N	E	W
Lanes	Lane 1	Lane 1	Lane 1
Total Lane Flow Rate	148.91	484.78	89.13
hd, Departure Headway	3.49	3.95	4.02
x, Degree of Utilization	0.14	0.53	0.10
m, Move Up Time	2.00	2.00	2.00
ts, Service Time	1.49	1.95	2.02
Capacity	1030.47	909.91	896.00
Delay	7.08	11.43	7.46
LOS	A	B	A
Q95, 95% Queue Length	0.51	3.36	0.33
Approach Delay	7.08	11.43	7.46
Approach LOS	A	B	A
Intersection Delay		10.04	
Intersection LOS		B	

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Node 450: Calle Real & Brandon Dr.	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	1.59
Worst Case Delay	11.19
Worst Case LOS	B

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	53.00	5.00	159.00	98.00	5.00	110.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	57.61	5.43	172.83	106.52	5.43	119.57

Pedestrians						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Flow (Ped/hr)	0.00	0.00			0.00	
w, Lane Width (ft)	12.00	12.00			12.00	
Sp, Walking Speed (ft/s)	3.50	3.50			3.50	
fpb, Percent Blockage	0.00	0.00			0.00	

Capacity of Movements below Rank 1						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Rank	3	2	1	1	2	1
vx, Volume	57.61	5.43			5.43	
Conflicting Volume (Veh)	356.52	226.09			279.35	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	356.52	226.09			279.35	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	645.75	818.30			1294.95	
Capacity	642.85	818.30			1294.95	

Critical Headway and Follow Up Headway						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
tc,base, Base Critical Headway	7.10	6.20			4.10	
tc,base,I, Base Critical Headway (Stage I)						
tc,base,II, Base Critical Headway (Stage II)						
tc,HV, Heavy Vehicles Adjustment Factor	1.00	1.00			1.00	
Phv, % Heavy Vehicles	0.00	0.00			0.00	
tc,G, Grade Adjustment Factor	0.20	0.10			1.00	
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment Factor	0.70	0.00			0.00	
tc, Critical Headway	6.40	6.20			4.10	
tc,I, Critical Headway (Stage I)						
tc,II, Critical Headway (Stage II)						
tf,base, Base Follow-Up Headway	3.50	3.30			2.20	
tf,hv, Heavy Vehicles Adjustment Factor	0.90	0.90			0.90	
tf, Follow-Up Headway	3.50	3.30			2.20	

Delay and Level of Service by Movement						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Volume	57.61	5.43	172.83	106.52	5.43	119.57
cmx, Capacity	642.85	818.30			1294.95	
V / C	0.09	0.01			0.00	
d, Delay	11.19	9.98			7.79	
LOS	B	A			A	
dA, Approach Delay	11.08		0.00		0.34	
Approach LOS	B					
dRank1, Rank 1 Delay			0.00		0.04	

Delay and Level of Service by Lane			
Approach	N	E (Major)	W (Major)
Lane	Lane 1	Lane 1	Lane 1
Movements	L1, R1	T, R1	L1, T
vx, Volume	63.04	279.35	125.00
Flared Storage Size			
cmx, Capacity	654.96		1294.95
V / C	0.10		0.10
Q95, 95% Queue Length	0.32		0.32
d, Delay	11.08		7.79
LOS	B		
dA, Approach Delay	11.08	0.00	0.34
Approach LOS	B		

Node 452: Calle Real & Elwood Station

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	1.93
Worst Case Delay	13.53
Worst Case LOS	B

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	77.00	12.00	269.00	159.00	21.00	163.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	83.70	13.04	292.39	172.83	22.83	177.17

Pedestrians						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Flow (Ped/hr)	0.00	0.00			0.00	
w, Lane Width (ft)	12.00	12.00			12.00	
Sp, Walking Speed (ft/s)	3.50	3.50			3.50	
fpb, Percent Blockage	0.00	0.00			0.00	

Capacity of Movements below Rank 1						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Rank	3	2	1	1	2	1
vx, Volume	83.70	13.04			22.83	
Conflicting Volume (Veh)	515.22	292.39			465.22	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	515.22	292.39			465.22	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	523.22	751.62			1106.75	
Capacity	511.25	751.62			1106.75	

Critical Headway and Follow Up Headway						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
tc,base, Base Critical Headway	7.10	6.20			4.10	
tc,base,I, Base Critical Headway (Stage I)						
tc,base,II, Base Critical Headway (Stage II)						
tc,HV, Heavy Vehicles Adjustment Factor	1.00	1.00			1.00	
Phv, % Heavy Vehicles	0.00	0.00			0.00	
tc,G, Grade Adjustment Factor	0.20	0.10			1.00	
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment Factor	0.70	0.00			0.00	
tc, Critical Headway	6.40	6.20			4.10	
tc,I, Critical Headway (Stage I)						
tc,II, Critical Headway (Stage II)						
tf,base, Base Follow-Up Headway	3.50	3.30			2.20	
tf,hv, Heavy Vehicles Adjustment Factor	0.90	0.90			0.90	
tf, Follow-Up Headway	3.50	3.30			2.20	

Delay and Level of Service by Movement						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Volume	83.70	13.04	292.39	172.83	22.83	177.17
cmx, Capacity	511.25	751.62			1106.75	
V / C	0.16	0.02			0.02	
d, Delay	13.53	11.28			8.32	
LOS	B	B			A	
dA, Approach Delay	13.23		0.00		0.95	
Approach LOS	B					
dRank1, Rank 1 Delay			0.00		0.19	

Delay and Level of Service by Lane				
Approach	N	E (Major)		W (Major)
Lane	Lane 1	Lane 1	Lane 2	Lane 1
Movements	L1, R1			L1, T
vx, Volume	96.74	292.39	172.83	200.00
Flared Storage Size				
cmx, Capacity	534.29			1106.75
V / C	0.18			0.18
Q95, 95% Queue Length	0.66			0.66
d, Delay	13.23			8.32
LOS	B			
dA, Approach Delay	13.23	0.00		0.95
Approach LOS	B			

Node 461: Storke & US 101 NB Ramps

Control Type	Signalized
Method	ICU Method 1
LOS	D
Critical V/C	0.875
Loss Time	14
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	6	377	15	1061	543	126	388	267	211	26	8	502
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	2	94	4	265	136	32	97	67	53	7	2	126
Adjusted Volume	6	377	15	1061	543	126	388	267	211	26	8	502

Volume and Adjustments by Lane Group

Approach	N		E	S		W	
Lane Group	L	C	C	L	C	L	C
ID	10449	10450	10446	10442	10444	10452	10453
Lanes	L	T, RT	L, LT, RT	L, L	T, RT	L	RT, R
Volume	6	392	1730	388	478	26	510

Saturation Flow Rate

Approach	N		E	S		W	
Lane Group	10449	10450	10446	10442	10444	10452	10453
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	3	2	2	1	2
Saturation Flow Rate	1600	3200	4800	3200	3200	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	6	377	15	1061	543	126	388	267	211	26	8	502
Volume / Saturation Flow Rate	0.004	0.123	0.123	0.332	0.360	0.360	0.121	0.149	0.149	0.016	0.159	0.159
Overlap adjusted Volume / Saturation Flow Rate	0.004	0.123	0.123	0.332	0.360	0.360	0.121	0.149	0.149	0.016	0.159	0.159
Critical Movement		Y		Y			Y					Y

Node 462: Storke & US 101 SB Ramp

Control Type	Signalized
Method	ICU Method 1
LOS	F
Critical V/C	1.155
Loss Time	12
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	350	1600		856	1470	11	5	134
PHF	1.000	1.000		1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	88	400		214	368	3	1	34
Adjusted Volume	350	1600		856	1470	11	5	134

Volume and Adjustments by Lane Group

Approach	N		E	S		W	
Lane Group	L	C		C	R	C	R
ID	10458	10460		10455	10457	10462	10463
Lanes	L, L	T, T		T, T	R	LT	R
Volume	350	1600		856	1470	16	134

Saturation Flow Rate

Approach	N		E	S		W	
Lane Group	10458	10460		10455	10457	10462	10463
Base Saturation Flow Rate	1600	1600		1600	1600	1600	1600
Number of Lanes	2	2		2	1	1	1
Saturation Flow Rate	3200	3200		3200	1600	1600	1600

Capacity Analysis

Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Volume	350	1600		856	1470	11	5	134
Volume / Saturation Flow Rate	0.109	0.500		0.268	0.919	0.007	0.010	0.084
Overlap adjusted Volume / Saturation Flow Rate	0.109	0.500		0.268	0.919	0.007	0.010	0.084
Critical Movement	Y				Y	Y		

Node 466: Los Carneros & Cremona	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.579
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement										
Approach	N	E			S			W		
Movement	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	44	124	597	17	14	33	412	37	1196	17
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	11	31	149	4	4	8	103	9	299	4
Adjusted Volume	44	124	597	17	14	33	412	37	1196	17

Volume and Adjustments by Lane Group						
Approach	N	E		S	W	
Lane Group	R	L	C	C	L	C
ID	10468	10465	10466	10464	10470	10471
Lanes	R, R	L	T, RT	LTR	L	T, RT
Volume	44	124	614	459	37	1213

Saturation Flow Rate						
Approach	N	E		S	W	
Lane Group	10468	10465	10466	10464	10470	10471
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600
Number of Lanes	2	1	2	1	1	2
Saturation Flow Rate	3200	1600	3200	1600	1600	3200

Capacity Analysis										
Approach	N	E			S			W		
Movement	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	44	124	597	17	14	33	412	37	1196	17
Volume / Saturation Flow Rate	0.014	0.077	0.192	0.192	0.009	0.287	0.287	0.023	0.379	0.379
Overlap adjusted Volume / Saturation Flow Rate	0.014	0.077	0.192	0.192	0.009	0.287	0.287	0.023	0.379	0.379
Critical Movement	Y	Y			Y				Y	

Node 467: Los Carneros & Calle Koral

Control Type	Signalized
Method	ICU Method 1
LOS	D
Critical V/C	0.808
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	196	671	39	14	38	332	65	1532	35	82	18	49
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	49	168	10	4	10	83	16	383	9	21	5	12
Adjusted Volume	196	671	39	14	38	332	65	1532	35	82	18	49

Volume and Adjustments by Lane Group

Approach	N			E			S		W	
Lane Group	L	C	R	L	C	R	L	C	L	C
ID	10476	10477	10479	10473	10474	10475	10482	10483	10480	10481
Lanes	L	T, T	R	L	T	R	L	T, T, RT	L	RT
Volume	196	671	39	14	38	332	65	1567	82	67

Saturation Flow Rate

Approach	N			E			S		W	
Lane Group	10476	10477	10479	10473	10474	10475	10482	10483	10480	10481
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	1	1	1	1	1	3	1	1
Saturation Flow Rate	1600	3200	1600	1600	1600	1600	1600	4800	1600	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	196	671	39	14	38	332	65	1532	35	82	18	49
Volume / Saturation Flow Rate	0.123	0.210	0.024	0.009	0.024	0.207	0.041	0.326	0.326	0.051	0.042	0.042
Overlap adjusted Volume / Saturation Flow Rate	0.123	0.210	0.024	0.009	0.024	0.207	0.041	0.326	0.326	0.051	0.042	0.042
Critical Movement	Y					Y		Y		Y		

Node 489: Hollister & Patterson

Control Type	Signalized
Method	ICU Method 1
LOS	D
Critical V/C	0.893
Loss Time	20
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	673	158	173	34	318	380	72	287	120	357	1029	40
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	168	40	43	9	80	95	18	72	30	89	257	10
Adjusted Volume	673	158	173	34	318	380	72	287	120	357	1029	40

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	L	C	L	C	L	C	L	C
ID	10489	10491	10486	10487	10497	10498	10493	10495
Lanes	L, L	T, RT	L	T, RT	L	T, RT	L, L	T, RT
Volume	673	331	34	698	72	407	357	1069

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	10489	10491	10486	10487	10497	10498	10493	10495
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	2	2	1	2	1	2	2	2
Saturation Flow Rate	3200	3200	1600	3200	1600	3200	3200	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	673	158	173	34	318	380	72	287	120	357	1029	40
Volume / Saturation Flow Rate	0.210	0.103	0.103	0.021	0.218	0.218	0.045	0.127	0.127	0.112	0.334	0.334
Overlap adjusted Volume / Saturation Flow Rate	0.210	0.103	0.103	0.021	0.218	0.218	0.045	0.127	0.127	0.112	0.334	0.334
Critical Movement	Y			Y					Y		Y	

Node 506: Cathedral Oaks 101 SB-Ramp	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	3.29
Worst Case Delay	51.71
Worst Case LOS	F

Volume and Adjustments								
Approach	N (Major)		E	S (Major)		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	137.00	293.00		412.00	291.00	38.00	5.00	59.00
PHF, Peak-hour factor	0.920	0.920		0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	148.91	318.48		447.83	316.30	41.30	5.43	64.13

Pedestrians								
Approach	N (Major)		E	S (Major)		W		
Movement	L1	T		T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00					0.00	0.00	0.00
w, Lane Width (ft)	12.00					12.00	12.00	12.00
Sp, Walking Speed (ft/s)	3.50					3.50	3.50	3.50
fpb, Percent Blockage	0.00					0.00	0.00	0.00

Capacity of Movements below Rank 1								
Approach	N (Major)		E	S (Major)		W		
Movement	L1	T		T	R1	L1	T	R1
Rank	2	1		1	1	4	3	2
vx, Volume	148.91					41.30	5.43	64.13
Conflicting Volume (Veh)	764.13					1222.28	1380.43	318.48
Conflicting Volume (Ped)	0.00					0.00	0.00	0.00
Conflicting Volume	764.13					1222.28	1380.43	318.48
Two-Stage Gap Acceptance						No	No	
Number of Storage Spaces in Median Refuge Area								
cpx, Potential Capacity	857.81					157.80	145.57	726.83
Capacity	857.81					132.18	114.87	726.83

Critical Headway and Follow Up Headway								
Approach	N (Major)		E	S (Major)		W		
Movement	L1	T		T	R1	L1	T	R1
tc,base, Base Critical Headway	4.10					7.10	6.50	6.20
tc,base,I, Base Critical Headway (Stage I)								
tc,base,II, Base Critical Headway (Stage II)								
tc,HV, Heavy Vehicles Adjustment Factor	1.00					1.00	1.00	1.00
Phv, % Heavy Vehicles	0.00					0.00	0.00	0.00
tc,G, Grade Adjustment Factor	1.00					0.20	0.20	0.10
G, % Grade	0.00		0.00	0.00		0.00		
T3,lt, Geometry Adjustment Factor	0.00					0.00	0.00	0.00
tc, Critical Headway	4.10					7.10	6.50	6.20
tc,I, Critical Headway (Stage I)								
tc,II, Critical Headway (Stage II)								
tf,base, Base Follow-Up Headway	2.20					3.50	4.00	3.30
tf,hv, Heavy Vehicles Adjustment Factor	0.90					0.90	0.90	0.90
tf, Follow-Up Headway	2.20					3.50	4.00	3.30

Delay and Level of Service by Movement								
Approach	N (Major)		E	S (Major)		W		
Movement	L1	T		T	R1	L1	T	R1
vx, Volume	148.91	318.48		447.83	316.30	41.30	5.43	64.13
cmx, Capacity	857.81					132.18	114.87	726.83
V / C	0.17					0.31	0.05	0.09
d, Delay	10.08					47.61	51.71	10.43
LOS	B					E	F	B
dA, Approach Delay	3.21		0.00	0.00		26.30		
Approach LOS			A			D		
dRank1, Rank 1 Delay	0.00			0.00				

Delay and Level of Service by Lane						
Approach	N (Major)		E	S (Major)	W	
Lane	Lane 1	Lane 2		Lane 1	Lane 1	Lane 2
Movements				T, R1	L1, T	
vx, Volume	148.91	318.48		764.13	46.74	64.13
Flared Storage Size						
cmx, Capacity					129.90	
V / C					0.36	
Q95, 95% Queue Length					1.62	
d, Delay					48.08	
LOS					E	
dA, Approach Delay	3.21		0.00	0.00	26.30	
Approach LOS			A		D	

Node 511: Hollister & Pebble Beach Rd

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	2.07
Worst Case Delay	31.72
Worst Case LOS	D

Volume and Adjustments

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	32.00	5.00	30.00	11.00	613.00	35.00	5.00	5.00	5.00	18.00	350.00	10.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	34.78	5.43	32.61	11.96	666.30	38.04	5.43	5.43	5.43	19.57	380.43	10.87

Pedestrians

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
w, Lane Width (ft)	12.00	12.00	12.00	12.00			12.00	12.00	12.00	12.00		
Sp, Walking Speed (ft/s)	3.50	3.50	3.50	3.50			3.50	3.50	3.50	3.50		
fpb, Percent Blockage	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		

Capacity of Movements below Rank 1

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	2	1	1	4	3	2	2	1	1
vx, Volume	34.78	5.43	32.61	11.96			5.43	5.43	5.43	19.57		
Conflicting Volume (Veh)	1117.93	1120.65	666.30	391.30			1153.26	1153.26	385.87	704.35		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1117.93	1120.65	666.30	391.30			1153.26	1153.26	385.87	704.35		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	186.01	208.05	462.73	1178.22			175.95	199.00	666.38	902.86		
Capacity	174.98	199.70	462.73	1178.22			155.27	191.01	666.38	902.86		

Critical Headway and Follow Up Headway

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Headway	7.10	6.50	6.20	4.10			7.10	6.50	6.20	4.10		
tc,base,I, Base Critical Headway (Stage I)												
tc,base,II, Base Critical Headway (Stage II)												
tc,HV, Heavy Vehicles Adjustment Factor	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00		
Phv, % Heavy Vehicles	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Factor	0.20	0.20	0.10	1.00			0.20	0.20	0.10	1.00		
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment Factor	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc, Critical Headway	7.10	6.50	6.20	4.10			7.10	6.50	6.20	4.10		
tc,I, Critical Headway (Stage I)												
tc,II, Critical Headway (Stage II)												
tf,base, Base Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		
tf,hv, Heavy Vehicles Adjustment Factor	0.90	0.90	0.90	0.90			0.90	0.90	0.90	0.90		
tf, Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		

Delay and Level of Service by Movement

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	34.78	5.43	32.61	11.96	666.30	38.04	5.43	5.43	5.43	19.57	380.43	10.87
cmx, Capacity	174.98	199.70	462.73	1178.22			155.27	191.01	666.38	902.86		
V / C	0.20	0.03	0.07	0.01			0.04	0.03	0.01	0.02		
d, Delay	31.72	29.17	18.93	8.09			29.40	25.07	11.62	9.08		
LOS	D	D	C	A			D	D	B	A		
dA, Approach Delay		25.80			0.13			22.03			0.43	
Approach LOS		D						C				
dRank1, Rank 1 Delay					0.00						0.00	

Delay and Level of Service by Lane

Approach	N	E (Major)			S	W (Major)		
Lane	Lane 1	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2	Lane 3
Movements	L1, T, R1				L1, T, R1			T, R1
vx, Volume	72.83	11.96	666.30	38.04	16.30	19.57	195.65	195.65
Flared Storage Size								
cmx, Capacity	245.65				227.68			
V / C	0.30				0.07			
Q95, 95% Queue Length	1.25				0.23			
d, Delay	25.80				22.03			
LOS	D				C			
dA, Approach Delay	25.80		0.13		22.03		0.43	
Approach LOS	D				C			

Node 512: Hollister & Palo Alto Dr

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	1.23
Worst Case Delay	24.97
Worst Case LOS	C

Volume and Adjustments												
Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	5.00	5.00	32.00	30.00	637.00	6.00	9.00	5.00	14.00	5.00	344.00	9.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	5.43	5.43	34.78	32.61	692.39	6.52	9.78	5.43	15.22	5.43	373.91	9.78

Pedestrians												
Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
w, Lane Width (ft)	12.00	12.00	12.00	12.00			12.00	12.00	12.00	12.00		
Sp, Walking Speed (ft/s)	3.50	3.50	3.50	3.50			3.50	3.50	3.50	3.50		
fpb, Percent Blockage	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		

Capacity of Movements below Rank 1												
Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	2	1	1	4	3	2	2	1	1
vx, Volume	5.43	5.43	34.78	32.61			9.78	5.43	15.22	5.43		
Conflicting Volume (Veh)	961.41	1155.43	349.46	383.70			803.80	1153.80	191.85	698.91		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	961.41	1155.43	349.46	383.70			803.80	1153.80	191.85	698.91		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	213.62	198.41	652.54	1185.83			277.76	198.85	823.61	907.07		
Capacity	198.76	190.33	652.54	1185.83			249.26	190.75	823.61	907.07		

Critical Headway and Follow Up Headway												
Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Headway	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,base,I, Base Critical Headway (Stage I)												
tc,base,II, Base Critical Headway (Stage II)												
tc,HV, Heavy Vehicles Adjustment Factor	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00		
Phv, % Heavy Vehicles	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Factor	0.20	0.20	0.10	1.00			0.20	0.20	0.10	1.00		
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment Factor	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc, Critical Headway	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,I, Critical Headway (Stage I)												
tc,II, Critical Headway (Stage II)												
tf,base, Base Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		
tf,hv, Heavy Vehicles Adjustment Factor	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00		
tf, Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		

Delay and Level of Service by Movement												
Approach		N			E (Major)			S			W (Major)	
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	5.43	5.43	34.78	32.61	692.39	6.52	9.78	5.43	15.22	5.43	373.91	9.78
cmx, Capacity	198.76	190.33	652.54	1185.83			249.26	190.75	823.61	907.07		
V / C	0.03	0.03	0.05	0.03			0.04	0.03	0.02	0.01		
d, Delay	24.17	24.97	11.57	8.12			20.40	24.83	10.33	8.99		
LOS	C	C	B	A			C	C	B	A		
dA, Approach Delay		14.67			0.36			16.16			0.13	
Approach LOS		B						C				
dRank1, Rank 1 Delay					0.00						0.00	

Delay and Level of Service by Lane								
Approach	N		E (Major)		S		W (Major)	
Lane	Lane 1	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2	Lane 3
Movements	L1, T, R1			T, R1	L1, T, R1			T, R1
vx, Volume	45.65	32.61	349.46	349.46	30.43	5.43	191.85	191.85
Flared Storage Size								
cmx, Capacity	418.05				353.01			
V / C	0.11				0.09			
Q95, 95% Queue Length	0.37				0.28			
d, Delay	14.67				16.16			
LOS	B				C			
dA, Approach Delay	14.67		0.36		16.16		0.13	
Approach LOS	B				C			

Node 513: Hollister & Coronado	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	1.38
Worst Case Delay	21.59
Worst Case LOS	C

Volume and Adjustments						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	94.00	657.00	21.00	34.00	339.00	19.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	102.17	714.13	22.83	36.96	368.48	20.65

Pedestrians						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Flow (Ped/hr)	0.00		0.00	0.00		
w, Lane Width (ft)	12.00		12.00	12.00		
Sp, Walking Speed (ft/s)	3.50		3.50	3.50		
fpb, Percent Blockage	0.00		0.00	0.00		

Capacity of Movements below Rank 1						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Rank	2	1	3	2	1	1
vx, Volume	102.17		22.83	36.96		
Conflicting Volume (Veh)	389.13		940.22	194.57		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	389.13		940.22	194.57		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	1180.39		265.72	820.33		
Capacity	1180.39		237.03	820.33		

Critical Headway and Follow Up Headway						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
tc,base, Base Critical Headway	4.10		7.50	6.90		
tc,base,I, Base Critical Headway (Stage I)						
tc,base,II, Base Critical Headway (Stage II)						
tc,HV, Heavy Vehicles Adjustment Factor	2.00		2.00	2.00		
Phv, % Heavy Vehicles	0.00		0.00	0.00		
tc,G, Grade Adjustment Factor	1.00		0.20	0.10		
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment Factor	0.00		0.70	0.00		
tc, Critical Headway	4.10		6.80	6.90		
tc,I, Critical Headway (Stage I)						
tc,II, Critical Headway (Stage II)						
tf,base, Base Follow-Up Headway	2.20		3.50	3.30		
tf,hv, Heavy Vehicles Adjustment Factor	1.00		1.00	1.00		
tf, Follow-Up Headway	2.20		3.50	3.30		

Delay and Level of Service by Movement						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Volume	102.17	714.13	22.83	36.96	368.48	20.65
cmx, Capacity	1180.39		237.03	820.33		
V / C	0.09		0.10	0.05		
d, Delay	8.34		21.59	10.79		
LOS	A		C	B		
dA, Approach Delay	1.04		14.91		0.00	
Approach LOS			B			
dRank1, Rank 1 Delay	0.00				0.00	

Delay and Level of Service by Lane						
Approach	E (Major)			S	W (Major)	
Lane	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2
Movements				L1, R1		T, R1
vx, Volume	102.17	357.07	357.07	59.78	194.57	194.57
Flared Storage Size						
cmx, Capacity				422.93		
V / C				0.14		
Q95, 95% Queue Length				0.49		
d, Delay				14.91		
LOS				B		
dA, Approach Delay	1.04			14.91	0.00	
Approach LOS				B		

Node 515: Hollister & Cannon Green

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	2.44
Worst Case Delay	61.32
Worst Case LOS	F

Volume and Adjustments						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	157.00	1024.00	20.00	95.00	592.00	30.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	170.65	1113.04	21.74	103.26	643.48	32.61

Pedestrians						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Flow (Ped/hr)	0.00		0.00	0.00		
w, Lane Width (ft)	12.00		12.00	12.00		
Sp, Walking Speed (ft/s)	3.50		3.50	3.50		
fpb, Percent Blockage	0.00		0.00	0.00		

Capacity of Movements below Rank 1						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Rank	2	1	3	2	1	1
vx, Volume	170.65		21.74	103.26		
Conflicting Volume (Veh)	676.09		1557.61	338.04		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	676.09		1557.61	338.04		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	924.93		105.34	663.67		
Capacity	924.93		77.20	663.67		

Critical Headway and Follow Up Headway						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
tc,base, Base Critical Headway	4.10		7.50	6.90		
tc,base,I, Base Critical Headway (Stage I)						
tc,base,II, Base Critical Headway (Stage II)						
tc,HV, Heavy Vehicles Adjustment Factor	2.00		2.00	2.00		
Phv, % Heavy Vehicles	0.00		0.00	0.00		
tc,G, Grade Adjustment Factor	1.00		0.20	0.10		
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment Factor	0.00		0.70	0.00		
tc, Critical Headway	4.10		6.80	6.90		
tc,I, Critical Headway (Stage I)						
tc,II, Critical Headway (Stage II)						
tf,base, Base Follow-Up Headway	2.20		3.50	3.30		
tf,hv, Heavy Vehicles Adjustment Factor	1.00		1.00	1.00		
tf, Follow-Up Headway	2.20		3.50	3.30		

Delay and Level of Service by Movement						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Volume	170.65	1113.04	21.74	103.26	643.48	32.61
cmx, Capacity	924.93		77.20	663.67		
V / C	0.18		0.28	0.16		
d, Delay	9.77		61.32	20.11		
LOS	A		F	C		
dA, Approach Delay	1.30		27.28		0.00	
Approach LOS			D			
dRank1, Rank 1 Delay	0.00				0.00	

Delay and Level of Service by Lane						
Approach	E (Major)			S	W (Major)	
Lane	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2
Movements				L1, R1		T, R1
vx, Volume	170.65	556.52	556.52	125.00	338.04	338.04
Flared Storage Size						
cmx, Capacity				285.93		
V / C				0.44		
Q95, 95% Queue Length				2.27		
d, Delay				27.28		
LOS				D		
dA, Approach Delay	1.30			27.28	0.00	
Approach LOS				D		

Node 517: Hollister & Pacific Oaks

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.603
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E		S		W		
Movement	L1	T	R1	L1	T	L1	R1	L1	T	R1
Base Volume	29	16	24	139	959	249	71	76	646	168
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	7	4	6	35	240	62	18	19	162	42
Adjusted Volume	29	16	24	139	959	249	71	76	646	168

Volume and Adjustments by Lane Group

Approach	N	E		S		W	
Lane Group	C	L	C	L	R	L	C
ID	10513	10510	10511	10517	10518	10514	10515
Lanes	LTR	L	T, T	L	R	L	T, RT
Volume	69	139	959	249	71	76	814

Saturation Flow Rate

Approach	N	E		S		W	
Lane Group	10513	10510	10511	10517	10518	10514	10515
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	2	1	1	1	2
Saturation Flow Rate	1600	1600	3200	1600	1600	1600	3200

Capacity Analysis

Approach	N			E		S		W		
Movement	L1	T	R1	L1	T	L1	R1	L1	T	R1
Volume	29	16	24	139	959	249	71	76	646	168
Volume / Saturation Flow Rate	0.018	0.043	0.043	0.087	0.300	0.156	0.044	0.048	0.254	0.254
Overlap adjusted Volume / Saturation Flow Rate	0.018	0.043	0.043	0.087	0.300	0.156	0.044	0.048	0.254	0.254
Critical Movement					Y	Y		Y		

Node 518: Hollister & Santa Felicia

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	1125.03
Worst Case Delay	10000
Worst Case LOS	F

Volume and Adjustments

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	142.00	9.00	39.00	186.00	1038.00	129.00	53.00	5.00	84.00	33.00	687.00	57.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	154.35	9.78	42.39	202.17	1128.26	140.22	57.61	5.43	91.30	35.87	746.74	61.96

Pedestrians

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
w, Lane Width (ft)	12.00	12.00	12.00	12.00			12.00	12.00	12.00	12.00		
Sp, Walking Speed (ft/s)	3.50	3.50	3.50	3.50			3.50	3.50	3.50	3.50		
fpb, Percent Blockage	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		

Capacity of Movements below Rank 1

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	2	1	1	4	3	2	2	1	1
vx, Volume	154.35	9.78	42.39	202.17			57.61	5.43	91.30	35.87		
Conflicting Volume (Veh)	2050.54	2483.15	634.24	808.70			1822.83	2522.28	404.35	1268.48		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	2050.54	2483.15	634.24	808.70			1822.83	2522.28	404.35	1268.48		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	33.13	29.94	426.58	825.64			49.25	28.26	601.47	554.60		
Capacity	13.29	16.07	426.58	825.64			15.34	15.16	601.47	554.60		

Critical Headway and Follow Up Headway

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Headway	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,base,I, Base Critical Headway (Stage I)												
tc,base,II, Base Critical Headway (Stage II)												
tc,HV, Heavy Vehicles Adjustment Factor	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00		
Phv, % Heavy Vehicles	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Factor	0.20	0.20	0.10	1.00			0.20	0.20	0.10	1.00		
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment Factor	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc, Critical Headway	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,I, Critical Headway (Stage I)												
tc,II, Critical Headway (Stage II)												
tf,base, Base Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		
tf,hv, Heavy Vehicles Adjustment Factor	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00		
tf, Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		

Delay and Level of Service by Movement

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	154.35	9.78	42.39	202.17	1128.26	140.22	57.61	5.43	91.30	35.87	746.74	61.96
cmx, Capacity	13.29	16.07	426.58	825.64			15.34	15.16	601.47	554.60		
V / C	11.62	0.61	0.10	0.24			3.75	0.36	0.15	0.06		
d, Delay	10000.00	10000.00	10000.00	10.77			6243.84	6246.61	6015.18	11.94		
LOS	F	F	F	B			F	F	F	B		
dA, Approach Delay		10000.00			1.48			6108.67			0.51	
Approach LOS		F						F				
dRank1, Rank 1 Delay					0.00						0.00	

Delay and Level of Service by Lane

Approach	N	E (Major)			S	W (Major)		
Lane	Lane 1	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2	Lane 3
Movements	L1, T, R1			T, R1	L1, T, R1			T, R1
vx, Volume	206.52	202.17	634.24	634.24	154.35	35.87	404.35	404.35
Flared Storage Size								
cmx, Capacity	16.76				36.19			
V / C	12.32				4.27			
Q95, 95% Queue Length	98.04				62.77			
d, Delay	20835.89				6108.67			
LOS	F				F			
dA, Approach Delay	10000.00		1.48		6108.67		0.51	
Approach LOS	F				F			

Node 521: Storke & Marketplace

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.656
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	49	656	271	71	36	61	179	934	64	241	30	109
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	12	164	68	18	9	15	45	234	16	60	8	27
Adjusted Volume	49	656	271	71	36	61	179	934	64	241	30	109

Volume and Adjustments by Lane Group

Approach	N				E		S			W
Lane Group	L		C	R	C	R	L		C	C
ID	10521		10522	10524	10519	10520	10527		10528	10525
Lanes	L		T, T	R	LT	R	L		T, RT	L, LTR
Volume	49		656	271	107	61	179		998	380

Saturation Flow Rate

Approach	N				E		S			W
Lane Group	10521		10522	10524	10519	10520	10527		10528	10525
Base Saturation Flow Rate	1600		1600	1600	1600	1600	1600		1600	1600
Number of Lanes	1		2	1	1	1	1		2	2
Saturation Flow Rate	1520	269	3200	1600	1600	1600	1520	548	3200	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	49	656	271	71	36	61	179	934	64	241	30	109
Volume / Saturation Flow Rate	0.031	0.205	0.169	0.044	0.067	0.038	0.112	0.312	0.312	0.075	0.119	0.119
Overlap adjusted Volume / Saturation Flow Rate	0.031	0.205	0.169	0.044	0.067	0.038	0.112	0.312	0.312	0.075	0.119	0.119
Critical Movement	Y			Y					Y		Y	

Node 522: Hollister & Storke

Control Type	Signalized
Method	ICU Method 1
LOS	F
Critical V/C	1.375
Loss Time	20
Cycle Length	100

Volume and Adjustments by Movement												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	217	612	820	296	660	625	125	931	212	746	399	46
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	54	153	205	74	165	156	31	233	53	187	100	12
Adjusted Volume	217	612	820	296	660	625	125	931	212	746	399	46

Volume and Adjustments by Lane Group												
Approach	N			E			S			W		
Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
ID	10535	10537	10539	10530	10532	10534	10545	10547	10549	10540	10542	10544
Lanes	L, L	T, T	R	L, L	T, T	R	L, L	T, T	R	L, L	T, T	R
Volume	217	612	820	296	660	625	125	931	212	746	399	46

Saturation Flow Rate												
Approach	N			E			S			W		
Lane Group	10535	10537	10539	10530	10532	10534	10545	10547	10549	10540	10542	10544
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Saturation Flow Rate	3200	3200	1600	3200	3200	1600	3200	3200	1600	3200	3200	1600

Capacity Analysis												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	217	612	820	296	660	625	125	931	212	746	399	46
Volume / Saturation Flow Rate	0.068	0.191	0.512	0.092	0.206	0.391	0.039	0.291	0.133	0.233	0.125	0.029
Overlap adjusted Volume / Saturation Flow Rate	0.068	0.191	0.512	0.092	0.206	0.391	0.039	0.291	0.133	0.233	0.125	0.029
Critical Movement			Y			Y	Y			Y		

Node 524: Hollister & Coromar Project Access

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.681
Loss Time	10
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	5	18	262	46	912	11	140	10	256	43	739	37
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	1	5	66	12	228	3	35	3	64	11	185	9
Adjusted Volume	5	18	262	46	912	11	140	10	256	43	739	37

Volume and Adjustments by Lane Group

Approach	N	E		S		W		
Lane Group	C	L	C	C	R	L	C	R
ID	10555	10552	10553	10550	10551	10556	10557	10559
Lanes	LTR	L	T, RT	LT	R	L	T, T	R
Volume	285	46	923	150	256	43	739	37

Saturation Flow Rate

Approach	N	E		S		W		
Lane Group	10555	10552	10553	10550	10551	10556	10557	10559
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	2	1	1	1	2	1
Saturation Flow Rate	1600	1600	3200	1600	1600	1600	3200	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	5	18	262	46	912	11	140	10	256	43	739	37
Volume / Saturation Flow Rate	0.003	0.178	0.178	0.029	0.288	0.288	0.087	0.094	0.160	0.027	0.231	0.023
Overlap adjusted Volume / Saturation Flow Rate	0.003	0.178	0.178	0.029	0.288	0.288	0.087	0.094	0.160	0.027	0.231	0.023
Critical Movement		Y			Y		Y			Y		

Node 525: Hollister & Los Carneros

Control Type	Signalized
Method	ICU Method 1
LOS	D
Critical V/C	0.85
Loss Time	20
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	103	482	153	196	664	72	299	765	198	372	493	201
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	26	121	38	49	166	18	75	191	50	93	123	50
Adjusted Volume	103	482	153	196	664	72	299	765	198	372	493	201

Volume and Adjustments by Lane Group

Approach	N			E		S			W	
Lane Group	L	C	R	L	C	L	C	R	L	C
ID	10563	10564	10566	10560	10561	10571	10573	10575	10567	10569
Lanes	L	T, T	R	L	T, RT	L, L	T, T	R	L, L	T, RT
Volume	103	482	153	196	736	299	765	198	372	694

Saturation Flow Rate

Approach	N			E		S			W	
Lane Group	10563	10564	10566	10560	10561	10571	10573	10575	10567	10569
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	1	1	2	2	2	1	2	2
Saturation Flow Rate	1600	3200	1600	1600	3200	3200	3200	1600	3200	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	103	482	153	196	664	72	299	765	198	372	493	201
Volume / Saturation Flow Rate	0.064	0.151	0.096	0.123	0.230	0.230	0.093	0.239	0.124	0.116	0.217	0.217
Overlap adjusted Volume / Saturation Flow Rate	0.064	0.151	0.096	0.123	0.230	0.230	0.093	0.239	0.124	0.116	0.217	0.217
Critical Movement	Y					Y		Y		Y		

Node 528: Hollister & Los Carneros Way

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.65
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Base Volume	98	103	916	226	162	485
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	25	26	229	57	41	121
Adjusted Volume	98	103	916	226	162	485

Volume and Adjustments by Lane Group

Approach	N	E	W	
Lane Group	C	C	L	C
ID	10578	10576	10581	10582
Lanes	L, LTR, R	T, RT	L	T, T
Volume	201	1142	162	485

Saturation Flow Rate

Approach	N	E	W	
Lane Group	10578	10576	10581	10582
Base Saturation Flow Rate	1600	1600	1600	1600
Number of Lanes	3	2	1	2
Saturation Flow Rate	4800	3200	1600	3200

Capacity Analysis

Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Volume	98	103	916	226	162	485
Volume / Saturation Flow Rate	0.031	0.042	0.357	0.357	0.101	0.152
Overlap adjusted Volume / Saturation Flow Rate	0.031	0.042	0.357	0.357	0.101	0.152
Critical Movement		Y	Y		Y	

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Node 530: Hollister & Aero Camino

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.591
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	90	5	86	5	1062	43	40	5	6	18	691	17
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	23	1	22	1	266	11	10	1	2	5	173	4
Adjusted Volume	90	5	86	5	1062	43	40	5	6	18	691	17

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	10589	10590	10586	10587	10584	10585	10591	10592
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	95	86	5	1105	45	6	18	708

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	10589	10590	10586	10587	10584	10585	10591	10592
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	2	1	1	1	2
Saturation Flow Rate	1600	1600	1600	3200	1600	1600	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	90	5	86	5	1062	43	40	5	6	18	691	17
Volume / Saturation Flow Rate	0.056	0.059	0.054	0.003	0.345	0.345	0.025	0.028	0.004	0.011	0.221	0.221
Overlap adjusted Volume / Saturation Flow Rate	0.056	0.059	0.054	0.003	0.345	0.345	0.025	0.028	0.004	0.011	0.221	0.221
Critical Movement		Y			Y		Y			Y		

Node 553: Storke & Santa Felicia

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	287.87
Worst Case Delay	2638.13
Worst Case LOS	F

Volume and Adjustments						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
Base Volume	801.00	36.00	186.00	1017.00	78.00	177.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	870.65	39.13	202.17	1105.43	84.78	192.39

Pedestrians						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
vx, Flow (Ped/hr)			0.00		0.00	0.00
w, Lane Width (ft)			12.00		12.00	12.00
Sp, Walking Speed (ft/s)			3.50		3.50	3.50
fpb, Percent Blockage			0.00		0.00	0.00

Capacity of Movements below Rank 1						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
Rank	1	1	2	1	3	2
vx, Volume			202.17		84.78	192.39
Conflicting Volume (Veh)			909.78		1847.28	454.89
Conflicting Volume (Ped)			0.00		0.00	0.00
Conflicting Volume			909.78		1847.28	454.89
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity			756.90		67.60	557.88
Capacity			756.90		41.54	557.88

Critical Headway and Follow Up Headway						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
tc,base, Base Critical Headway			4.10		7.50	6.90
tc,base,I, Base Critical Headway (Stage I)						
tc,base,II, Base Critical Headway (Stage II)						
tc,HV, Heavy Vehicles Adjustment Factor			2.00		2.00	2.00
Phv, % Heavy Vehicles			0.00		0.00	0.00
tc,G, Grade Adjustment Factor			1.00		0.20	0.10
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment Factor			0.00		0.70	0.00
tc, Critical Headway			4.10		6.80	6.90
tc,I, Critical Headway (Stage I)						
tc,II, Critical Headway (Stage II)						
tf,base, Base Follow-Up Headway			2.20		3.50	3.30
tf,hv, Heavy Vehicles Adjustment Factor			1.00		1.00	1.00
tf, Follow-Up Headway			2.20		3.50	3.30

Delay and Level of Service by Movement						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
vx, Volume	870.65	39.13	202.17	1105.43	84.78	192.39
cmx, Capacity			756.90		41.54	557.88
V / C			0.27		2.04	0.34
d, Delay			11.49		2638.13	2557.93
LOS			B		F	F
dA, Approach Delay	0.00		1.78		2582.46	
Approach LOS					F	
dRank1, Rank 1 Delay	0.00		0.00			

Delay and Level of Service by Lane						
Approach	N (Major)		S (Major)			W
Lane	Lane 1	Lane 2	Lane 1	Lane 2	Lane 3	Lane 1
Movements		T, R1				L1, R1
vx, Volume	454.89	454.89	202.17	552.72	552.72	277.17
Flared Storage Size						
cmx, Capacity						116.18
V / C						2.39
Q95, 95% Queue Length						85.37
d, Delay						2582.46
LOS						F
dA, Approach Delay	0.00		1.78			2582.46
Approach LOS						F

Node 562: Storke & Phelps	
Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.625
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	75	674	175	5	14	68	98	839	9	150	11	95
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	19	169	44	1	4	17	25	210	2	38	3	24
Adjusted Volume	75	674	175	5	14	68	98	839	9	150	11	95

Volume and Adjustments by Lane Group							
Approach	N		E	S		W	
Lane Group	L	C	C	L	C	L	C
ID	10595	10596	10594	10600	10601	10598	10599
Lanes	L	T, RT	LTR	L	T, RT	L	RT
Volume	75	849	87	98	848	150	106

Saturation Flow Rate							
Approach	N		E	S		W	
Lane Group	10595	10596	10594	10600	10601	10598	10599
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	1	1	2	1	1
Saturation Flow Rate	1600	3200	1600	1600	3200	1600	1600

Capacity Analysis												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	75	674	175	5	14	68	98	839	9	150	11	95
Volume / Saturation Flow Rate	0.047	0.265	0.265	0.003	0.054	0.054	0.061	0.265	0.265	0.094	0.066	0.066
Overlap adjusted Volume / Saturation Flow Rate	0.047	0.265	0.265	0.003	0.054	0.054	0.061	0.265	0.265	0.094	0.066	0.066
Critical Movement		Y			Y		Y			Y		

Node 564: Mesa & Los Carneros

Control Type	Signalized
Method	ICU Method 1
LOS	C
Critical V/C	0.799
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	114	692	39	145	23	269	25	412	52	14	16	19
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	29	173	10	36	6	67	6	103	13	4	4	5
Adjusted Volume	114	692	39	145	23	269	25	412	52	14	16	19

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	L	C	C	R	L	C	C	R
ID	10605	10606	10603	10604	10609	10610	10607	10608
Lanes	L	RT	LT	R	L	RT	LT	R
Volume	114	731	168	269	25	464	30	19

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	10605	10606	10603	10604	10609	10610	10607	10608
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	1	1	1	1	1
Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	114	692	39	145	23	269	25	412	52	14	16	19
Volume / Saturation Flow Rate	0.071	0.457	0.457	0.091	0.105	0.168	0.016	0.290	0.290	0.009	0.019	0.012
Overlap adjusted Volume / Saturation Flow Rate	0.071	0.457	0.457	0.091	0.105	0.168	0.016	0.290	0.290	0.009	0.019	0.012
Critical Movement			Y			Y	Y			Y		

Node 620: Hollister & St Joseph	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	0.31
Worst Case Delay	29.01
Worst Case LOS	D

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	12.00	7.00	562.00	15.00	12.00	1138.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	13.04	7.61	610.87	16.30	13.04	1236.96

Pedestrians						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Flow (Ped/hr)	0.00	0.00			0.00	
w, Lane Width (ft)	12.00	12.00			12.00	
Sp, Walking Speed (ft/s)	3.50	3.50			3.50	
fpb, Percent Blockage	0.00	0.00			0.00	

Capacity of Movements below Rank 1						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Rank	3	2	1	1	2	1
vx, Volume	13.04	7.61			13.04	
Conflicting Volume (Veh)	1263.59	313.59			627.17	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	1263.59	313.59			627.17	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	164.23	688.15			964.37	
Capacity	160.85	688.15			964.37	

Critical Headway and Follow Up Headway						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
tc,base, Base Critical Headway	7.50	6.90			4.10	
tc,base,I, Base Critical Headway (Stage I)						
tc,base,II, Base Critical Headway (Stage II)						
tc,HV, Heavy Vehicles Adjustment Factor	2.00	2.00			2.00	
Phv, % Heavy Vehicles	0.00	0.00			0.00	
tc,G, Grade Adjustment Factor	0.20	0.10			1.00	
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment Factor	0.70	0.00			0.00	
tc, Critical Headway	6.80	6.90			4.10	
tc,I, Critical Headway (Stage I)						
tc,II, Critical Headway (Stage II)						
tf,base, Base Follow-Up Headway	3.50	3.30			2.20	
tf,hv, Heavy Vehicles Adjustment Factor	1.00	1.00			1.00	
tf, Follow-Up Headway	3.50	3.30			2.20	

Delay and Level of Service by Movement						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
vx, Volume	13.04	7.61	610.87	16.30	13.04	1236.96
cmx, Capacity	160.85	688.15			964.37	
V / C	0.08	0.01			0.01	
d, Delay	29.01	11.86			8.78	
LOS	D	B			A	
dA, Approach Delay	22.69		0.00		0.09	
Approach LOS	C					
dRank1, Rank 1 Delay			0.00		0.00	

Delay and Level of Service by Lane						
Approach	N	E (Major)		W (Major)		
Lane	Lane 1	Lane 1	Lane 2	Lane 1	Lane 2	Lane 3
Movements	L1, R1		T, R1			
vx, Volume	20.65	313.59	313.59	13.04	618.48	618.48
Flared Storage Size						
cmx, Capacity	224.12					
V / C	0.09					
Q95, 95% Queue Length	0.30					
d, Delay	22.69					
LOS	C					
dA, Approach Delay	22.69	0.00		0.09		
Approach LOS	C					

Node 624: Cathedral Oaks & Calle Real	
Control Type	AWSC
Method	HCM 6th Edition
Average Delay	13.91
Average LOS	B

Volume and Adjustments												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	5.00	133.00	31.00	234.00	72.00	5.00	189.00	193.00	94.00	14.00	5.00	43.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
Flow Rate	5.43	144.57	33.70	254.35	78.26	5.43	205.43	209.78	102.17	15.22	5.43	46.74
Geometry Group	5			5			5			4b		

Saturation Headway							
Approach	N		E		S		W
Lanes	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1
Total Lane Flow Rate	5.43	178.26	254.35	83.70	205.43	311.96	67.39
Left Turn Flow Rate	5.43	0.00	254.35	0.00	205.43	0.00	15.22
Right Turn Flow Rate	0.00	33.70	0.00	5.43	0.00	102.17	46.74
PLT, Proportion LT	1.00	0.00	1.00	0.00	1.00	0.00	0.23
PRT, Proportion RT	0.00	0.19	0.00	0.06	0.00	0.33	0.69
PHV, Proportion HV	0.00	0.00	0.00	0.00	0.00	0.00	0.00
hLT,adj, Headway adjustment for left turns	0.50		0.50		0.50		0.20
hRT,adj, Headway adjustment for right turns	-0.70		-0.70		-0.70		-0.60
hHV,adj, Headway adjustment for heavy vehicles	1.70		1.70		1.70		1.70
hadj, Headway adjustment	0.50	-0.13	0.50	-0.05	0.50	-0.23	-0.37

Departure Headway							
Approach	N		E		S		W
Lanes	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1
Total Lane Flow Rate	5.43	178.26	254.35	83.70	205.43	311.96	67.39
hd initial	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x initial	0.00	0.16	0.23	0.07	0.18	0.28	0.06
hd, iteration 1	6.01	5.37	6.10	5.56	5.78	5.05	5.46
Difference, iteration 1	2.81	2.17	2.90	2.36	2.58	1.85	2.26
hd, iteration 2	6.84	6.20	6.76	6.21	6.43	5.69	6.34
Difference, iteration 2	0.83	0.83	0.65	0.65	0.65	0.64	0.88
hd, iteration 3	7.06	6.42	6.95	6.41	6.61	5.87	6.60
Difference, iteration 3	0.22	0.22	0.20	0.20	0.18	0.18	0.26
hd, iteration 4	7.13	6.49	7.01	6.46	6.66	5.92	6.67
Difference, iteration 4	0.06	0.06	0.05	0.05	0.05	0.05	0.07
Convergence	Y	Y	Y	Y	Y	Y	Y
hd final, Departure Headway	7.13	6.49	7.01	6.46	6.66	5.92	6.67
x final, Degree of Utilization	0.01	0.32	0.50	0.15	0.38	0.51	0.12

Capacity and Level of Service							
Approach	N		E		S		W
Lanes	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1
Total Lane Flow Rate	5.43	178.26	254.35	83.70	205.43	311.96	67.39
hd, Departure Headway	7.13	6.49	7.01	6.46	6.66	5.92	6.67
x, Degree of Utilization	0.01	0.32	0.50	0.15	0.38	0.51	0.12
m, Move Up Time	2.30	2.30	2.30	2.30	2.30	2.30	2.00
ts, Service Time	4.83	4.19	4.71	4.16	4.36	3.62	4.67
Capacity	504.90	554.28	513.66	556.85	540.67	607.46	539.26
Delay	9.90	12.25	16.52	10.30	13.42	14.81	10.63
LOS	A	B	C	B	B	B	B
Q95, 95% Queue Length	0.03	1.41	2.88	0.53	1.82	3.10	0.43
Approach Delay	12.18		14.98		14.26		10.63
Approach LOS	B		B		B		B
Intersection Delay	13.91						
Intersection LOS	B						

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Node 630: Hollister & Marketplace/Village Way

Control Type	Signalized
Method	ICU Method 1
LOS	C
Critical V/C	0.763
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	5	5	5	385	1257	5	75	5	339	5	843	44
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	1	1	1	96	314	1	19	1	85	1	211	11
Adjusted Volume	5	5	5	385	1257	5	75	5	339	5	843	44

Volume and Adjustments by Lane Group

Approach	N	E			S		W	
Lane Group	C	L	C	R	C	R	L	C
ID	10643	10638	10640	10642	10636	10637	10644	10645
Lanes	LTR	L, L	T, T	R	LT	R	L	T, RT
Volume	15	385	1257	5	80	339	5	887

Saturation Flow Rate

Approach	N	E			S		W	
Lane Group	10643	10638	10640	10642	10636	10637	10644	10645
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	2	1	1	1	1	2
Saturation Flow Rate	1600	3200	3200	1600	1600	1600	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	5	5	5	385	1257	5	75	5	339	5	843	44
Volume / Saturation Flow Rate	0.003	0.009	0.009	0.120	0.393	0.003	0.047	0.050	0.212	0.003	0.277	0.277
Overlap adjusted Volume / Saturation Flow Rate	0.003	0.009	0.009	0.120	0.393	0.003	0.047	0.050	0.212	0.003	0.277	0.277
Critical Movement	Y			Y					Y		Y	

Node 636: Hollister & Cathedral Oaks	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	3.32
Worst Case Delay	30.57
Worst Case LOS	D

Volume and Adjustments						
Approach	N (Major)		E (Major)		W	
Movement	L1	R1	T	R1	L1	T
Base Volume	321.00	79.00	66.00	611.00	80.00	88.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	348.91	85.87	71.74	664.13	86.96	95.65

Pedestrians						
Approach	N (Major)		E (Major)		W	
Movement	L1	R1	T	R1	L1	T
vx, Flow (Ped/hr)			0.00		0.00	0.00
w, Lane Width (ft)			12.00		12.00	12.00
Sp, Walking Speed (ft/s)			3.50		3.50	3.50
fpb, Percent Blockage			0.00		0.00	0.00

Capacity of Movements below Rank 1						
Approach	N (Major)		E (Major)		W	
Movement	L1	R1	T	R1	L1	T
Rank	1	1	2	1	3	2
vx, Volume			71.74		86.96	95.65
Conflicting Volume (Veh)			391.85		1127.72	391.85
Conflicting Volume (Ped)			0.00		0.00	0.00
Conflicting Volume			391.85		1127.72	391.85
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity			1177.68		228.08	547.14
Capacity			1177.68		227.28	547.14

Critical Headway and Follow Up Headway						
Approach	N (Major)		E (Major)		W	
Movement	L1	R1	T	R1	L1	T
tc,base, Base Critical Headway			4.10		7.10	6.50
tc,base,I, Base Critical Headway (Stage I)						
tc,base,II, Base Critical Headway (Stage II)						
tc,HV, Heavy Vehicles Adjustment Factor			1.00		1.00	1.00
Phv, % Heavy Vehicles			0.00		0.00	0.00
tc,G, Grade Adjustment Factor			1.00		0.20	0.20
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment Factor			0.00		0.70	0.00
tc, Critical Headway			4.10		6.40	6.50
tc,I, Critical Headway (Stage I)						
tc,II, Critical Headway (Stage II)						
tf,base, Base Follow-Up Headway			2.20		3.50	4.00
tf,hv, Heavy Vehicles Adjustment Factor			0.90		0.90	0.90
tf, Follow-Up Headway			2.20		3.50	4.00

Delay and Level of Service by Movement						
Approach	N (Major)		E (Major)		W	
Movement	L1	R1	T	R1	L1	T
vx, Volume	348.91	85.87	71.74	664.13	86.96	95.65
cmx, Capacity			1177.68		227.28	547.14
V / C			0.06		0.38	0.17
d, Delay			8.26		30.57	12.97
LOS			A		D	B
dA, Approach Delay	0.00		0.80		21.35	
Approach LOS					C	
dRank1, Rank 1 Delay	0.00		0.00			

Delay and Level of Service by Lane						
Approach	N (Major)		E (Major)		W	
Lane	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
Movements						
vx, Volume	348.91	85.87	71.74	664.13	86.96	95.65
Flared Storage Size						
cmx, Capacity						
V / C						
Q95, 95% Queue Length						
d, Delay						
LOS						
dA, Approach Delay	0.00		0.80		21.35	
Approach LOS					C	

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Node 717: Hollister & Entrance

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.593
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	103	5	31	261	742	24	30	5	145	5	341	59
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	26	1	8	65	186	6	8	1	36	1	85	15
Adjusted Volume	103	5	31	261	742	24	30	5	145	5	341	59

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	10652	10653	10649	10650	10647	10648	10654	10655
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	108	31	261	766	35	145	5	400

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	10652	10653	10649	10650	10647	10648	10654	10655
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	2	1	1	1	2
Saturation Flow Rate	1600	1600	1600	3200	1600	1600	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	103	5	31	261	742	24	30	5	145	5	341	59
Volume / Saturation Flow Rate	0.064	0.068	0.019	0.163	0.239	0.239	0.019	0.022	0.091	0.003	0.125	0.125
Overlap adjusted Volume / Saturation Flow Rate	0.064	0.068	0.019	0.163	0.239	0.239	0.019	0.022	0.091	0.003	0.125	0.125
Critical Movement	Y			Y					Y		Y	

Node 856: Hollister & Cortona

Control Type	TWSC
Method	HCM 6th Edition
dl, Average Delay	914.28
Worst Case Delay	10000
Worst Case LOS	F

Volume and Adjustments

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	27.00	7.00	340.00	5.00	1231.00	10.00	130.00	6.00	5.00	104.00	627.00	21.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	29.35	7.61	369.57	5.43	1338.04	10.87	141.30	6.52	5.43	113.04	681.52	22.83

Pedestrians

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
w, Lane Width (ft)	12.00	12.00	12.00	12.00			12.00	12.00	12.00	12.00		
Sp, Walking Speed (ft/s)	3.50	3.50	3.50	3.50			3.50	3.50	3.50	3.50		
fpb, Percent Blockage	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		

Capacity of Movements below Rank 1

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	2	1	1	4	3	2	2	1	1
vx, Volume	29.35	7.61	369.57	5.43			141.30	6.52	5.43	113.04		
Conflicting Volume (Veh)	1924.46	2284.78	674.46	704.35			1602.72	2278.80	352.17	1348.91		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1924.46	2284.78	674.46	704.35			1602.72	2278.80	352.17	1348.91		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	41.28	40.08	401.54	902.86			72.01	40.44	649.91	516.97		
Capacity	26.73	28.78	401.54	902.86			3.61	29.04	649.91	516.97		

Critical Headway and Follow Up Headway

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Headway	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,base,I, Base Critical Headway (Stage I)												
tc,base,II, Base Critical Headway (Stage II)												
tc,HV, Heavy Vehicles Adjustment Factor	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00		
Phv, % Heavy Vehicles	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Factor	0.20	0.20	0.10	1.00			0.20	0.20	0.10	1.00		
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment Factor	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc, Critical Headway	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,I, Critical Headway (Stage I)												
tc,II, Critical Headway (Stage II)												
tf,base, Base Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		
tf,hv, Heavy Vehicles Adjustment Factor	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00		
tf, Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		

Delay and Level of Service by Movement

Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	29.35	7.61	369.57	5.43	1338.04	10.87	141.30	6.52	5.43	113.04	681.52	22.83
cmx, Capacity	26.73	28.78	401.54	902.86			3.61	29.04	649.91	516.97		
V / C	1.10	0.26	0.92	0.01			39.13	0.22	0.01	0.22		
d, Delay	2483.68	2474.08	2357.97	9.01			10000.00	10000.00	10000.00	13.91		
LOS	F	F	F	A			F	F	F	B		
dA, Approach Delay		2369.22			0.04			10000.00			1.92	
Approach LOS		F						F				
dRank1, Rank 1 Delay					0.04						0.00	

Delay and Level of Service by Lane

Approach	N	E (Major)		S	W (Major)		
Lane	Lane 1	Lane 1	Lane 2	Lane 1	Lane 1	Lane 2	Lane 3
Movements	L1, T, R1	L1, T	T, R1	L1, T, R1			T, R1
vx, Volume	406.52	677.17	677.17	153.26	113.04	352.17	352.17
Flared Storage Size							
cmx, Capacity	178.10	902.86		3.89			
V / C	2.28	0.75		39.36			
Q95, 95% Queue Length	119.32	8.38		77.64			
d, Delay	2369.22	9.01		70917.85			
LOS	F			F			
dA, Approach Delay	2369.22	0.04		10000.00		1.92	
Approach LOS	F			F			

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Node 877: Hollister & Sumida Gardens

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.559
Loss Time	15
Cycle Length	100

Volume and Adjustments by Movement

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	20	5	52	14	535	35	11	5	63	30	1098	8
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	5	1	13	4	134	9	3	1	16	8	275	2
Adjusted Volume	20	5	52	14	535	35	11	5	63	30	1098	8

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	L	C	L	C	L	C	L	C
ID	10660	10661	10657	10658	10665	10666	10662	10663
Lanes	L	RT	L	T, RT	L	RT	L	T, RT
Volume	20	57	14	570	11	68	30	1106

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	10660	10661	10657	10658	10665	10666	10662	10663
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	2	1	1	1	2
Saturation Flow Rate	1600	1600	1600	3200	1600	1600	1600	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	20	5	52	14	535	35	11	5	63	30	1098	8
Volume / Saturation Flow Rate	0.013	0.036	0.036	0.009	0.178	0.178	0.007	0.042	0.042	0.019	0.346	0.346
Overlap adjusted Volume / Saturation Flow Rate	0.013	0.036	0.036	0.009	0.178	0.178	0.007	0.042	0.042	0.019	0.346	0.346
Critical Movement	Y			Y					Y		Y	

Node 1009: Los Carneros & Raytheon Dr.

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.511
Loss Time	0
Cycle Length	100

Volume and Adjustments by Movement

Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Base Volume	153	59	682	34	129	1483
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	38	15	171	9	32	371
Adjusted Volume	153	59	682	34	129	1483

Volume and Adjustments by Lane Group

Approach	N		E		W	
Lane Group	L	R	C	R	L	C
ID	10670	10672	10667	10669	10673	10674
Lanes	L, L	R	T, T	R	L	T, T
Volume	153	59	682	34	129	1483

Saturation Flow Rate

Approach	N		E		W	
Lane Group	10670	10672	10667	10669	10673	10674
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600
Number of Lanes	2	1	2	1	1	2
Saturation Flow Rate	3200	1600	3200	1600	1600	3200

Capacity Analysis

Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Volume	153	59	682	34	129	1483
Volume / Saturation Flow Rate	0.048	0.037	0.213	0.021	0.081	0.463
Overlap adjusted Volume / Saturation Flow Rate	0.048	0.037	0.213	0.021	0.081	0.463
Critical Movement	Y					Y

Node 1042: Hollister & Santa Babara Shores

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	0.44
Worst Case Delay	16.18
Worst Case LOS	C

Volume and Adjustments						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	16.00	667.00	12.00	15.00	334.00	16.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	17.39	725.00	13.04	16.30	363.04	17.39

Pedestrians						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Flow (Ped/hr)	0.00		0.00	0.00		
w, Lane Width (ft)	12.00		12.00	12.00		
Sp, Walking Speed (ft/s)	3.50		3.50	3.50		
fpb, Percent Blockage	0.00		0.00	0.00		

Capacity of Movements below Rank 1						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Rank	2	1	3	2	1	1
vx, Volume	17.39		13.04	16.30		
Conflicting Volume (Veh)	380.43		769.02	190.22		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	380.43		769.02	190.22		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	1189.10		341.71	825.59		
Capacity	1189.10		335.46	825.59		

Critical Headway and Follow Up Headway						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
tc,base, Base Critical Headway	4.10		7.50	6.90		
tc,base,I, Base Critical Headway (Stage I)						
tc,base,II, Base Critical Headway (Stage II)						
tc,HV, Heavy Vehicles Adjustment Factor	2.00		2.00	2.00		
Phv, % Heavy Vehicles	0.00		0.00	0.00		
tc,G, Grade Adjustment Factor	1.00		0.20	0.10		
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment Factor	0.00		0.70	0.00		
tc, Critical Headway	4.10		6.80	6.90		
tc,I, Critical Headway (Stage I)						
tc,II, Critical Headway (Stage II)						
tf,base, Base Follow-Up Headway	2.20		3.50	3.30		
tf,hv, Heavy Vehicles Adjustment Factor	1.00		1.00	1.00		
tf, Follow-Up Headway	2.20		3.50	3.30		

Delay and Level of Service by Movement						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Volume	17.39	725.00	13.04	16.30	363.04	17.39
cmx, Capacity	1189.10		335.46	825.59		
V / C	0.01		0.04	0.02		
d, Delay	8.07		16.18	9.81		
LOS	A		C	A		
dA, Approach Delay	0.19		12.64		0.00	
Approach LOS			B			
dRank1, Rank 1 Delay	0.00				0.00	

Delay and Level of Service by Lane						
Approach	E (Major)			S	W (Major)	
Lane	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2
Movements				L1, R1		T, R1
vx, Volume	17.39	362.50	362.50	29.35	190.22	190.22
Flared Storage Size						
cmx, Capacity				500.55		
V / C				0.06		
Q95, 95% Queue Length				0.19		
d, Delay				12.64		
LOS				B		
dA, Approach Delay	0.19			12.64	0.00	
Approach LOS				B		

Node 1159: Hollister & David Love PL	
Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	66.6
Worst Case Delay	951.8
Worst Case LOS	F

Volume and Adjustments												
Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	141.00	5.00	81.00	5.00	609.00	65.00	5.00	5.00	5.00	60.00	1080.00	37.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	153.26	5.43	88.04	5.43	661.96	70.65	5.43	5.43	5.43	65.22	1173.91	40.22

Pedestrians												
Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Flow (Ped/hr)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
w, Lane Width (ft)	12.00	12.00	12.00	12.00			12.00	12.00	12.00	12.00		
Sp, Walking Speed (ft/s)	3.50	3.50	3.50	3.50			3.50	3.50	3.50	3.50		
fpb, Percent Blockage	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		

Capacity of Movements below Rank 1												
Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	2	1	1	4	3	2	2	1	1
vx, Volume	153.26	5.43	88.04	5.43			5.43	5.43	5.43	65.22		
Conflicting Volume (Veh)	1428.26	2052.72	366.30	1214.13			1669.02	2067.93	607.07	732.61		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1428.26	2052.72	366.30	1214.13			1669.02	2067.93	607.07	732.61		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	97.09	56.17	636.43	581.51			64.25	54.95	444.34	881.29		
Capacity	79.35	49.14	636.43	581.51			45.90	48.08	444.34	881.29		

Critical Headway and Follow Up Headway												
Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Headway	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,base,I, Base Critical Headway (Stage I)												
tc,base,II, Base Critical Headway (Stage II)												
tc,HV, Heavy Vehicles Adjustment Factor	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00		
Phv, % Heavy Vehicles	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Factor	0.20	0.20	0.10	1.00			0.20	0.20	0.10	1.00		
G, % Grade		0.00			0.00			0.00			0.00	
T3,lt, Geometry Adjustment Factor	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc, Critical Headway	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,I, Critical Headway (Stage I)												
tc,II, Critical Headway (Stage II)												
tf,base, Base Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		
tf,hv, Heavy Vehicles Adjustment Factor	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00		
tf, Follow-Up Headway	3.50	4.00	3.30	2.20			3.50	4.00	3.30	2.20		

Delay and Level of Service by Movement												
Approach	N			E (Major)			S			W (Major)		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	153.26	5.43	88.04	5.43	661.96	70.65	5.43	5.43	5.43	65.22	1173.91	40.22
cmx, Capacity	79.35	49.14	636.43	581.51			45.90	48.08	444.34	881.29		
V / C	1.93	0.11	0.14	0.01			0.12	0.11	0.01	0.07		
d, Delay	951.80	107.50	39.90	11.25			100.56	97.00	30.22	9.41		
LOS	F	F	E	B			F	F	D	A		
dA, Approach Delay		607.81			0.08			75.93			0.48	
Approach LOS		F						F				
dRank1, Rank 1 Delay					0.00						0.00	

Delay and Level of Service by Lane									
Approach	N		E (Major)			S	W (Major)		
Lane	Lane 1	Lane 2	Lane 1	Lane 2	Lane 3	Lane 1	Lane 1	Lane 2	Lane 3
Movements		L1, T, R1			T, R1	L1, T, R1			T, R1
vx, Volume	123.37	123.37	5.43	366.30	366.30	16.30	65.22	607.07	607.07
Flared Storage Size									
cmx, Capacity		197.19				66.91			
V / C		0.63				0.24			
Q95, 95% Queue Length		4.47				0.93			
d, Delay		52.50				75.93			
LOS		F				F			
dA, Approach Delay	607.81			0.08		75.93		0.48	
Approach LOS	F					F			

Node 1182: Ward & Ekwill

Control Type	TWSC
Method	HCM 6th Edition
dI, Average Delay	2.11
Worst Case Delay	12.94
Worst Case LOS	B

Volume and Adjustments

Approach	N (Major)		E		S (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	30.00	119.00	5.00	77.00	302.00	5.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	32.61	129.35	5.43	83.70	328.26	5.43

Pedestrians

Approach	N (Major)		E		S (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Flow (Ped/hr)	0.00		0.00	0.00		
w, Lane Width (ft)	12.00		12.00	12.00		
Sp, Walking Speed (ft/s)	3.50		3.50	3.50		
fpb, Percent Blockage	0.00		0.00	0.00		

Capacity of Movements below Rank 1

Approach	N (Major)		E		S (Major)	
Movement	L1	T	L1	R1	T	R1
Rank	2	1	3	2	1	1
vx, Volume	32.61		5.43	83.70		
Conflicting Volume (Veh)	333.70		525.54	330.98		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	333.70		525.54	330.98		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	1236.97		516.07	715.24		
Capacity	1236.97		501.41	715.24		

Critical Headway and Follow Up Headway

Approach	N (Major)		E		S (Major)	
Movement	L1	T	L1	R1	T	R1
tc,base, Base Critical Headway	4.10		7.10	6.20		
tc,base,I, Base Critical Headway (Stage I)						
tc,base,II, Base Critical Headway (Stage II)						
tc,HV, Heavy Vehicles Adjustment Factor	1.00		1.00	1.00		
Phv, % Heavy Vehicles	0.00		0.00	0.00		
tc,G, Grade Adjustment Factor	1.00		0.20	0.10		
G, % Grade	0.00		0.00		0.00	
T3,lt, Geometry Adjustment Factor	0.00		0.70	0.00		
tc, Critical Headway	4.10		6.40	6.20		
tc,I, Critical Headway (Stage I)						
tc,II, Critical Headway (Stage II)						
tf,base, Base Follow-Up Headway	2.20		3.50	3.30		
tf,hv, Heavy Vehicles Adjustment Factor	0.90		0.90	0.90		
tf, Follow-Up Headway	2.20		3.50	3.30		

Delay and Level of Service by Movement

Approach	N (Major)		E		S (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Volume	32.61	129.35	5.43	83.70	328.26	5.43
cmx, Capacity	1236.97		501.41	715.24		
V / C	0.03		0.01	0.12		
d, Delay	7.99		12.94	10.79		
LOS	A		B	B		
dA, Approach Delay	1.61		10.92		0.00	
Approach LOS			B			
dRank1, Rank 1 Delay	0.23				0.00	

Delay and Level of Service by Lane

Approach	N (Major)	E	S (Major)
Lane	Lane 1	Lane 1	Lane 1
Movements	L1, T	L1, R1	T, R1
vx, Volume	161.96	89.13	333.70
Flared Storage Size			
cmx, Capacity	1236.97	697.11	
V / C	0.13	0.13	
Q95, 95% Queue Length	0.45	0.44	
d, Delay	7.99	10.92	
LOS		B	
dA, Approach Delay	1.61	10.92	0.00
Approach LOS		B	

EXHIBIT B

Fire Impact Fee Nexus Study dated September 2014, prepared by the Santa Barbara Fire Protection District

Santa Barbara County Fire Department

Fire Impact Fee Nexus Study

September 2014
Final Report

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ACKNOWLEDGEMENTS

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We would like to acknowledge special efforts made by the following individuals and organizations to this project:

Diane Sauer, Santa Barbara County Fire Department
Deputy Chief Eric Peterson, Santa Barbara County Fire Department
Scot Alderete, Santa Barbara County Fire Department
Santa Barbara County Assessor's Office
Santa Barbara County Association of Governments

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EXECUTIVE SUMMARY

INTRODUCTION

The Santa Barbara County Fire Department ("Department") provides first-responder fire protection services countywide except to the Cities of Guadalupe, Lompoc, Santa Barbara and Santa Maria; the Carpinteria-Summerland Fire Protection District; the Montecito Fire Protection District and Vandenberg Air Force Base. Specifically, the Department's services include fire prevention and suppression; emergency medical response and transport; rescue and hazardous materials response.

Currently, the County of Santa Barbara ("County") imposes "fire protection mitigation fees" on all new development within the Department's service area in the amount of $0.20 per square foot for non-sprinklered structures and $0.10 per square foot for sprinklered structures. (Section 15-48 et seq.). Established in 1996, these fire impact fees are outdated and insufficient to mitigate the impact of new development. These fees have never been adjusted for inflation and only include fire apparatus and equipment costs. Additionally, the County, on behalf of the Department, also imposes fire facility impact fees on new development within the Orcutt Community Plan (Section 15-72 et seq.) and the Goleta Community Plan (Section 15-79.20 et seq.).

This Fire Impact Fee Nexus Study ("Nexus Study") was prepared pursuant to the Mitigation Fee Act ("Act") as found in Government Code § 66000 et seq. The purpose of this Nexus Study is to establish the legal and policy basis for the collection of new fire impact fees ("fees") on new residential and nonresidential development within the Department's service area. As growth occurs, fire impact fee revenue will be used to expand the Department's fire protection facilities, apparatus and equipment so the Department can maintain its existing level of service. The Act does not allow for fee revenue to be used for Department staffing, maintenance or other operational costs. The proposed fire impact fee program would replace the three aforementioned current fire impact fee programs.

In order to impose such fees, this Nexus Study will demonstrate that a reasonable relationship or "nexus" exists between new development that occurs within the Department's service area and the need for fire protection facilities, apparatus and equipment as a result of new development. More specifically, this Nexus Study will present findings in order to meet the procedural requirements of the Mitigation Fee Act, also known as AB 1600, which are as follows:

1. Identify the purpose of the fee.

2. Identify the use to which the fee is to be put.
3. Determine how there is a reasonable relationship between the fee's use and the type of development project on which the fee is imposed ("benefit relationship").
4. Determine how there is a reasonable relationship between the need for the fire facilities and the type of development project on which the fee is imposed ("impact relationship").
5. Determine how there is a reasonable relationship between the amount of the fee and the cost of the facilities or portion of the facilities attributable to the development on which the fee is imposed ("proportional relationship").

To determine the Department's fire impact fees consistent with these procedural requirements, this Nexus Study utilizes an existing facility standard methodology. Under this method, the Department's ratio of existing fire protection facilities, apparatus and equipment to existing development establishes the standard for determining new development's fair share of the cost to expand the Department's fire system as growth occurs. Existing development is determined based on the assumption that 50 percent of the need and demand for fire service (and associated facilities, apparatus and equipment) is related to the persons (residents or employees) and the other 50 percent of the need is related to the structural area (i.e. living area or nonresidential building area) in which they live or work. The value of the Department's existing fire system is determined using the replacement cost of the Department's existing inventory of fire protection facilities, apparatus and equipment. These costs are then applied to seven land use categories in proportion to the need they create for fire protection and emergency response services.

SUMMARY OF GENERAL FINDINGS

1. The County of Santa Barbara ("County"), on behalf of the Department, currently imposes Department-wide "fire protection mitigation fees" in the amount of $0.20 per square foot for non-sprinklered structures and $0.10 per square foot for sprinklered structures. Established in 1996, these fees are outdated and insufficient to mitigate the impact of new development. These fees have never been adjusted and only include fire apparatus and equipment costs. Additionally, the County, on behalf of the Department, also imposes "development impact mitigation fees" for fire protection facilities for two planning areas within the Department's services area.

FIGURE 1 – SUMMARY OF CURRENT TOTAL FIRE IMPACT FEES

	Department Sevice Area				
Land Use Category	**Unincorp. Area**	**City of Buellton**	**City of Solvang**	**Goleta Planning Area [1,2]**	**Orcutt Planning Area [2]**
Residential Development	Per Sq. Ft.				
Single Family Residential	$0.10	$0.10	$0.10	$0.56	$0.56
Other Residential	$0.10	$0.10	$0.10	$0.75	$0.69
Nonresidential Development	Per Sq. Ft.				
Retail Commercial	$0.10	$0.10	$0.10	$0.70	$0.68
Industrial	$0.10	$0.10	$0.10	$0.94	$0.92

Notes:

[1] The Goleta Planning Area includes the City of Goleta and the surrounding unincorporated area.

[2] For comparison purposes, the fees shown include the Department-wide service area fee for apparatus and equipment only of $0.10 per square foot of sprinklered area and reflect average living areas of 1,841 square feet for a single family home and 978 square feet for an other residential unit.

2. Department-wide fire impact fees for facilities, apparatus and equipment are needed to ensure that the Department can adequately expand its fire protection facilities, apparatus and equipment needed for the resident and employee growth and structural area created by new development.

3. A reasonable relationship or "nexus" exists between new development in the Department's service area and the need for additional fire protection facilities, apparatus and equipment as a result of new development.

4. The proposed department-wide fire impact fee is consistent with the policies of the Santa Barbara County General Plan.

SUMMARY OF GENERAL RECOMMENDATIONS

Based on the findings presented in the Nexus Study, the following general recommendations are presented:

1. The Department should establish new Department-wide fire impact fees to fairly allocate the costs of providing fire protection facilities, apparatus and equipment to new development. The following fire impact fees for the Department are proposed:

FIGURE 2 – SUMMARY OF PROPOSED DEPARTMENT-WIDE FIRE IMPACT FEES

Land Use Category	Proposed Department-wide Fire Impact Fees
Residential Development	**Per Living Area Square Feet**
Single Family Housing	$0.59
Other Residential Housing	$0.75
Nonresidential Development	**Per Building Square Feet**
Retail / Commercial	$0.77
Office	$0.94
Industrial	$0.71
Warehouse / Distribution	$0.52
Agricultural	$0.35

2. Since only Cities and Counties have authority to impose fees as a condition of project approval, the Department's proposed fire impact fees must be adopted by the Santa Barbara County Board of Supervisors and the respective City Councils of Buellton, Goleta and Solvang on behalf of the Department.

3. The Department's new fire impact fees should be adopted and implemented in accordance with the applicable provisions of the Mitigation Fee Act (Government Code § 66000 et al.).

4. The Department's new fire impact fee program should be administered in accordance with Government Code § 66006 and other applicable provisions of the Mitigation Fee Act.

5. The cost estimates presented in this Nexus Study are in 2014 dollars. The ordinance and/or resolution establishing the new Department-wide fire impact fees should include a provision for annual inflationary adjustments based on a Department review of an appropriate construction cost index.
6. The Department should periodically conduct a review of facility, apparatus and equipment costs and building trends within the Department. If costs change significantly in either direction, this Nexus Study should be updated and the fire impact fees adjusted accordingly.

DETERMINATION OF EXISTING DEVELOPMENT

The Department serves both residences and businesses throughout their service area. As such, the demand for the Department's fire protection services and associated fire protection facilities, apparatus and equipment is measured by its service population and the structures it protects. This section will first determine the service population and structural area within the Department's service area. This data will be used to establish a fire facilities demand factor for the various residential and nonresidential land uses within the Department's service area, which in turn will be used to determine existing development's total fire facilities demand.

SERVICE POPULATION

The Department provides first-responder fire protection services countywide except to the Cities of Guadalupe, Lompoc, Santa Barbara and Santa Maria and the Carpinteria-Summerland Fire Protection District, the Montecito Fire Protection District and Vandenberg Air Force Base.[1] The Department currently serves an estimated total population of 158,854 which includes 148,208 residents in households and 10,646 in group quarters. For the purpose of this Nexus Study, the population in group quarters is accounted for in the nonresidential population. The resident population estimate is based on figures from the 2010 Census for the Department's service area and adjusted by annual growth rates provided by the California Department of Finance.

For nonresidential development, it is estimated that there are approximately 58,200 employees. Current employment is based on May 2014 employment figures provided by the California Employment Development Department ("EDD") for the cities and census-designated places closely approximating the service area of the Department.[2]

STRUCTURAL AREA

The Department provides fire protection to approximately 57,098 occupied and vacant housing units and approximately 24.7 million square feet of nonresidential building area. Estimated total housing units are based on figures from the 2010 U.S. Census for the Department service area and adjusted by annual growth rates provided by the California Department of Finance. Nonresidential building area is based upon an average employment density assumption of 2.36 employees for every 1,000 square feet.

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[1] Maps of the Department's service areas are provided in Appendix A.
[2] Current employment by city or census-designated place is provided in Appendix B.

FIRE FACILITIES DEMAND FACTOR

To determine the relative demand for fire facilities for various land uses, this Nexus Study relies on equivalent dwelling unit ("EDU") factors to compare fire facilities demand across various residential and nonresidential land uses. For purposes of this Nexus Study, it is assumed that 50 percent of the demand for fire protection and emergency response services is related to the persons (residents or employees) and the other 50 percent of the need is to protect the structural area (living area or nonresidential building area) in which the persons live or work. The equivalent dwelling unit ("EDU") is also used to convert the nonresidential building area to a residential dwelling unit value. This approach allows for the cost of fire protection facilities, apparatus and equipment to be fairly apportioned among residential and nonresidential land uses.

Figure 3 on the following page shows the calculation of the fire facilities demand factor for seven land use categories. The land use categories are expressed per square feet of living area or building area. By this measure, for example, one single-family home creates the demand for Department's fire facilities, apparatus and equipment equal to 710 square feet of retail commercial building area.

FIGURE 3 – FIRE FACILITIES DEMAND FACTOR

Land Use Category	Residents per Unit / Employees per 1,000 Sq. Ft. [1]	Persons per Unit EDU	Persons Demand Factor [2]	Structural Area per Unit (sq. ft.) [3]	Structural Area per Unit EDU	Structural Area Demand Factor	Fire Facilities Demand Factor
Calc	a	b = a / 2.91	c = b * 50%	d	e = d / 1,841	f = e * 50%	g = c + f
Single Family Residential	2.91	1.00	0.50	1,841	1.00	0.50	**1.00**
Other Residential	2.42	0.83	0.42	977	0.53	0.27	**0.68**
Residential	**2.77**	**0.95**	**0.48**	**1,595**	**0.87**	**0.43**	**0.91**
Retail / Commercial	2.56	0.88	0.44	1,000	0.54	0.27	**0.71**
Office	3.47	1.19	0.60	1,000	0.54	0.27	**0.87**
Industrial	2.28	0.78	0.39	1,000	0.54	0.27	**0.66**
Warehouse / Distribution	1.23	0.42	0.21	1,000	0.54	0.27	**0.48**
Agricultural	0.33	0.11	0.06	1,000	0.54	0.27	**0.33**
Nonresidential	**2.36**	**0.81**	**0.41**	**1,000**	**0.54**	**0.27**	**0.68**

Source: Santa Barbara County Assessor's Office; Southern California Association of Governments and U.S. Census Bureau

Notes:

[1] Residents per unit is based on census data from the 2010 U.S. Census. All nonresidential density figures (except Agriculture) are from 2001 "Employment Density Study" prepared by The Natelson Company, Inc. for the Southern California Association of Governments expressed in terms of the number of employees per 1,000 square feet of building area. The density figure for Agriculture is from the 2004 "Employment Density in the Puget Sound Region" report prepared by E.K. Pflum for the University of Washington.

[2] The persons weighting factor represents the use of fire protection facilities by the people occupying a structure.

[3] Average housing unit size per square foot are based on July 2014 assessor's roll from the Santa Barbara County Assessor's Office. Nonresidential density is based on a "per 1,000 square feet of building area" basis.

EXISTING FIRE FACILITIES DEMAND EDUS

Figure 4 below calculates the Department's existing demand EDUs based on the total number of housing units and estimated nonresidential building area within the Department. As shown, total demand EDUs for the Department is 68,579. Existing demand EDUs represents the level of existing development served by the Department's existing facilities.

FIGURE 4 – EXISTING DEMAND EDUS

Land Use Categories	Housing Units and 1,000 Sq. Ft. of Building Area [1]	Fire Facilities Demand Factor [2]	Existing Demand EDUs
Calc	a	b	c = a * b
Single Family Residential	40,570	1.00	40,570
Other Residential	16,528	0.68	11,239
Nonresidential [1]	24,661	0.68	16,769
Total	**81,759**		**68,579**

Source: U.S. Census Bureau: California Employment Development Department; and SCI Consulting Group

Notes:

[1] Total housing units are from Figure 11. Nonresidential development assumes 2.36 employees per 1,000 square feet and 58,200 employees or 24,661 nonresidential development units.

[2] See Figure 3.

DETERMINATION OF EXISTING FIRE PROTECTION FACILITIES

The next step in determining the Department's existing fire facilities standard is to calculate the replacement cost of the Department's fire protection facilities, apparatus and equipment. Figure 5 below presents a summary of replacement cost (in 2014 dollars) for the Department's existing fire facilities (land and fire stations), apparatus (engines and special vehicles) and equipment. The detailed inventory and estimated replacement cost for each is provided in Appendix D.

The estimated value of the Department's inventory is based on unit cost assumptions provided by the Department. Estimated land value was based on market research conducted by SCI Consulting Group on comparable properties on the market at the time of the Nexus Study. Fire station replacement costs are based on construction cost estimates from the Engineering News and Record Square Foot Costbook, 2013 Edition for fire station construction in the greater Los Angeles area.

As shown below, the estimated value of the Department's existing fire protection facilities is approximately $74.5 million.

FIGURE 5 – ESTIMATED VALUE OF EXISTING FIRE SYSTEM FACILITIES

Fee Components	Total Replacement Costs [1]
Land	$10,649,210
Buildings	$38,561,030
Apparatus / Equipment	$25,289,701
Total Fire System Facilities	**$74,499,941**

Source: Santa Barbara County Fire Department

Notes:

[1] See Appendix D for more detail.

DETERMINATION OF THE FIRE IMPACT FEE

The Mitigation Fee Act requires that development impact fees be determined in a way that ensures a reasonable relationship between the need for fire protection facilities, apparatus and equipment and the type of development project on which the fee is imposed. In this section, the Department's existing fire facilities standard is determined and then applied to seven land uses categories in proportion to the demand they create as measured by their fire facilities demand factor.

FIRE FACILITIES STANDARD

The Department's ratio of existing fire facilities to existing development establishes the standard for determining new development's fair share of the cost to expand the Department's fire facilities as growth occurs. As shown in figure 6 below, this standard is represented by the existing fire system facility value of $1,086.35 per demand EDU.

FIGURE 6 – FIRE FACILITIES STANDARD

Existing Fire System Facilities [1]	$74,499,941
Existing Demand EDUs [2]	68,579
Fire Facilities Standard	**$1,086.35**

Notes:

[1] See Figure 5.

[2] See Figure 4.

RESIDENTIAL FIRE IMPACT FEES

Since residential land uses have varying dwelling unit occupancies and living area, the residential fire impact fees are expressed on a "per square footage" basis for the following two residential land use categories:

- "Single Family Residential" means detached and attached one-family dwelling units; and
- "Other Residential" includes multi-family residential, mobile homes and other housing that is not Single Family Residential.

Figure 7 below presents the calculation of the proposed residential fire impact fees. As shown, the cost per unit is determined by multiplying the fire facility standard by their respective fire facilities demand factor. The cost per unit is then divided by the average structural area (living area) per unit to determine the fee per square foot. As shown, the proposed fees for single-family residential construction and other residential construction are $0.59 and $0.75 per square foot respectively. Although the cost per other residential unit is lower than a single family home, the other residential fee is higher than the single family residential fee due to their smaller unit sizes.

FIGURE 7 – PROPOSED RESIDENTIAL FIRE IMPACT FEES

Land Use Category	Fire Facilities Standard [1]	Fire Facilities Demand Factor [2]	Cost per Unit	Structural Area per Unit (sq. ft.) [2]	Proposed Res. Fees (per sq. ft.) [3]
Calc	a	b	c = a * b	d	e = c / d
Single Family Residential	$1,086.35	1.00	$1,086.35	1,841	$0.59
Other Residential	$1,086.35	0.68	$738.71	977	$0.75

Notes:

[1] See Figure 6.

[2] See Figure 3.

[3] Proposed residential fire impact fees are rounded down to the cent.

NONRESIDENTIAL FIRE IMPACT FEES

As stated earlier, the Mitigation Fee Act requires that development impact fees be determined in a way that ensures a reasonable relationship between the fee and the type of development on which the fee is imposed. Since different nonresidential land uses have varying employment densities, the nonresidential fire impact fee is expressed per square foot of building area for five nonresidential land use categories based on their respective fire facilities demand factor.

The five nonresidential land use categories are defined below.

- "Retail / Commercial" means non-manufacturing business establishments, including, but not limited to, hotels, restaurants, wholesale businesses, retail stores, and health, social and educational institutions.
- "Office" means establishments providing direct services to customers, professional and medical office buildings. Including but not limited to business / service, executive headquarters, processing such as information processing and computer-dependent and / or tele-communications-based activities, professional and administrative services.
- "Industrial" means manufacturing buildings, including but not limited to, food processing, manufacturing, high tech, metal processing, pulp and paper firms, voltage optimization, water and wastewater systems, transport processing or other activity involving farm products off-farm. In particular, it includes fixed pieces of equipment, buildings or complexes used to produce goods in connection with, or as part of, any process or system.
- "Warehouse / Distribution" means buildings devoted to the storage and / or distribution of non-agricultural products. A distribution center for a set of products is a warehouse or other specialized building, which is stocked with products (goods) to be redistributed to retailers, to wholesalers, or directly to consumers.
- "Agricultural" means a structure designed and constructed to house farm implements, hay, grain, poultry, livestock or other horticultural products, including other agricultural structures located on agriculturally zoned land other than residential, retail or office space. This structure shall not be a place of human habitation.

Figure 8 below presents the calculation of the nonresidential fire impact fees. As shown, the fees for the five nonresidential land uses are determined by multiplying the fire facility standard by their respective fire facilities demand factor.

FIGURE 8 – PROPOSED NONRESIDENTIAL FIRE IMPACT FEES

Land Use Category	Fire Facilities Standard [1]	Fire Facilities Demand Factor [2]	Cost per Demand EDU	Proposed Nonresidential Fees [3]
Calc	a	b	c = a * b	d = c / 1,000
	----- Per 1,000 Sq. Ft. -----			- Per Sq. Ft. -
Retail / Commercial	$1,086.35	0.71	$771.31	$0.77
Office	$1,086.35	0.87	$945.12	$0.94
Industrial	$1,086.35	0.66	$716.99	$0.71
Warehouse / Distribution	$1,086.35	0.48	$521.45	$0.52
Agricultural	$1,086.35	0.33	$358.49	$0.35

Notes:

[1] See Figure 6.

[2] See Figure 3.

[3] Proposed nonresidential fire impact fees are rounded down to the cent.

PROJECTED FIRE IMPACT FEE REVENUE

Figure 9 projects fire impact fee revenue through 2040 based on household and employment projections for the Department provided by the Santa Barbara County Association of Governments ("SBCAG"). Demand EDU growth was first determined by applying an annual growth rate of 0.6% for residential and 0.82% for nonresidential to the existing EDUs for the twenty-six year period from 2014 to 2040. Total fire impact fee revenue (in 2014 dollars) is then calculated by multiplying the fire facilities demand standard by demand EDU growth for the period.

According to the County's current Five-Year Capital Improvement Program ("CIP"), over $80 million in capital projects have been identified for the Department. Assuming the same growth rates for the five-year period of the CIP, the fire impact fee will fund approximately $2.47 million of the five-year CIP. The Department will need to fund existing development share of the CIP, and any future improvements not currently identified, with other funding sources.

FIGURE 9 – PROJECTED FIRE IMPACT FEE REVENUE

Land Use Category	Current Demand EDUs (2014) [1]	Demand EDU Growth (2040) [2]	Fire Facilty Demand Standard [3]	Projected Fire Impact Fee Revenue (2014$)
Calc	a	b	c	d = b * c
Residential	51,809	8,719	$1,086.35	$9,471,303
Nonresidential	16,769	3,967	$1,086.35	$4,309,457
Total	**68,579**	**12,685**	**$1,086.35**	**$13,780,761**

Source: Santa Barbara County Association of Governments; SCI Consulting Group

Notes:

[1] See Figure 4.

[2] Based on projected annual growth rates of 0.6% for residential and 0.82% for nonresidentail from 2014 to 2040 for the District's service area provided by the Santa Barbara County Association of Governments.

[3] See Figure 6.

NEXUS FINDINGS

This section frames the Nexus Study findings in terms of the legislated requirements to demonstrate the legal justification of the fire impact fees. The justification of the fire impact fees on new development must provide information as set forth in Government Code § 66000. These requirements are discussed below.

PURPOSE OF FEE

This Nexus Study must identify the purpose of the fee.

The purpose of the fire impact fee is to fund the cost of fire protection and emergency response facilities, apparatus, and equipment attributable to new residential and nonresidential development in the Department. The fire impact fees will ensure that new development will not burden existing development with the cost of facilities required to accommodate growth as it occurs within the Department.

USE OF FEE REVENUE

This Nexus Study must identify the use to which the fee is to be put.

Fee revenue will be used to fund the cost of expanded fire facilities, apparatus and equipment to serve new development. Fee revenue may not be used to fund operational, maintenance or repair costs.

BENEFIT RELATIONSHIP

This Nexus Study must determine how there is a reasonable relationship between the fee's use and the type of development project on which the fee is imposed.

The fee will be collected as development occurs. To maintain its existing level of fire protection and emergency response services, fee revenue will be used to expand the Department's facilities, apparatus and equipment to meet the additional demand generated by the new residents and employees and new structural area created by new development projects.

IMPACT RELATIONSHIP

This Nexus Study must determine how there is a reasonable relationship between the need for fire protection facilities, apparatus and equipment and the type of development project on which the fee is imposed.

New development projects will create additional need for the Department's fire protection and emergency response services and a corresponding need for expanded facilities, apparatus and equipment. The fee will be imposed on different types of development projects in proportion to the additional service population generated and structural area created by new development projects.

PROPORTIONALITY

This Nexus Study must determine how there is a reasonable relationship between the amount of the fee and the cost of the fire protection facilities, apparatus and equipment attributable to the development on which the fee is imposed.

The cost of fire protection facilities, apparatus and equipment attributable to a development project is based upon the level of existing development served by the Department's existing fire protection facilities, apparatus and equipment. The use of an existing facilities standard methodology to determine the fire impact fee achieves proportionality between existing development and new development. Moreover, these equivalent costs are applied to seven land use categories in proportion to the need they create for expanded facilities. The use of a fire facilities demand factor to determine the fire impact fee schedule achieves proportionality across the types of development on which the fee is imposed.

FEE PROGRAM IMPLEMENTATION AND ADMINISTRATION

This section contains general recommendations for the adoption and administration of the fire impact fee program based on the findings of this Nexus Study and for the interpretation and application of the fire impact fees recommended herein. The specific statutory requirements for the adoption and implementation may be found in the Mitigation Fee Act (California Govt. Code § 66000 et seq.).

ADOPTION REQUIREMENTS

The following are the general requirements for approval and adoption of the Fire Impact Fee Nexus Study and proposed fire impact fees.

1. The local agency shall conduct at least "one open and public meeting" as part of a regularly scheduled meeting on the proposed fees.
2. At least 14 days before the meeting, the local agency shall mail out a notice of the meeting to any interested party who filed a written request for notice of the adoption of new or increased fees.
3. At least 10 days before the meeting, the local agency is to make available to the public the Nexus Study for review.
4. At least 10 days before the public hearing, a notice of the time and place of the meeting, shall be published twice in a newspaper of general circulation.
5. The fire impact fees take effect 60 days after adoption of the resolution or ordinance.

ACCOUNTING REQUIREMENTS

Proceeds from the fire impact fee should be deposited into a separate fund or account so that there will be no commingling of fees with other revenue. The fire impact fees should be expended solely for the purpose for which they were collected. Any interest earned by such account should be deposited in that account and expended solely for the purpose for which originally collected.

ANNUAL REPORTING REQUIREMENTS

The following information must be made available to the public within 180 days after the last day of each fiscal year:

- a brief description of the type of fee in the account;
- the amount of the fee;

- the beginning and ending balance of the account;
- the fees collected that year and the interest earned;
- an identification of each public improvement for which the fees were expended and the amount of the expenditures for each improvement;
- an identification of an approximate date by which construction of the improvement will commence if the local agency determines that sufficient funds have been collected to complete financing of an incomplete public improvement;
- a description of each inter-fund transfer or loan made from the account or fund, including the public improvement on which the transferred or loaned fees will be expended, the date on which any loan will be repaid, and the rate of interest to be returned to the account; and
- the amount of money refunded under section Govt. Code § 66001.

FIVE-YEAR REPORTING REQUIREMENTS

For the fifth fiscal year following the first receipt of any fire impact fee proceeds, and every five years thereafter, the Department shall make all of the following findings with respect to that portion of the account or fund remaining unexpended, whether committed or uncommitted:

- Identify the purpose to which the fee is to be put;
- Demonstrate a reasonable relationship between the fee and the purpose for which it is charged;
- Identify all sources and amounts of funding anticipated to complete financing in incomplete improvements; and
- Designate the approximate dates on which the funding is expected to be deposited into the appropriate account or fund.

ANNUAL INFLATIONARY ADJUSTMENT

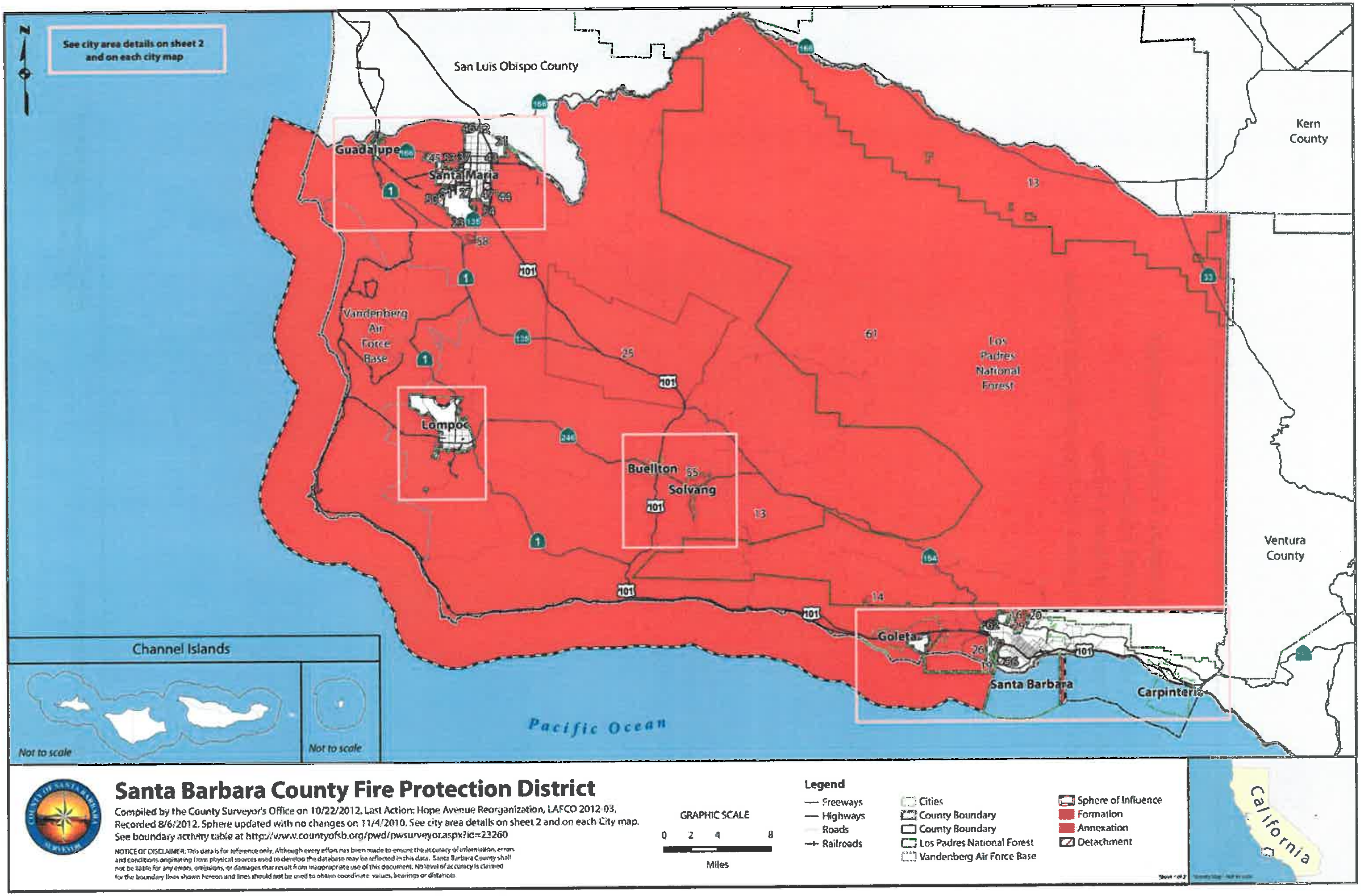
In order for the Department to maintain its existing level of service, the fee will need to be adjusted annually commensurate with changes in the cost of facilities, apparatus and equipment. Therefore, the fire impact fee will be adjusted on July 1 of each fiscal year by the percentage change in an appropriate engineering cost index as published by the Engineering News Record, or its successor publication for the preceding twelve months.

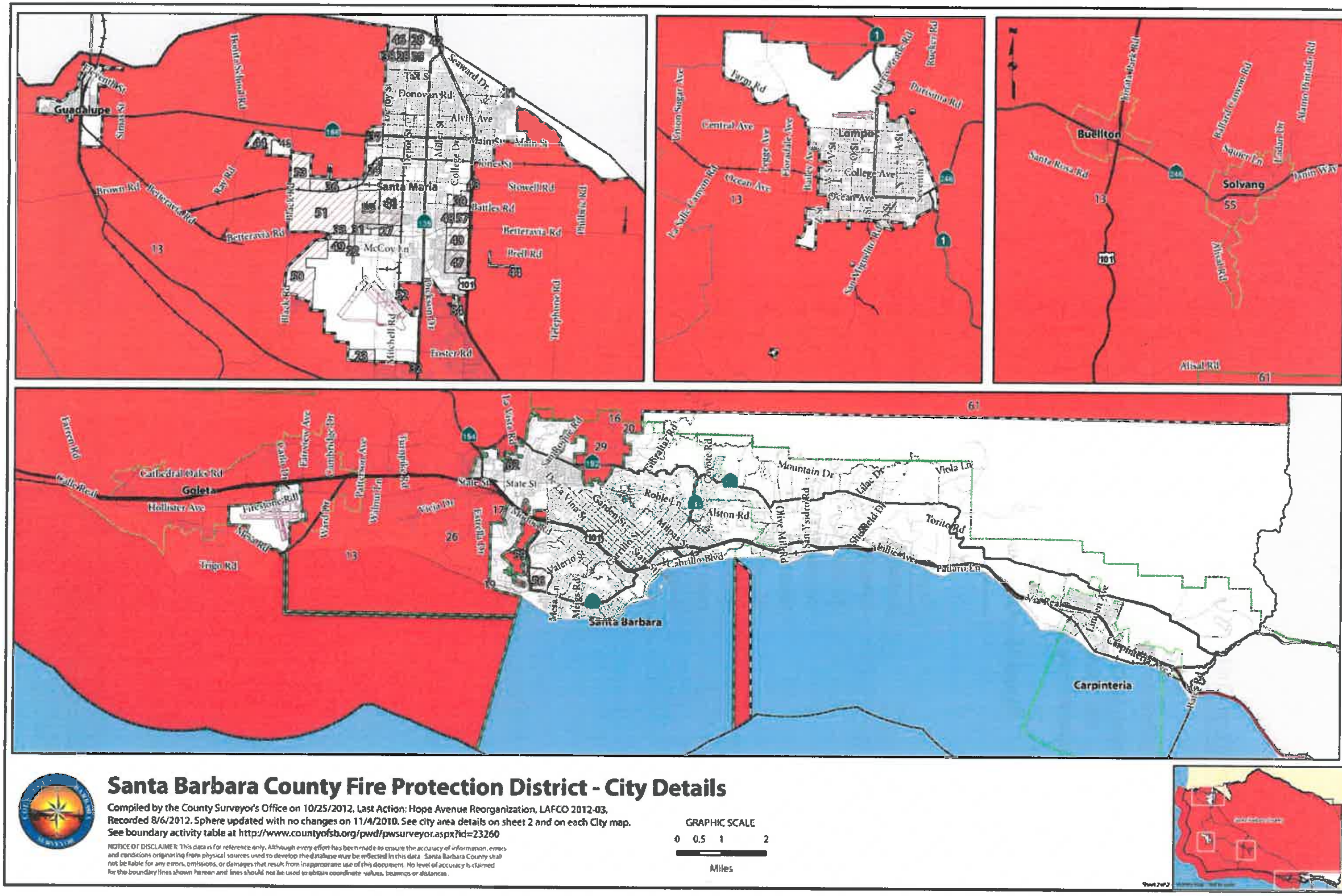
FIRE IMPACT FEE CREDIT

Subject to certain restrictions, if a developer dedicates land, constructs facilities and / or provide apparatus/equipment for the Department, the fire impact fees imposed on that development project may be adjusted to reflect a credit for the cost of the dedicated land, facilities constructed and / or apparatus/equipment provided.

APPENDICES

Appendix A – Maps of Santa Barbara County Fire Department
Appendix B – Estimate of Current Employment
Appendix C – Dwelling Unit Occupancy Factors
Appendix D – Fire System Inventory and Replacement Cost Estimates


See city area details on sheet 2 and on each city map
N
San Luis Obispo County
Kern County
Ventura County
Guadalupe
Santa Maria
Vandenberg Air Force Base
Lompoc
Buellton
Solvang
Los Padres National Forest
Goleta
Santa Barbara
Carpinteria
Pacific Ocean
Channel Islands
Not to scale
Not to scale
California
Santa Barbara County Fire Protection District
Compiled by the County Surveyor's Office on 10/22/2012. Last Action: Hope Avenue Reorganization, LAFCO 2012-03, Recorded 8/6/2012. Sphere updated with no changes on 11/4/2010. See city area details on sheet 2 and on each City map.
See boundary activity table at http://www.countyofsb.org/pwd/pwsurveyor.aspx?id=23260
NOTICE OF DISCLAIMER: This data is for reference only. Although every effort has been made to ensure the accuracy of information, errors and conditions originating from physical sources used to develop the database may be reflected in this data. Santa Barbara County shall not be liable for any errors, omissions, or damages that result from inappropriate use of this document. No level of accuracy is claimed for the boundary lines shown hereon and lines should not be used to obtain coordinate values, bearings or distances.
GRAPHIC SCALE
0 2 4 8
Miles
Legend
Freeways
Highways
Roads
Railroads
Cities
County Boundary
County Boundary
Los Padres National Forest
Vandenberg Air Force Base
Sphere of Influence
Formation
Annexation
Detachment


Santa Barbara County Fire Protection District - City Details
Compiled by the County Surveyor's Office on 10/25/2012. Last Action: Hope Avenue Reorganization, LAFCO 2012-03, Recorded 8/6/2012. Sphere updated with no changes on 11/4/2010. See city area details on sheet 2 and on each City map.
See boundary activity table at http://www.countyofsb.org/pwd/pwsurveyor.aspx?id=23260
GRAPHIC SCALE
0 0.5 1 2
Miles
Guadalupe
Santa Maria
Lompoc
Buellton
Solvang
Goleta
Santa Barbara
Carpinteria
Bonita School Rd
Brown Rd
Betteravia Rd
Ray Rd
Black Rd
McCoy Ln
Mitchell Rd
Foster Rd
Stowell Rd
Battles Rd
Telephone Rd
Phillips Rd
Seaward Dr
Donovan Rd
Alvin Ave
Main St
College Dr
Miller St
Union Sugar Ave
Central Ave
Ocean Ave
Floradale Ave
Bailey Ave
College Ave
Purisima Rd
Rucker Rd
Santa Rosa Rd
Ballard Canyon Rd
Alisal Rd
Alamo Pintado Rd
Farren Rd
Calle Real
Cathedral Oaks Rd
Hollister Ave
Trigo Rd
Patterson Ave
Turnpike Rd
La Vista Rd
State St
Estrella Dr
Mountain Dr
Alston Rd
Olive Mill Rd
San Ysidro Rd
Coyote Rd
Cabrillo Blvd
Lillie Ave
Padaro Ln
Toro Canyon Rd
Via Real
Linden Ave
Carpinteria Ave
Viola Ln
Lilac Dr
Sheffield Dr
Valerio St
Mesa Ln
Meigs Rd

APPENDIX B – ESTIMATE OF CURRENT EMPLOYEE SERVICE POPULATION

The Department's current employee service population is estimated based on May 2014 employment figures provided by the California Employment Development Department ("EDD"). The Cities and census-designated places ("CDP") shown below were used to approximate the total service area of the Department.

FIGURE 10 – ESTIMATE OF CURRENT EMPLOYEE SERVICE POPULATION

Place [1]	Employee Service Population
Buellton city	2,300
Goleta city	17,600
Isla Vista CDP	9,300
Los Alamos CDP	800
Mission Canyon CDP	1,600
Mission Hills CDP	1,700
Orcutt CDP	14,800
Santa Ynez CDP	2,800
Solvang city	3,200
Toro Canyon CDP	1,100
Vandenberg Village CDP	3,000
Total Department	**58,200**

Source: California Employment Development Department, May 2014

Notes:

[1] CDP is "Census Designated Place" - a recognized community designated for the 2000 U.S. Census.

APPENDIX C – DWELLING UNIT OCCUPANCY FACTORS

FIGURE 11 – DWELLING UNIT OCCUPANCY FACTORS

Land Use Categories	Occupied Dwelling Units (2014) [1]	Vacant Dwelling Units (2014) [2]	Household Population (2014) [1]	Dwelling Unit Occupancy Factor
Calc	a	b	c	d= c / a
Single Family Residential	38,184	2,386	111,430	2.91
Other Residential	15,187	1,341	36,778	2.42
Total Residential	53,371	3,727	148,208	2.77

Source: U.S. Census Bureau and California Department of Finance

Notes:

[1] Based on figures from the 2010 U.S. Census for the Department's service area and adjusted for growth based on the California Department of Finance E5 Report.

APPENDIX D – FIRE SYSTEM INVENTORY AND REPLACEMENT COST ESTIMATES

FIGURE 12 – EXISTING LAND INVENTORY

Station #	Location	Land Area (acres)	Unit Cost (per acre)	Land Value (2014$)
Station 11	6901 Frey Way, Goleta CA 93117	2.00	$760,000	$1,520,000
Station 12	5330 Calle Real, Goleta CA 93117	1.60	$760,000	$1,216,000
Station 13 [1]	4570 Hollister, Santa Barbara CA 93110	0.57	$740,000	$421,800
Station 14	320 Los Carneros, Goleta CA 93117	0.79	$760,000	$601,160
Station 15	2491 Foothill Rd, Santa Barbara CA 93105	1.50	$740,000	$1,110,000
Station 17 [5]	Mesa Road, Bldg 547 Santa Barbara, CA 93106	0.00	$0	$0
Station 18	17200 Mariposa Reina, Gaviota CA 93117	3.40	$350,000	$1,190,350
Station 21	335 Union Ave., Orcutt CA 93455	0.17	$250,000	$42,500
Station 22	1596 Tiffany Park Ct, Santa Maria CA 93455	0.47	$320,000	$150,400
Station 23	5003 Depot Ave, Santa Maria CA 93454	1.30	$320,000	$416,000
Station 24 [3]	99 Centennial, Los Alamos CA 93440	1.59	$350,000	$556,500
Station 30 [4]	1644 Oak St., Solvang CA 93464	0.57	$0	$0
Station 31 [2]	168 W HWY 246, Buellton CA 93427	2.10	$350,000	$735,000
Station 32	906 Airport Rd, Santa Ynez CA 93254	1.50	$625,000	$937,500
Station 41	41 Newsome St., New Cuyama CA 93254	0.43	$100,000	$43,000
Station 51	3510 Harris Grade Road, Lompoc CA 93436	1.50	$350,000	$525,000
Headquarters	4410 Cathedral Oaks Rd, SB CA 93110	1.60	$740,000	$1,184,000
Buellton Ops [2]	166 W. HWY 246, Buellton CA 93427	2.10	$0	$0
South BC [1]	4570 Hollister, Santa Barbara CA 93110	0.57	$0	$0
North BC	99 Centennial, Los Alamos CA 93440	1.59	$0	$0
Total Land Value				**$10,649,210**

Source: Santa Barbara County Fire Department; SCI Consulting Group

Notes:

[1] Station 13 and South BC share the same parcel

[2] Station 31 and Buellton Ops share the same APN, addresses are not recorded and are listed under 164 W HWY 246

[3] Station 24, Construction and North BC share the same APN

[4] Owned by City of Solvang; Shared w/City Hall

[5] Owned by UC Santa Barbara.

FIGURE 13 – EXISTING FIRE STATION INVENTORY

Station #	Location	Building Area (sq. ft.)	Unit Cost (sq. ft.) [1]	Replacement Cost (2014$)
Station 11	6901 Frey Way, Goleta CA 93117	6,880	$445	$3,061,600
Station 12	5330 Calle Real, Goleta CA 93117	5,560	$445	$2,474,200
Station 13	4570 Hollister, Santa Barbara CA 93110	5,560	$445	$2,474,200
Station 14	320 Los Carneros, Goleta CA 93117	3,000	$445	$1,335,000
Station 15	2491 Foothill Rd, Santa Barbara CA 93105	2,040	$445	$907,800
Station 17 [2]	Mesa Road, Bldg 547, SB, CA 93106	0	$445	$0
Station 18	17200 Mariposa Reina, Gaviota CA 93117	5,646	$445	$2,512,470
Station 21	335 Union Ave., Orcutt CA 93455	3,825	$445	$1,702,125
Station 22	1596 Tiffany Park Ct, Santa Maria CA 93455	4,544	$445	$2,022,080
Station 23	5003 Depot Ave, Santa Maria CA 93454	3,880	$445	$1,726,600
Station 24	99 Centennial, Los Alamos CA 93440	6,260	$445	$2,785,700
Station 30 [3]	1644 Oak St., Solvang CA 93464	0	$445	$0
Station 31	168 W HWY 246, Buellton CA 93427	4,656	$445	$2,071,920
Station 32	906 Airport Rd, Santa Ynez CA 93254	5,646	$445	$2,512,470
Station 41	41 Newsome St., New Cuyama CA 93254	4,255	$445	$1,893,475
Station 51	3510 Harris Grade Road, Lompoc CA 93436	7,961	$445	$3,542,645
Headquarters	4410 Cathedral Oaks Rd, SB CA 93110	12,432	$445	$5,532,240
Buellton Ops	166 W. HWY 246, Buellton CA 93427	2,000	$445	$890,000
South BC	4570 Hollister, Santa Barbara CA 93110	2,509	$445	$1,116,505
Total Fire Station Replacement Costs		**86,654**		**$38,561,030**

Source: Santa Barbara County Fire Department; Engineering News and Record

Notes:

[1] Based on contruction costs from the 2013 Edition of the ENR Square Foot Costbook for the greater Los Angeles area and adjusted 4.2% for inflation. Unit cost also included 15% for site development and 5% for design.

[2] Owned by UC Santa Barbara.

[3] Owned by City of Solvang; Shared w/City Hall.

FIGURE 14 – APPARATUS AND EQUIPMENT INVENTORY

Type		Units	Cost per Unit	Equipment Cost per Unit	Replacement Cost (2014$)
	Calc	a	b	c	d = a * (b + c)
Type 1 Engines		24	$530,000	$136,089	$12,856,089
Type 2/3 Engines		3	$350,000	$71,467	$1,121,467
Type 3 Engines		13	$350,000	$71,467	$4,621,467
Water Tenders		4	$370,000	$35,000	$1,515,000
Breathing/Supt		1	$400,000	$136,089	$536,089
Ladder Truck		1	$1,000,000	$136,089	$1,136,089
Command Vehicles		25	$60,000	$4,000	$1,504,000
Sedans		22	$30,000	$1,500	$661,500
Vans		5	$45,000	$1,500	$226,500
Pickup Trucks		37	$30,000	$1,500	$1,111,500
Total					**$25,289,701**

Source: Santa Barbara County Fire Department

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EXHIBIT C

Summary of Development Impact Fees

Summary of Development Impact Fees

Land Use Category	Units	Maximum Justified Fee
Public Administration(now includes Police Fee)		
Single Family Detached	per DU	$3,086
All Other Residential[1]	per DU	$2,238
Retail & Commercial	per KSF	$487
Office & Medical	per KSF	$655
Industrial	per KSF	$243
Police		
Single Family Detached	per DU	$0
All Other Residential[1]	per DU	$0
Retail & Commercial	per KSF	$0
Office & Medical	per KSF	$0
Industrial	per KSF	$0
Library		
Single Family Detached	per DU	$959
All Other Residential[1]	per DU	$696
Retail & Commercial	per KSF	$151
Office & Medical	per KSF	$203
Industrial	per KSF	$75
Parks & Recreation		
Residential Subdivisions (Quimby Act)		
Single Family Detached	per DU	$14,998
All Other Residential[1]	per DU	$10,880
All Other Development (Mitigation fee Act)		
Single Family Detached	per DU	$11,900
Duplex/Triplex/4-plex	per DU	$9,843
Apartment	per DU	$7,947
Mobile Home	per DU	$7,947
Accessory Dwelling Unit	per DU	$7,947
Retail and Commercial	per KSF	$1,880
Office and Medical	per KSF	$2,525
Industrial	per KSF	$936

Summary of Development Impact Fees

Land Use Category	Units	Maximum Justified Fee
Storm Drain		
Single Family Detached	per DU	$3,596
All Other Residential[1]	per DU	$2,609
Retail & Commercial	per KSF	$1,988
Office & Medical	per KSF	$2,671
Industrial	per KSF	$990
Transportation (sample of land uses)		
Single Family Detached	per DU	$12,077
Apartment	per DU	$7,487
Hotel	per room	$7,171
Supermarket	per KSF	$70,816
General Office	per KSF	$17,808
General Light Industrial	per KSF	$11,835
Bicycle & Pedestrian		
Single Family Detached	per DU	$3,092
All Other Residential[1]	per DU	$2,243
Retail & Commercial	per KSF	$488
Office & Medical	per KSF	$656
Industrial	per KSF	$243
Fire Fee		
Single Family Detached	per KSF	$670
All Other Residential[1]	per KSF	$840
Retail & Commercial	per KSF	$870
Office & Medical	per KSF	$1,060
Industrial	per KSF	$800
Warehouse/Distribution	per KSF	$580
Agricultural	per KSF	$400

ATTACHMENT 2

Ordinance 19-__, entitled “An Ordinance of the City Council of the City of Goleta, California, Repealing Goleta Municipal Code Sections 16.12, 16.15, 16.18, 16.19, 16.20, and 16.21 and Ordinance No. 14-10, and Amending the Inland Zoning Ordinance to Add Section 35-333 and Coastal Zoning Ordinance to Add Section 35-187 to Require the Payment of Development Impact Fees for Development Projects within the City, Pursuant to the Mitigation Fee Act”.

ORDINANCE NO. 19-__

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF GOLETA, CALIFORNIA, REPEALING GOLETA MUNICIPAL CODE SECTIONS 16.12, 16.15, 16.18, 16.19, 16.20, AND 16.21 AND ORDINANCE NO. 14-10, AND AMENDING THE INLAND ZONING ORDINANCE TO ADD SECTION 35-333 AND COASTAL ZONING ORDINANCE TO ADD SECTION 35-187 TO REQUIRE THE PAYMENT OF DEVELOPMENT IMPACT FEES FOR DEVELOPMENT PROJECTS WITHIN THE CITY, PURSUANT TO THE MITIGATION FEE ACT

WHEREAS, the State of California, through the enactment of Government Code sections 66001 through 66025 (also known as the "Mitigation Fee Act") has, among other things, authorized the legislative body of a city to, by ordinance, impose impact fees on development projects for the purpose of defraying all or a portion of the cost of public facilities related to the development project, provided that a nexus is established in the enactment of development impact fees between the development project's impacts and the imposed fee amounts.

WHEREAS, the imposition of development impact fees is one of the preferred methods of ensuring that new development bears a proportionate share of the estimated reasonable cost of providing public facilities and service improvements necessary to accommodate such development.

WHEREAS, the amendments to the Inland Zoning Ordinance and Coastal Zoning Ordinance added pursuant to this Ordinance recognize that new Development or Development Projects (as such terms are defined in this Ordinance) within the City will result in additional growth and that such growth will place additional burdens on various City facilities, infrastructure, and services. These amendments further recognize the types of land Development that will generate impacts necessitating the acquisition of land and construction of public facilities and expansion of services and infrastructure in order to meet and accommodate the respective developments.

WHEREAS, all Development Projects within the City should bear a proportionate financial burden in the construction and improvement of Public Facilities Projects (as such term is defined in this Ordinance) and services necessary to serve the respective Development Projects.

WHEREAS, by separate resolutions on file in the Office of the City Clerk, the City Council has adopted the Development Impact Fee study update and Capital Improvement Plan in support of the Development Impact Fees (as such term is defined in this Ordinance) enacted herein.

WHEREAS, the Mitigation Fee Act provides that prior to the adoption of an impact fee ordinance, the local government agency must: (a) identify the purpose of the fee; (b) identify the use to which the fee will be put; (c) make specific findings to determine that there is a reasonable relationship between the fee's use and the type of development project on which the fee is imposed; (d) make specific findings to determine that there is a reasonable relationship between the need for the public facility and the type of the development project on which the fee is imposed; (e) make specific findings to determine that there is a reasonable relationship between the amount of the fee and the cost of the public facility or portion of the public facility attributable to the development project on which the fee is imposed, including that the fee shall not exceed the estimated reasonable cost of providing the service or facility; and (f) hold at least one noticed, public hearing as part of a regularly scheduled meeting.

WHEREAS, in accordance with the above-referenced requirements of the Mitigation Fee Act, the City Council finds the following with respect to the Development Impact Fees:

(1) *Purpose of the Fee*. The purpose of the Development Impact Fees established herein is to provide funding to achieve the City's goal of maintaining adequate service levels and to provide acceptable and safe facilities and improvements, including capital acquisition and improvements as needed, as established by the goals and objectives of City's General Plan, by imposing fees on new Development in the City to offset the growth related thereto. In particular, the City's Land Use, Open Space, Safety, Transportation, Public Facilities, and Noise Elements of the General Plan each detail specific standards related to the City's public improvements, public services, and community amenities that are or will be impacted by the City's increased growth, including without limitation those goals, policies, and standards set forth in General Plan LU 2.2, LU 11.1, SE 5.2, SE 5.4, SE 7, PF 1.6(a), PF 3.3 and 3.4, PF 3.8 and 3.9, PF 8.2, PF 9, PF 10.2, OS 9, TE 1.3, TE 10.4, TE 11.4, TE 11.5, TE 13, TE 14.1, which are incorporated herein by this reference. Accordingly, to comply with the requirements and policies of the General Plan, the City will need to provide additional or rehabilitated facilities and improvements as growth increases within the City as a result of Development Projects in order to alleviate compacted services and congested and overused facilities. Without assessing the proposed Development Impact Fees, there will be insufficient revenue from the Development Projects to remain consistent with the General Plan's goals, policies, and standards.

(2) *Use of the Fee*. The proceeds from the respective Development Impact Fees will be used for the purpose of acquiring and developing new or rehabilitating existing Public Facilities and services, to the extent a Development Project results in impacts for which the respective fee reasonably relates. The Ordinance proposes to collect a proportionate fee

from Development Projects, to the extent such projects result in impacts requiring the imposition of such fee.

New Development Projects will result in increased demands on the City's bicycle, pedestrian, transportation, fire, police, library, parks and recreation (to the extent not covered by Quimby Fees), public administration, and storm drain facilities. The need to plan and provide for population increases, and the attendant impacts on the City's facilities, is demonstrated through the City's General Plan, which anticipates that increased growth will place resource, facilities, and service constraints on the City. (*See, e.g*., General Plan LU 11.1, OS 3.2(2), OS 9.1 and 9.2, SE 7.1, TE 10.4, TE 11.4, TE 14.1, PF 8.2(9), PF 3.3 and 3.4, PF 3.9, PF 4.1, which are incorporated herein by this reference.) Any Development Impact Fee shall not include the costs attributable to existing deficiencies in Public Facilities, but may include the costs for increased demand for additional facilities and services reasonably related to the proposed Development Project. Revenues from the proposed Development Impact Fees are anticipated to be used to, among other things, offset costs associated with the increased facility and service uses from new Development, as set forth in the General Plan.

(3) ***Relationship Between the Fee's Use and the Type of Development Project on Which the Fee is Imposed***. The Development Impact Fees may be applied to Development Projects within the City, but only to the extent that such Development Project creates impacts that require mitigation that may be offset by the respective type of Development Impact Fee, as set forth in this Ordinance. New Development will place additional burdens on all or some of the Citywide bicycle, pedestrian, transportation, fire, police, library, parks and recreation (to the extent not covered by Quimby Fees), public administration, and storm drain facilities.

Accordingly, the imposed fees will be used to acquire and construct new facilities and equipment needed to offset the impacts resulting from the associated Development. The Public Facilities and services acquired and/or rehabilitated with the proceeds of the fees, to the extent a Development Project results in impacts for which the respective imposed fee reasonably relates, will address and mitigate the additional impacts and demands created by these Development Projects.

(4) ***Relationship Between the Need for the Facilities and the Type of Project***. The Public Facilities and anticipated future Development herein referenced are based upon an analysis of existing Land Use and zoning. Each new Development Project will generate demands on facilities through the resulting increase in population and/or usage in the City, and the associated new or rehabilitated bicycle, pedestrian, transportation, fire, police, library, parks and recreation (to the extent not covered by Quimby Fees), public administration, and storm drain facilities, to the extent impacted by the new Development, are needed to provide services and

facilities consistent with the goals and objectives of City's General Plan (as previously identified) and are designed to mitigate the impacts caused by new Development throughout the City. Current facilities and services are only adequate for the existing development and population in the City. The City will need to acquire and/or rehabilitate facilities and services within the City to meet increased demands resulting from new Development, and the Public Facilities and/or services developed and or increased through the Development Impact Fees will address and mitigate the additional impacts and demands created by the new Development Projects.

(5) *Relationship Between the Amount of the Fee and the Cost of the Facility or Portion of the Facilities Attributed to the Project*. The amounts of the proposed Development Impact Fees, as set forth in the fee setting resolution, have been established in accordance with the Development Impact Fee study update, previously adopted by the City Council and incorporated herein by this reference, and do not exceed the estimated reasonable cost of providing Public Facilities occasioned by Development Projects within the City. The amounts of the proposed Development Impact Fees established by the fee setting resolution relate rationally to the estimated reasonable cost of providing Public Facilities occasioned by Development Projects within the City.

WHEREAS, it is necessary through the provisions of this Ordinance to impose fees on new Development in order to protect the public health, safety and welfare through the provision of adequate public facilities, to afford developers certainty with regard to their financial obligations, and to ensure that such development will not create a burden on the interrelated public facilities and services networks of the City.

WHEREAS, pursuant to Government Code sections 66016, 66017, and 66018, the City has: (a) mailed notice as least fourteen (14) days prior to this meeting to all interested parties that have requested notice of new or increased fees or service charges; (b) published notice pursuant to the requirements of Government Code section 6062a; and (c) held a duly noticed, regularly scheduled public hearing at which oral and written testimony was received.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF GOLETA DOES HEREBY ORDAIN AS FOLLOWS:

SECTION 1. Recitals

The City Council hereby finds and determines that the foregoing recitals, which are incorporated herein by reference, are true and correct.

SECTION 2. Required Findings for an Ordinance Amendment

Pursuant to Inland Zoning Ordinance section 35-180.6 and Coastal Zoning Ordinance section 35-325.5, the City Council makes the following findings:

A. This Ordinance is in the interest of the general community welfare since it ensures that new development fully offsets the cost and burden of such new development on public services and infrastructure and thus ensures the general community will not face undue burdens of new development; and

B. This Ordinance is consistent with the Goleta General Plan/Coastal Land Use Plan. Specifically, this Ordinance supports the following policies that identify the need for various development impact fees as part of the General Plan/Coastal Land Use Plan: Open Space Element Policy OS 9.2 (Mitigation of Impacts of New Development on Parks and Recreation Facilities), which requires new development to pay a proportionate share for cost of acquisition and improvement of parks, recreation facilities, and open space; Transportation Element Policy TE 14.1 (Traffic Impact Fees), which requires new development to pay its proportionate share for transportation improvements to mitigate traffic impacts of new development; Public Facilities Element Policy PF 3.3 (Impact Fees for Fire Protection Facilities/Equipment), which requires fees to be imposed on all new development within the City for a new fire station in western Goleta and new fire apparatus; Public Facilities Element Policy PF 3.8 (Impact Fee for Police Facilities), which requires the continued development impact fee to assist with funding capital facilities for police services; Public Facilities Element Policy PF 10.2 (Development Impact Fees), which requires the adoption of an impact fee program that requires new development to pay a proportionate share of cost for new and upgraded capital facilities attributable to new development; and Public Facilities Element Policy PF 1.6(a), which specifically calls out the use of administrative and law enforcement development impact fees as a potential funding source for a new civic center. In addition, this Ordinance is one component of the City's compliance with General Plan/Coastal Land Use Plan Implementation Action PF-IA-1 (Preparation of AB 1600 Study and Impact Fee Program), which, in part, requires a AB 1600 fee ordinance to be developed by the City to address transportation, fire protection, parks and recreation, library, public administration, and police services; and

C. The Ordinance is consistent with good zoning and planning practices since the Ordinance provides that new development address the demand for public services and infrastructure generated by the new development and cover the cost of such services. The Ordinance does not change what uses, buildings, or structures are allowable under the adopted General Plan and zoning.

SECTION 3. Environmental Assessment

The adoption of a new development impact fee ordinance is exempt from the California Environmental Quality Act. (Public Resources Code, §§ 21000, et seq., "CEQA.") The adoption of the proposed ordinance is not a "project" pursuant to the regulations promulgated under CEQA (14 Cal. Code of Regulations, §§ 15000, et seq., "CEQA Guidelines") as it (i) does not have the "potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment" as it merely establishes regulations for development that will be separately evaluated under CEQA (CEQA Guidelines §15378(a)), and (ii) creates a government funding mechanism which does not involve commitment to any specific project which may result in a potentially significant physical impact on the environment (CEQA Guidelines, § 15378(b)(4)). Even assuming for the sake of argument that the Ordinance was a "project," it is statutorily exempt because the Ordinance only provides a method of "obtaining of funds for capital projects, necessary to maintain service within existing service areas," as further detailed in this Ordinance. (CEQA Guidelines, § 15273(a)(4).)

SECTION 4. Repeals

The following are hereby deleted in their entirety:

A. Goleta Municipal Code Section 16.12 Flood Control Fees for Development of Land Not a Subdivision.

B. Goleta Municipal Code Section 16.15 Development Mitigation Fees for Parks in Connection with Residential Development Projects Which Do Not Involve the Subdivision of Land.

C. Goleta Municipal Code Section 16.18 Development Impact Fees, Commercial and Industrial Development.

D. Goleta Municipal Code Section 16.19 Library Facility Development Impact Fees.

E. Goleta Municipal Code Section 16.20 Public Administration Facility Development Impact Fees.

F. Goleta Municipal Code Section 16.21 Police Facility Development Impact Fees.

G. Ordinance No. 14-10 An Ordinance Adopting Development Impact Fees for Fire Facilities In Accordance with the Mitigation Fee Act (Government Code §§ 66000-66025).

SECTION 5. Development Impact Fees.

Sections 35-333 (Inland) and 35-187 (Coastal), "Development Impact Fees," is hereby added to both the Inland Zoning Ordinance and Coastal

Zoning Ordinance, respectively (hereinafter collectively referred to as "Section"), to read in its entirety as follows:

A. *Purpose*. This Section establishes the categories of Development Impact Fees to be imposed on Development in order to defray the cost of new or rehabilitated Public Facilities required, incrementally, by new Development within the City, which are needed to accommodate the attendant growth in the City and to maintain an acceptable level of facilities and services for all areas within the City. The imposition of the respective Development Impact Fees ensures that new Development bear a proportionate share of the cost of Public Facilities and service improvements necessary to accommodate such Development, to the extent that such Development creates impacts that require mitigation that may be offset by the respective type of Development Impact Fee. The imposition of Development Impact Fees through this Section is necessary to protect the public health, safety and welfare by ensuring the provision of adequate Public Facilities.

B. *Applicability*. The standards in this Section shall apply to all Development and Development Projects as defined in this Section. This Section is adopted to implement the provisions of sections 66000 *et seq.* of the Government Code (the "Mitigation Fee Act"), which authorize a city to impose impact fees as a condition of approval on a Development Project for the purpose of defraying all or a portion of the cost of Public Facilities related to such project.

   Development Impact Fees are hereby established to be imposed on new Development and Development Projects within the City of Goleta to pay a proportionate share of the reasonably estimated costs of Public Facilities related to bicycle, pedestrian, transportation, fire, police, library, parks and recreation (to the extent not covered by Quimby Fees), public administration, and storm drain facilities, to the extent impacted by a Development Project. The Development Impact Fees authorized by this Section will be used only for defraying costs associated with developing new or rehabilitating existing bicycle, pedestrian, transportation, fire, police, library, parks and recreation (to the extent not covered by Quimby Fees), public administration, and storm drain facilities, to the extent applicable, resulting from new Development Projects, and shall not exceed the estimated cost associated with providing those facilities.

C. *Definitions*. For purposes of this Section, the following terms, phrases, words and their derivation shall have the meanings respectively ascribed to them by this Section:

   1. Bicycle/Pedestrian Facilities. Public improvements that facilitate walking and bicycling in the City, including but not limited to sidewalks, multi-use trails, bike lanes, bike paths and related planning, engineering, construction and administrative activity.

2. Coastal Development Permit (CDP). A zoning approval as defined in Section 35-169 of the City's Coastal Zoning Ordinance, as may be amended.

3. Development or Development Project. A Development or Development Project means any project undertaken for the purpose of development. Development or Development Project shall include all projects involving any use or work requiring a Land Use Permit or the issuance of a permit for construction or reconstruction, for erection of manufactured housing or structures, or for structures moved into the City, but shall not include a permit to operate.

4. Development Area. The Floor Area of the use plus any other area, including, but not limited to, outdoor areas devoted to patrons of the use.

5. Development Impact Fee (sometimes also referred to herein as "Fee(s)" or "DIF(s)"). A monetary exaction, other than a tax or special assessment, which is charged by City to an applicant in connection with approval of a Development Project for the purpose of defraying all or a portion of the cost of Public Facilities related to the Development Project, but does not include fees specified in Government Code section 66477, fees for processing applications for governmental regulatory actions or approvals, or fees collected under Development Agreements adopted pursuant Government Code sections 65864 *et seq.* The types of Development Impact Fees authorized to be imposed pursuant to this Section are specified in Subsection D, below.

6. Discretionary Approval. An approval by the City for a project which requires the exercise of judgement or deliberation when the City decides to approve or disapprove a particular activity, as distinguished from situations where the City merely has to determine there has been conformity with applicable statutes, ordinances, or regulations.

7. Dwelling Unit. A single unit providing complete independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking and sanitation. Includes accessory Dwelling Units.

8. Fire Facilities. Public improvements and facilities for fire suppression and protection, emergency medical response and transport, and rescue and hazardous materials response purposes and related planning, engineering, construction and administrative activity.

9. Floor Area. The area included within the surrounding exterior walls of all floors or levels of a structure or portion thereof as measured to the interior surface of exterior walls, or from the centerline of a common or party wall separating two structures.

10. Land Use Permit (LUP). A zoning approval as defined in the Goleta Municipal Code or ordinance of the City, as the same presently exist or as may be amended.

11. Library Facilities. Public improvements and facilities for public libraries; related equipment, buildings, and books; related planning, engineering, construction and administrative activity; and any other capital Library Facility projects identified in the City's Five-Year Capital Improvement Plan.

12. Parks and Recreation Facilities. Public park facilities for recreation, open space, riding and hiking trails, ancillary facilities, related planning, engineering, construction and administrative activity and any other capital park and recreation facility projects identified in the five-year Capital Improvement Plan.

13. Peak Hour Trips (PHT). The maximum one hour quantity of vehicle trips accessing a particular Land Use during the PM peak period (4:00 PM – 6:00 PM).

14. Public Administration Facilities. Public improvements and facilities for governmental buildings and facilities; police facilities including patrol cars, equipment, jail, juvenile and probation facilities; community and civic centers; portions of community buildings devoted to Public Administration in Goleta; related planning, engineering, construction and Administrative activity; and any other capital Public Administration Facility projects identified in the City's Five-Year Capital Improvement Plan.

15. Public Facilities. Includes, but is not limited to, those facilities defined in this Section, public improvements, public services, community amenities, and related planning, engineering, construction and administrative activity.

16. Storm Drain Facilities. Public improvements and facilities for storm drainage, including but not limited to inlets and outlets, storm drain pipes, box culverts, and pump stations and related planning, engineering, construction and administrative activity.

17. Transportation Facilities. Public improvements and facilities for transportation purposes, including but not limited to, roads, road rights of way, striping, curbs, gutters, sidewalks, bridges, traffic control devices, street lighting, bike lanes built in conjunction with standard roadway design and related planning, engineering, construction and administrative activity.

D. List of Types of Development Impact Fees.

1. Unless otherwise indicated, the following types of Development Impact Fees will be imposed at the time of approval for Development within the City to finance the cost of the related Public Facilities:

   a. Bicycle and Pedestrian Facilities.
   b. Fire Facilities.
   c. Library Facilities.
   d. Parks and Recreation Facilities (not applicable to residential subdivisions for which Quimby Fees are imposed).
   e. Public Administration Facilities.
   f. Storm Drain Facilities.
   g. Transportation Facilities.

E. Amount of Fee, Automatic Adjustment and Special Fund

1. The City Council may, after noticed public hearing and in compliance with Government Code Section 66000 *et seq.*, adopt a resolution (i) setting forth the amount of each specific type of Development Impact Fee identified in Section D(1), above, or (ii) revising any such previously adopted fee amounts, with the ordinance codified in this Section being considered as enabling and directive in this regard. Any resolution adopted under this Section shall establish how each Development Impact Fee amount is calculated and shall be in accordance with the provisions of Chapter 5 of Division 1 of Title 7 of the California Government Code, commencing with section 66000 (the Mitigation Fee Act), including by making, without limitation, the following findings:

   a. Identifying the purpose of the Fee;
   b. Identifying the use to which the Fee is to be put;
   c. Determining how there is a reasonable relationship between the Fee's use and the type of Development Project on which the Fee is imposed;
   d. Determining how there is a reasonable relationship between the need for the Public Facility and the type of Development Project on which the Fee is imposed;
   e. Determining how there is a reasonable relationship between the amount of the Fee and the cost of the Public Facility or portion of the Public Facility attributable to the Development on which the Fee is imposed; and
   f. Establishing a schedule of Fees.

2. An adopted fee resolution, as referenced in Subsection E(1) of this Section, may allow for automatic adjustments of fees on July 1st of each fiscal year, by a percentage equal to the appropriate Construction Cost Index ("CCI") as published by Engineering News Record, or its successor publication, for the preceding 12 months for which the CCI is available and such CCI shall be specific to California or the nearest

region; provided, however, that the adopted fee resolution shall identify the specific types of fees subject to such automatic adjustments and shall apply only to the types of fees for which the Mitigation Fee Act authorizes automatic adjustments.

3. All revenues derived from and all moneys collected for each type of Development Impact Fee, as identified in Subsection D(1) of this Section, including accrued interest thereon, shall be deposited in a separate, special fund created to hold the revenue generated for each respective type of Development Impact Fee. Each such fund is hereby established and shall be administered in accordance with Government Code sections 66000, *et seq*., including specifically Sections 66001(c)-(e) and 66006. Moneys within each such fund may be expended only for the identified purpose or purposes for which the respective fee was collected.

F. *Imposition of Development Impact Fee.*

1. Any person who seeks to develop land within the City shall be subject to the imposition of Development Impact Fees under the following conditions:

TABLE 1 – Trigger for Imposition of DIFs

Type of Development		
	Transportation Facilities Fees	All Other Fees
Residential	Approval of any Development that generates a Peak Hour Trip (PHT) or fraction thereof	Permitting of 1 (one) or more Dwelling Unit(s)
Non-Residential	Approval of any Development that generates a Peak Hour Trip (PHT) or fraction thereof	Permitting of 500 or more square feet of Development Area

G. *Beneficial Projects and Fee Reduction*. The City may establish by resolution categories of “beneficial projects” which are eligible for fee reductions or waivers. The City will establish administrative procedures for granting these fee reductions or waivers.

H. *Protests and Fee Adjustments.*

1. A developer of any Development Project subject to the fees described in this Section may apply to the City Council for a reduction, adjustment or waiver of any one or more of the Fees. The application for such protest must be made in writing and filed with the City Clerk, state in detail the factual basis for the claim of waiver, reduction or adjustment, and meet all requirements of Government Code 66020, as may be amended.

2. The City Council shall consider the protest application, referenced in Subsection H(1), at a public hearing. The decision of the City Council shall be final. If a reduction, adjustment or waiver is granted, any change in use within the Development Project shall invalidate the waiver, adjustment or reduction of the Fee if such change in use would render the same inappropriate. The hearing shall be noticed and conducted in the same fashion and manner as prescribed by the laws of the City for a hearing on Development Projects requiring Discretionary Approval.

3. The City Council may, from time to time, and as the need may arise, set forth by resolution specific limitations which will apply to reductions, adjustments or waivers of Development Impact Fees which may be made pursuant to this Subsection H. In this regard, this Section shall be considered enabling and directory.

I. *Payment of Fee.*

1. The Fees established pursuant to this Section shall be paid by the developer for the property on which a Development Project is proposed at the time of final inspection or the date on which the certificate of occupancy is issued, whichever occurs first, except as otherwise provided below. Fees imposed on residential Development, however, shall be collected in accordance with the provisions of Government Code section 66007. Where a Development Project does not require a building permit, Fees will be collected at permit issuance.
2. Unless otherwise specified by the City, the amount of Development Impact Fees shall be based on those Development Impact Fees and amounts in effect at the time payment is made or due.

J. *Use of Funds.*

1. Funds collected from Development Impact Fees shall be used for the purpose of paying the actual or estimated costs of designing, constructing and/or improving the Public Facilities within the City to which the specific Fee or Fees relate, including any required acquisition of land or rights-of-way therefor. No Development Impact Fee funds shall be used for costs attributable to existing deficiencies in Public Facilities, but may be used for the costs for increased demand for additional facilities and services reasonably related to the proposed Development Project.

2. In the event that bonds or similar debt instruments are issued for advanced provision of Public Facilities for which Development Impact Fees may be expended, Development Impact Fees may be used to pay debt service on such bonds or similar debt instruments to the extent that the facilities provided are of the type to which the fees involved relate.

K. *Refund of Fees Paid*. If a permit for a Development Project for which Development Impact Fees have been imposed expires without commencement of Development and the required Development Impact Fees under such permit have already been paid, then the feepayer shall be entitled to a refund, without interest, of the Development Impact Fee(s) paid. The feepayer must submit an application for such a refund to the City Manager within thirty (30) calendar days of the expiration of the permit. Failure to timely submit the required application for refund shall constitute a waiver of any right to the refund.

L. Exemptions. Any claim of exemption with respect to any one or more of the Development Impact Fees must be made no later than the time for application for fee adjustment pursuant to this Section. The following shall be exempted from payment of the Development Impact Fees:

1. Alterations, renovations or expansion of an existing residential building or structure that do not meet the conditions of imposition of fees as described in this Section, where no additional Dwelling Units are created and the use is not changed; provided, however, that the expansion of or change of use of an existing commercial or industrial building or structure shall not be exempt from the fees established in this Section. For purposes of this section, "expansion" shall be defined as any increase in the gross Floor Area of the existing building or structure and "change of use" shall be defined as the initiation of a use which requires approval of a conditional use permit, Development plan, zone change, or local Coastal plan amendment.

2. The replacement of a destroyed or partially destroyed or damaged building or structure with a new building or structure of the same size and use.

M. *Credits*.

1. New Development that, through demolition or conversion, will eliminate existing Development is entitled to a Fee credit if the demolished or converted Development was a lawful use and was in use within two years of the new Development under the City zoning regulations.

2. New Development that will replace Development that was partially or totally destroyed by fire, flood, earthquake, mudslide, or other casualty or act of God, is entitled to a Fee credit if the Development that was partially or totally destroyed was a lawful use and such destruction

occurred within five years of the new Development under the City zoning regulations.

3. If an existing Development undergoes a change of use, only costs proportional to the amount of the improvement or facility that mitigates the need therefor attributable to and reasonably related to the given Development shall be eligible for an in-lieu credit within 10 years, and then only against the specific relevant Fee(s) involved to which the facility or improvement relates.

4. The City may allow for Fees collected for Transportation Facilities to be satisfied or partially satisfied if the obligor of the Transportation Facilities Fees donates real property which is needed by the City for local transportation purposes pursuant to Government Code section 66006.5.

5. Credit shall not be given for site-related improvements, including, but not limited to, traffic signals, right-of-way dedications, or providing paved access to the property, which are specifically required by the Development Project in order to serve it and which do not constitute facilities or improvements associated with a specific category of Development Impact Fee.

N. *Superseding Provisions*. The provisions of this Section and any resolution adopted pursuant hereto supersede any previous ordinance or resolution to the extent the same is in conflict herewith.

SECTION 6. Severability.

If any section, subsection, sentence, clause, phrase, or portion of this Ordinance is, for any reason, held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this Ordinance, and each section, subsection, subdivision, sentence, clause, phrase or portion thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses, phrases or portions might subsequently be declared invalid or unconstitutional.

SECTION 7. Compliance with Notice and Public Hearing Requirements.

This Ordinance was reviewed at a noticed public hearing, for which the Ordinance and the associated Staff Report were available to the general public for a period of not less than fourteen (14) days prior to the public hearing.

SECTION 8. Effective Date.

In accordance with California Government Code section 66017(a), this Ordinance shall be in full force and effect sixty (60) days after its adoption.

SECTION 9. Certification.

The City Clerk shall certify to the passage and adoption of this Ordinance, and shall cause the same to be published within fifteen (15) days after passage in accordance with law, and shall cause this Ordinance and its certification, together with proof of publication, to be entered into the Book of Ordinances of the City of Goleta.

INTRODUCED ON the ___ day of ________, 2019.

PASSED, APPROVED, AND ADOPTED this ________day of ______ 2019.

____
PAULA PEROTTE
MAYOR

ATTEST:	**APPROVED AS TO FORM:**
_________________________	_________________________
DEBORAH S. LOPEZ CITY CLERK	MICHAEL JENKINS CITY ATTORNEY

STATE OF CALIFORNIA)
COUNTY OF SANTA BARBARA) ss.
CITY OF GOLETA)

I, Deborah S. Lopez, City Clerk of the City of Goleta, California, do hereby certify that the foregoing Ordinance No. 18-__ was introduced on _______, and adopted at a regular meeting of the City Council of the City of Goleta, California, held on the _______, by the following roll-call vote, to wit:

AYES:

NOES:

ABSENT:

ABSTENTIONS:

(SEAL)

____
DEBORAH S. LOPEZ
CITY CLERK

ATTACHMENT 3

Notice of Exemption (NOE)

NOTICE OF EXEMPTION (NOE)

To: ☐ Office of Planning and Research
P.O. Box 3044, 1400 Tenth St. Rm. 212
Sacramento, CA 95812-3044

☒ Clerk of the Board of Supervisors
County of Santa Barbara
105 E. Anapamu Street, Room 407
Santa Barbara, CA 93101

From: City of Goleta
130 Cremona Drive, Suite B
Goleta, CA 93117

CITY OF GOLETA

Subject: Filing of Notice of Exemption

Project Title: City of Goleta Development Impact Fees and Development Impact Fees Ordinance

Project Applicant: City of Goleta, Public Works Department

Project Location (Address and APN): City wide

Description of Nature, Purpose and Beneficiaries of Project:

The City of Goleta is updating its development impact fee (DIF) program with adoption of new DIF fees, Nexus Study, and Ordinance. The 2019 Ordinance is based on updated nexus studies that balance forecasted impacts of future development projects with fees collected by the City to offset those impacts. The collection of such DIF fees does not authorize the City to build any project, but provides long term funding to assist with the cost of future capital projects city-wide.

The DIF program will assist the City in funding capital projects ranging from park improvements to bicycle lanes to roadway maintenance and improvements. This broad range of improvements within public rights-of-way and on city-owned lands will be developed further when project-specific funding and prioritization occurs for each project. The DIF Ordinance does not adopt any policy or put in place any action which would cause a physical change to the environment as a separate California Environmental Quality Act (CEQA) analysis would accompany future projects when funding is in place.

Because the DIF Ordinance will be located in the Zoning Ordinance, on December 10, 2018, the Planning Commission considered the proposed DIF Ordinance, fees and nexus study and approved a Resolution recommending to the City Council that it approve the DIF Ordinance.

Name of Public Agency Approving the Project: City of Goleta

Name of Person or Agency Carrying Out the Project: City of Goleta, Public Works Department, Charles W. Ebeling, P.E., T.E, Public Works Director

Exempt Status: *(check one)*
- ☐ Ministerial (Sec. 15268)
- ☐ Declared Emergency (Sec. 15269 (a))
- ☐ Emergency Project (Sec. 15269 (b) (c))
- ☐ Categorical Exemption: *(Insert Type(s) and Section Number(s))*

☒ Other Statutory Exemption: [CEQA Guidelines, § 15273(a)(4)]

Reason(s) why the project is exempt:

The adoption of new DIF fees, related Nexus Study and Ordinance is exempt from the California Environmental Quality Act and the regulations promulgated thereunder (14 Cal. Code of Regulations, §§ 15000, et seq., “CEQA Guidelines”) as this action does not constitute a “project” pursuant to the CEQA Guidelines, § 15378(b)(4) because: (i) it does not have the “potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment” as it merely establishes regulations for development that will be separately evaluated under CEQA (CEQA Guidelines §15378(a)), and (ii) creates a government funding mechanism which does not involve commitment to any specific project which may result in a potentially significant physical impact on the environment (CEQA Guidelines, § 15378(b)(4)). In addition, obtaining funds (fees) for capital projects for services in existing service areas are statutorily exempt under CEQA Guidelines, § 15273(a)(4).

City of Goleta Contact Person and Telephone Number:

		805-961-7542
Lisa Prasse, Current Planning Manager	Date	Phone

If filed by the applicant:

1. Attach certified document of exemption finding
2. Has a Notice of Exemption been filed by the public agency approving the project?

☒ Yes ☐No

Date received for filing at OPR: ____

Note: Authority cited: Section 21083 and 21110, Public Resources Code
Reference: Sections 21108, 21152 and 21152.1, Public Resources Code