Agenda Item C.2
PUBLIC HEARING
Meeting Date: May 19, 2026

TO: Mayor and Councilmembers

SUBMITTED BY: Luz "Nina" Buelna, Public Works Director

SUBJECT: 2026 Development Impact Fee Program Update

RECOMMENDATIONS:

Adopt Council Resolution No. 26-___entitled "A Resolution of the City Council of the City of Goleta, California, Approving the 2026 Development Impact Fee Program Update Report and Updated Development Impact Fees Pursuant to the Mitigation Fee Act and Finding that the Resolution is Exempt Under the California Environmental Quality Act."

BACKGROUND

Development Impact Fees ("DIF") are fees imposed on development projects to offset in whole or in part, the cost of new or additional public facilities caused by the development. Cities have the authority to charge DIFs by way of the Mitigation Fee Act (Government Code sections 66000-66025). Under the Mitigation Fee Act, 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, originally 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. In 2019, the City prepared its own Nexus Study Development Impact Fee Study, which provided the supporting analysis for a new ordinance. The ordinance, referred to as the "DIF Ordinance" (Ordinance 19-04), consolidated previous existing DIF regulations into one regulation in the Zoning Ordinance. The Development Impact Fees listed in Ordinance 19-04, codified in Goleta Municipal Code Chapter 17.70, are:

1. Public Administration Facilities Fee
2. Fire Facilities Fee
3. Library Facilities Fee
4. Parks and Recreation Facilities Fee

5. Storm Drain Facilities Fee
6. Transportation Facilities Fee
7. Bicycle and Pedestrian Facilities Fee

DISCUSSION

Under the Mitigation Fee Act, every five years, Local Agencies are required to conduct and make public specific findings to ensure that the DIF's purposes still exist, that the funds are still needed, and that the fees still meet the reasonable relationship standards. As discussed above, in 2019, the City completed a new Nexus Study Development Impact Fee Study. To comply with the Mitigation Fee Act requirements, a DIF update study is required to analyze the proportionate relationship between development and all fees. On August 20, 2024, the City council approved consultant agreements with Urban Economics, DKS Associates (DKS) and MNS Engineers (MNS) to prepare and support the DIF update. DKS updated the City of Goleta Travel Model and prepared an analysis identifying traffic impacts resulting from projected future growth, and MNS prepared project cost estimates to address the traffic impacts identified by the DKS analysis.

All proposed impact 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 (2025) capital assets to the existing population served by those facilities. This approach is based solely on available data (existing capital asset inventory and service population estimates). The facility standard is not based on adopted policies, such as those contained in the City's General Plan or state statutes.

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 using a similar approach to that used to establish the existing fee. Planning for transportation improvements typically uses a travel demand model. The Goleta Travel Model developed for the Goleta General Plan was updated in 2025 for this nexus analysis. The travel model analyzed the impacts of the City's buildout growth scenario and surrounding regional growth on the City's transportation system. The results update the list of improvements described in the Transportation Element of the 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 caused 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, which represents restricted traffic flow that remains stable but does not cause significant delay. In this instance, LOS is a commonly used measure of congestion and

delay based on the ratio of the number of vehicles on a roadway to its capacity (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 identified 32 capital improvement projects to address existing and future deficiencies in the City's transportation system.

The fair-share analysis was conducted to ensure the impact fee funds only the portion of those improvements 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 its transportation system.

Public Works presented a draft of the 2026 DIF Update Plan to the City Council on February 17, 2026. Based on input from the Council at the meeting, further input from City Staff, Urban Economics, and DKS, the recommended maximum fees have been refined based on the following:

- Finalization of the traffic model and resulting refinement to the deficiency analysis for the transportation projects. This resulted in a reduction in the number of transportation projects from 35 to 32 and some modifications to the deficiency percentages for certain projects. The effect of this was to decrease the Maximum Justified Transportation Fee compared to the Fee presented at the February 17, 2026, Council Meeting.

- Use of average intersection control costs for applicable Transportation DIF projects. Of the 32 transportation projects identified to address future growth, 12 include conceptual intersection control improvements that may ultimately function as roundabouts, traffic signals, or other operational improvements such as additional channelization. At this stage, the City has not completed the preliminary engineering, operational analysis, environmental review, or community engagement necessary to determine the appropriate intersection control type for each location. To maintain consistency between the level of analysis supporting the Nexus Study and future project-level decisions, the study used an average of roundabout and signalized intersection improvement costs for applicable projects. This approach maintains flexibility for future project development, supports consistency between the Nexus Study assumptions and future implementation decisions, and reduces the Maximum Justified Transportation Fee compared to the fee presented at the February 17, 2026, Council Meeting.

- An update of the library population and resulting standards to reflect the Goleta Valley Library contractual service area, which extends beyond City limits. This update lowered the existing facility standards, and in turn reduced the Maximum Justified Library Fee compared to the Fee presented at the February 17, 2026, Council Meeting.

- Updated bicycle and pedestrian facilities inventory to avoid any potential overlap with transportation improvement projects. This updated inventory decreased the Maximum Justified Bicycle/Pedestrian Fee compared to the Fee presented at the February 17, 2026, Council Meeting.

- Split the cost of the Goleta Freeway Crossing transportation project (project # R-05) between the Transportation Fee and the Bicycle/Pedestrian Fee.

Based on the Nexus Study, including the changes identified above, the updated fees compared to the existing fees are summarized below:

Table E.1: Existing and Maximum Justified Fee Schedule

Land Use Category	Units	Adopted Fee *(2019 Nexus Study)*	Existing Fee *(FY 2025-26)*	Maximum Justified Fee	Difference *(Justified vs. Existing)* Amount	Difference *(Justified vs. Existing)* Percent
Public Administration						
Single Family Detached[1]	per DU	$3,086	$4,132	$10,540	$ 6,408	155%
All Other Residential	per DU	2,238	2,999	7,396	4,397	147%
Retail & Commercial	per KSF	487	656	1,665	1,009	154%
Office & Medical	per KSF	655	880	2,237	1,357	154%
Industrial	per KSF	243	329	829	500	152%
Library						
Single Family Detached[1]	per DU	$959	$1,287	$ 873	$ (414)	(32%)
All Other Residential	per DU	696	934	613	(321)	(34%)
Retail & Commercial	per KSF	151	206	138	(68)	(33%)
Office & Medical	per KSF	203	275	185	(90)	(33%)
Industrial	per KSF	75	105	69	(36)	(35%)
Parks & Recreation						
Residential Subdivisions (Quimby Act)						
Single Family Detached[1]	per DU	$14,998	$20,084	$36,913	$16,829	84%
All Other Residential	per DU	10,880	14,572	25,902	11,330	78%
All Other Development (Mitigation Fee Act)						
Single Family Detached[1]	per DU	$11,900	$15,928	$32,895	$16,967	107%
All Other Residential	per DU	7,947	13,175	23,083	9,908	75%
Retail & Commercial	per KSF	1,880	2,519	5,196	2,677	106%
Office & Medical	per KSF	2,525	3,382	6,981	3,599	106%
Industrial	per KSF	936	1,257	2,587	1,330	106%
Storm Drain						
Single Family Detached[1]	per DU	$ 3,596	$ 4,817	$10,845	$ 6,028	125%
All Other Residential	per DU	2,609	3,494	3,904	410	12%
Retail & Commercial	per KSF	1,988	2,665	6,290	3,625	136%
Office & Medical	per KSF	2,671	3,578	4,338	760	21%
Industrial	per KSF	990	1,329	5,097	3,768	284%

Table E.3: Existing and Maximum Justified Fee Schedule (continued)

Land Use Category	Units	Adopted Fee *(2019 Nexus Study)*	Existing Fee *(FY 2025-26)*	Maximum Justified Fee	Difference *(Justified vs. Existing)* Amount	Percent
Transportation						
All Land Uses	per PM Peak Hour Trip	$ 12,450	$ 16,665	$ 22,687	$ 6,022	36%
Sample of Land Uses						
Single Family Detached[1]	per DU	$ 12,077	$ 15,165	$ 20,466	$ 5,301	35%
Apartment	per DU	7,487	8,166	11,443	3,277	40%
Hotel	per room	7,171	9,499	10,236	737	8%
Supermarket	per KSF	70,816	89,491	119,651	30,160	34%
General Office	per KSF	17,808	22,998	25,700	2,702	12%
General Light Industrial	per KSF	11,835	10,666	10,894	228	2%
Bicycle & Pedestrian						
Single Family Detached[1]	per DU	$3,092	$4,142	$ 13,812	$ 9,670	233%
All Other Residential	per DU	2,243	3,006	9,692	6,686	222%
Retail & Commercial	per KSF	488	657	2,182	1,525	232%
Office & Medical	per KSF	656	881	2,931	2,050	233%
Industrial	per KSF	243	329	1,086	757	230%
All Updated Fees						
Single Family Detached[1]	**per DU**	**$ 34,710**	**$45,471**	**$ 89,431**	**$43,960**	97%
All Other Residential[2]	**per DU**	**23,220**	**31,774**	**56,132**	**24,358**	77%
Retail & Commercial[3]	**per KSF**	**75,810**	**96,194**	**135,122**	**38,928**	40%
Office & Medical[4]	**per KSF**	**24,518**	**31,994**	**42,372**	**10,378**	32%
Industrial[5]	**per KSF**	**14,322**	**14,015**	**20,562**	**6,547**	47%

Notes: "DU" = dwelling unit; "KSF" = thousand building square feet. Residential fees are calculated per square foot of living space in this nexus study update, though residential fees are shown per average sized DU in this table for the purpose of comparison to current fee schedule.
The City also charges impact fees for fire and affordable housing that are not included in this update.
[1] Includes detached and attached accessory dwelling units (ADU). Fees for ADUs can only be charged on ADUs greater than 750 square feet, and are charged proportionally based on the square footage of the ADU to the square footage of the primary unit.
[2] Parks and transportation fees based on "Apartment" category.
[3] For transportation fee, based on supermarket category.
[4] For transportation fee, based on general office category.
[5] For transportation fee, based on general light industrial category.
Sources: City of Goleta Fee Schedule, FY 2025-26; 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 the current City facility standard. Total fee revenue to buildout is projected to be $34.7 million. Change in fee amounts driven by the increased cost of land and buildings.

- Library fee: Fees are decreasing compared to existing fees to reflect the lower existing standard once accounting for non-City service areas. Projected fee

revenue to buildout decreases to $2.9 million compared to $4.3 million under the existing fee schedule.

- Parks and Recreation fee: Impact updated based on current City park standards. Total fee revenue to buildout increased to about $108.5 million. Change in fee amounts driven by increased land acquisition and park improvement costs.

- Storm drain fee: Nexus analysis updated based on the current City facility standard. Total fee revenue to buildout increases to about $40.4 million. Change in fee amounts driven by more comprehensive identification of the City's existing facility standards, and increased replacement cost of facilities.

- Transportation fee: Fee will fund $191.9 million of costs identified as needed to serve new development in the City through the traffic modeling analysis.

- Bicycle and Pedestrian fee: Nexus analysis updated based on the current City facility standard. Total fee revenue to buildout increases to about $45.6 million. Change in fee amounts driven by more comprehensive identification of City's existing facility standards, and increased replacement cost of facilities.

ENVIRONMENTAL REVIEW

The adoption of new development impact fees, and related nexus study is exempt from the California Environmental Quality Act (CEQA) 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, § 15061(b)(3), this action constitutes a creation of governing funding mechanism, who do not involve any commitment to a specific project which may result in a potentially significant physical impact on the environment CEQA Guidelines, § 15378(b)(4), and the action constitutes an organization and administrative activity of government that will not result in direct or indirect physical changes in the environment CEQA Guidelines, § 15378(b)(5). In addition, obtaining funds (fees) for capital projects for services in existing service areas are statutorily exempt under CEQA Guidelines, § 15273(a)(4).

FISCAL IMPACTS:

2026 DIF Program Update

DIF adjustments will be effective 60 days after 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 depend on the number of development projects subject to DIF payment 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 are not discretionary with the City. The DIF amounts will be automatically adjusted on July 1st of each fiscal year, by the construction cost index (CCI) specific to California or the nearest region, as published by the Engineering News Record, 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.

ALTERNATIVES:

The City Council may elect not to adopt the 2026 Development Impact Fee Update; however, doing so would violate the requirements of the Mitigation Fee Act.

LEGAL REVIEW BY: Isaac Rosen, City Attorney

APPROVED BY: Robert Nisbet, City Manager

ATTACHMENTS:

1. Resolution No. 26-___entitled "A Resolution of the City Council of the City of Goleta, California, Approving the 2026 Development Impact Fee Program Update Report and Updated Development Impact Fees Pursuant to the Mitigation Fee Act and Finding the Resolution to be Exempt Under the California Environmental Quality Act."

Exhibit A – 2026 Development Impact Fee Program Update Report
Exhibit B – Updated Development Impact Fees

2. Presentation 2026 Development Impact Fee Program Update

ATTACHMENT 1

Resolution No. 26-___entitled “A Resolution of the City Council of the City of Goleta, California, Approving the 2026 Development Impact Fee Program Update Report and Updated Development Impact Fees Pursuant to the Mitigation Fee Act and Finding the Resolution to be Exempt under the California Environmental Quality Act.”

Exhibit A – 2026 Development Impact Fee Program Update Report

Exhibit B – Updated Development Impact Fees

RESOLUTION NO. 26-____

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF GOLETA, CALIFORNIA, APPROVING THE 2026 DEVELOPMENT IMPACT FEE PROGRAM UPDATE REPORT AND UPDATED DEVELOPMENT IMPACT FEES PURSUANT TO THE MITIGATION FEE ACT AND FINDING THE RESOLUTION EXMEPT UNDER THE CALIFORNIA ENVIRONMENTAL QUALITY 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 or resolution, 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, initially relying on ordinances and nexus studies conducted by the County of Santa Barbara before incorporation; and

WHEREAS, in 2019, the City Council adopted Resolution No. 19-04, which approved new development impact fees and a Development Impact Fee Study pursuant to the Mitigation Fee Act, establishing seven impact fees for public administration facilities, library facilities, parks and recreation facilities, transportation facilities, bicycle and pedestrian facilities, storm drain facilities, and fire facilities; and

WHEREAS, pursuant to Resolution No. 19-04, the amount of the development impact fees has been automatically modified annually by a percentage equal to the appropriate Construction Cost Index ("CCI") as published by Engineering News Record for the preceding 12 months; and

WHEREAS, under the Mitigation Fee Act and AB 602 (which amended the Mitigation Fee Act in 2021), cities must ensure that there is a nexus between the development project's impacts and the imposed fee amounts, and must update their nexus study at least every eight years beginning January 1, 2022; and

WHEREAS, the City contracted with Urban Economics and DKS to prepare a new nexus study updating six of the City's development impact fees; and

WHEREAS, in April 2026, Urban Economics completed the 2026 Development Impact Fee Program Update for the City of Goleta, California (the "2026 Report"), which provides updated analyses and recommends updated maximum justified fees for: (1) the public administration facilities impact fee; (2) the library facilities impact fee; (3) the parks and recreation facilities impact fee and park dedication in-lieu (Quimby) fee; (4) the transportation facilities impact fee; (5) the bicycle and pedestrian facilities impact fee; and (6) the storm drain facilities impact fee; and

WHEREAS, the 2026 Report does not include the fire facilities fee, as that fee is the responsibility of the County of Santa Barbara, which provides facilities and services through the County's Fire Department, nor does it include the affordable housing fee, which was recently adopted in 2021 and first imposed on development in 2022; and

WHEREAS, this update does not create any new impact fees, but rather updates the nexus analyses and maximum justified fee amounts for the six existing fees described above, consistent with current capital facilities costs, updated facility inventories, and changes required by AB 602; and

WHEREAS, pursuant to AB 602, fees for residential development are now calculated per square foot of living space rather than as a flat rate per dwelling unit type; and

WHEREAS, the 2026 Report has been made available for public review and comment pursuant to the Mitigation Fee Act; and

WHEREAS, the City Council held a duly noticed public hearing on May 19, 2026, to consider the proposed updated development impact fees and the 2026 Report, at which time the City Council heard testimony from all interested persons wishing to be heard; and

WHEREAS, the City Council now desires to approve the 2026 Report and adopt updated development impact fees in accordance with the nexus calculations and recommendations in the 2026 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 foregoing recitals are true and correct and are incorporated herein by this reference and the 2026 Report, attached as Exhibit A and incorporated herein by reference, complies with California Government Code Section 66001 by establishing the basis for the imposition of updated fees on new development. This finding is based on the fact that the 2026 Report:

A. Identifies the purpose of each fee;

B. Identifies the use to which each fee will be put;

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

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

E. 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 2026 DEVELOPMENT IMPACT FEE PROGRAM UPDATE REPORT. The fees collected pursuant to this Resolution shall be used to finance the public facilities described or identified in the 2026 Report, attached as Exhibit A and incorporated herein by reference, 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 2026 DEVELOPMENT IMPACT FEE PROGRAM UPDATE REPORT. The City Council has considered the specific project descriptions and cost estimates identified in the 2026 Report, attached as Exhibit A and incorporated herein by reference, and hereby approves such project descriptions and cost estimates and finds them reasonable as the basis for calculating and imposing the updated development impact fees.

SECTION 4: CONSISTENCY WITH GENERAL PLAN. The City Council finds that the projects and fee methodology identified in the 2026 Report attached as Exhibit A and incorporated herein by reference are consistent with the City's General Plan.

SECTION 5: CEQA FINDING.
The adoption of new development impact fees (Exhibit B) and related nexus study (Exhibit A) is exempt from the California Environmental Quality Act (CEQA) 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, § 15061(b)(3), this action constitutes a creation of governing funding mechanism, who do not involve any commitment to a specific project which may result in a potentially significant physical impact on the environment CEQA Guidelines, § 15378(b)(4), and the action constitutes an organization and administrative activity of government that will not result in direct or indirect physical changes in the environment CEQA Guidelines, § 15378(b)(5). In addition, obtaining funds (fees) for capital projects for services in existing service areas are statutorily exempt under CEQA Guidelines, § 15273(a)(4).

SECTION 6: ADOPTION OF 2026 DEVELOPMENT IMPACT FEE PROGRAM UPDATE REPORT. The City Council hereby adopts the 2026

Report, dated April 2026, prepared by Urban Economics, attached hereto as Exhibit A and incorporated herein by reference.

SECTION 7: RETENTION OF FIRE FACILITIES FEE AND AFFORDABLE HOUSING FEE. The fire facilities impact fee adopted pursuant to Resolution No. 19-04 and the Fire Impact Fee Nexus Study dated September 2014, prepared by the Santa Barbara Fire Protection District, shall remain in effect and is not modified by this Resolution. The affordable housing impact fee adopted in 2021 shall likewise remain in effect and is not modified by this Resolution.

SECTION 8: ADOPTION OF UPDATED FEES. The City Council hereby approves and adopts the updated development impact fees as set forth in Exhibit B to this Resolution, attached hereto and incorporated herein by this reference. Fees for residential development shall be calculated per square foot of living space in accordance with AB 602 and as set forth in the 2026 Report and Exhibit B. The amount of the development impact fees shall be automatically increased annually effective July 1, 2027 and each July 1 thereafter by the percentage increase 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. The City Manager, or designee, is authorized to administratively adjust the development impact fees without future action of the City Council or need for future public hearings, until such time as a new impact fee nexus study and fees are adopted, or this authorization is revoked by the City Council.

SECTION 9: AUTHORIZATION. The City Manager, or designee, is hereby authorized and directed to update the development impact fee schedule and to collect such fees on new development projects and to take all action necessary to effectuate the purpose of this Resolution.

SECTION 10: SUPERSESSION OF PRIOR FEES. Upon the effective date of this Resolution, the updated development impact fees hereby approved and adopted shall supersede the corresponding fees previously adopted pursuant to Resolution No. 19-04. For the avoidance of doubt, this Resolution does not supersede the fire facilities impact fee or the affordable housing impact fee.

SECTION 11: 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 2026 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.

SECTION 12: EFFECTIVE DATE. This Resolution becomes effective upon its adoption. The updated development impact fees adopted herein shall become effective sixty (60) days after adoption of this Resolution, in accordance with Government Code section 66017.

SECTION 13. CERTIFICATION

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 19th day of May 2026.

_____

PAULA PEROTTE
MAYOR

ATTEST:

_____

DEBORAH S. LOPEZ
CITY CLERK

APPROVED AS TO FORM:

_____

ISAAC ROSEN
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. 26-___ was duly adopted by the City Council of the City of Goleta at a Public Hearing held on May 19th, 2026, by the following roll call vote of the Council members:

AYES:

NOES:

ABSENT:

ABSTAIN:

(SEAL)

_____
DEBORAH S. LOPEZ
CITY CLERK

2026 DEVELOPMENT IMPACT FEE PROGRAM UPDATE

PUBLIC REVIEW DRAFT

Prepared For:

City of Goleta

Preparation Date: April 2026

Prepared By:

Robert D. Spencer, Urban Economics

With Assistance From:

Jim Damkowitch, DKS & Gerald Comati, COM3 Consulting

TABLE OF CONTENTS

Executive Summary ..... **iv**
1. Introduction **9**
Background 9
Study Objectives 10
Assumptions and Limitations 10
Fee Waivers 11
Nexus Analysis Approach 11
Existing Fund Balances 12
Factors Driving Changes to Maximum Justified Fees 13
2. Growth Forecast **15**
Growth Forecast 15
New Development and Facilities Demand 19
Service Population 20
3. Public Administration Facilities **22**
Facility Standards 22
Fee Schedule 24
Use of Fee Revenue 24
4. Library Facilities **28**
Facility Standards 28
Fee Schedule 30
Use of Fee Revenue 30
5. Park & Recreation Facilities **33**
Facility Standards 33
Fee Schedule 38
Use of Fee Revenue 39
6. Transportation Facilities **42**
Transportation Demand Modeling 42
Local Transportation Deficiency Criteria 42
Facility Standards 44

Capital Improvements and Fair Share Analysis 44
Fee Schedule 49
Use of Fee Revenue 56
7. Bicycle & Pedestrian Facilities 58
Facility Standards 58
Fee Schedule 59
Use of Fee Revenue 60
8. Storm Drain Facilities Fee 62
Storm Drain Demand 62
Facility Standards 63
Fee Schedule 65
Use of Fee Revenue 65

Appendix A: Traffic Needs Analysis ..... [separate cover]
Appendix B: Transportation Improvement Project Cost Estimates .. [separate cover]

LIST OF TABLES

Table E.1: Goleta Growth Forecast, 2025-Buildout vi
Table E.2: Existing Facility Standard Costs vi
Table E.3: Existing and Maximum Justified Fee Schedule vii
Table 1.1 Impact Fee Fund Balances 13
Table 1.2: Factors Driving Changes to Maximum Justified Fee Schedule 14
Table 2.1: Growth Forecast (dwelling units & building space) 17
Table 2.2: Occupant Density 18
Table 2.3: Growth Forecast (residents & workers) 19
Table 2.4: Service Population 21
Table 3.1: Existing Public Administration Facilities 25
Table 3.2: Public Administration Facility Standard and Costs 26
Table 3.3: Public Administration Facilities Impact Fee 26
Table 3.4: Public Administration Facilities Impact Fee Revenue 27

Table 4.1: Existing Library Facilities 28
Table 4.2: Library Facility Standards and Costs 29
Table 4.3: Library Facilities Impact Fee Schedule 30
Table 4.4: Library Facilities Impact Fee Revenue 31
Table 5.1: Park Inventory (acres) 34
Table 5.2: Park Facility Standards 36
Table 5.3: Existing Capital Asset Park Facility Standards 38
Table 5.4: Park & Recreation Facilities Impact and Park Dedication In-lieu Fees 39
Table 5.5: Park & Recreation Facilities Impact Fee Revenue 40
Table 6.1: Transportation Improvements and Costs 46
Table 6.2: Vehicle Trip Rates 51
Table 6.3: New Development Vehicle Trip Generation 53
Table 6.4: Transportation Fee Cost per Trip 54
Table 6.5: Transportation Impact Fee Schedule (sample) 56
Table 7.1: Bicycle & Pedestrian Facilities Standard 58
Table 7.2: Bicycle & Pedestrian Facilities Costs 59
Table 7.3: Bicycle and Pedestrian Facilities Impact Fee 60
Table 7.4: Bicycle & Pedestrian Facilities Impact Fee Revenue 60
Table 8.1: Equivalent Dwelling Units 62
Table 8.2: Land Use Scenario and EDUs 63
Table 8.3: Existing Storm Drain Facilities & Standards 64
Table 8.4: Storm Drain Facilities Cost Standard 64
Table 8.5: Storm Drain Facilities Impact Fee Schedule 65
Table 8.6: Storm Drain Facilities Impact Fee Revenue 66

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 completed a major update to the program and associated ordinance (Ordinance 19-04) in 2019. The ordinance identified seven fees. This report provides a second major update to the program based on the most current data available at the time the report was prepared. Since 2019 the City has adjusted fees annually for inflation.

This report provides the supporting analysis for the City to update six existing impact fees:

- Public administration facilities impact fee (update existing fee)
- 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 (update existing fee)
- Storm drain facilities impact fee (update existing fee)

Purpose

The City is updating the aforementioned impact fees and the analysis documented in 2019 so that the fees will accurately reflect new development's fair share of capital facility costs through buildout. Per statute, the City must update its nexus study at least every eight years, but can choose to update the fees more frequently if desired. To this end, the City is updating its development impact fee nexus analysis for several reasons:

- To reflect current capital facilities costs, which have increased significantly since the prior update.
- To reflect changes existing facility inventories, and resulting facility standards and level of service.
- To reflect design changes for transportation facilities.

Fees Not Included in this Analysis

This report does not include the fire facilities fee because, although the City collects the fee, the fee is the responsibility of the County of Santa Barbara that provides facilities and services through the County's Fire Department. This report also does not include the affordable housing fee because this fee was recently adopted in 2021 and first imposed on development in 2022.

Changes to Fee Structure

The only structural change to the fee program, is to charge residential fees per square foot, as opposed to a flat rate per type of dwelling unit. This change has been made to comply with the provisions of AB 602, which went into effect in 2022. For the purpose of comparing the maximum justified fees to the current fees, the maximum justified fees are expressed per average sized dwelling unit. Fees will vary based on the square footage size of each residential development project. Note that the change to charging residential fees per square foot is not the driving factor to the increases in the fee schedules, rather the changes are driven by the facility standards, planned facilities and cost estimates.

Facility Standards and Growth Assumptions

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 summarized **Table E.1**, and described in detail in Chapter 2.

The cost per resident and per worker to maintain existing facility standards as growth occurs are shown in **Table E.2**. Parks represent the highest per capita cost for residential development and transportation is the highest cost for non-residential development.

Table E.1: Goleta Growth Forecast, 2025-Buildout

Land Use	Existing *(2025)*	Buildout	Growth	*(% Buildout)*
Residential (residents & dwelling units)				
Residents	32,417	40,169	7,752	*19%*
Single Family Detached	5,533	6,511	978	*15%*
All Other Residential	7,622	9,973	2,351	*24%*
Total Dwelling Units	13,155	16,484	3,329	*20%*
Non-residential (workers & 1,000 bldg. sq. ft.)				
Workers	25,540	35,380	9,840	*28%*
Retail / Commercial	3,353	4,621	1,268	*27%*
Office & Medical	3,187	5,058	1,871	*37%*
Industrial	6,684	7,572	888	*12%*
Total Bldg. Sq. Ft. *(1,000s)*	38,764	52,631	13,867	*26%*

Sources: Tables 2.1 and 2.3.

Table E.2: Existing Facility Standard Costs

Facility	Cost to Maintain Existing Facility Standard: Per Resident	Per Worker
Public Administration	$ 3,573	$ 715
Library	$ 296	$ 59
Parks	$11,151	$ 2,230
Transportation	$ 5,151	$ 8,211
Bicycle & Pedestrian	$ 4,682	$ 936
Storm Drain	n/a	n/a

Notes: Transportation costs based on "all other residential" (all but detached single family) and "general office" land use categories. Storm drain fees calculated based on impervious surface, not per capita. Cost per equivalent dwelling unit of impervious surface to maintain standard is $10,303.
Sources: Tables 2.2, 2.4, 3.2, 4.2, 5.3, 6.1, 6.2, 6.4, and 7.2.

Maximum Justified Fee Schedules

The updated fee schedules based on the per capita costs from **Table E.2** are shown below in **Table E.3**. The table also includes a comparison with the City's existing fee schedule. Fees for residential development calculated in this nexus study will be charged per square foot of living space. However, to provide a comparison to the fees currently charged by the City, Table E.3 displays the maximum justified fees for the average sized single family detached unit (1,791 square feet), and for the average sized 'all other' residential unit (927 square feet). Fees for a given unit will be different that the maximum justified fees shown here to the extent that the square footage of the unit varies from that of an average sized unit.

Fees for Accessory Dwelling Units

The California State Legislature has provided requirements for how local agencies can impose development impact fees on accessory dwelling units (ADU). California Government Code §66311.5(c)(1) stipulates that local agencies may not impose any impact fees on ADUs 750 square feet or less. ADUs greater than 750 square feet can be charged impact fees in proportion to the size of the primary dwelling unit. Charging impact fees per square foot for ADUs larger than 750 square feet meets the proportionality requirement.

Table E.3: Existing and Maximum Justified Fee Schedule

Land Use Category	Units	Adopted Fee *(2019 Nexus Study)*	Existing Fee *(FY 2025-26)*	Maximum Justified Fee	Difference *(Justified vs. Existing)* Amount	Difference *(Justified vs. Existing)* Percent
Public Administration						
Single Family Detached[1]	per DU	$3,086	$4,132	$10,540	$ 6,408	155%
All Other Residential	per DU	2,238	2,999	7,396	4,397	147%
Retail & Commercial	per KSF	487	656	1,665	1,009	154%
Office & Medical	per KSF	655	880	2,237	1,357	154%
Industrial	per KSF	243	329	829	500	152%
Library						
Single Family Detached[1]	per DU	$959	$1,287	$ 873	$ (414)	(32%)
All Other Residential	per DU	696	934	613	(321)	(34%)
Retail & Commercial	per KSF	151	206	138	(68)	(33%)
Office & Medical	per KSF	203	275	185	(90)	(33%)
Industrial	per KSF	75	105	69	(36)	(35%)
Parks & Recreation						
Residential Subdivisions (Quimby Act)						
Single Family Detached[1]	per DU	$14,998	$20,084	$36,913	$16,829	84%
All Other Residential	per DU	10,880	14,572	25,902	11,330	78%
All Other Development (Mitigation Fee Act)						
Single Family Detached[1]	per DU	$11,900	$15,928	$32,895	$16,967	107%
All Other Residential	per DU	7,947	13,175	23,083	9,908	75%
Retail & Commercial	per KSF	1,880	2,519	5,196	2,677	106%
Office & Medical	per KSF	2,525	3,382	6,981	3,599	106%
Industrial	per KSF	936	1,257	2,587	1,330	106%
Storm Drain						
Single Family Detached[1]	per DU	$ 3,596	$ 4,817	$10,845	$ 6,028	125%
All Other Residential	per DU	2,609	3,494	3,904	410	12%
Retail & Commercial	per KSF	1,988	2,665	6,290	3,625	136%
Office & Medical	per KSF	2,671	3,578	4,338	760	21%
Industrial	per KSF	990	1,329	5,097	3,768	284%

Table E.3: Existing and Maximum Justified Fee Schedule (continued)

Land Use Category	Units	Adopted Fee *(2019 Nexus Study)*	Existing Fee *(FY 2025-26)*	Maximum Justified Fee	Difference *(Justified vs. Existing)* Amount	Percent
Transportation						
All Land Uses	per PM Peak Hour Trip	$ 12,450	$ 16,665	$ 22,687	$ 6,022	36%
Sample of Land Uses						
Single Family Detached[1]	per DU	$ 12,077	$ 15,165	$ 20,466	$ 5,301	35%
Apartment	per DU	7,487	8,166	11,443	3,277	40%
Hotel	per room	7,171	9,499	10,236	737	8%
Supermarket	per KSF	70,816	89,491	119,651	30,160	34%
General Office	per KSF	17,808	22,998	25,700	2,702	12%
General Light Industrial	per KSF	11,835	10,666	10,894	228	2%
Bicycle & Pedestrian						
Single Family Detached[1]	per DU	$3,092	$4,142	$ 13,812	$ 9,670	233%
All Other Residential	per DU	2,243	3,006	9,692	6,686	222%
Retail & Commercial	per KSF	488	657	2,182	1,525	232%
Office & Medical	per KSF	656	881	2,931	2,050	233%
Industrial	per KSF	243	329	1,086	757	230%
All Updated Fees						
Single Family Detached[1]	**per DU**	**$ 34,710**	**$45,471**	**$ 89,431**	**$43,960**	97%
All Other Residential[2]	**per DU**	**23,220**	**31,774**	**56,132**	**24,358**	77%
Retail & Commercial[3]	**per KSF**	**75,810**	**96,194**	**135,122**	**38,928**	40%
Office & Medical[4]	**per KSF**	**24,518**	**31,994**	**42,372**	**10,378**	32%
Industrial[5]	**per KSF**	**14,322**	**14,015**	**20,562**	**6,547**	47%

Notes: "DU" = dwelling unit; "KSF" = thousand building square feet. Residential fees are calculated per square foot of living space in this nexus study update, though residential fees are shown per average sized DU in this table for the purpose of comparison to current fee schedule.
The City also charges impact fees for fire and affordable housing that are not included in this update.
[1] Includes detached and attached accessory dwelling units (ADU). Fees for ADUs can only be charged on ADUs greater than 750 square feet, and are charged proportionally based on the square footage of the ADU to the square footage of the primary unit.
[2] Parks and transportation fees based on "Apartment" category.
[3] For transportation fee, based on supermarket category.
[4] For transportation fee, based on general office category.
[5] For transportation fee, based on general light industrial category.
Sources: City of Goleta Fee Schedule, FY 2025-26; 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 of 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 completed a major update to the program in 2019. This report provides a second major update to the program based on the most current data available at the time the report was prepared. The City adjusts fees annually for inflation between major program updates.

This report provides the supporting analysis for the City to update six existing impact fees:

- Public administration facilities impact fee (update existing fee)
- 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 (update existing fee)
- Storm drain facilities impact fee (update existing fee)

This report does not include the fire facilities fee because, although the City collects the fee, the fee is the responsibility of the County of Santa Barbara that provides facilities and services through the County's Fire Department. This report also does not include the affordable housing fee because this fee was recently adopted in 2021 and first imposed on development in 2022. Per AB 602, a nexus study must be updated at least every eight years, from

[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.

the period beginning January 1, 2022. Further, to comply with AB 602, fees for residential development are calculated per square foot of living space.

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.

Assumptions and Limitations

This nexus study relies on data from a variety of sources, including publicly available, third-party sources (California Department of Finance; US Census Bureau), the City's own data (General Plan, facility inventories, certain replacement cost data), and data developed by consultants specifically for this effort (Goleta Travel Demand model, transportation cost estimates). Care has been taken to use reasonable and justifiable

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

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

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

assumptions throughout this report, and to conservatively estimate the allocation of future facility costs to new development where appropriate. The City should consider updating this analysis periodically to ensure the assumptions are reasonable. Per state law, a nexus study must be updated at least every eight years.

Fee Waivers

The nexus analysis is based on the estimated cost of the facilities needed to serve all new development, and does not exclude any development that may be exempted from paying impact fees, such as affordable housing units. If the analysis excluded development that is exempted from paying fees, then the burden would be shifted to other land uses, which is not permittable under the Mitigation Fee Act. As such, any fee reductions, waivers or exemptions for development projects are effectively subsidized by the City's General Fund.

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.

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 the 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. However, the City cannot increase fees above the maximum justified amount on other land uses to compensate for adopting lower fees for a particular use.

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 Capital Improvement Program (CIP) which is on file with the City and incorporated herein by this reference. The transportation fee is based on a comprehensive long-range list of specific improvements that is included in Chapter 6.

Existing Fund Balances

Table 1.1 displays the City's current impact fee fund balances for all impact fee funds, including those not being updated in this nexus study. The fund balances are not used in the fee analysis for those fees calculated using the existing facility standard (public administration, library, parks and recreation, storm drain and bicycle and pedestrian facilities). The existing fund balances for these categories represents facilities that the City has not yet constructed or acquired. To be conservative the fund balances are excluded from the calculation of the existing facility standards.

The fund balance is used in the calculation of the transportation facilities fee, since that fee is calculated based on a defined project list and allocation to new development. In that case the fund balance is subtracted from the

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

costs allocated to new development prior to calculating the cost per PM peak hour trip.

Table 1.1 Impact Fee Fund Balances

Fee	FY24/25 Fund Balance ($1,000s)
Public Administration	683
Library	283
Parks and Recreation - Quimby	6,400
Parks and Recreation - Non-Quimby	2,320
Affordable Housing Development	7
Storm Drain	565
Transportation	1,296
Bicycle and Pedestrian	291
Fire	4,100

Source: City of Goleta.

Factors Driving Changes to Maximum Justified Fees

The maximum justified fees in this report are in some cases considerably higher than the fees justified by the City's 2019 Nexus Study. There are many factors that drive changes to the maximum justified fee schedule. The following discussion summarizes the predominant factors driving changes to fee levels in this nexus study update compared to the 2019 study:

- Increased unit costs (replacement costs for buildings, bike, pedestrian, storm drainage infrastructure and land acquisition). Unit costs have been updated based on cost experience provided by the City, and Urban Economics' experience in other jurisdictions in Southern California. Construction costs have escalated significantly since COVID, and this analysis seeks to capture changes in the cost of future facilities needed to serve new development. For example, the Engineering News Record's Construction Cost Index has increased by over 25% since 2019.
- Updated inventories of existing facilities (public administration facilities, parks and open space, bike and pedestrian infrastructure, storm drain infrastructure) that more accurately reflect the City's existing level of service and investment in facilities and infrastructure compared to the information that was available in 2019. More detailed inventories demonstrate that the City provides a higher level of service than was previously assumed, which means that the corresponding fees to maintain the existing level of service are higher than in the prior nexus study.

- Library fees have been updated to assume a larger service population, including demand from unincorporated areas within the Goleta Valley Library's service area, per the FY 2025-2026 Agreement for Operation of a Countywide Library System. This results in a lower facility standard per person, and consequently lower impact fees.
- Revised traffic model analysis and cost estimates. DKS updated the travel demand model to reflect current conditions, and recalculated the existing deficiencies and allocation of responsibility to new development. Projects that had been completed, or no longer deficient since the prior update have been removed from the analysis, and new projects have been added.

Table 1.2 summarizes the factors driving the changes to the maximum justified amounts, by fee category.

Table 1.2: Factors Driving Changes to Maximum Justified Fee Schedule

Fee Category	Factors Driving Changes to Fee Schedule	Primary Cost Drivers	Key Assumptions
Public Administration	Increased cost of facilities; Increased cost of land acquisition; increased level of service indicated by existing facility inventories	Land Acquisition; Construction Costs	Existing Service Population; Existing LOS; Unit Cost Assumptions
Libraries	Level of service decreased due to increased population served by roughly the same amount facilities. Costs increased slightly. Fees decreased compared to prior study.	Land Acquisition; Construction Costs	Existing Service Population; Existing LOS; Unit Cost Assumptions
Parks	Existing inventory of parkland indicates an increased level of service; Increased costs to acquire land and improve parks	Land Acquisition; Park improvement costs	Existing Service Population; Existing LOS; Unit Cost Assumptions
Transportation Facilities	Revised traffic model and increased cost estimates	Construction Costs	Travel Demand Model allocation; Growth Projections; Project Costs
Bicycle and Pedestrian Facilities	Updated inventories of existing facilities providing service resulting in higher level of service. Increased unit costs.	Construction Costs	Existing Service Population; Existing LOS; Unit Cost Assumptions
Storm Drains	Updated inventories of existing facilities providing service resulting in higher level of service. Increased unit costs.	Construction Costs	Existing Impervious Surface; Existing LOS; Unit Cost Assumptions

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 2025 and for buildout of the city under the current General Plan in terms of dwelling units and nonresidential building square feet. Buildout is not assigned to occur in any particular year, rather, the nexus analysis considers the total growth increment, regardless of when it may occur.
- 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, 2025 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 nonresidential building space by land use category, including 11 retail/commercial categories, three office/medical categories, and three industrial categories.

The following section describes the updates made to the travel demand model for use in this nexus study.

Updates to Travel Demand Model Baseline Land Use

DKS updated the travel demand model baseline to accurately quantify the current development in the City and surrounding areas. The 2013 baseline data was updated using the sources cited below. All City of Goleta land uses were reviewed and approved by City staff – including land use of neighboring jurisdictions. The County of Santa Barbara, City of Santa Barbara, and University of California, Santa Barbara (UCSB) land use was informed and coordinated with the County and the City. The following summarizes the data sources for each jurisdiction that informed changes to the land use scenario:

City of Goleta:

- Residential and nonresidential land use permit data (2013-2024)
- General Plan Update Resolutions
- 2024 school enrollment
- Built housing unit summaries 2013-2024

County of Santa Barbara:

- Residential and nonresidential land use permit data (2013-2024)
- County General Plan rezones

City of Santa Barbara

- Residential and nonresidential land use permit data (2013-2024)
- La Cumbre Plaza General Plan rezones

UCSB:

- Residential permit data (2013-2024)
- Student Enrollment (2024)

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

Land Use	Existing (2025)[1]	Buildout	Growth (% Buildout)	
Residential (dwelling units)				
Single Family Detached	5,533	6,511	978	15%
All Other Residential	7,622	9,973	2,351	24%
Total Residential	**13,155**	**16,484**	**3,329**	**20%**
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	1,225	1,861	636	34%
Regional Commercial	491	528	37	7%
Resort Hotel[3]	281	329	48	15%
Restaurants	210	244	34	14%
Theater	-	65	65	NA
Subtotal	3,353	4,621	1,268	27%
Office & Medical (1,000 sq. ft.)				
Hospitals	101	161	60	37%
Medical	150	225	75	33%
Office	2,936	4,672	1,736	37%
Subtotal	3,187	5,058	1,871	37%
Industrial (1,000 sq. ft.)				
Heavy Industrial	274	418	144	34%
Light Industrial	6,410	7,088	678	10%
Research & Development	-	66	66	NA
Subtotal	6,684	7,572	888	12%
Total Non-residential	**13,224**	**17,251**	**4,027**	**23%**

[1] Residential estimates for 2025 based on DOF data. Nonresidential estimates for 2025 based on travel demand model data for 2024. 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, Table *E-5 Population and Housing Estimates for Cities, Counties and the State — January 1, 2025*; Goleta Traffic Model land use scenarios (2025 and General Plan buildout); Jan A. DeRoos, *Planning and Programming a Hotel*, Cornell University, 2011.

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.

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**.

Table 2.2: Occupant Density

Land Use				
Residential				
Single Family Detached	2.95	persons / DU		
All Other Residential	2.07	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. All densities rounded to the nearest hundredth.
Sources: U.S. Census Bureau, 2019-2023 American Community Survey 5-Year Estimates, Tables B25033 and B25024; 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**. 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**. It is important to quantify the existing and land use scenario in terms of people, because it is people who generate demand for services and the facilities needed to provide those services from the City.

Total existing household population is consistent with January 1, 2025 estimates by the California Department of Finance. Existing residents in single family units are estimated using the existing count of dwelling units, and the calculated occupant density from Table 2.2. The difference between total household population and the calculated residents in single family detached units is the estimated number of existing residents in all other residential units.

The total increase of resident units, by type from Table 2.1 is multiplied by the assumptions of residents per unit, by type from Table 2.2 to estimate the increase in household population between 2025 and buildout. The increase in household population is added to the estimates of existing population to calculate an estimate of total household population, by housing unit type at buildout.

Estimates of nonresidential square footage (in thousands) from Table 2.1 are multiplied by the occupant density assumptions of workers per 1,000 square feet of building space for three general land uses types to estimate workers in the base year, at the planning horizon and those associated with new nonresidential development in the City.

Table 2.3: Growth Forecast (residents & workers)

Land Use	Existing (2025)	Buildout	Growth	(% Buildout)
Residents[1]				
Single Family Detached	16,322	19,207	2,885	*15%*
All Other Residential	16,095	20,962	4,867	*23%*
Total	32,417	40,169	7,752	*19%*
Workers				
Retail & Commercial	7,812	10,766	2,954	*27%*
Office & Medical	9,975	15,831	5,856	*37%*
Industrial	7,753	8,783	1,030	*12%*
Total	25,540	35,380	9,840	*28%*

[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, 2025,* Sacramento, California, May 2025; Tables 2.1 and 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. Increases in impervious surface generating runoff drive demand for storm drain facilities. Service population, trip generation and impervious surface are commonly used and reasonable indicators of the impact of new development on the need for new or expanded facilities.

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 both residential and some business uses, tend to be used during certain parts of the day, and face lower levels of demand per worker versus per

resident. Therefore, the same service population, which includes residents plus workers, who have been weighted to reflect a lower level of demand for facilities compared to residents, is used for all three of these impact fees.

2. Demand for storm drain facilities is based on impervious surface assumptions applied to residential and non-residential land uses.
3. Demand for transportation facilities is based on trip generation rates applied to residential and non-residential land uses.

The next section describes the approach used in this study to measure service population for the public administration, library, parks, and bicycle & pedestrian facilities. See Chapter 6 for further explanation of how transportation demand is measured for the nexus analysis. See Chapter 8 for a discussion of impervious surface related to demand for storm drain facilities.

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 residents in group quarters are more likely to have access to private facilities such as a university campus, or are inmates prohibited from using public facilities. 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.

User surveys by other local government agencies have indicated that service demand from one worker is typically less than demand from one resident. This result is reasonable because nonresidential buildings are typically occupied less intensively (fewer hours of the day) than housing units. Thus, relative to one resident, one worker should be weighted by a factor less than one before adding employment to residents to calculate service population.

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. User surveys, as well as a simple comparison of demand based on 40 hours per week as a worker versus 128 hours as a

resident (168 hours total in a week), would suggest a weighting factor closer to 0.30. However, to reflect that master planning for these facilities typically focuses more on residential demand, a more conservative factor of 0.20 is used in this nexus analysis. 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 population used in this impact fee update is shown in **Table 2.4**. New development will comprise 21% (9,720 / 47,245 = 21%) of the calculated service population at buildout.

Table 2.4: Service Population

Land Use	Existing *(2025)*	Buildout	Growth *(% Buildout)*	
Public Administration, Library, Park & Bike/Ped. Facilities				
Residents *(a)*	32,417	40,169	7,752	
Workers *(b)*	25,540	35,380	9,840	
Relative Demand/Benefit *(c)* [1]	0.20	0.20	0.20	
Service Population *(a + (b x c))*	37,525	47,245	9,720	*21%*

[1] Factors based on available user survey data and estimates from similar impact fee nexus studies.
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 owned by the City and not otherwise associated with the nexus analysis for any of the City's other impact fees. Public administration facilities include a range of facilities such as city hall, community centers, corporation yards, and recreation facilities not associated with typical park development costs (see Chapter 5, *Park and Recreation Facilities*).

Police facilities are not included because services are provided through a contract with the Santa Barbara County sheriff's department, and the local substation is in a leased facility. Fire facilities are not included because services are provided by the Santa Barbara County Fire Department and facilities are owned by the County.

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]

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 2021) development impact fee nexus studies for jurisdictions in California.[7] These nexus studies were chosen because the included recent replacement costs, and provided sufficient detail to differentiate between administrative buildings and utility buildings. To be conservative, these values were not adjusted for cost inflation since the specific study was conducted. Land costs reflect a conservative estimate of $2,695,000 per acre for acquisition based on the City's 2018 cost to acquire the Goleta Train Depot. This cost is significantly less than the average cost per acre incurred by the City to acquire right of way recently. The Train Depot acquisition is a reasonable proxy for valuing the City's land inventory, since the parcel is more representative of land suitable to site public facilities, as opposed to right-of-way acquisition. Total costs include a five percent charge for fee program administration based on the City's analysis of staff time spent to administer the fee program.

As shown in the table, the City has an existing capital asset facility standard composed of 2.94 and 0.20 square feet per capita for civic and utility buildings, respectively, plus 20.59 square feet of land per capita. Also included in the table is the train deport facility standard. This standard is expressed separately from other types of buildings to reflect the City's recent investment in the facility, and because the cost of the facility was significantly higher than other types of buildings. The total cost for new development to maintain this facility standard is $3,573 per capita including fee program administration costs.

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

[7] Local agencies included in sample to estimate building replacement costs: Azusa, Chino Hills, Pismo Beach, Grover Beach, Indian Wells, Temple City, Placer County.

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.

Fees adopted at this level would allow the City to provide facilities to new development at the same ratio of facilities to service population that currently exists in the City of Goleta today. As a policy decision, the City can adopt any fee lower than the maximum justified amounts. However, should the City elect to adopt fees below the maximum amounts, the lost revenue required to construct the facilities must come from the City's general fund or other unrestricted revenue source. The City cannot impose higher fees on other applicants in the future to make up the lost revenue.

Use of Fee Revenue

Estimated fee revenue through buildout based on the growth forecast presented in Chapter 2 is shown in **Table 3.4**. The City programs impact fee revenue through its Capital Improvement Program, which serves as the adopted CIP for this nexus study, as required by AB 602, and which is on file with the City and incorporated herein by this reference and available on the City's website. The City's CIP is updated annually to incorporate revised projections of future DIF revenues, and program those revenues to eligible projects that benefit new development.

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 21 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 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.

Table 3.1: Existing Public Administration Facilities

Facility	Address	Use	Building Type	Parcel Area *(acres)*	Building Area *(sq. ft.)*
Goleta Valley Community Center				9.84	
Main Bldg. / Goleta Community Center	5679 Hollister Ave.	Community center	Civic		23,860
Boys and Girls Club	5701 Hollister Avenue	Youth services	Civic		14,974
Classroom Bldg - North (site-built)	5689 Hollister Ave.	Youth services	Civic		6,851
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					54,031
Parking Lot	Orange Ave.	Parking lot	NA	0.15	-
City Hall	130 Cremona Drive	Offices	Civic	2.46	40,049
Public Works Corporation Yard	6735 Hollister Ave.		Utility	2.32	4,000
Land For Future Corporation Yard	Hollister/Hwy 217	Future City Facility	Utility	0.49	-
Goleta Train Depot	27 S La Patera Lane	Train Station/Transit Center	Train Depot	2.48	9,000
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					110,470
Train Depot					9,000
Utility Buildings					7,570
Total				17.74	127,040

[1] Land included in parkland inventory.
Sources: City of Goleta Master Facilities List (City of Goleta GS Facilities Master List 01-2025.xlsx); City of Goleta Owned Land Inventory (City_of_Goleta_Owned_Jan_2023.xlsx).

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)*
Formula	*a*	*b*	*c = a / b*	*d*	*e = c x d*
Civic Buildings	110,470	37,525	2.94	$ 500	$ 1,470
Train Depot	9,000	37,525	0.24	2,444	587
Utility Buildings	7,570	37,525	0.20	300	60
Land[2]	772,624	37,525	20.59	62	1,277
Subtotal					$ 3,394
Program Administration (5% of total)					179
Total					$ 3,573

Note: Total cost per capita rounded to the nearest dollar.
[1] Building replacement costs based on values used in similar studies for jurisdictions in California. Land cost based on City's recent land acquisition costs.
[2] Acres from Table 3.1 converted to square feet based on 43,560 square feet per acre.
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 *(Residents/DU or Workers/KSF)*	Relative Demand	Maximum Justified Fee	Fee per Square Foot[1]
Formula	*a*	*b*	*c*	*d = a * b * c*	*e = d / average*
Residential					
Single Family Detached[2]	$ 3,573	2.95	1.00	$ 10,540 per DU	$5.88
All Other Residential	3,573	2.07	1.00	7,396 per DU	7.98
Nonresidential					
Retail & Commercial	$ 3,573	2.33	0.20	$ 1,665 per KSF	$1.67
Office & Medical	3,573	3.13	0.20	2,237 per KSF	2.24
Industrial	3,573	1.16	0.20	829 per KSF	0.83

Notes: "DU" = dwelling unit; "KSF" = thousand building square feet.
[1] Assumes 1,791 square feet per average sized single family unit and 927 for all other residential units in Goleta based on an analysis of American Housing Survey data from 2023.
[2] Includes attached and detached accessory dwelling units. Fees for ADUs can only be charged on ADUs greater than 750 square feet in size, and are charged proportionally based on the square footage of the ADU to the square footage of the primary dwelling unit.
Sources: Tables 2.2, 2.4, and 3.2.

Table 3.4: Public Administration Facilities Impact Fee Revenue

Land Use Category	Growth (2025-Buildout)[1]	Maximum Justified Fee[2]	Revenue (2025-Buildout)
Formula	*a*	*b*	*c = a * b*
Residential			
Single Family Detached	978	$ 10,540	$ 10,300,000
All Other Residential	2,351	7,396	17,400,000
Subtotal	3,329		$ 27,700,000
Nonresidential			
Retail & Commercial	1,268	$ 1,665	$ 2,100,000
Office & Medical	1,871	2,237	4,200,000
Industrial	888	829	700,000
Subtotal	4,027		$ 7,000,000
Total			$ 34,700,000

Note: Totals rounded to nearest $100,000.
[1] Dwelling units for residential and thousand building square feet for nonresidential land uses.
[2] Per average sized dwelling unit for residential and per thousand building square feet 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 21 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, its collection of materials and a book mobile.

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**. Note that the inventory only includes owned library facilities, and excludes the temporary GVL Express library at 6500 Hollister Avenue, Suite 105 because it is not owned by the City. The City is currently renovating its main library building at 500 North Fairview Ave.

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.		81,004	volumes[1]
Land	500 North Fairview Ave.		2.07	acres
Vehicles			1.00	book van

[1] Includes books, audiobooks, DVDs, CDs, and library of things, hotspots, passes, magazines and book club kits.
Sources: City of Goleta Master Facilities List (City of Goleta GS Facilities Master List 01-2025.xlsx); City of Goleta Owned Land Inventory (City_of_Goleta_Owned_Jan_2023.xlsx).

The library facility standard and associated costs are shown in **Table 4.2**. The assumed City service population is from Table 2.4. This figure has been adjusted in Table 4.2 to account for unincorporated service population served by the Goleta Valley Library. Per the FY 2025-26 Agreement for the Operation of a Countywide Library System, and the latest estimate of household population in Goleta from the California Department of Finance, 49.8% of demand for the Goleta Valley Library branch library services is associated with City residents and the remainder is associated with unincorporated residents. Consequently, the City's library service

population is assumed to be 49.8% of the total service population in this for the purpose of calculating the existing facility standards, which results an assumed service population of 75,332, which includes residents and a weighted estimate of workers.

Building and materials replacement costs are based on values used in similar studies for jurisdictions in California consistent with the sources used in the Public Administration fee analysis, and have been increased to reflect upgrades and renovations from the Building Forward infrastructure project. Assumed land values 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 0.21 square feet of library space and 1.08 volumes per 1,000 capita, plus 1.20 square feet of land per capita. The total cost for new development to maintain this facility standard is $296 per capita including fee program administration costs.

Table 4.2: Library Facility Standards and Costs

Facility Type	Existing Facilities Inventory *(units)*		Existing Service Population	Existing Facility Standard *(units per capita)*	Average Replacement Cost *(per unit)*[1]	Total Cost *(per capita)*
Formula	*a*		*b*	*c = a / b*	*d*	*e = c x d*
Building	15,773	sq. ft.	75,332	0.21	$ 800	$ 168
Materials	81,004	volumes	75,332	1.08	32	35
Land[2]	90,169	sq. ft.	75,332	1.20	62	74
Vehicles	1	book van	75,332	0.000013	300,000	4
Subtotal						$ 281
Program Administration (5% of total)						22
Total						$ 296

Note: Total cost per capita rounded to the nearest dollar.
[1] Per Table 2.4 the existing City service population for library facilities is 37,525. This figure has been adjusted in this table to account for unincorporated service population served by the Goleta Valley Library. Per the FY 2025-26 Agreement for the Operation of a Countywide Library System, and the latest estimate of household population in Goleta from the CA Department of Finance, 49.8% of demand for the branch library services is associated with City residents and the remainder is associated with unincorporated residents. The City's library service population is assumed to be 49.8% of the total service population in this table for the purpose of calculating the existing facility standards.
[2] Building and materials replacement costs based on values used in similar studies for jurisdictions in California. Building replacement cost increased to reflect upgrades and renovation from Building Forward infrastructure project. Land cost based on City's recent land acquisition costs.
[3] Acres from Table 4.1 converted to square feet based on 43,560 square feet per acre.
Sources: Table 1, FY 2025-2026 Agreement for Operation of a Countywide Library System; 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.

Fees adopted at this level would allow the City to provide facilities to new development at the same ratio of facilities to service population that currently exists in the City of Goleta today. As a policy decision, the City can adopt any fee lower than the maximum justified amounts. However, should the City elect to adopt fees below the maximum amounts, the lost revenue required to construct the facilities must come from the City's general fund or other unrestricted revenue source. The City cannot impose higher fees on other applicants in the future to make up the lost revenue.

Table 4.3: Library Facilities Impact Fee Schedule

Land Use Category	Cost per Capita	Occupant Density *(Residents/DU or Workers/KSF)*	Relative Demand	Maximum Justified Fee		Fee per Square Foot[1]
Formula	*a*	*b*	*c*	*d = a * b * c*		*e = d / average*
Residential						
Single Family Detached[2]	$ 296	2.95	1.00	$ 873	per DU	$0.49
All Other Residential	296	2.07	1.00	613	per DU	0.66
Nonresidential						
Retail & Commercial	$ 296	2.33	0.20	$ 138	per KSF	$0.14
Office & Medical	296	3.13	0.20	185	per KSF	0.19
Industrial	296	1.16	0.20	69	per KSF	0.07

[1] Assumes 1,791 square feet per average sized single family unit and 927 for all other residential units in Goleta based on an analysis of American Housing Survey data from 2023.
[2] Includes attached and detached accessory dwelling units. Fees for ADUs can only be charged on ADUs greater than 750 square feet in size, and are charged proportionally based on the square footage of the ADU to the square footage of the primary dwelling unit.
Sources: Tables 2.2, 2.4, and 4.2.

Use of Fee Revenue

Estimated fee revenue through buildout associated with the increase in City service population based on the growth forecast presented in Chapter 2 and the maximum justified fee schedule is shown in **Table 4.4**.

Table 4.4: Library Facilities Impact Fee Revenue

Land Use Category	Growth (2025-Buildout)[1]	Maximum Justified Fee[2]	Revenue (2025-Buildout)
Formula	*a*	*b*	*c = a * b*
Residential			
Single Family Detached	978	$ 873	$ 900,000
All Other Residential	2,351	613	1,400,000
Subtotal	3,329		$ 2,300,000
Nonresidential			
Retail & Commercial	1,268	$ 138	$ 200,000
Office & Medical	1,871	185	300,000
Industrial	888	69	100,000
Subtotal	4,027		$ 600,000
Total			$ 2,900,000

Note: Totals rounded to nearest $100,000.
[1] Dwelling units for residential and thousand building square feet for nonresidential land uses.
[2] Per average sized dwelling unit for residential and per thousand building square feet 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. Examples include additional collections, a bookmobile or expanded building space. The Goleta Valley Library currently is in need of additional space to accommodate its growing physical collection of materials.

The City's Capital Improvement Program (CIP) will be updated to indicate anticipated use of fee revenue, and which is on file with the City and incorporated herein by this reference and available on the City's website. The City's current CIP includes a project making ADA, safety, and building improvements to the Goleta Valley Library. The City's CIP is updated annually to incorporate revised projections of future DIF revenues, and program those revenues to eligible projects that benefit new development.

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. City service population from growth is forecast to be 21 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 21 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 Acres
Andamar	-	2.45	2.45	-	2.45
Armitos Park	-	1.48	1.48	-	1.48
Armstrong	-	0.46	0.46	-	0.46
Bella Vista I & II	-	3.50	3.50	-	3.50
Bella Vista III	0.77	-	0.77	-	0.77
Berkeley Park	-	4.20	4.20	-	4.20
Brandon	2.22	-	2.22	-	2.22
Campus Glen	6.31	-	6.31	-	6.31
Evergreen Acres	-	28.72	28.72	-	28.72
Glen Annie at Del Norte	0.99	-	0.99	-	0.99
Jonny D. Wallis Neighborhood Park	-	3.98	3.98	-	3.98
Koarts Apartments	6.60	-	6.60	-	6.60
La Goleta	6.13	-	6.13	-	6.13
Lake Los Carneros Natural and Historical Preserve (Including Stow House)	-	5.53	5.53	134.46	139.99
Mathilda	-	0.20	0.20	-	0.20
Nectarine	-	0.13	0.13	-	0.13
Oro Verde	7.35	-	7.35	-	7.35
San Jose Creek	4.87	-	4.87	-	4.87
San Miguel	-	2.71	2.71	-	2.71
San Miguel Open Space	3.07	-	3.07	-	3.07
Santa Barbara Shores (Small)	4.83	-	4.83	-	4.83
Santa Barbara Shores Open Space (Small)	1.24	-	1.24	-	1.24
Santa Barbara Shores Park	-	-	-	98.62	98.62
Sperling Preserve	-	-	-	137.65	137.65
Stonebridge	3.41	-	3.41	-	3.41
Stow Grove Park[1]	11.10	-	11.10	-	11.10
Stow Tennis Courts	-	2.68	2.68	-	2.68
University Village	-	3.16	3.16	-	3.16
Winchester I	2.22	1.14	3.36	-	3.36
Winchester II	-	1.20	1.20	-	1.20
Total	61.11	61.54	122.65	370.73	493.38

[1] Stow Grove park is currently improved, however the City is planning to completely rehabilitate the park. Park acres for this park are listed as unimproved to reflect need for rehabilitation.
Sources: Table 3-1, Draft Open Space Element Update; City of Goleta Owned Land Inventory (City_of_Goleta_Owned_Jan_2023.xlsx).

Quimby Act Standard

The Quimby Act[8] 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:

- 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 as of the last Federal Census 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.[9] 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.

[8] Government Code, section 66477.

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

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 1.64 acres of improved parkland, 3.27 acres of total parkland, and 9.88 acres of open space per 1,000 capita.

The Quimby Act standard based only on existing residents as of the last Federal Census and parkland is 3.75 acres per 1,000 residents. The Quimby Act standard is slightly higher than the comparable Mitigation Fee Act standard (3.75 versus 3.27 acres) 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 Population[1]	Existing Facility Standard	
Formula	*a*		*b*	*c = a / (b / 1,000)*	
Mitigation Fee Act Park Facilities Standard					
Improved Parkland	61.54	acres	37,525	1.64	acres / 1,000 capita
Total Parkland	122.65	acres	37,525	3.27	acres / 1,000 capita
Open Space	370.73	acres	37,525	9.88	acres / 1,000 capita
Quimby Act Parkland Dedication Standard					
Total Parkland	122.65	acres	32,690	3.75	acres / 1,000 capita

[1] Service population is based on residents and workers for the Mitigation Fee Act standard. Residents as of last Federal Census in 2020 used to calculated 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 a conservative estimate of $2,695,000 per acre for acquisition based on the City's 2018 cost to acquire the Goleta Train Depot. This cost is used to be conservative because it is significantly less than the average cost per acre incurred by the City to acquire right of way recently. The assumed park improvement cost per acre is based on the City's budgeted cost to rehabilitate Stow Park from the City's most recent CIP.

Table 5.3 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 fees 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)*
Formula	*a*	*b*	*c = a x b / 1,000*
All Development Except Residential Subdivisions			
Park Facilities Impact Fee (Mitigation Fee Act)			
Improved Parkland	1.64	$ 919,000	$ 1,507
Total Parkland	3.27	2,695,100	8,813
Open Space	9.88	27,600	273
Subtotal			$ 10,593
Program Administration (5% of total)			558
Total			**$ 11,151**
Residential Subdivisions			
Parkland Dedication In-lieu Fee (Quimby Act)			
Total Parkland	3.75	$ 2,695,100	$ 10,107
Program Administration (5% of total)			532
Subtotal			$ 10,639
Park Facilities Impact Fee (Mitigation Fee Act)			
Improved Parkland	1.64	919,000	1,507
Open Space	9.88	27,600	273
Subtotal			$ 1,780
Program Administration (5% of total)			94
Subtotal			$ 1,874
Total			**$ 12,513**

Note: Total cost per capita rounded to the nearest dollar.
[1] Land cost based on City's recent land acquisition costs. Park development costs based on cost per acre to renovate Stow Grove Park from the City's current CIP (Project No. 9074).
Sources: City of Goleta CIP; Urban Economics; Table 5.2.

The total cost for new development to maintain the existing parkland standard is $11,151 per capita if the project is not a residential subdivision subject to the Quimby Act. The total cost is $12,513 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.

Fees adopted at this level would allow the City to provide parks to new development at the same ratio of facilities to service population that currently exists in the City of Goleta today. As a policy decision, the City can adopt any fee lower than the maximum justified amounts. However, should the City elect to adopt fees below the maximum amounts, the lost revenue required to construct the facilities must come from the City's general fund or other unrestricted revenue source. The City cannot impose higher fees on other applicants in the future to make up the lost revenue.

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

Land Use Category	Cost per Capita	Occupant Density *(Residents/DU or Workers/KSF)*	Relative Demand	Maximum Justified Fee		Fee per Square Foot[1]
Formula	*a*	*b*	*c*	*d = a * b * c*		*e = d / average*
All Development Except Residential Subdivisions (Mitigation Fee Act)						
Residential						
Single Family Detached[2]	$11,151	2.95	1.00	$ 32,895	per DU	$ 18.37
All Other Residential	11,151	2.07	1.00	23,083	per DU	24.90
Nonresidential						
Retail & Commercial	$11,151	2.33	0.20	5,196	per KSF	$ 5.20
Office & Medical	11,151	3.13	0.20	6,981	per KSF	6.98
Industrial	11,151	1.16	0.20	2,587	per KSF	2.59
Residential Subdivisions						
Parkland Dedication In-Lieu Fee (Quimby Act)						
Single Family Detached[2]	$10,639	2.95	1.00	$ 31,385	per DU	$17.52
All Other Residential	10,639	2.07	1.00	22,023	per DU	23.76
Park Development & Open Space Fee (Mitigation Fee Act)						
Single Family Detached[2]	$ 1,874	2.95	1.00	$ 5,528	per DU	$ 3.09
All Other Residential	1,874	2.07	1.00	3,879	per DU	4.18
Total Fee						
Single Family Detached	**$12,513**	**2.95**	**1.00**	**$ 36,913**	**per DU**	$ 20.61
All Other Residential	**12,513**	**2.07**	**1.00**	**25,902**	**per DU**	27.94

Note: "DU" = dwelling unit; "KSF" = thousand building square feet.
[1] Assumes 1,791 square feet per average sized single family unit and 927 for all other residential units in Goleta based on an analysis of American Housing Survey data from 2023.
[2] Includes attached and detached accessory dwelling units. Fees for ADUs can only be charged on ADUs greater than 750 square feet in size, and are charged proportionally based on the square footage of the ADU to the square footage of the primary dwelling unit.
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 (2025-Buildout)[1]	Maximum Justified Fee[2]	Revenue (2025-Buildout)
Formula	*a*	*b*	*c = a * b*
Residential			
Single Family Detached	978	$ 32,895	$ 32,200,000
All Other Residential	2,351	23,083	54,300,000
Subtotal	3,329		$ 86,500,000
Nonresidential			
Retail & Commercial	1,268	$ 5,196	$ 6,600,000
Office & Medical	1,871	6,981	13,100,000
Industrial	888	2,587	2,300,000
Subtotal	4,027		$ 22,000,000
Total			$108,500,000

Notes: Revenue estimates assume all projects are subject only to the Mitigation Fee Act fees and not the Quimby Act in-lieu fee. Totals rounded to nearest $100,000.
[1] Dwelling units for residential and thousand building square feet for nonresidential land uses.
[2] Per average sized dwelling unit for residential and per thousand building square feet 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. The City programs impact fee revenue through its Capital Improvement Program, which serves as the adopted CIP for this nexus study, as required by AB 602, and which is on file with the City and incorporated herein by this reference and available on the City's website. The City's CIP is updated annually to incorporate revised projections of future DIF revenues, and program those revenues to eligible projects that benefit new development.

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 21 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 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 adopted 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 modeling coupled with operational determinations. 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 used in the City's prior Public Facilities Impact Fee Program was updated in 2025 for use in this nexus analysis. The model encompasses 192 traffic analysis zones that aggregate the underlying land use based on 28 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 both morning (a.m.) and evening (p.m.) peak-period travel. Based on the city's General Plan buildout growth scenario described in Chapter 2, along with surrounding regional growth, the Goleta Travel Model is applied to generate future year AM/PM peak hour traffic volumes that are then input into various planning- and/or engineering-based operational tools to determine the operating characteristics of a given roadway or intersection. Based on these analyses, operational deficiencies are identified relative to the City's General Plan standards/thresholds as described below.

Local Transportation Deficiency Criteria

The City of Goleta defines transportation deficiency criteria through the City General Plan Circulation Element. The primary policies of concern for this study are TE 4, which defines target LOS standards, TE 5, which

defines planned street and road improvements, and TE 13, which defines traffic impacts for new developments. From these policies, the City defines a traffic impact as any project which causes an intersection on a major arterial, minor arterial, or collector roadway to degrade below a LOS C except at the intersection of Storke and Hollister where an LOS D standard will be maintained. Projects are required to evaluate the creation of safety hazards, potential adverse effects on local neighborhood streets, and other substantial transportation concerns.

Projects to be funded by the fee program met at least one of the following criteria. In any event, the use of development impact fee revenue will be used only to (1) refurbish existing facilities in order to maintain existing LOS or (2) achieve an adopted LOS that is consistent with the City's General Plan.

- The project is needed to mitigate a future deficiency, or the worsening of an existing deficiency at a signalized intersection. Due to new development's contribution to a level of service (LOS) failure, channelization is provided to allow the intersection to operate at an acceptable LOS.
- The project is needed to add capacity to accommodate new development by improving a non-signalized intersection into either a signalized intersection or roundabout. These projects are identified by either a projected decrease in the LOS, or signal warrant conditions.
- The project is needed to mitigate queue spillback caused by additional trips generated by new development. Queue spillback refers to a traffic condition in which a queue of vehicles formed at a congested signalized intersection, extends backwards far enough to block the upstream intersection.
- The project is needed on a major arterial, minor arterial, or collector roadway to add capacity to accommodate new development by providing additional travel lanes, as identified under the Highway Capacity Manual approach, or if the segment exceeds General Plan average daily trip (ADT) thresholds.
- The project is needed to mitigate a future deficiency, or the worsening of an existing deficiency on a State owned and operated State Highway freeway facility (i.e., US 101 or SR 217). Due to new development's contribution to a level of service (LOS) failure, additional travel lane (aux-lane, general purpose lane, managed lane) is provided to allow the freeway to operate at an acceptable LOS. Given that these are not City-owned facilities, the City applies

an LOS Standard of D (standard used for applicable Congestion Management Programs statewide).

The results of the deficiency assessment and project identification serve to update the list of improvements described in the City's Development Impact Fee capital improvement list and 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. The cost to correct existing deficiencies cannot be funded with impact fee revenue and is excluded from the fee calculations. Facility standards for transportation analysis are based on policies in the Transportation Element of the City's *General Plan*.[10] 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 32 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

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

2. New development outside Goleta
3. New development inside Goleta

Finally, cost estimates for each improvement were developed. The total cost for all 32 projects is $485.6 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 39.52 percent of total project costs, or $191.9 million.

Note that project costs for R-13, I-01, I-12-02, I-12-02 (I4), I-12-05, I-12-06, I-12-07, I-12-10, I-12-11, I-12-12, I-12-35 and I-12-36 represent the average cost between a traffic signal and a roundabout for each location, and are noted as "average" in the *Intersection Control* column of Table 6.1. Average costs are used due to the uncertainty as to which type of intersection control will ultimately be built so that costs are not overstated in this fee analysis. The specific intersection control for each project will be determined during the project's design phase based on operational, safety, and site-specific considerations.

Table 6.1: Transportation Improvements and Costs

Map ID	Project Location	Total Cost ($1,000s)[1]	Intersection Control	Existing Deficiency		Total Growth[2]		Goleta Growth	
				Share	Cost ($1,000s)	Share	Cost ($1,000s)	Share	Cost ($1,000s)
Existing Roadways									
R-02	Hollister Avenue Complete Streets Corridor Plan	10,750	Signal	70%	7,510	30%	3,240	47.52%	1,540
R-10	US 101 NB Aux Lane Between Los Carneros Road and Storke Road	22,650	n/a	90%	20,401	10%	2,249	25.11%	565
R-11	US 101 NB/SB Aux Lanes Between Fairview Avenue and Los Carneros Road	33,500	n/a	0%	-	100%	33,500	61.01%	20,439
R-12	Storke Road Widening: Phelps Road to City Limits	6,000	n/a	65%	3,883	35%	2,117	44.92%	951
R-13	Los Carneros Way Realignment	23,550	Average	0%	-	100%	23,550	73.25%	17,250
R-14	South Fairview Avenue Widening	6,200	n/a	0%	-	100%	6,200	46.72%	2,897
Subtotal		102,650		31%	31,794	69%	70,856	42.51%	43,641
Existing Intersections									
I-01	Fairview Avenue/Calle Real Intersection Improvements	23,875	Average	0%	-	100%	23,875	68.19%	16,280
I-02	Fairview Avenue at US101 SB On-Ramp Improvements	28,800	n/a	71%	20,360	29%	8,440	53.88%	4,547
I-07	Hollister Widening - West of Storke Road	3,620	n/a	0%	-	100%	3,620	62.47%	2,261
I-08	Patterson Avenue at US101 SB Ramp Improvements	44,450	Signal	75%	33,469	25%	10,981	37.16%	4,081
I-10	Hollister Avenue at Patterson Avenue	3,600	n/a	0%	-	100%	3,600	35.40%	1,275

[1] Project costs for projects R-13, I-01, I-12-02, I-12-02 (I4), I-12-05, I-12-06, I-12-07, I-12-10, I-12-11, I-12-12, I-12-35 and I-12-36 represent the average cost between a traffic signal and a roundabout for each location. Average costs are used due to the uncertainty as to which type of intersection control will ultimately be built so that costs are not overstated in this fee analysis.
[2] Total growth share includes Goleta growth share and excludes existing deficiency share.
Sources: Appendix A and Appendix B.

Table 6.1: Transportation Improvements and Costs Continued

Map ID	Project Location	Total Cost ($1,000s)[1]	Intersection Control	Existing Deficiency		Total Growth[2]		Goleta Growth	
				Share	Cost ($1,000s)	Share	Cost ($1,000s)	Share	Cost ($1,000s)
I-12-02	New Intersection Control - Calle Real / Carlo Drive	4,980	Average	74%	3,665	26%	1,315	67.89%	893
I-12-02 (I4)	New Intersection Control - Cathedral Oaks Road / Hollister Avenue / US 101 NB Ramps	5,640	Average	0%	-	100%	5,640	84.10%	4,743
I-12-05	New Intersection Control - Cathedral Oaks Road / Los Carneros Road	6,555	Average	0%	-	100%	6,555	56.78%	3,722
I-12-06	New Intersection Control - Cathedral Oaks Road / N La Patera Lane	7,205	Average	66%	4,762	34%	2,443	57.22%	1,398
I-12-07	New Intersection Control - Fairview Avenue / Stow Canyon Road	7,015	Average	77%	5,398	23%	1,617	76.55%	1,238
I-12-10	New Intersection Control - Hollister Avenue / Cannon Green Drive	5,925	Average	79%	4,690	21%	1,235	87.80%	1,084
I-12-11	New Intersection Control - Hollister Avenue / Pebble Beach Drive	8,015	Average	0%	-	100%	8,015	87.53%	7,016
I-12-12	New Intersection Control - Hollister Avenue / Sumida Gardens Lane	6,425	Average	0%	-	100%	6,425	25.79%	1,657
I-12-23	New Intersection Control - Carlo Drive / Cathedral Oaks Road	8,050	Roundabout	63%	5,107	37%	2,943	58.12%	1,710
I-12-27	New Intersection Control - Cathedral Oaks / 101 SB-Ramp	34,000	Roundabout	67%	22,842	33%	11,158	81.01%	9,039
I-12-30	New Intersection Control - Hollister Avenue / Palo Alto Drive	10,200	Roundabout	0%	-	100%	10,200	89.08%	9,086

[1] Project costs for projects R-13, I-01, I-12-02, I-12-02 (I4), I-12-05, I-12-06, I-12-07, I-12-10, I-12-11, I-12-12, I-12-35 and I-12-36 represent the average cost between a traffic signal and a roundabout for each location. Average costs are used due to the uncertainty as to which type of intersection control will ultimately be built so that costs are not overstated in this fee analysis.
[2] Total growth share includes Goleta growth share and excludes existing deficiency share.
Sources: Appendix A and Appendix B.

Table 6.1: Transportation Improvements and Costs Continued

Map ID	Project Location	Total Cost ($1,000s)[1]	Intersection Control	Existing Deficiency		Total Growth[2]		Goleta Growth	
				Share	Cost ($1,000s)	Share	Cost ($1,000s)	Share	Cost ($1,000s)
I-12-31	New Intersection Control - Hollister Avenue / Santa Felicia Drive	2,180	Signal	78%	1,696	22%	484	84.31%	408
I-12-32	New Intersection Control - Storke Avenue / Santa Felicia Drive	270	n/a	78%	211	22%	59	50.15%	30
I-12-33	New Intersection Control - Hollister Avenue / Cathedral Oaks Avenue	9,250	Roundabout	0%	-	100%	9,250	88.52%	8,189
I-12-34	New Intersection Control - Hollister Avenue / Cortona Drive	1,700	Signal	66%	1,115	34%	585	73.87%	432
I-12-35	New Intersection Control - Cathedral Oaks Avenue / Glen Annie Road	5,900	Average	0%	-	100%	5,900	27.23%	1,607
I-12-36	New Intersection Control - Cathedral Oaks Avenue / Alameda Avenue	5,985	Average	0%	-	100%	5,985	30.16%	1,805
I-18	Storke Road at US101 SB Ramps	22,400	Signal	81%	18,140	19%	4,260	50.09%	2,134
I-22	Hollister Avenue / Fairview Avenue Intersection Improvements	15,850	Roundabout	0%	-	100%	15,850	52.91%	8,386
Subtotal		271,890		45%	121,454	55%	150,436	34.21%	93,020
New Roadways									
R-05	Goleta US 101 Bike/Ped Overcrossing[3]	92,300	n/a	0%	-	100%	92,300	50.00%	46,150
R-09	Phelps Road Extension	18,800	n/a	0%	-	100%	18,800	48.41%	9,100
Subtotal		111,100		0%	-	100%	111,100	49.73%	55,250
Total		**485,640**		32%	**153,249**	68%	**332,391**	39.52%	**191,912**

[1] Project costs for projects R-13, I-01, I-12-02, I-12-02 (I4), I-12-05, I-12-06, I-12-07, I-12-10, I-12-11, I-12-12, I-12-35 and I-12-36 represent the average cost between a traffic signal and a roundabout for each location. Average costs are used due to the uncertainty as to which type of intersection control will ultimately be built so that costs are not overstated in this fee analysis.
[2] Total growth share includes Goleta growth share and excludes existing deficiency share.
[3] This project relieves congestion necessary to achieve an acceptable LOS for an adjacent intersection. Given that the project is solely dedicated to bicycle and pedestrian uses, and because there is a separate fee for bicycle and pedestrian facilities, half of the project costs are included here, and half of the costs can be funded by the bicycle and pedestrian facilities fee.
Sources: Appendix A and Appendix B.

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 Project Cost Estimates* provided under separate cover for more detail on the cost estimation work conducted for each improvement. Appendix A and B are on file with the City and are incorporated herein by this reference.

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 a given land use category is shown below:

$$\text{Trips for land use category} = \text{Land use category growth (in units)} \times \text{Land use category trip rate (per unit)}$$

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 fee =

Cost per trip x Trip rate for land use category (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 28 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 28 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 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]	Average
Single Family Detached	210	Single Family Detached	DU	0.93	100%	0.93
All Other Residential	220	Multifamily Housing (Low Rise)	DU	0.52	36%	
	215	Single Family Attached	DU	0.51	53%	
	252	Senior Housing - Multifamily	DU	0.25	5%	
	255	Continuing Care	DU	0.19	5%	
		Weighted Average			100%	0.48
Auto Services	843	Automobile Parts Sales	KSF	4.86	*100%*	4.86
Banks	911	Walk-In Bank	KSF	12.13	*100%*	12.13
Fast Food Restaurants		[No growth forecast]				
Hotel	310	Hotel	room	0.47	*50%*	
	320	Motel	room	0.37	*50%*	
		Weighted Average			100%	0.42
Indoor Recreation	492	Health / Fitness Club	KSF	3.77	*50%*	
	493	Athletic Club	KSF	3.38	*50%*	
		Weighted Average			100%	3.58
Shopping Mall		[No growth forecast]				
Neighborhood Commercial	814	Variety Store	KSF	6.70	6%	
	816	Hardware / Paint Store	KSF	2.98	0%	
	817	Nursery / Garden Center	KSF	6.58	1%	
	850	Supermarket	KSF	8.79	55%	
	861	Sporting Goods Superstore	KSF	2.09	1%	
	863	Electronic Superstore	KSF	4.25	1%	
	875	Department Store	KSF	1.95	0%	
	876	Apparel Store	KSF	5.77	10%	
	880	Pharmacy / Drugstore	KSF	8.51	15%	
	890	Furniture Store	KSF	0.57	3%	
	975	Drinking Place	KSF	6.44	7%	
		Weighted Average			100%	7.75
Regional Commercial	814	Variety Store	KSF	6.70	6%	
	816	Hardware / Paint Store	KSF	2.98	7%	
	817	Nursery / Garden Center	KSF	6.58	1%	
	850	Supermarket	KSF	8.79	15%	
	861	Sporting Goods Superstore	KSF	2.09	3%	
	863	Electronic Superstore	KSF	4.25	6%	
	875	Department Store	KSF	1.95	32%	
	876	Apparel Store	KSF	5.77	12%	
	880	Pharmacy / Drugstore	KSF	8.51	4%	
	890	Furniture Store	KSF	0.57	11%	
	925	Drinking Place	KSF	6.44	2%	
		Weighted Average			100%	4.18

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]	Average
Resort Hotel	330	Resort Hotel	KSF	0.39	100%	0.39
Restaurants	931	Fine Dining Restaurant	KSF	8.10	*25%*	
	932	High-turnover (sit-down)	KSF	9.18	*75%*	
		Weighted Average			100%	8.91
Theater	445	Movie Theater	KSF	4.91	*100%*	4.91
Hospitals	610	Hospital	KSF	0.86	100%	0.86
Medical	630	Clinic	KSF	3.67	*50%*	
	720	Medical-Dental Office	KSF	3.42	*50%*	
		Weighted Average			100%	3.55
Office	710	General Office	KSF	1.18	*50%*	
	770	Business Park	KSF	0.79	*50%*	
		Weighted Average			100%	0.99
Heavy Industrial	130	Industrial Park	KSF	0.23	*100%*	0.23
Light Industrial	110	General Light Industrial	KSF	0.49	*100%*	0.49
Research & Development	760	Research & Development Center	KSF	0.45	*100%*	0.45

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 12th Edition*, 2025; 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, which differ by land use category. 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 SANDAG data is used because it identifies pass-by and trip length assumptions by land use category. The same adjustment to remove pass-by trips from the fee calculation will be used when applying the fee to individual development projects to maintain the necessary consistency discussed above. New development in Goleta is estimated to generate 8,844 P.M. peak hour trips at buildout, as shown in **Table 6.3**.

Table 6.3: New Development Vehicle Trip Generation

Travel Demand Model Land Use Category	Growth (2025-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	978	DU	0.93	3%	0.90	880	10%
All Other Residential	2,351	DU	0.48	3%	0.47	1,105	12%
Auto Services[1]	75	KSF	4.86	10%	4.37	328	4%
Banks[1]	5	KSF	12.13	25%	9.10	46	1%
Fast Food Restaurants[1]	-	KSF	NA	40%	NA	NA	NA
Hotels	454	rooms	0.42	4%	0.40	182	2%
Indoor Recreation	114	KSF	3.58	9%	3.26	372	4%
Shopping Mall	-	KSF	NA	NA	NA	NA	NA
Neighborhood Commercial[1]	636	KSF	7.75	40%	4.65	2,957	33%
Regional Commercial[1]	37	KSF	4.18	20%	3.34	124	1%
Resort Hotel	48	KSF	0.39	4%	0.37	18	0%
Restaurants[1]	34	KSF	8.91	20%	7.13	242	3%
Theater	65	KSF	4.91	17%	4.08	265	3%
Hospitals	60	KSF	0.86	2%	0.84	50	1%
Medical	75	KSF	3.55	10%	3.20	240	3%
Office	1,736	KSF	0.99	4%	0.95	1,649	19%
Heavy Industrial	144	KSF	0.23	3%	0.22	32	0%
Light Industrial	678	KSF	0.49	2%	0.48	325	4%
Research & Development	66	KSF	0.45	2%	0.44	29	0%
Total Trips						**8,844**	**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 ($191.9 million) from **Table 6.1**, and total trips from growth (8,844) shown in **Table 6.3**. Total costs are reduced by the City's existing transportation impact fee fund balance. In addition, five percent is added to the net cost for fee program administration. The total cost per trip is $22,687 as shown in **Table 6.4**.

Table 6.4: Transportation Fee Cost per Trip

Transportation Improvement Cost: Goleta Growth Share ($1,000s)	$191,912
Estimated Impact Fee Fund Balance (June 30, 2025)	1,296
Net Goleta Growth Share	$190,616
Program Administration (5% of total)	10,032
Total GTIF Program Cost	$200,648
P.M. Peak Hour Trips from Growth, (2025 to Buildout)	8,844
Proposed Fee per P.M. Peak Hour Trip	$ 22,687

Sources: Tables 6.1 and 6.3.

Smart Growth and VMT Efficient Housing Discounts

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**.

Housing development projects that meet certain smart growth or vehicle miles traveled (VMT) efficient criteria must be charged a lower impact fee to reflect lower levels of demand for transportation facilities.[11]

The Smart Growth criteria are:

1. 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.
2. The housing development is located within one-half mile from three or more of the following:
    a. A supermarket or grocery store.
    b. A public park.
    c. A community center.
    d. A pharmacy or drugstore.
    e. A medical clinic or hospital.
    f. A public library.
    g. A school that maintains a kindergarten or any of grades 1 to 12, inclusive.
    h. A licensed childcare facility.
    i. A restaurant.

[11] Government Code, section 66005.1

3. The housing development provides no more than one onsite parking space for zero- to two-bedroom units, and two onsite parking spaces for three or more bedroom units.

Eligible housing projects that meet the criteria would receive a 15% discount on the transportation impact fees 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 transit 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 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		Fee per Square Foot[1]
Formula	*a*	*b*	*c*	*d = a x b x (1 - c)*		*e = d / average sq. ft.*
Residential						
Single Family Detached[2]	$ 22,687	0.93	3%	$20,466	per DU	$ 11.43
Apartment	22,687	0.52	3%	11,443	per DU	6.39
Nonresidential						
Hotel	$ 22,687	0.47	4%	$10,236	per room	n/a
Supermarket	22,687	8.79	40%	119,651	per KSF	119.65
General Office	22,687	1.18	4%	25,700	per KSF	25.70
General Light Industrial	22,687	0.49	2%	10,894	per KSF	10.89

Notes: "DU" = dwelling unit; "KSF" = thousand building square feet.
[1] Assumes 1,791 square feet per average sized single family unit and 927 for all other residential units in Goleta based on an analysis of American Housing Survey data from 2023.
[2] Includes attached and detached accessory dwelling units. Fees for ADUs can only be charged on ADUs greater than 750 square feet in size, and are charged proportionally based on the square footage of the ADU to the square footage of the primary dwelling unit.
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 2025-26 to FY 2026-27) Capital Improvement Program, and which is on file with the City and incorporated herein by this reference. 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 $293.7 million in alternative funding sources to fully fund all improvements ($485.6 million - $261 million). At a minimum the City needs to identify $153.2 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.

These projects may include bicycle and pedestrian components that are ancillary to the project and included only because they meet typical transportation improvement design standards. The bicycle and pedestrian facilities fee documented in the next chapter of this report cannot be used to fund the ancillary bicycle and pedestrian components of the projects included in this chapter, with the exception of project R-05, 50% of which can be funded through this fee, and up to 50% of which can be funded by bicycle and pedestrian facilities fee. With the exception of project R-05, the bicycle and pedestrian facilities fee must be used to fund bicycle and pedestrian facilities unrelated to the project list in this chapter.

7. BICYCLE & PEDESTRIAN FACILITIES

This chapter provides a nexus analysis, fee schedule, and estimated revenue for the City's bicycle and pedestrian facilities impact fee. 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 funds 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		Existing Service Pop-ulation	Existing Facility Standard *(units per capita)*
Formula	*a*	*b*	*c = a * b*		*d*	*e = c / d*
Sidewalks	569,669	6	3,418,016	sq. ft.	37,525	91
Class I Bike Paths	32,250	10	322,500	sq. ft.	37,525	9
Class II Bike Lanes	222,578	NA	222,578	ln. ft.	37,525	6
Class III Bike Boulevards	63,575	NA	63,575	ln. ft.	37,525	2

Note: Existing facility standard rounded to nearest square foot, or linear foot per capita.
Sources: City of Goleta Infrastructure Inventory Update (2025 Infrastructure Inventory Update_250221_FINAL v1.xlsx); Table 2.4.

The bicycle and pedestrian facilities costs are shown in **Table 7.2**. Replacement costs were provided by the City for use in this analysis. The total cost for new development to maintain this facility standard is $4,682 per capita including fee program administration costs.

Table 7.2: Bicycle & Pedestrian Facilities Costs

Facility Type	Existing Facility Standard *(units per capita)*		Average Replace-ment Cost *(per unit)*[1]	Total Cost *(per Capita)*
Formula	*a*		*b*	*c = a * b*
Sidewalks	91	sq. ft.	$ 44.00	$ 4,004
Class I Bike Paths	9	sq. ft.	36.25	326
Class II Bike Lanes	6	ln. ft.	18.94	114
Class III Bike Boulevards	2	ln. ft.	1.89	4
Subtotal				$ 4,448
Program Administration (5% of total)				234
Total				$ 4,682

Note: Total Cost per Capita rounded to the nearest whole dollar.
[1] Average replacement costs identified in City of Goleta 2025 Infrastructure Inventory Update.
Sources: City of Goleta 2025 Infrastructure Inventory Update (2025 Infrastructure Inventory Update_250221_FINAL v1.xlsx), 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.

Fees adopted at this level would allow the City to provide facilities to new development at the same ratio of facilities to service population that currently exists in the City of Goleta today. As a policy decision, the City can adopt any fee lower than the maximum justified amounts. However, should the City elect to adopt fees below the maximum amounts, the lost revenue required to construct the facilities must come from the City's general fund or other unrestricted revenue source. The City cannot impose higher fees on other applicants in the future to make up the lost revenue.

Table 7.3: Bicycle and Pedestrian Facilities Impact Fee

Land Use Category	Cost per Capita	Occupant Density (Residents/DU or Workers/KSF)	Relative Demand	Maximum Justified Fee		Fee per Square Foot[1]
Formula	*a*	*b*	*c*	*d = a x b x c*		*e = d / average sq. ft.*
Residential						
Single Family Detached[2]	$ 4,682	2.95	1.00	$ 13,812	per DU	$ 7.71
All Other Residential	4,682	2.07	1.00	9,692	per DU	10.46
Nonresidential						
Retail & Commercial	$ 4,682	2.33	0.20	$ 2,182	per KSF	$ 2.18
Office & Medical	4,682	3.13	0.20	2,931	per KSF	2.93
Industrial	4,682	1.16	0.20	1,086	per KSF	1.09

[1] Assumes 1,791 square feet per average sized single family unit and 927 for all other residential units in Goleta based on an analysis of American Housing Survey data from 2023.
[2] Includes attached and detached accessory dwelling units. Fees for ADUs can only be charged on ADUs greater than 750 square feet in size, and are charged proportionally based on the square footage of the ADU to the square footage of the primary dwelling unit.
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 (2025-Buildout)[1]	Maximum Justified Fee[2]	Revenue (2025-Buildout)
Formula	*a*	*b*	*c = a * b*
Residential			
Single Family Detached	978	$ 13,812	$ 13,500,000
All Other Residential	2,351	9,692	22,800,000
Subtotal	3,329		$ 36,300,000
Nonresidential			
Retail & Commercial	1,268	$ 2,182	$ 2,800,000
Office & Medical	1,871	2,931	5,500,000
Industrial	888	1,086	1,000,000
Subtotal	4,027		$ 9,300,000
Total			$ 45,600,000

[1] Dwelling units for residential and thousand building square feet for nonresidential land uses.
[2] Per average sized dwelling unit for residential and per thousand building square feet for nonresidential land uses.
Sources: Table 2.1 and 7.3.

Certain transportation facilities projects from Chapter 6 of this report may include bicycle and pedestrian components that are ancillary to the project. The bicycle and pedestrian facilities fee documented in this chapter cannot be used to fund the bicycle and pedestrian components of the transportation facilities fee projects, with the exception of project R-05, up to 50% of which can be funded by bicycle and pedestrian facilities fee. The bicycle and pedestrian facilities fee must be used to fund bicycle and pedestrian facilities unrelated to the project list in the prior chapter, with the exception of project R-05.

The City programs impact fee revenue through its Capital Improvement Program, which serves as the adopted CIP for this nexus study, as required by AB 602, and which is on file with the City and incorporated herein by this reference and available on the City's website. The City's CIP is updated annually to incorporate revised projections of future DIF revenues, and program those revenues to eligible projects that benefit new development.

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 21 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 an update to the City's storm drain facilities impact fee. Storm drain facilities include pipes, culverts, catch basins and related facilities used to convey surface storm water.

Storm Drain Demand

New development generates storm water runoff by increasing the amount of land that is impervious to precipitation. The increased stormwater runoff must be controlled through storm drain facilities. **Table 8.1** shows the calculation of equivalent dwelling unit (EDU) demand factors, which relate the amount of impervious surface generated by various land uses to the amount of impervious surface generated by a typical single family dwelling unit. Density assumptions are based on typical densities from the City's General Plan. The average percent impervious factors are derived from California EPA data.

Table 8.1: Equivalent Dwelling Units

Land Use	Density (Units per Acre of KSF/Acre)[1]	Average Percent Impervious	Impervious Surface per DU or KSF	Equivalent Dwelling Unit (EDU)[2]
Formula	a	b	*c = b * 43,560 / a*	d = c / 4,269
Residential				
Single Family Detached	5.00	0.49	4,269	1.00
All Other Residential	20.00	0.70	1,525	0.36
Nonresidential				
Retail & Commercial	15.246	0.86	2,457	0.58
Office & Medical	17.424	0.69	1,725	0.40
Industrial	17.424	0.81	2,025	0.47

[1] Dwelling units for residential and thousand building square feet for non-residential. Density based on typical development densities from the City's General Plan. Density based on R-SF zoning for single family detached, and R-MD zoning for all other residential. Nonresidential densities are based on floor-area-ratios (FAR) of 0.35 for retail/commercial and 0.40 for office/medical and industrial.

[2] EDUs per dwelling unit for residential development and per thousand square feet for nonresidential development.

Sources: Pages 10 and 15, User's Guide for the California Impervious Surface Coefficients, Office of Environmental Health Hazard Assessment California Environmental Protection Agency, December 2010; Tables 2-1 and 2-3, Goleta General Plan/Coastal Land Use Plan; Urban Economics.

Table 8.2 applies the EDU factors calculated in Table 8.1 to the land use scenario from Table 2.1 to express demand for storm drain facilities in terms of impervious surface EDUs in the base year, at the planning horizon, and for the projected growth increment.

Table 8.2: Land Use Scenario and EDUs

	EDU Factor	Existing (DU/ KSF)	Existing EDUs	Projected Growth (DU/KSF)	Growth in EDUs	Buildout (DU/ KSF)	Build-out EDUs
Residential							
Single Family Detached	1.00	5,533	5,533	978	978	6,511	6,511
All Other Residential	0.36	7,622	2,744	2,351	846	9,973	3,590
Subtotal		13,155	8,277	3,329	1,824	16,484	10,101
Nonresidential							
Retail & Commercial	0.58	3,353	1,945	1,268	735	4,621	2,680
Office & Medical	0.40	3,187	1,275	1,871	748	5,058	2,023
Industrial	0.47	6,684	3,141	888	417	7,572	3,559
Subtotal		13,224	6,361	4,027	1,901	17,251	8,262
Total			14,638		3,726		18,364
Percent of Total			80%		20%		100%

Sources: Tables 8.1 and 2.1.

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 impervious surface 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 8.3.** Existing storm drain EDUs are identified in **Table 8.2**. Dividing the existing quantities of facilities by existing EDUs results in the existing storm drain infrastructure standards, expressed per EDU.

Table 8.3: Existing Storm Drain Facilities & Standards

Facility Type	Quantity	Units	Existing EDUs	Existing Facility Standard *(units per EDU)*
Underground Drainage	129,433	Linear Feet	14,638	8.84
Inlets	823	Each	14,638	0.06
Outlets	336	Each	14,638	0.02
Maintenance Holes	587	Each	14,638	0.04
Surface Drainage (Channel)	21,175	Cubic Yards	14,638	1.45

Notes: Replacement costs provided by City for use in this analysis based on recent project bid results and Caltrans data, adjusted for inflation into 2025 dollars. Cost per linear foot is the weighted average cost across all types of materials for a given diameter.
Sources: City of Goleta Infrastructure Inventory Update, 2026; Table 8.2.

The existing storm drain facilities cost standard in **Table 8.4.** The infrastructure standards from Table 8.3 are multiplied by the average replacement cost for each facility type to determine the existing cost standard per EDU. Unit replacement costs were provided by City for use in this analysis based on recent project bid results and Caltrans data, and were adjusted for inflation into 2025 dollars. The cost for new development to maintain the existing storm drain infrastructure facility standards is $10,845 per EDU including fee program administration costs.

Table 8.4: Storm Drain Facilities Cost Standard

Facility Type	Existing Facility Standard *(units per EDU)*		Average Replace-ment Cost *(per unit)*[1]	Total Cost *(per EDU)*
Formula	*a*		*b*	*c = a * b*
Underground Drainage	8.84	ln. ft.	$ 559	$ 4,943
Inlets	0.06	each	12,326	693
Outlets	0.02	each	9,440	217
Maintenance Holes	0.04	each	22,600	906
Surface Drainage (Channel)	1.45	c.y.	2,450	3,544
Subtotal				$ 10,303
Program Administration (5% of total)				542
Total				$ 10,845

Note: Total Cost per EDU rounded to the nearest whole dollar.
[1] Average replacement costs identified in City of Goleta 2026 Infrastructure Inventory Update.
Sources: City of Goleta 2026 Infrastructure Inventory Update, Table 8.3

Fee Schedule

The storm drain facilities impact fee is shown in **Table 8.5**. The fee is based on the cost per EDU shown in Table 8.4 necessary to maintain the City's existing capital asset facility standard.

Fees adopted at this level would allow the City to provide facilities to new development at the same ratio of facilities to impervious surface that currently exists in the City of Goleta today. As a policy decision, the City can adopt any fee lower than the maximum justified amounts. However, should the City elect to adopt fees below the maximum amounts, the lost revenue required to construct the facilities must come from the City's general fund or other unrestricted revenue source. The City cannot impose higher fees on other applicants in the future to make up the lost revenue.

Table 8.5: Storm Drain Facilities Impact Fee Schedule

Land Use Category	Cost per EDU	EDU Factor	Maximum Justified Fee		Fee per Square Foot[1]
Formula	*a*	*b*	*c = a * b*		*d = c / average sq. ft.*
Residential					
Single Family Detached[2]	$10,845	1.00	$10,845	per DU	$6.06
All Other Residential	10,845	0.36	3,904	per DU	4.21
Nonresidential					
Retail & Commercial	$10,845	0.58	$ 6,290	per KSF	$6.29
Office & Medical	10,845	0.40	4,338	per KSF	4.34
Industrial	10,845	0.47	5,097	per KSF	5.10

[1] Assumes 1,791 square feet per average sized single family unit and 927 for all other residential units in Goleta based on an analysis of American Housing Survey data from 2023.
[2] Includes attached and detached accessory dwelling units. Fees for ADUs can only be charged on ADUs greater than 750 square feet in size, and are charged proportionally based on the square footage of the ADU to the square footage of the primary dwelling unit.
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 8.6**. The City is currently pursing the development of a Storm Drain Master Plan (Project No. 9085) which will be used to identify capacity expanding storm drain projects.

Table 8.6: Storm Drain Facilities Impact Fee Revenue

Land Use Category	Growth (2025-Buildout)[1]	Maximum Justified Fee[2]	Revenue (2025-Buildout)
Formula	*a*	*b*	*c = a * b*
Residential			
Single Family Detached	978	$ 10,845	$ 10,600,000
All Other Residential	2,351	3,904	9,200,000
Subtotal	3,329		$ 19,800,000
Nonresidential			
Retail & Commercial	1,268	$ 6,290	$ 8,000,000
Office & Medical	1,871	4,338	8,100,000
Industrial	888	5,097	4,500,000
Subtotal	4,027		$ 20,600,000
Total			$ 40,400,000

Note: Fee revenue rounded to nearest $100,000.
[1] Dwelling units for residential and thousand building square feet for nonresidential land uses.
[2] Per average sized dwelling unit for residential and per thousand building square feet for nonresidential land uses.
Sources: Table 8.2 and 8.5.

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. The City programs impact fee revenue through its Capital Improvement Program, which serves as the adopted CIP for this nexus study, as required by AB 602, and which is on file with the City and incorporated herein by this reference and available on the City's website. The City's CIP is updated annually to incorporate revised projections of future DIF revenues, and program those revenues to eligible projects that benefit new development. Once completed, the Storm Drain Master Plan will be incorporated into the City's CIP.

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 20 percent of project costs based on new development as a share of total development at buildout (see **Table 8.2**).

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.

2026

APPENDIX A

TRAFFIC NEEDS ANAYSIS - DIF PROGRAM UPDATE

JIM DAMKOWITCH, PRINCIPAL DKS

DKS ASSOCIATES | 428 J Street Sacramento, CA

TRAFFIC NEEDS ASSESSMENT - DIF PROGRAM UPDATE

DATE: April 9, 2026

TO: Nina Buelna, Public Works Director | City of Goleta

FROM: Jim Damkowitch, Principal | DKS Associates

SUBJECT: City of Goleta Development Impact Fee Program Update Project #24675-002

INTRODUCTION

As part of the overall Development Impact Fee (DIF) update by the City of Goleta, DKS 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 serve to inform the update of the Goleta Development Impact Fee (DIF) fee schedule for traffic. The intent of the DIF is to contribute funds for construction of the City of Goleta's Capital Improvement Program (CIP) through administration of locally generated developer traffic impact fees. This analysis satisfies the requisite California Mitigation Fee Act (MFA) 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 City's 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 DIF cost estimates. The latter is a requisite step for developing a fee schedule by land use type.

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, and General Plan land use and transportation strategies and policies.

The Goleta Travel Model estimates peak-hour traffic (AM and PM) for both existing year and future year conditions, providing roadway segment volumes and intersection turning movements that support detailed operational analyses. The ability to predict future volume sets helps determine whether a given road segment or intersection will operate acceptably under future conditions, as well

as the extent to which new development within and outside the City will contribute to future infrastructure deficiencies identified within the City of Goleta.

A comprehensive update to the Goleta Travel Model was completed in August 2025. The baseline model was updated to reflect 2024 conditions and was validated to State/Federal criteria. A 2050 travel forecast was developed based on the City of Goleta's General Plan land use buildout and adopted resolutions. For areas within the modeling domain but outside the City's boundaries, land uses were updated to reflect 2050 conditions based on County and City of Santa Barbara rezones, school (K-12) enrollment projections, UCSB Long Range Development Plan projections, Santa Barbara Airport enplanement projections, and applicable County/City of Santa Barbara Specific Plans.

SBCAG's Regional Travel Demand Model baseline and 2050 volumes were used to establish traffic growth at all entry/exit points (i.e., gateways) into the Goleta Travel Model modeling domain (i.e., Goleta Valley).

A complete description of the Goleta Travel Model update is provided in the *Technical Memorandum City of Goleta Travel Model Update*, *DKS December 2025* provided in **Appendix A.1**.

MITIGIATION FEE ACT (MFA)

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

- Existing Deficiencies: A DIF 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 DIF capital project must increase the capacity of a transportation facility or service that otherwise would be deficient at the time horizon (2050);
- Fair Share: the DIF 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 VMT efficient housing development meets a set of specific characteristics (see legislative updates).

MFA LEGISLATIVE UPDATES

Since the last update of the DIF in 2019, the following legislative updates to the MFA have occurred.

- AB 602 - With the passage of AB 602 (2021), residential fees must now be based on floor area versus by unit. If an agency wishes to continue charging residential fees on a per unit basis – a defensible justification must be developed and submitted. AB 602 also protracts noticing and public review requirements including on-line public access to draft documents prior to fee adoption.

- SB 99 (ADUs) - SB 13 addresses how Accessory Dwelling Units (ADUs) are to be addressed as part of traffic impact fee programs. SB 13 (2019) amended Section 65852.2 of the

California Government Code to specify that local agencies may not impose development impact fees on ADUs of less than 750 square feet. Any impact fees must be charged proportionately in relation to the square footage of the primary dwelling unit.

- AB 358 (VMT Efficient Residential Housing Discount) - If a housing development satisfies all of the following characteristics, the fee, or the portion thereof relating to vehicular traffic impacts, shall be set at a rate that reflects a lower rate of automobile trip generation associated with such housing developments in comparison with housing developments without all of these characteristics.

  (1) The housing development is located within a transit priority area and the major transit stop, if planned, is programmed to be completed before or within one year from the scheduled completion and occupancy of the housing development.

  (2) The housing development is located within one-half mile from three or more of the following:

    (A) A supermarket or grocery store.

    (B) A public park.

    (C) A community center.

    (D) A pharmacy or drugstore.

    (E) A medical clinic or hospital.

    (F) A public library.

    (G) A school that maintains a kindergarten or any of grades 1 to 12, inclusive.

    (H) A licensed childcare facility.

    (I) A restaurant. For purposes of this paragraph, a “restaurant” means a retail food establishment that prepares, serves, and vends food directly to the consumer.

  (3) The housing development provides no more than one onsite parking space for zero- to two-bedroom units, and two onsite parking spaces for three or more bedroom units.

  For this purpose, the City of Goleta applies a discounted fee amount of 15% based on the trip generation study: S*mart Growth Trip Generation Study (SANDAG, June 2010)*. This study compared the vehicle trip generation characteristics of seven development projects in the San Diego region with similar “smart growth” characteristics identified above. The average reduction in trip generation was shown to be approximately 15% relative to the Institute of Transportation Engineers (ITE) based trip generation factors for housing developments without these characteristics.

GOLETA DIF STRUCTURE

FEE ASSESSMENT GEOGRAPHY

The Goleta Travel Model is comprised of 192 geographical spaces called Traffic Analysis Zones (TAZ's). These 192 TAZ's are the primary units of analysis for modeling purposes. 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:

- City of Goleta TAZs;
- Non-City TAZs; and,
- External Zone TAZs.

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

Goleta Travel Model TAZs was further grouped into the following sub-geographies:

- City of Goleta
- County of Santa Barbara Less Rezone Areas;
- County of Santa Barbara Rezone Areas;
- City of Santa Barbara – Airport Master Plan and Airport Specific Plan Areas;
- City of Santa Barbara – East Goleta Valley; and,
- University of California at Santa Barbara (UCSB)

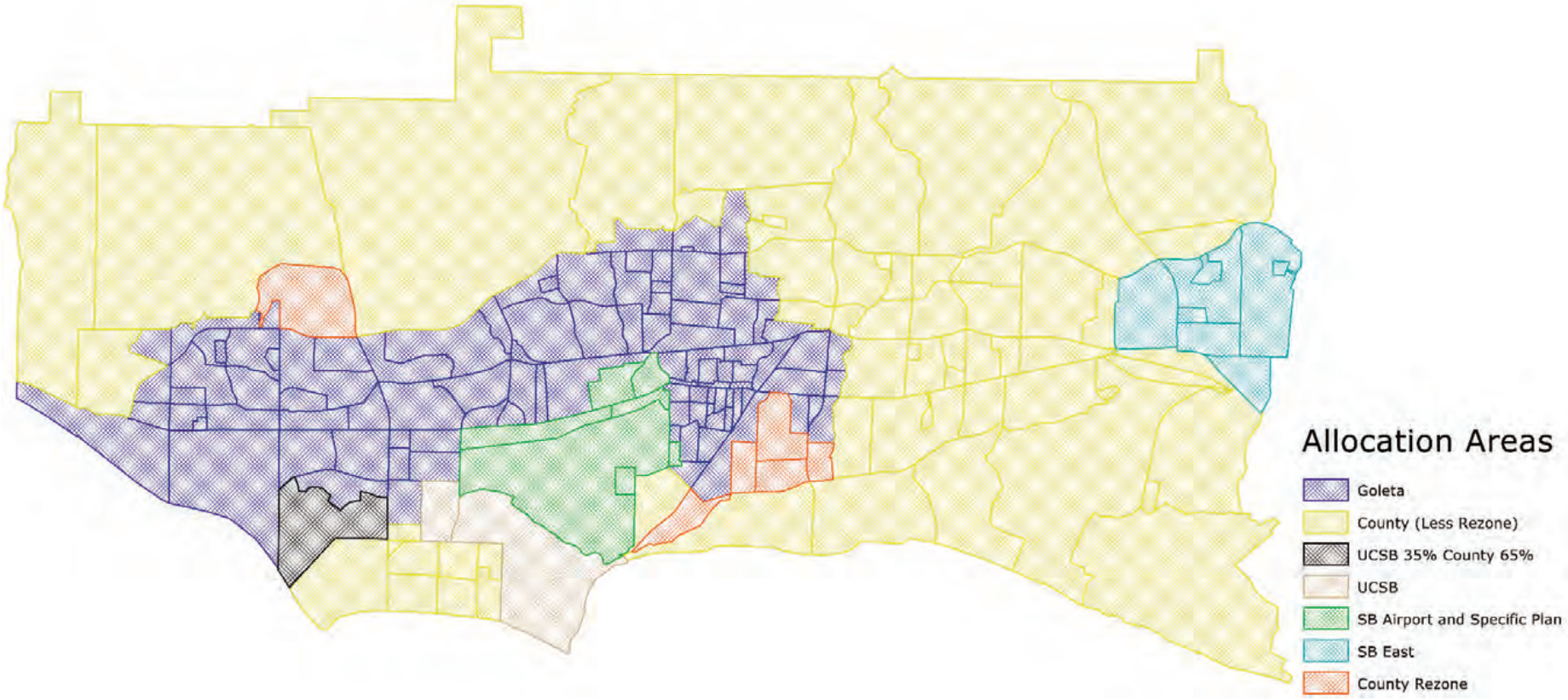
Trips associated with new development planned within these sub-areas were analyzed to determine the fee implications associated with inter-jurisdictional travel demand. These geographies are shown in **Figure 1**. TAZ to Planning Area correspondence tables were developed and coded as VISUM graphics parameter files for analysis.

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 DIF is 2025 and was based on the Department of Finance, Population and Housing Estimates for Cities and Counties. Nonresidential estimates for 2025 were based on the Goleta Traffic Model data for 2024. Based on built and occupied development permits, the implication of the base year gap of one year for nonresidential development was considered negligible.

The planning horizon for this fee assessment is 2050. This forecast horizon is consistent with the planning horizon developed for the City's travel model forecast horizon. A planning horizon of 2050 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.

FIGURE 1: GOLETA TRAVEL MODEL SUB-AREAS



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 within the Goleta Valley that are 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;
- County Rezones converting previously zone agricultural areas for residential;
- Buildout of the University of California at Santa Barbara Long Range Development Plan;
- K1-12 School enrollment projections; and,
- Buildout of the City of Santa Barbara's Santa Barbara Airport Master Plan and Specific Plan.

Table 1 provides a summary of the net development growth assumed to occur between 2024 and 2050 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 stratified by TAZ for traffic modeling purposes. **Table 3** refines the data in Table 2 to reflect the DIF base year of 2025 (adds one year) and consolidates into the DIF fee schedule land use categories.

PLANNING HORIZON EXTERNAL TRAFFIC ASSUMPTIONS

AM/PM peak hour external traffic growth assumptions for 2050 were developed as part of the Goleta Travel Model update. For state highway facilities, external growth assumptions were developed from SBCAG's regional travel model projected growth, and historical traffic growth based on counts or published volumes. External assumptions for non-state facilities were based on SBCAG's regional travel model projected growth and future land use considerations (i.e., potential to be impacted by future development). The following external link 2024-2050 traffic growth assumptions were made for the Goleta Travel Model forecasts:

1.	SR-154	0 (-)%
2.	SR-192/Cathedral Oaks	44%
3.	State Street	17%
4.	Calle Real (East)	24%
5.	Highway 101 (East)	13%
6.	Modoc Drive	14%
7.	Las Palmas Drive	7%
8.	Highway 101 (West)	0 (-)%
9.	Calle Real (West)	57%

The lack of projected traffic growth for the two gateways that serve interregional trips between northern Santa Barbara County and the South Coast is based on SBCAG's 2050 regional growth forecasts and SBCAG travel modeling performed as part of the 2050 Regional Transportation Plan / Sustainable Community Strategy (RTP/SCS). These projections are driven by a greater future housing development allocation in the South Coast which serves to remedy the jobs housing imbalance between northern and southern Santa Barbara County effectively reducing travel demand at these two gateways in the future.

Table 1: Goleta Travel Model Land Use Growth Summary (all Jurisdictions)

Land Use Category	Model ID	Units	2024 Existing	2050 GPU	Change
Single Family	SFDU	DU	14,187	16,871	2,684
Multi Family	MFDU	DU	13,285	24,682	11,397
Regional Commercial	REG_COMM	KSF	640	937	297
Neighborhood Commercial	NB_COMM	KSF	1,881	2,753	872
Office	OFFICE	KSF	3,552	5,585	2,033
Research & Development	R_D	KSF	-	66	66
Light Industrial	LT_INDUST	KSF	6,801	7,682	881
Heavy Industrial	HV_INDUST	KSF	1,386	1,530	144
Agriculture	AGRI	Acres	6,815	6,868	53
Hotel/Motel	HOTEL	Rooms	949	1,456	507
Restaurant	RESTR	KSF	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	KSF	220	357	137
Park Recreation	PARK_REC	Acres	1,078	1,152	74
Theater	THEATER	KSF	9	90	81
Auto	AUTO	KSF	530	632	102
Hospital	HOSP	KSF	135	195	60
Indoor Recreation	INDOOR_REC	KSF	441	618	177
Santa Barbara Airport	SB_AIRPORT	Pax/Day	1,741	3,127	1,386
UCSB	UCSB	Students	19,039	25,000	5,961
Student Housing (Off Campus)	STU_HSE	DU	65	65	0
Student Housing (On Campus)	STUDENT_HO	DU	6,887	7,216	329
La Cumbre Mall	LA_CUMBRA	KSF	651	398	(253)
Resort Hotel	RESORT_HOT	Rooms	360	422	62
UCSB Faculty/Staff	FACULTY_ST	Emp	9,528	11,400	1,872
Bank	BANK	KSF	23	37	14
Fast Food Restaurant	F_FOOD	KSF	35	38	3
Golf Course	GOLF	Holes	63	45	(18)

Table 2: Goleta Travel Model City of Goleta Land Use Growth Summary

Land Use Category	Model ID	Units	2024 Existing	2050 GPU	Change
Single Family	SFDU	DU	6,101	6,571	470
Multi Family	MFDU	DU	7,516	9,973	2,457
Regional Commercial	REG_COMM	KSF	491	528	37
Neighborhood Commercial	NB_COMM	KSF	1,225	1,861	636
Office	OFFICE	KSF	2,936	4,672	1,736
Research & Development	R_D	KSF	-	66	66
Light Industrial	LT_INDUST	KSF	6,410	7,088	678
Heavy Industrial	HV_INDUST	KSF	274	418	144
Agriculture	AGRI	Acres	369	367	(2)
Hotel/Motel	HOTEL	Rooms	630	1,022	392
Restaurant	RESTR	KSF	210	244	34
Elementary School	K_SCHOOL	Students	2,555	2,752	197
Middle-High School	H_SCHOOL	Students	3,170	4,367	1,197
Medical	MEDICAL	KSF	150	225	75
Park Recreation	PARK_REC	Acres	595	629	34
Theater	THEATER	KSF	-	65	65
Auto	AUTO	KSF	424	499	75
Hospital	HOSP	KSF	101	161	60
Indoor Recreation	INDOOR_REC	KSF	254	368	114
Santa Barbara Airport	SB_AIRPORT	Pax/Day	-	-	-
UCSB	UCSB	Students	-	-	-
Student Housing (Off Campus)	STU_HSE	DU	-	-	-
Student Housing (On Campus)	STUDENT_HO	DU	-	-	-
La Cumbre Mall	LA_CUMBRA	KSF	-	-	-
Resort Hotel	RESORT_HOT	Rooms	360	422	62
UCSB Faculty/Staff	FACULTY_ST	Emp	-	-	-
Bank	BANK	KSF	23	28	5
Fast Food Restaurant	F_FOOD	KSF	35	35	-
Golf Course	GOLF	Holes	18	18	-

Table 3: City of Goleta Land Use Growth Summary

Land Use	Existing (2025) [1]	Buildout	Growth	(% Buildout)
Residential (dwelling units)				
Single Family Detached	5,533	6,511	978	15%
All Other Residential	7,622	9,973	2,351	24%
Total Residential	**13,155**	**16,484**	**3,329**	**20%**
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	1,225	1,861	636	34%
Regional Commercial	491	528	37	7%
Resort Hotel[3]	281	329	48	15%
Restaurants	210	244	34	14%
Theater	-	65	65	NA
Subtotal	3,353	4,621	1,268	27%
Office & Medical (1,000 sq. ft.)				
Hospitals	101	161	60	37%
Medical	150	225	75	33%
Office	2,936	4,672	1,736	37%
Subtotal	3,187	5,058	1,871	37%
Industrial (1,000 sq. ft.)				
Heavy Industrial	274	418	144	34%
Light Industrial	6,410	7,088	678	10%
Research & Development	-	66	66	NA
Subtotal	6,684	7,572	888	12%
Total Non-residential	**13,224**	**17,251**	**4,027**	**23%**

[1] Residential estimates for 2025 based on DOF data. Nonresidential estimates for 2025 based on travel demand model data for 2024. 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, Table *E-5 Population and Housing Estimates for Cities, Counties and the State — January 1, 2025*; Goleta Traffic Model land use scenario (2024 and General Plan buildout - Land_Use_2024_GPU_Goleta_TAZs_only.xlsx); Jan A. DeRoos, *Planning and Programming a Hotel*, Cornell University, 2011.

TOTAL NEW TRIPS RESULTING FROM NEW GROWTH

Pursuant to the Mitigation Fee Act, 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 2024 Baseline model and 2050 General Plan model trip generation estimates from within the City's jurisdiction was calculated. This 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 Manual (12th Edition) and adjusted to exclude pass-by trips[1], 8,844 new PM peak hour trips are projected to generated from planned development within the City of Goleta over the 25-year planning horizon.

DEFICIENCY ASSESSMENT – TECHNICAL APPROACH

Existing/future year operational deficiencies were identified based on the City's General Plan adopted service standard of Level of Service (LOS) C[2]. All analyses 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. All counts were collected in May 2024. Operational determinations herein do not reflect peak season or peak weekend traffic as these conditions can be dominated by interregional traffic that is not appropriate for computing traffic fees to local development. The following deficiency screens were applied to determine operational implications of future development:

- Signalized Intersection Level of Service (ICU Planning Method)
- Signalized Intersection Level of Service (HCM Operational Method – for select locations)
- Non-Signalized Intersection Level of Service (HCM Operational Method)
- Intersection 95th Percentile Queues (HCM Operational Method)
- Intersection Peak Hour Signal Warrant (CA MUTCD)
- Goleta Roadway ADT Threshold (City General Plan Adopted Threshold)
- Freeway Mainline (HCM Operational Method)

SIGNALIZED INTERSECTIONS

For signalized intersections, the volume-to-capacity ratio of conflicting turn movements using the Intersection Capacity Utilization (ICU) method was applied to determine the LOS at signalized intersections. For some specialized studies, average control delay based on the Highway Capacity Manual (HCM) 7th Edition Operational Methodology was applied to determine signalized intersection operations. For intersections analyzed using the HCM 7th Edition, 95th percentile queues were also analyzed. Intersections were identified as operationally deficient if their peak hour 95th percentile queue exceeded available queue storage.

[1] 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.

[2] Pursuant to the City's General Plan, the intersection of Hollister/Storke Road has an LOS standard of "D". For US 101 mainline analyses an LOS standard of "D" is also applied.

NON-SIGNALIZED INTERSECTIONS

For stop-controlled intersections, average delay criteria was applied to determine the LOS based on the HCM 7th Edition operational methodology. The potential need for modifying an intersection control type from stop control to a traffic signal or roundabout at the non-signalized intersections was based on the peak hour signal warrant criteria of the California Manual on Uniform Traffic Control Devices (MUTCD, 2025).

INTERSECTION SIGNAL WARRANT

Signal warrant analyses were performed for 21 stop-controlled intersections under both Baseline and Future conditions. Warrant 3 (Peak Hour) was applied to identify a deficiency at a study intersection. Meeting Warrant 3 only identifies a potential deficiency and not necessarily that a signal (or roundabout) is warranted. This analysis did not evaluate all of the warrants for traffic signals but instead focused on the peak hour warrant as an "indicator" of the likelihood of a given non-signalized intersection warranting a change in control type. Before a control type conversion is implemented, the full set of nine warrants should be performed at those locations identified as showing a deficiency. This analysis was performed in accordance with the California Manual on Uniform Traffic Control Devices (CA MUTCD).

LOCAL ROADWAY SEGMENTS

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.

FREEWAY MAINLINE

Deficiencies on freeway mainline facilities were based on the HCM 7th Edition operational methodology for merge-diverge influence areas. LOS on these facilities is based on vehicle density expressed as passenger cars per lane per mile (pcplpm).

The operational criteria for each of these approaches are presented in **Attachment A.2**.

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. Intersection baseline deficiencies were based on AM/PM peak hour turning movement counts while roadway segment baseline deficiencies were based on 72-hour (Tues-Thurs) continuous counts.

FUTURE DEFICIENCIES

As described above, the Goleta Travel Model was used to generate future volumes based on 2050 land use growth projections relative to the existing (no-build) transportation network (i.e., without DIF capital projects). The projected volumes from the Goleta Travel Model provide the basis for determining future deficiencies in the City's roadway network.

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 National Cooperative Highway Research Program (NCHRP) Report 765. NCHRP-765 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 for both daily roadway segment volumes and AM/PM peak hour intersection turn movements respectively. These adjustments are described below.

Roadway Segments

Given that the City of Goleta's General Plan 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 2050 conditions by dividing the delta between model baseline and 2050 PM peak hour forecast by 0.1 and adding to the count. Where daily traffic counts are not available, future year 2050 daily volumes are estimated by dividing the NCHRP-765 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 2050 daily volumes can then be compared to City of Goleta's established General Plan ADT Thresholds. These LOS thresholds provide a generalized estimate of LOS C 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 than those reported herein.

Intersection Turn Movements"

The Goleta Travel Model generates both AM and PM peak hour turning movement volumes for each model intersection. To generate 2050 forecast AM/PM peak hour turning movements at intersections, turn movement counts are "grown" to reflect 2050 conditions by adding the delta between model baseline and 2050 forecast turn movement to the AM and PM intersection turn movement counts respectively. The future year turn movements are then used for operational assessments.

DEFICIENCY ANALYSIS RESULTS

Tables 4 and **Table 5** provide the existing intersection ICU LOS results for the AM and PM peak hours respectively. **Tables 6** and **Table 7** provide the 2050 future intersection ICU LOS results for the AM and PM peak hours respectively. Baseline and future ICU LOS worksheets are provided in **Attachment A.3**.

Table 8A and **Table 8B** present the existing and future ADT Threshold analysis based on the "Delta" and "Peak Hour Adjustment" methods respectively.

Table 9 provides the Baseline and 2050 future US 101 merge-diverge analysis LOS results for northbound/southbound between Fairview and Los Carneros and for northbound between Los Carneros and Storke. Baseline and future merge-diverge LOS worksheets are provided in **Attachment A.4**.

Table 10 provides the existing and future Peak Hour Signal Warrant #3 results. It also provides the circulatory lane requirements (i.e., single- or two-lane) if roundabout control is the preferred control type versus signalization. A technical memorandum of this analysis is provided in **Attachment A.5**.

In addition to aforementioned analyses, three focused corridor-based operational analyses were performed. These more detailed analyses include:

- Cathedral Oaks Corridor Analysis (between Northgate Drive and Storke Road);
- South Patterson Corridor Analysis (Hollister Avenue between Fairview Avenue and Patterson Road); and,
- South Fairview Avenue Analysis

These more detailed operational studies examined intersection LOS based on average control delay and 95th percentile queue estimates based on the Highway Capacity Manual (HCM) 7th Edition Operational Methodology using SYNCHRO and SIDRA operational software. Intersections were identified as operationally deficient if their peak hour HCM LOS exceeded LOS C or their 95th percentile queues exceeded available queue storage. The results of these more engineering-based operational determinations supersede those determined through planning-based methods. The following locations were determined to be deficient based on these more detailed operational assessments:

- Hollister Avenue / Sumida Gardens Lane Intersection
- Hollister / Patterson Intersection
- Cathedral Oaks Avenue / Glen Annie Road Intersection
- Cathedral Oaks Avenue / Alameda Avenue Intersection
- South Fairview Avenue Roadway Widening (channelization and queue storage)

These operational studies are documented in technical memorandums provided in **Attachment A.6**, **Attachment A.7**, and **Attachment A.8** respectively.

A fourth specialized analysis entailed analyzing the mode shift benefits of a pedestrian/bicycle only grade separated crossing of US 101 (called the Goleta Freeway Crossing) and the diversion benefits of the connecting Phelps Road with Henry Wang Drive. Based on this analysis, both these improvements serve to reduce vehicular demand at the Hollister/Storke intersection which under future 2050 baseline conditions is shown to become deficient. Combined with the Hollister Avenue at Storke Road Improvement Widening (West of Storke Road), operations at Storke/Hollister are shown to operate within standard (i.e., LOS D). This technical memorandum is provided in **Attachment A.9**.

Based on these analyses, a total of 32 deficient locations were identified for inclusion in the Goleta DIF. The 32 deficient locations are shown in **Figure 2**. Project renderings and cost estimates for each improvement are provided in **Appendix B**.

Table 4: Existing AM Peak Hour ICU Intersection Operations Summary

Node	Intersection		Entering Volume	AM Count (ICU 1)			
Number	Name	Control Type	AM Count	Max Delay	Max LOS	Adj. V/C	Adj. LOS
151	Cathedral Oaks & Kellogg	Signalized	1,359	96.63	A	0.39	A
164	Cathedral Oaks & La Patera	TWSC	1,023	28.7	D		
169	Carlo Dr & Cathedral Oaks Rd	TWSC	1,025	25.97	D		
171	Cathedral Oaks & Fairview	Signalized	1,380			0.45	A
173	Cathedral Oaks & Cambridge	Signalized	1,290			0.36	A
195	Cathedral Oaks & Los Carneros	TWSC	967	23.61	C		
203	Stow Canyon & Fairview	TWSC	1,148	43.83	E		
204	Fairview & Berkeley	Signalized	1,256			0.38	A
240	Fairview & Shirrell Way	TWSC	1,255	26.32	D		
241	Encina & Fairview	Signalized	1,268			0.37	A
273	Cathedral Oaks & Brandon	TWSC	388	12.23	B		
276	Cathedral Oaks & Alameda	Signalized	807			0.43	A
277	Cathedral Oaks & Glen Anne	Signalized	1,253			0.5	A
279	Calle Real & Los Caneros	Roundabout	907	5.84	A	0.28	A
280	Calle Real & La Patera	TWSC	394	11.08	B		
282	Calle Real & Carlo Dr	TWSC	894	17.32	C		
288	Calle Real & Fairview	Signalized	2,291			0.7	C
289	Fairview & US 101 NB Ramps	Signalized	2,458			0.64	B
296	Calle Real & Kellogg	Signalized	1,035			0.37	A
305	Patterson & Overpass	Signalized	1,904			0.53	A
306	Patterson & US 101 SB Ramps	Signalized	2,598			0.89	D
307	Patterson & US 101 NB Ramp	Signalized	2,672			0.63	B
359	Cathedral Oaks & Winchester Canyon	AWSC	421	9.16	A		
372	Glen Annie & Del Norte	TWSC	695	9.4	A		
375	Los Caneros & US101 SB Ramps	Signalized	2,174			0.58	A
376	Los Carneros & US 101 NB Ramps	Signalized	1,565			0.5	A
383	Fairview & US 101 SB Ramps	Signalized	2,495			0.63	B
385	Hollister & Fairview	Signalized	2,260			0.61	B
386	Fairview & Mandarin	TWSC	1,964	59.72	F		
387	Hollister & Orange	TWSC	1,508	46.06	E		
390	Hollister & Pine/Nectarine	Signalized	1,304			0.4	A
394	Hollister & Rutherford	Signalized	1,204			0.33	A
396	Hollister & Community Center West Driveway	TWSC	1,209	8.75	A		
399	Hollister & Kellogg	Signalized	1,811			0.5	A
402	Hollister & SR-217 SB Ramps	Roundabout*	1,876			0.49	A
405	Hollister & SR-217 NB Ramps	Roundabout*	1,659			0.32	A
441	Calle Real & NB 101 OnRamp	TWSC	176	9.99	A		
445	Calle Real & Winchester Canyon	AWSC	490	9.3	A	0.25	A
450	Calle Real & Brandon Dr.	TWSC	432	11.31	B		
451	San Rossano Dr & Calle Real	TWSC	500	12.38	B		
461	Storke & US 101 NB Ramps	Signalized	2,392			0.62	B
462	Storke & US 101 SB Ramp	Signalized	2,765			0.84	D
465	Los Carneros Rd & Calle Koral (west/south)	TWSC	1,229	11.31	B		
466	Los Carneros & Cremona	Signalized	1,336			0.36	A
467	Los Carneros & Calle Koral	Signalized	1,816			0.5	A
489	Hollister & Patterson	Signalized	2,286			0.55	A
506	Cathedral Oaks 101 SB-Ramp	TWSC	1,022	63.56	F		
511	Hollister & Pebble Beach Rd	TWSC	771	16.55	C		
512	Hollister & Palo Alto Dr	TWSC	745	17.77	C		
513	Hollister & Coronado	TWSC	728	13.68	B		
515	Hollister & Cannon Green	TWSC	1,087	22.6	C		
517	Hollister & Pacific Oaks	Signalized	1,258			0.39	A
518	Hollister & Santa Felicia	TWSC	1,303	36.91	E		
521	Storke & Marketplace	Signalized	1,593			0.39	A
522	Hollister & Storke	Signalized	2,772			0.5	A
524	Hollister & Coromar Project Access	Signalized	1,151			0.32	A
525	Hollister & Los Carneros	Signalized	1,790			0.41	A
526	Cremona Dr & Hollister Ave	TWSC	887	15.56	C		
528	Hollister & Los Carneros Way	Signalized	952			0.26	A
530	Hollister & Aero Camino	Signalized	1,008			0.29	A
553	Storke & Santa Felicia	TWSC	1,098	18.65	C		
556	Fowler & Fairview	TWSC	370	10.89	B		
562	Storke & Phelps	Signalized	1,126			0.42	A
564	Mesa & Los Carneros	Signalized	1,271			0.21	A
617	Los Caneros & Castilian	Signalized	1,268			0.37	A
624	Cathedral Oaks & Calle Real	AWSC	865	20.66	C	0.64	B
630	Hollister & Marketplace/Village Way	Signalized	1,498			0.42	A
636	Hollister & Cathedral Oaks	TWSC	743	14.71	B		
717	Hollister & Entrance	Signalized	1,038			0.39	A
856	Hollister & Cortona	TWSC	1,160	33.91	D		
864	Deckers Outdoor Access & Hollister Ave	TWSC	1,076	10.15	B		
877	Hollister & Sumida Gardens	Signalized	1,048			0.3	A
1042	Hollister & Santa Babara Shores	TWSC	732	13.52	B		
1141	Sperling Preserve/Ellwood Dwy & Hollister Ave	TWSC	886	22.03	C		
1182	Ward & Ekwill	TWSC	217	10.1	B		

* Under construction at the time of this analysis

Table 5: Existing PM Peak Hour Intersection Operations Summary

Node	Intersection		Entering Volume	PM Count (ICU 1)			
Number	Name	Control Type	PM Count	Max Delay	Max LOS	Adj. V/C	Adj. LOS
151	Cathedral Oaks & Kellogg	Signalized	1,216			0.36	A
164	Cathedral Oaks & La Patera	TWSC	855	21.27	C		
169	Carlo Dr & Cathedral Oaks Rd	TWSC	888	21.08	C		
171	Cathedral Oaks & Fairview	Signalized	1,281			0.39	A
173	Cathedral Oaks & Cambridge	Signalized	1,146			0.31	A
195	Cathedral Oaks & Los Carneros	TWSC	902	20	C		
203	Stow Canyon & Fairview	TWSC	832	20.07	C		
204	Fairview & Berkeley	Signalized	949			0.31	A
240	Fairview & Shirrell Way	TWSC	1,000	21.03	C		
241	Encina & Fairview	Signalized	1,069			0.38	A
273	Cathedral Oaks & Brandon	TWSC	405	12.3	B		
276	Cathedral Oaks & Alameda	Signalized	686			0.33	A
277	Cathedral Oaks & Glen Anne	Signalized	1,161			0.47	A
279	Calle Real & Los Caneros	Roundabout	1,146	7.85	A	0.37	A
280	Calle Real & La Patera	TWSC	841	17.71	C		
282	Calle Real & Carlo Dr	TWSC	1,109	21.34	C		
288	Calle Real & Fairview	Signalized	2,634			0.67	B
289	Fairview & US 101 NB Ramps	Signalized	2,442			0.75	C
296	Calle Real & Kellogg	Signalized	1,528			0.43	A
305	Patterson & Overpass	Signalized	2,021			0.55	A
306	Patterson & US 101 SB Ramps	Signalized	2,782			0.90	E
307	Patterson & US 101 NB Ramp	Signalized	2,930			0.66	B
359	Cathedral Oaks & Winchester Canyon	AWSC	419	8.79	A	0.05	A
372	Glen Annie & Del Norte	TWSC	713	9.49	A		
375	Los Caneros & US101 SB Ramps	Signalized	2,188			0.6	B
376	Los Carneros & US 101 NB Ramps	Signalized	1,785			0.54	A
383	Fairview & US 101 SB Ramps	Signalized	2,698			0.84	D
385	Hollister & Fairview	Signalized	3,014			0.71	C
386	Fairview & Mandarin	TWSC	2,288	784.89	F		
387	Hollister & Orange	TWSC	2,017	111.53	F		
390	Hollister & Pine/Nectarine	Signalized	2,000			0.59	A
394	Hollister & Rutherford	Signalized	1,868			0.47	A
396	Hollister & Community Center West Driveway	TWSC	1,760	10.53	B		
399	Hollister & Kellogg	Signalized	2,483			0.57	A
402	Hollister & SR-217 SB Ramps	Roundabout*	2,463			0.6	B
405	Hollister & SR-217 NB Ramps	Roundabout*	2,250			0.5	A
441	Calle Real & NB 101 OnRamp	TWSC	305	10.97	B		
445	Calle Real & Winchester Canyon	AWSC	646	11.37	B	0.29	A
450	Calle Real & Brandon Dr.	TWSC	313	10.26	B		
451	San Rossano Dr & Calle Real	TWSC	379	10.89	B		
461	Storke & US 101 NB Ramps	Signalized	2,742			0.71	C
462	Storke & US 101 SB Ramp	Signalized	2,973			0.63	B
465	Los Carneros Rd & Calle Koral (west/south)	TWSC	1,575	10.66	B		
466	Los Carneros & Cremona	Signalized	1,622			0.43	A
467	Los Carneros & Calle Koral	Signalized	2,151			0.59	A
489	Hollister & Patterson	Signalized	2,572			0.63	B
506	Cathedral Oaks 101 SB-Ramp	TWSC	1,010	31.1	D		
511	Hollister & Pebble Beach Rd	TWSC	951	21.42	C		
512	Hollister & Palo Alto Dr	TWSC	937	20.59	C		
513	Hollister & Coronado	TWSC	966	16.83	C		
515	Hollister & Cannon Green	TWSC	1,378	29.25	D		
517	Hollister & Pacific Oaks	Signalized	1,636			0.47	A
518	Hollister & Santa Felicia	TWSC	1,817	264.57	F		
521	Storke & Marketplace	Signalized	2,208			0.53	A
522	Hollister & Storke	Signalized	3,903			0.7	C
524	Hollister & Coromar Project Access	Signalized	1,924			0.48	A
525	Hollister & Los Carneros	Signalized	3,013			0.57	A
526	Cremona Dr & Hollister Ave	TWSC	1,322	23.95	C		
528	Hollister & Los Carneros Way	Signalized	1,422			0.39	A
530	Hollister & Aero Camino	Signalized	1,493			0.41	A
553	Storke & Santa Felicia	TWSC	1,766	65.78	F		
556	Fowler & Fairview	TWSC	575	13	B		
562	Storke & Phelps	Signalized	1,672			0.49	A
564	Mesa & Los Carneros	Signalized	1,934			0.28	A
617	Los Caneros & Castilian	Signalized	1,630			0.47	A
620	Hollister & St Joseph	TWSC	1,388	27.04	D		
624	Cathedral Oaks & Calle Real	AWSC	920	18.74	C	0.59	A
630	Hollister & Marketplace/Village Way	Signalized	2,621			0.68	B
636	Hollister & Cathedral Oaks	TWSC	935	20.15	C	0	A
717	Hollister & Entrance	Signalized	1,232			0.39	A
856	Hollister & Cortona	TWSC	1,805	69.71	F		
864	Deckers Outdoor Access & Hollister Ave	TWSC	1,857	11.64	B		
877	Hollister & Sumida Gardens	Signalized	1,410			0.37	A
1042	Hollister & Santa Babara Shores	TWSC	909	14.89	B		
1141	Sperling Preserve/Ellwood Dwy & Hollister Ave	TWSC	941	22.71	C		
1182	Ward & Ekwill	TWSC	293	10.57	B		

* Under construction at the time of this analysis

Table 6: 2050 AM Peak Hour ICU Intersection Operations Summary

Node	Intersection		Entering Volume	AM 2050 (ICU 1) VISUM V6			
Number	Name	Control Type	AM Forecast	Max Delay	Max LOS	Adj. V/C	Adj. LOS
151	Cathedral Oaks & Kellogg	Signalized	1,585			0.46	A
164	Cathedral Oaks & La Patera	TWSC	1,247	42.01	E		
169	Carlo Dr & Cathedral Oaks Rd	TWSC	1,266	46.26	E		
171	Cathedral Oaks & Fairview	Signalized	1,623			0.53	A
173	Cathedral Oaks & Cambridge	Signalized	1,528			0.43	A
195	Cathedral Oaks & Los Carneros	TWSC	1,284	64.42	F		
203	Stow Canyon & Fairview	TWSC	1,348	283.48	F		
204	Fairview & Berkeley	Signalized	1,440			0.42	A
240	Fairview & Shirrell Way	TWSC	1,443	36.32	E		
241	Encina & Fairview	Signalized	1,462			0.4	A
273	Cathedral Oaks & Brandon	TWSC	428	12.9	B		
276	Cathedral Oaks & Alameda	Signalized	1,331			0.44	A
277	Cathedral Oaks & Glen Anne	Signalized	1,709			0.68	B
279	Calle Real & Los Caneros	Roundabout	1,254	9.4	A	0.4	A
280	Calle Real & La Patera	TWSC	514	12.37	B		
282	Calle Real & Carlo Dr	TWSC	996	19.65	C		
288	Calle Real & Fairview	Signalized	2,587			0.73	C
289	Fairview & US 101 NB Ramps	Signalized	2,778			0.73	C
296	Calle Real & Kellogg	Signalized	1,224			0.4	A
305	Patterson & Overpass	Signalized	2,455			0.59	A
306	Patterson & US 101 SB Ramps	Signalized	3,129			1.02	F
307	Patterson & US 101 NB Ramp	Signalized	3,095			.0.75	C
359	Cathedral Oaks & Winchester Canyon	AWSC	474	9.46	A	0.12	A
372	Glen Annie & Del Norte	TWSC	1,078	12.17	B		
375	Los Caneros & US101 SB Ramps	Signalized	2,567			0.68	B
376	Los Carneros & US 101 NB Ramps	Signalized	1,959			0.6	B
383	Fairview & US 101 SB Ramps	Signalized	2,992			0.74	C
385	Hollister & Fairview	Signalized	3,083			0.76	C
386	Fairview & Mandarin	TWSC	2,477	333.31	F		
387	Hollister & Orange	TWSC	2,024	291.28	F		
390	Hollister & Pine/Nectarine	Signalized	1,758			0.49	A
394	Hollister & Rutherford	Signalized	1,583			0.41	A
396	Hollister & Community Center West Driveway	TWSC	1,580	8.77	A		
399	Hollister & Kellogg	Signalized	2,377			0.55	A
402	Hollister & SR-217 SB Ramps	Roundabout	2,418			0.55	A
405	Hollister & SR-217 NB Ramps	Roundabout	2,301			0.51	A
441	Calle Real & NB 101 OnRamp	TWSC	184	10.04	B		
445	Calle Real & Winchester Canyon	AWSC	522	9.68	A	0.28	A
450	Calle Real & Brandon Dr.	TWSC	471	11.63	B		
451	San Rossano Dr & Calle Real	TWSC	535	12.84	B		
461	Storke & US 101 NB Ramps	Signalized	3,123			0.76	C
462	Storke & US 101 SB Ramp	Signalized	3,253			0.88	D
465	Los Carneros Rd & Calle Koral (west/south)	TWSC	1,507	13	B		
466	Los Carneros & Cremona	Signalized	1,690			0.45	A
467	Los Carneros & Calle Koral	Signalized	2,245			0.6	B
489	Hollister & Patterson	Signalized	3,213			0.79	C
506	Cathedral Oaks 101 SB-Ramp	TWSC	1,169	130.14	F		
511	Hollister & Pebble Beach Rd	TWSC	952	19.75	C		
512	Hollister & Palo Alto Dr	TWSC	901	21.2	C		
513	Hollister & Coronado	TWSC	878	15.39	C		
515	Hollister & Cannon Green	TWSC	1,330	28.61	D		
517	Hollister & Pacific Oaks	Signalized	1,708	41.26	A	0.47	A
518	Hollister & Santa Felicia	TWSC	1,662	76.76	F		
521	Storke & Marketplace	Signalized	2,007	49.73	A	0.46	A
522	Hollister & Storke	Signalized	3,576	763.47	A	0.6	B
524	Hollister & Coromar Project Access	Signalized	1,700	28.26	A	0.45	A
525	Hollister & Los Carneros	Signalized	2,408	50.07	A	0.5	A
526	Cremona Dr & Hollister Ave	TWSC	1,234	24.24	C		
528	Hollister & Los Carneros Way	Signalized	1,332	49.64	A	0.36	A
530	Hollister & Aero Camino	Signalized	1,353	62.48	A	0.38	A
553	Storke & Santa Felicia	TWSC	1,441	29.6	D		
556	Fowler & Fairview	TWSC	479	11.88	B		
562	Storke & Phelps	Signalized	1,423	47.69	A	0.47	A
564	Mesa & Los Carneros	Signalized	1,524	52.54	A	0.29	A
617	Los Caneros & Castilian	Signalized	1,644	65.1	A	0.5	A
624	Cathedral Oaks & Calle Real	AWSC	960	27.94	D	0.74	C
630	Hollister & Marketplace/Village Way	Signalized	1,900	39.1	A	0.47	A
636	Hollister & Cathedral Oaks	TWSC	887	17.02	C		
717	Hollister & Entrance	Signalized	1,217	283.6	A	0.41	A
856	Hollister & Cortona	TWSC	1,775	2115.38	F		
864	Deckers Outdoor Access & Hollister Ave	TWSC	1,525	10.84	B		
877	Hollister & Sumida Gardens	Signalized	1,933	2891.44	A	0.53	A
1042	Hollister & Santa Babara Shores	TWSC	879	15.12	C		
1141	Sperling Preserve/Ellwood Dwy & Hollister Ave	TWSC	1,046	31.78	D		
1182	Ward & Ekwill	TWSC	236	10.2	B		

Table 7: 2050 PM Peak Hour ICU Intersection Operations Summary

Node	Intersection		Entering Volume	PM 2050 (ICU 1) VISUM V6			
Number	Name	Control Type	PM Forecast	Max Delay	Max LOS	Adj. V/C	Adj. LOS
151	Cathedral Oaks & Kellogg	Signalized	1,531			0.45	A
164	Cathedral Oaks & La Patera	TWSC	1,198	37.07	E	0	A
169	Carlo Dr & Cathedral Oaks Rd	TWSC	1,224	36.9	E	0	A
171	Cathedral Oaks & Fairview	Signalized	1,697			0.58	A
173	Cathedral Oaks & Cambridge	Signalized	1,516			0.41	A
195	Cathedral Oaks & Los Carneros	TWSC	1,281	93.56	F	0	A
203	Stow Canyon & Fairview	TWSC	991	24.82	C	0	A
204	Fairview & Berkeley	Signalized	1,101			0.34	A
240	Fairview & Shirrell Way	TWSC	1,156	28.8	D	0	A
241	Encina & Fairview	Signalized	1,217			0.41	A
273	Cathedral Oaks & Brandon	TWSC	498	13.7	B	0	A
276	Cathedral Oaks & Alameda	Signalized	1,339			0.34	A
277	Cathedral Oaks & Glen Anne	Signalized	1,692			0.56	A
279	Calle Real & Los Caneros	Roundabout	1,556	15.99	C	0.55	A
280	Calle Real & La Patera	TWSC	1,071	24.22	C	0	A
282	Calle Real & Carlo Dr	TWSC	1,320	24.9	C	0	A
288	Calle Real & Fairview	Signalized	3,022			0.8	D
289	Fairview & US 101 NB Ramps	Signalized	2,772			0.76	C
296	Calle Real & Kellogg	Signalized	1,834			0.47	A
305	Patterson & Overpass	Signalized	2,576			0.62	B
306	Patterson & US 101 SB Ramps	Signalized	3,307			1.06	F
307	Patterson & US 101 NB Ramp	Signalized	3,198			0.72	C
359	Cathedral Oaks & Winchester Canyon	AWSC	580	10.17	B	0.26	A
372	Glen Annie & Del Norte	TWSC	1,108	10.37	B	0	A
375	Los Caneros & US101 SB Ramps	Signalized	2,719			0.75	C
376	Los Carneros & US 101 NB Ramps	Signalized	2,181			0.56	A
383	Fairview & US 101 SB Ramps	Signalized	3,444			1.05	F
385	Hollister & Fairview	Signalized	4,115			0.72	C
386	Fairview & Mandarin	TWSC	3,070	10000	F	0	A
387	Hollister & Orange	TWSC	2,781	10000	F	0	A
390	Hollister & Pine/Nectarine	Signalized	2,520			0.72	C
394	Hollister & Rutherford	Signalized	2,242			0.61	B
396	Hollister & Community Center West Driveway	TWSC	2,090	12.38	B	0	A
399	Hollister & Kellogg	Signalized	3,078			0.72	C
402	Hollister & SR-217 SB Ramps	Roundabout	3,040			0.78	C
405	Hollister & SR-217 NB Ramps	Roundabout	3,014			0.6	B
441	Calle Real & NB 101 OnRamp	TWSC	310	11.01	B	0	A
445	Calle Real & Winchester Canyon	AWSC	679	11.97	B	0.32	A
450	Calle Real & Brandon Dr.	TWSC	368	10.51	B	0	A
451	San Rossano Dr & Calle Real	TWSC	429	11.37	B	0	A
461	Storke & US 101 NB Ramps	Signalized	3,402			0.78	C
462	Storke & US 101 SB Ramp	Signalized	3,836			0.9	E
465	Los Carneros Rd & Calle Koral (west/south)	TWSC	1,875	10.76	B	0	A
466	Los Carneros & Cremona	Signalized	2,176			0.67	B
467	Los Carneros & Calle Koral	Signalized	2,758			0.75	C
489	Hollister & Patterson	Signalized	3,503			0.74	C
506	Cathedral Oaks 101 SB-Ramp	TWSC	1,347	67.48	F	0	A
511	Hollister & Pebble Beach Rd	TWSC	1,314	33.5	D	0	A
512	Hollister & Palo Alto Dr	TWSC	1,283	31.13	D	0	A
513	Hollister & Coronado	TWSC	1,235	21.64	C	0	A
515	Hollister & Cannon Green	TWSC	1,666	48.59	E	0	A
517	Hollister & Pacific Oaks	Signalized	2,143			0.62	B
518	Hollister & Santa Felicia	TWSC	2,197	5469.17	F	0	A
521	Storke & Marketplace	Signalized	2,607			0.6	B
522	Hollister & Storke	Signalized	5,026			1.02	F
524	Hollister & Coromar Project Access	Signalized	2,591			0.73	C
525	Hollister & Los Carneros	Signalized	3,783			0.71	C
526	Cremona Dr & Hollister Ave	TWSC	1,882	66.13	F	0	A
528	Hollister & Los Carneros Way	Signalized	1,990			0.53	A
530	Hollister & Aero Camino	Signalized	1,926			0.49	A
553	Storke & Santa Felicia	TWSC	2,111	546.93	F	0	A
556	Fowler & Fairview	TWSC	724	14.97	B	0	A
562	Storke & Phelps	Signalized	2,063			0.56	A
564	Mesa & Los Carneros	Signalized	2,196			0.28	A
617	Los Caneros & Castilian	Signalized	2,125			0.58	A
620	Hollister & St Joseph	TWSC	2,034	49.05	E	0	A
624	Cathedral Oaks & Calle Real	AWSC	1,139	29.05	D	0.73	C
630	Hollister & Marketplace/Village Way	Signalized	3,022			0.75	C
636	Hollister & Cathedral Oaks	TWSC	1,294	38.59	E	0	A
717	Hollister & Entrance	Signalized	1,489			0.43	A
856	Hollister & Cortona	TWSC	2,838	10000	F	0	A
864	Deckers Outdoor Access & Hollister Ave	TWSC	2,157	13.37	B	0	A
877	Hollister & Sumida Gardens	Signalized	2,451			0.75	C
1042	Hollister & Santa Babara Shores	TWSC	1,252	19.47	C	0	A
1141	Sperling Preserve/Ellwood Dwy & Hollister Ave	TWSC	1,290	41.53	E	0	A
1182	Ward & Ekwill	TWSC	308	10.84	B	0	A

* Under construction at the time of this analysis

Table 8A: Roadway Segment ADT Threshold Operations Summary

Location	Model Link ID	Functional Classification	Lanes	LOS C Threshold (ADT)	ADT	Adjusted Future ADT	Existing Above Threshold	Future Above Threshold
Brandon Dr near Calle Real	280	Collector	2	9,280	1,555	2,175	-	-
Calle Real near Amador Ave	21106	Local	2	7,280	10,063	12,341	Yes	Yes
Calle Real near N Turnpike Rd	143	Major Arterial	4	34,000	9,482	13,446	-	-
Calle Real near Vega Dr	171	Major Arterial	2	14,300	11,033	13,375	-	-
Calle Real near Via Lee	144	Major Arterial	2	14,300	8,232	9,146	-	-
Carlo Dr near Verdura Ave	115	Collector	2	9,280	1,298	1,273	-	-
Carson St near S Fairview Ave	424	Local	2	7,280	1,907	3,765	-	-
Cathedral Oaks Rd near Calle Real	274	Major Arterial	2	14,300	3,310	5,080	-	-
Cathedral Oaks Rd near El Rodeo Rd	51	Major Arterial	2	14,300	10,657	13,503	-	-
Cathedral Oaks Rd near Glen Annie Rd	617	Major Arterial	2	14,300	8,977	11,820	-	-
Cathedral Oaks Rd near Santa Margueria Dr	633	Major Arterial	2	14,300	2,655	4,764	-	-
Del Norte Dr near Colusa Dr	290	Collector	2	9,280	7,373	10,447	-	Yes
El Colegio Rd near Embarcadero Del Norte	562	Minor Arterial	4	30,100	11,702	15,973	-	-
Fairview Ave near Calle Real	804	Major Arterial	6	34,000	23,970	23,751	-	-
Fairview Ave near El Camino Real	306	Major Arterial	4	34,000	22,413	29,865	-	-
Fairview Ave near Hollister Ave	311	Major Arterial	4	34,000	20,861	28,632	-	-
Glen Annie Rd near Cathedral Oaks Dr	163	Major Arterial	2	14,300	7,340	10,456	-	-
Hollister Ave near Cathedral Oaks Rd	458	Major Arterial	2	14,300	6,761	10,392	-	-
Hollister Ave near Glen Annie Rd	479	Major Arterial	4	34,000	26,393	30,321	-	-
Hollister Ave near Lopez Rd	420	Major Arterial	4	34,000	20,017	25,009	-	-
Hollister Ave near Puente Dr	352	Major Arterial	4	34,000	15,726	17,595	-	-
Kellogg Ave near Kellogg Way	428	Minor Arterial	2	12,500	2,535	4,234	-	-
Kellogg Ave near Marbury Dr	132	Collector	2	9,280	3,695	3,815	-	-
La Patera Ln near Shamrock Ave	112	Collector	2	9,280	2,206	2,188	-	-
Los Carneros Rd near Calle Koral	798	Major Arterial	5	34,000	23,721	29,062	-	-
Los Carneros Rd near El Comino Real WB Ramps	166	Major Arterial	4	34,000	11,743	15,279	-	-
Los Carneros Rd near Hollister Ave	488	Major Arterial	4	34,000	19,464	24,292	-	-
Ocean Rd near El Colegio Rd	569	Minor Arterial	4	30,100	10,005	14,434	-	-
Patterson Ave near Calle Real	813	Major Arterial	4	34,000	14,672	16,427	-	-
Patterson Ave near Overpass Rd	811	Major Arterial	4	34,000	22,447	27,643	-	-
Phelps Rd near Storke Rd	686	Minor Arterial	2	12,500	2,933	3,658	-	-
Pine Ave near Thorn Wood Dr	907	Collector	2	9,280	2,465	3,756	-	-
San Marcos Rd near Patricia Ln	139	Local	2	7,280	3,069	3,622	-	-
Santa Felicia Dr near Storke Rd	509	Local	2	7,280	3,895	4,508	-	-
Stadium Rd near El Colegio Rd	564	Local	2	7,280	2,437	3,149	-	-
Storke Rd near Hollister Ave	483	Major Arterial	5	34,000	23,560	30,729	-	-
Storke Rd near Willowgrove Dr	533	Major Arterial	2	14,300	13,790	16,964	-	Yes
Turnpike Rd near El Camino Real EB Ramps	140	Major Arterial	4	34,000	21,401	22,873	-	-
Turnpike Rd near El Camino Real WB Ramps	217	Major Arterial	4	34,000	23,636	28,026	-	-
Winchester Canoyn Rd near Calle Real	388	Minor Arterial	2	12,500	3,775	3,816	-	-

Table 8B: Roadway Segment PM Peak Hour Adjusted ADT Threshold Operations Summary

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	1,400	1,528	-	-
Alameda Ave south of Cathedral Oaks Rd	162	Local	2	7,280	1,920	3,408	-	-
Berkeley Rd east of Fairview Ave	80	Collector	2	9,280	1,360	1,441	-	-
Cambridge Dr north of Cathedral Oaks Rd	1	Collector	2	9,280	1,500	1,571	-	-
Cannon Green Dr south of Hollister Ave	468	Collector	2	9,280	2,480	3,731	-	-
Castilian Dr west of Los Carneros Rd	667	Local	2	7,280	3,260	4,957	-	-
Fairview Ave north of Hollister Avenue	312	Major Arterial	4	34,000	18,330	24,681	-	-
Hollister Avenue west of Entrance Road	471	Major Arterial	4	34,000	9,150	11,336	-	-
Hollister Avenue west of Cannon Green Drive	781	Major Arterial	4	34,000	11,840	14,445	-	-
Hollister Avenue west of Pacific Oaks Rd	472	Major Arterial	4	34,000	14,010	17,185	-	-
Hollister Avenue west of Storke Road	478	Major Arterial	4	34,000	21,760	25,205	-	-
Hollister Avenue east of Storke Road	815	Major Arterial	4	34,000	17,500	24,572	-	-
Hollister Avenue west of Los Carneros Road	831	Major Arterial	4	34,000	18,570	21,848	-	-
Hollister Avenue east of Los Carneros Road	486	Major Arterial	4	34,000	13,080	17,288	-	-
Hollister Avenue west of Fairview Avenue	310	Major Arterial	4	34,000	17,150	21,861	-	-
Hollister Avenue west of Pine Avenue	823	Major Arterial	4	34,000	16,940	21,368	-	-
Hollister Avenue west of Kellog Avenue	824	Major Arterial	4	34,000	18,240	21,002	-	-
Hollister Avenue west of Patterson Avenue	436	Major Arterial	4	34,000	12,980	17,278	-	-
Kellog Avenue north of Hollister Avenue	330	Local	2	7,280	3,800	5,360	-	-
Kellog Avenue south of Hollister	329	Minor Arterial	2	12,500	6,060	8,600	-	-
Los Carneros Road north of Cremona Drive	924	Major Arterial	4	34,000	16,000	20,501	-	-
Los Carneros Road north of Hollister Avenue	794	Major Arterial	4	34,000	14,070	17,567	-	-
Los Carneros Road south of Hollister Avenue	488	Major Arterial	4	34,000	16,440	20,874	-	-
Los Carneros Road south of Discovery Drive	639	Major Arterial	2	14,300	16,020	18,358	Yes	Yes
Nectarine Avenue north of Hollister Avenue	317	Local	2	7,280	1,370	2,422	-	-
Pine Avenue north of Gaviota Street	701	Collector	2	9,280	4,450	4,684	-	-
Orange Avenue north of Hollister Avenue	756	Local	2	7,280	970	1,325	-	-
Shirrell Way west of Fairview Avenue	116	Local	2	7,280	2,460	2,802	-	-
Storke Road south of US 101 SB Ramps	408	Major Arterial	4	34,000	27,070	34,723	Yes	Yes
Stow Canyon Road west of Fairview Avenue	739	Collector	2	9,280	1,910	2,389	-	-
Calle Real near El Camino Real On-Ramp	378	Local	2	7,280	1,200	1,236	-	-
Storke Rd south of Phelps Rd	517	Major Arterial	4	34,000	12,560	16,463	-	-
Los Carneros Road south of US-101	799	Major Arterial	4	34,000	20,260	25,190	-	-

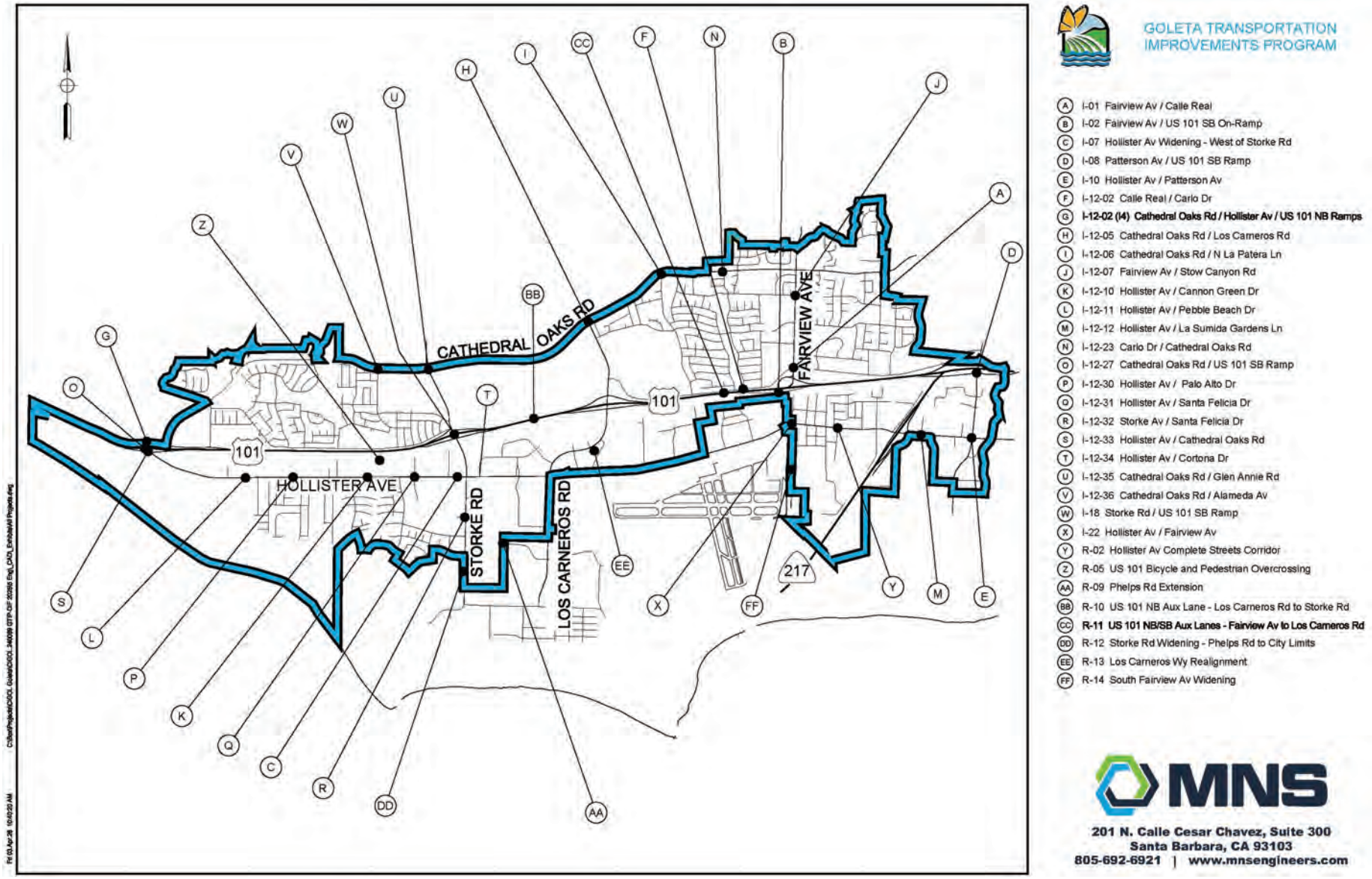
Table 9. HCM 7th Edition US 101 Merge-Diverge Analysis Results

R10 - US 101 NB Aux Lane Between Los Carneros Road and Storke Road												
Dir.	Location/Type	Baseline (2024)				Future No Project (2050)				Future Plus Project (2050)			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
NB	N Los Carneros Rd On-Ramp	30.1	D	34.7	D	33.4	D	36.4	E				
NB	Between N Los Carneros Rd On-Ramp and Storke Rd Off-Ramp	28.6	D	35.1	E	33.1	D	37.8	E	24.3	C	26.7	C
NB	Storke Rd Off-Ramp	31.3	D	36.5	E	35	D	38.3	E				
R11 - US 101 NB Aux Lanes Between Los Carneros Road and Fairview Avenue													
Dir.	Location/Type	Baseline (2024)				Future No Project (2050)				Future Plus Project (2050)			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
NB	N Los Carneros Rd On-Ramp	27.1	C	26.7	C	27.8	C	31.7	D				
NB	Between N Los Carneros Rd On-Ramp and N Fairview Ave Off-Ramp	26.5	D	26.4	D	27.5	D	33.6	D	21.8	C	26.4	C
NB	N Fairview Ave Off-Ramp	31.4	D	31.3	D	32.2	D	36.8	E				
R11 - US 101 SB Aux Lanes Between Fairview Avenue and Los Carneros Road													
Dir.	Location/Type	Baseline (2024)				Future No Project (2050)				Future Plus Project (2050)			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
SB	N Fairview Ave On-Ramp	25.3	C	29.4	D	30.7	D	28.9	D				
SB	Between N Fairview Ave On-Ramp and N Los Carneros Rd Off-Ramp	23.8	C	28.8	D	30.5	D	27.8	D	22.9	C	24.2	C
SB	N Los Carneros Rd Off-Ramp	29	D	33.6	D	33	D	32.8	D				

Table 10. Signal Warrant (Peak Hour Signal Warrant #3) and Roundabout Control Analysis Results

INTERSECTION	SIGNAL WARRANT			ROUNDABOUT ANALYSIS	
	PERFORMED?	MEETS WARRANT		PERFORMED?	RECOMMENDED NO. OF LANES
		BASELINE SCENARIO	FUTURE SCENARIO		
1. Cathedral Oaks Road & La Patera	Yes	No	No	No	
2. Cathedral Oaks Road & Carlo Drive	Yes	No	No	Yes	Single-Lane
3. Cathedral Oaks Road & Los Carneros	Yes	No	Yes	No	
4. Stow Canyon Road & N Fairview Avenue	Yes	Yes	Yes	No	
5. N Fairview Avenue & Shirrell Way	Yes	No	No	No	
6. S Fairview Avenue & Mandarin Drive	Yes	Yes	Yes	No	
7. Hollister Avenue & Orange Avenue	Yes	No	Yes	No	
8. Cathedral Oaks Road & US 101 SB Ramps	Yes	No	Yes	Yes	Single-Lane
9. Hollister Avenue & Pebble Beach Road	Yes	No	No	No	
10. Hollister Avenue & Palo Alto Drive	Yes	No	No	Yes	Single- or Two-Lane
11. Hollister Avenue & Cannon Green Drive	Yes	No	Yes	No	
12. Hollister Avenue & Santa Felicia Drive	Yes	Yes	Yes	Yes	Two-Lane
13. Hollister Avenue & Cremona Drive	Yes	No	Yes	Yes	Single- or Two-Lane
14. Storke Road & Santa Felicia Drive	Yes	Yes	Yes	Yes	Single- or Two-Lane
15. Hollister Avenue & St Joseph Street	Yes	No	Yes	No	
16. Cathedral Oaks Road & Calle Real	Yes	No	Yes	No	
17. Hollister Avenue & Cathedral Oaks Road	Yes	No	Yes	Yes	Single-or Two-Lane
18. Hollister Avenue & Cortona Drive	Yes	Yes	Yes	Yes	Two-Lane with SBR By-Pass Lane
19. Hollister Avenue & Sperling Preserve/Ellwood Driveway	Yes	No	No	Yes	Single- or Two-Lane
20. Calle Real & Carlo Drive	Yes	Yes	Yes	Yes	Single-Lane
21. Calle Real & La Patera	Yes	No	No	No	

Figure 2. Goleta DIF Capital Improvement Projects and Locations



FAIR SHARE

Fair share refers to the share of the total cost of a DIF 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 (i.e., select link) for each deficient DIF roadway segment and intersection using the Goleta Travel Model. The link/node volume delta (or difference) between the baseline and 2050 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 DIF fair share for roadway projects to yield a final fair share allocation percentage specific to each identified DIF 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 DIF. 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 DIF.

Existing/Future Development Share: For capital projects that address an existing (2024) 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 (see Scenario C in Example Figure). For a DIF capital project that addresses a future (2050) deficiency – 100% of the cost is applied (see Scenario B in Example Figure). The new development share of the applicable cost is then determined by tracking the number of internal trips, as defined above, attributable to new development in the City of Goleta.

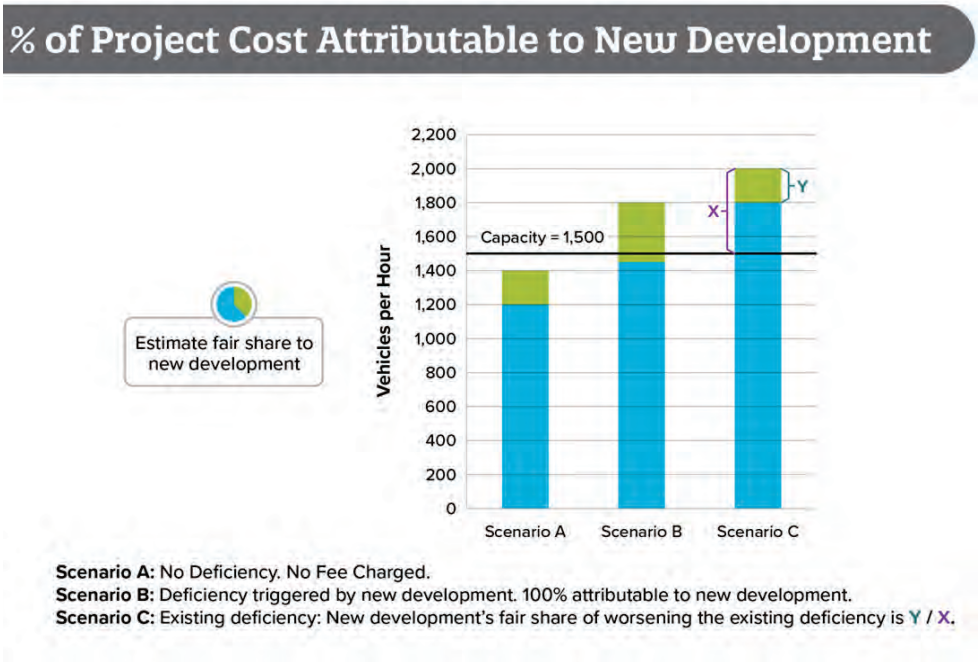


Table 11 lists each DIF project, summarizes the deficiency trigger and analysis method that provides the nexus for a given project's inclusion in the list, the total cost for each improvement that will remedy the deficiency and the share of the total cost that is attributable to new development. The latter is premised on whether a given improvement addresses an existing deficiency or a future deficiency. For nine of the 32 DIF project locations, more detailed operational studies were performed. These studies are documented in technical memorandums and provided as attachments to this report.

Table 12 presents the Goleta Travel Model trips (categorized by jurisdiction) and the resulting fair share cost assessment. As shown, each DIF 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 can then be stratified by City of Goleta "new" trips, to reflect the City's total fair share responsibility to fund a given DIF improvement.

The sum of the improvement costs required to remedy all 32 identified deficiencies yields a total capital cost of $485,640,000. This is reduced to $439,490,000 given that the total cost of the Goleta Freeway Crossing is split 50/50 between the traffic fee and the pedestrian/bicycle fee. This was done given that the Goleta Freeway Crossing, although strictly a pedestrian/bicycle facility improvement, contributes to mode shifts that will provide operational benefits to the future deficiency at the Hollister/Storke intersection.

Factoring for existing deficiencies reduces the total fair share cost to $ $286,241,000. Applying the fair share percentages by project yields a total holistic fair share cost for the City of Goleta of $185,014,000. This reflects approximately 65% of the total fair share DIF roadway improvement costs.

For informational purposes, the fair share costs associated with future development in non-Goleta jurisdictions is also calculated. This amount sums to $101,228,000 which is approximately 35% of total fair share DIF roadway improvement costs. Of the non-Goleta fair share amount, the burden by non-Goleta jurisdiction is as follows:

- UCSB Long Range Development Plan: $17,292,000 6.04%
- City of Santa Barbara Airport & Specific Plans: $19,196,000 6.71%
- County of Santa Barbara: $64,740,000 22.62%

Note, the County of Santa Barbara is attributable for growth in the unincorporated County in Goleta Valley (i.e., Eastern Goleta Valley Community Plan, the Isla Vista Specific Plan, the Gaviota Community Plan) and a number of significant rezone areas that converts previously zoned agriculture parcels to residential (see **Figure 1**).

Table 11. DIF Project List and Costs

Network Obj.		CIP Project Locations	Volumes		Existing or Future Deficiency	Deficiency Assessment			Signal Warrant #3	LOS Method	Project Cost ($1,000s)		
												Adj for Existing Deficiencies	
Map ID	Link/Node ID		Base	Future		Deficient Period	Base LOS	Future LOS			COST	%	$
I-01	288	Fairview Avenue/Calle Real Intersection Improvements	2,451	2,831	Future	PM	B	D	n/a	ICU	$23,875	100%	$23,875
I-02	383	Fairview Avenue at US101 SB On-Ramp Improvements	1,889	2,443	Existing	PM	D	F	n/a	ICU/HCM	$28,800	29%	$8,440
I-07	522	Hollister Avenue at Storke Road Improvement Widening - West of Storke Road	4,094	5,158	Future	PM	C	F	n/a	ICU	$3,620	100%	$3,620
I-08	306	Patterson Avenue at US101 SB Ramp Improvements	3,782	4,716	Existing	AM/PM	E	F	n/a	ICU	$44,450	25%	$10,981
I-10	489	Hollister Avenue at Patterson Avenue	5,155	6,996	Future	AM/PM	See Footnote 1		n/a	HCM	$3,600	100%	$3,600
I-12-02	282	New Intersection Control - Calle Real / Carlo Drive	837	1,059	Existing	PM	C	C	Yes	ICU	$4,980	26%	$1,315
I-12-02 (I4)	624	New Intersection Control - Cathedral Oaks Road / Hollister Avenue / US 101 NB Ramps	1,135	1,439	Future	AM/PM	C	D	Yes	ICU	$5,640	100%	$5,640
I-12-05	195	New Intersection Control - Cathedral Oaks Road / Los Carneros Road	1,625	2,266	Future	AM/PM	C	F	Yes	ICU	$6,555	100%	$6,555
I-12-06	164	New Intersection Control - Cathedral Oaks Road / N La Patera Lane	1,459	1,953	Existing	AM/PM	D	E	No	ICU	$7,205	34%	$2,443
I-12-07	203	New Intersection Control - Fairview Avenue / Stow Canyon Road	826	1,017	Existing	AM	E	F	Yes	ICU	$7,015	23%	$1,617
I-12-10	515	New Intersection Control - Hollister Avenue / Cannon Green Drive	1,526	1,844	Existing	PM	D	E	Yes	ICU	$5,925	21%	$1,235
I-12-11	511	New Intersection Control - Hollister Avenue / Pebble Beach Drive	778	1,131	Future	PM	C	D	No	ICU	$8,015	100%	$8,015
I-12-12	877	New Intersection Control - Hollister Avenue / Sumida Gardens Lane	1,487	2,445	Future	PM	Queue Spillback See Footnote 1		n/a	HCM	$6,425	100%	$6,425
I-12-23	169	New Intersection Control - Carlo Drive / Cathedral Oaks Road	1,363	1,861	Existing	AM/PM	D	E	No	ICU	$8,050	37%	$2,943
I-12-27	506	New Intersection Control - Cathedral Oaks / 101 SB-Ramp	1,382	1,836	Existing	AM/PM	F	F	Yes	ICU	$34,000	33%	$11,158
I-12-30	512	New Intersection Control - Hollister Avenue / Palo Alto Drive	836	1,153	Future	PM	C	D	No	ICU	$10,200	100%	$10,200
I-12-31	518	New Intersection Control - Hollister Avenue / Santa Felicia Drive	3,269	3,996	Existing	AM/PM	F	F	Yes	ICU	$2,180	22%	$484
I-12-32	553	New Intersection Control - Storke Avenue / Santa Felicia Drive	1,581	1,929	Existing	PM	F	F	Yes	ICU	$270	22%	$59
I-12-33	1042	New Intersection Control - Hollister Avenue / Cathedral Oaks Avenue	733	1,065	Future	PM	C	C	Yes	ICU	$9,250	100%	$9,250
I-12-34	856	New Intersection Control - Hollister Avenue / Cortona Drive	3,460	4,651	Existing	AM/PM	F	F	Yes	ICU	$1,700	34%	$585
I-12-35	277	New Intersection Control - Cathedral Oaks Avenue / Glen Annie Road	2,167	3,126	Future	AM/PM	Queue Spillback See Footnote 2		n/a	HCM	$5,900	100%	$5,900
I-12-36	276	New Intersection Control - Cathedral Oaks Avenue / Alameda Avenue	1,597	2,505	Future	AM/PM	Queue Spillback See Footnote 2		n/a	HCM	$5,985	100%	$5,985
I-18	462	Storke Road at US101 SB Ramps	2,331	2,775	Existing	AM	D	D	n/a	ICU	$22,400	19%	$4,260
I-22	385	Hollister Avenue / Fairview Avenue Intersection Improvements	2,724	3,679	Future	PM	C	E	n/a	ICU	$15,850	100%	$15,850
R-02	*	Hollister Avenue Complete Streets Corridor Plan	2,535	3,299	Existing	AM/PM	See Footnote 3				$10,750	30%	$3,240
R-05	*	Goleta US 101 Bike/Ped Overcrossing	251	479	Future	PM	See Footnote 4				$46,150	100%	$46,150
R-09	21126	Phelps Road Extension	191	399	Future	AM	See Footnote 5				$18,800	100%	$18,800
R-10	294	US 101 NB Aux Lane Between Los Carneros Road and Storke Road	1,034	1,137	Existing	PM	E	E	n/a	HCM	$22,650	10%	$2,249
R-11	301	US 101 NB/SB Aux Lanes Between Fairview Avenue and Los Carneros Road	1,517	2,008	Future	PM	D	E	n/a	HCM	$33,500	100%	$33,500
R-12	517	Storke Road Widening: Phelps Road to City Limits	1,043	1,411	Existing	PM	> C		n/a	ADT	$6,000	35%	$2,117
R-13	*	R-13: Los Carneros Way Realignment Extra: Los Carneros & Calle Koral	2,161	2,920	Future	PM	See Footnote 6				$23,550	100%	$23,550
R-14	495	South Fairview Avenue Widening	263	410	Future	PM	See Footnote 7				$6,200	100%	$6,200

Notes

* R-02 Average of link #754,309,322,648,816,817,818,819,820,821,822,823,824,825,832,833,834, and 835

* R-05 Total cost is $92.3 million: Cost split 50/50 with Ped/Bike Fee

* R-13 Sum of link #628 and node #467

Footnotes

1. Improvements associated with queue spill-back conditions - see South Patterson Traffic Analysis in Appendix A.6

2. Improvements associated with queue spill-back conditions - see Cathedral Oaks Traffic Analysis in Appendix A.7

3. Improvement associated with Goleta Old Town Revitialization - minor side-street deficiencies.

4. Improvement costs split 50/50 with Ped and Bike Fee. Improvement supports I-07 by relieving traffic at Storke/Hollister, See Appendix A.9

5. Improvement supports I-07 by relieving traffic at Storke/Hollister, See Appendix A.9

6. Improvement associated with deficiency at Los Carneros/Calle Koral and Realignment of Camino Vistas

7. Deficiency and improvement identified in South Fairview Technical Memorandum, Dowling Associates, 7/23/2009 in Appendix A.8

Table 12. DIF Fair Share

Network Obj.		CIP Project Locations	Volumes		Existing or Future Deficiency	Project Cost ($1,000s)			Base Trips by Jurisdiction	Future Trips by Jurisdiction	Future Delta Net New Trips by Jurisdiction	Future - Detail														City of Goleta Fair Share	City of Goleta Cost (x1000)	UCSB Cost (x1000)	SB Old Town Cost (x1000)	SB East Cost (x1000)	SB Airport Cost (x1000)	Cnty Less RZ. Cost (x1000)	County Rezone Cost (x1000)
							Adj for Existing Deficiencies					Net New Trips							% Fair Share													
Map ID	Link/Node ID		Base	Future		COST	%	$	Total Trips Less External	Total Trips Less External	Total Trips Less External	City of Goleta	UCSB	SB Old Town	SB East	SB Airport	County (less County Rezone)	County Rezone	City of Goleta	UCSB	SB Old Town	SB East	SB Airport	County (less County Rezone)	County Rezone							
I-01	288	Fairview Avenue/Calle Real Intersection Improvements	2,451	2,831	Future	$23,875	100%	$23,875	2,451	2,831	380	259	13	16	3	6	72	12	68%	3%	4%	1%	2%	19%	3%	68.22%	$16,280	$831	$978	$162	$367	$4,526	$731
I-02	383	Fairview Avenue at US101 SB On-Ramp Improvements	1,889	2,443	Existing	$28,800	29%	$8,440	1,889	2,443	554	298	10	107	26	13	96	3	54%	2%	19%	5%	2%	17%	0%	53.87%	$4,547	$160	$1,632	$397	$198	$1,464	$41
I-07	522	Hollister Avenue at Storke Road Improvement Widening - West of Storke Road	4,094	5,158	Future	$3,620	100%	$3,620	4,094	5,158	1065	665	39	29	26	1	278	27	62%	4%	3%	2%	0%	26%	2%	62.51%	$2,261	$133	$98	$87	$5	$945	$90
I-08	306	Patterson Avenue at US101 SB Ramp Improvements	3,782	4,716	Existing	$44,450	25%	$10,981	3,782	4,716	935	347	96	14	26	14	172	265	37%	10%	1%	3%	1%	18%	28%	37.18%	$4,081	$1,129	$160	$311	$161	$2,022	$3,117
I-10	489	Hollister Avenue at Patterson Avenue	5,155	6,996	Future	$3,600	100%	$3,600	5,155	6,996	1842	652	47	33	30	15	497	567	35%	3%	2%	2%	1%	27%	31%	35.42%	$1,275	$93	$64	$59	$29	$972	$1,108
I-12-02	282	New Intersection Control - Calle Real / Carlo Drive	837	1,059	Existing	$4,980	26%	$1,315	837	1,059	220	150	10	6	1	1	52	2	68%	5%	3%	0%	0%	23%	1%	67.69%	$893	$62	$33	$3	$6	$308	$9
I-12-02 (I4)	624	New Intersection Control - Cathedral Oaks Road / Hollister Avenue / US 101 NB Ramps	1,135	1,439	Future	$5,640	100%	$5,640	1,135	1,439	304	256	2	3	2	1	37	2	84%	1%	1%	1%	0%	12%	1%	84.08%	$4,743	$40	$62	$42	$22	$686	$44
I-12-05	195	New Intersection Control - Cathedral Oaks Road / Los Carneros Road	1,625	2,266	Future	$6,555	100%	$6,555	1,625	2,266	643	365	21	13	29	0	213	3	57%	3%	2%	5%	0%	33%	0%	56.92%	$3,722	$212	$128	$298	$0	$2,170	$26
I-12-06	164	New Intersection Control - Cathedral Oaks Road / N La Patera Lane	1,459	1,953	Existing	$7,205	34%	$2,443	1,459	1,953	496	284	21	7	28	0	153	3	57%	4%	1%	6%	0%	31%	1%	57.37%	$1,398	$105	$32	$138	$2	$753	$15
I-12-07	203	New Intersection Control - Fairview Avenue / Stow Canyon Road	826	1,017	Existing	$7,015	23%	$1,617	826	1,017	189	145	1	7	6	2	21	8	77%	0%	3%	3%	1%	11%	4%	76.08%	$1,238	$6	$56	$51	$21	$181	$64
I-12-10	515	New Intersection Control - Hollister Avenue / Cannon Green Drive	1,526	1,844	Existing	$5,925	21%	$1,235	1,526	1,844	318	279	6	5	0	0	25	2	88%	2%	2%	0%	0%	8%	1%	87.74%	$1,084	$24	$20	$2	$0	$96	$10
I-12-11	511	New Intersection Control - Hollister Avenue / Pebble Beach Drive	778	1,131	Future	$8,015	100%	$8,015	778	1,131	353	309	5	2	2	0	32	2	88%	2%	0%	1%	0%	9%	1%	87.53%	$7,016	$124	$36	$52	$5	$726	$56
I-12-12	877	New Intersection Control - Hollister Avenue / Sumida Gardens Lane	1,487	2,445	Future	$6,425	100%	$6,425	1,487	2,445	958	247	44	27	16	12	108	503	26%	5%	3%	2%	1%	11%	52%	25.77%	$1,657	$296	$180	$109	$82	$727	$3,373
I-12-23	169	New Intersection Control - Carlo Drive / Cathedral Oaks Road	1,363	1,861	Existing	$8,050	37%	$2,943	1,363	1,861	498	289	23	7	28	1	147	3	58%	5%	1%	6%	0%	30%	1%	58.07%	$1,710	$134	$39	$165	$4	$871	$20
I-12-27	506	New Intersection Control - Cathedral Oaks / 101 SB-Ramp	1,382	1,836	Existing	$34,000	33%	$11,158	1,382	1,836	454	368	5	5	6	2	62	7	81%	1%	1%	1%	0%	14%	1%	81.10%	$9,039	$125	$116	$148	$48	$1,517	$165
I-12-30	512	New Intersection Control - Hollister Avenue / Palo Alto Drive	836	1,153	Future	$10,200	100%	$10,200	836	1,153	317	282	5	2	1	0	25	1	89%	2%	1%	0%	0%	8%	0%	88.98%	$9,086	$162	$62	$30	$5	$812	$42
I-12-31	518	New Intersection Control - Hollister Avenue / Santa Felicia Drive	3,269	3,996	Existing	$2,180	22%	$484	3,269	3,996	724	610	9	14	11	2	62	16	84%	1%	2%	1%	0%	9%	2%	84.01%	$408	$6	$10	$7	$1	$41	$11
I-12-32	553	New Intersection Control - Storke Avenue / Santa Felicia Drive	1,581	1,929	Existing	$270	22%	$59	1,581	1,929	349	175	73	5	4	0	84	7	50%	21%	2%	1%	0%	24%	2%	50.35%	$30	$12	$1	$1	$0	$14	$1
I-12-33	1042	New Intersection Control - Hollister Avenue / Cathedral Oaks Avenue	733	1,065	Future	$9,250	100%	$9,250	733	1,065	333	295	5	2	2	0	28	1	89%	2%	1%	0%	0%	8%	0%	88.68%	$8,189	$144	$47	$45	$6	$783	$37
I-12-34	856	New Intersection Control - Hollister Avenue / Cortona Drive	3,460	4,651	Existing	$1,700	34%	$585	3,460	4,651	1191	880	2	41	14	3	230	21	74%	0%	3%	1%	0%	19%	2%	73.85%	$432	$1	$20	$7	$1	$113	$10
I-12-35	277	New Intersection Control - Cathedral Oaks Avenue / Glen Annie Road	2,167	3,126	Future	$5,900	100%	$5,900	2,167	3,126	959	261	43	14	16	4	612	9	27%	4%	1%	2%	0%	64%	1%	27.25%	$1,607	$264	$88	$95	$22	$3,768	$55
I-12-36	276	New Intersection Control - Cathedral Oaks Avenue / Alameda Avenue	1,597	2,505	Future	$5,985	100%	$5,985	1,597	2,505	908	274	28	11	5	4	584	2	30%	3%	1%	1%	0%	64%	0%	30.18%	$1,805	$187	$70	$35	$27	$3,848	$13
I-18	462	Storke Road at US101 SB Ramps	2,331	2,775	Existing	$22,400	19%	$4,260	2,331	2,775	443	222	8	2	14	5	185	8	50%	2%	0%	3%	1%	42%	2%	50.09%	$2,134	$79	$21	$132	$46	$1,775	$73
I-22	385	Hollister Avenue / Fairview Avenue Intersection Improvements	2,724	3,679	Future	$15,850	100%	$15,850	2,724	3,679	955	505	25	191	24	31	108	71	53%	3%	20%	2%	3%	11%	7%	52.89%	$8,386	$416	$3,167	$396	$514	$1,795	$1,177
R-02	*	Hollister Avenue Complete Streets Corridor Plan	2,535	3,299	Existing	$10,750	30%	$3,240	2,535	3,299	758	360	9	74	4	4	112	194	48%	1%	10%	1%	1%	15%	26%	47.12%	$1,540	$40	$316	$17	$17	$480	$831
R-05	*	Goleta US 101 Bike/Ped Overcrossing	251	479	Future	$46,150	100%	$46,150	251	479	228	194	5	0	3	0	25	1	85%	2%	0%	1%	0%	11%	1%	85.00%	$39,252	$1,022	$20	$594	$22	$4,969	$270
R-09	21126	Phelps Road Extension	191	399	Future	$18,800	100%	$18,800	191	399	208	101	85	1	0	0	21	0	48%	41%	1%	0%	0%	10%	0%	48.32%	$9,100	$7,706	$117	$5	$13	$1,854	$6
R-10	294	US 101 NB Aux Lane Between Los Carneros Road and Storke Road	1,034	1,137	Existing	$22,650	10%	$2,249	1,034	1,137	101	25	5	3	0	3	61	4	25%	5%	3%	0%	3%	60%	4%	24.61%	$565	$119	$66	$0	$64	$1,354	$82
R-11	301	US 101 NB/SB Aux Lanes Between Fairview Avenue and Los Carneros Road	1,517	2,008	Future	$33,500	100%	$33,500	1,517	2,008	489	299	12	5	29	3	98	44	61%	2%	1%	6%	1%	20%	9%	60.79%	$20,439	$804	$348	$1,956	$234	$6,683	$3,037
R-12	517	Storke Road Widening: Phelps Road to City Limits	1,043	1,411	Existing	$6,000	35%	$2,117	1,043	1,411	368	165	92	3	1	0	106	1	45%	25%	1%	0%	0%	29%	0%	44.96%	$951	$529	$19	$3	$1	$609	$4
R-13	*	R-13: Los Carneros Way Realignment Extra: Los Carneros & Calle Koral	2,161	2,920	Future	$23,550	100%	$23,550	2,161	2,920	759	556	45	31	24	1	87	15	73%	6%	4%	3%	0%	12%	2%	73.22%	$17,250	$1,407	$957	$743	$24	$2,710	$458
R-14	495	South Fairview Avenue Widening	263	410	Future	$6,200	100%	$6,200	263	410	148	69	22	6	0	47	4	1	47%	15%	4%	0%	32%	3%	0%	46.84%	$2,897	$921	$233	$0	$1,959	$167	$23
																											$185,014	$17,292	$19,196			$64,740	
																											64.64%	6.04%		6.71%			22.62%

Notes

* R-02 Average of link #754,309,322,648,816,817,818,819,820,821,822,823,824,825,832,833,834, and 835

* R-05 Total cost is $92.3 million: Cost split 50/50 with Ped/Bike Fee

* R-13 Sum of link #628 and node #467

ATTACHMENT A.1

CITY OF GOLETA TRAVEL MODEL UPDATE

MODEL PLOTS (AVAILABLE UPON REQUEST)

DKS 428 J STREET, SUITE 340 • SACRAMENTO, CA 95814 • 916.368.2000 • DKSASSOCIATES.COM

TECHNICAL MEMORANDUM

DATE: December 12, 2025

TO: Nina Buelna, Public Works Director | City of Goleta

FROM: Jim Damkowitch, Principal | DKS Associates

SUBJECT: City of Goleta Travel Model Project #24675-002

INTRODUCTION

This memorandum summarizes the recent update to the City of Goleta's Travel Model. Updates to model software, model inputs, and assumptions will be described in addition to the baseline model validation performance. Future land use updates will also be described.

Among other planning applications, the updated model will be applied to update of the Goleta Traffic Impact Fee (GTIF) portion of the City's Development Impact Fee (DIF) schedule. The DIF contributes funds for construction of the City of Goleta's Transportation Improvement Program (GTIP) through administration of locally generated developer traffic impact fees. These updates ensure consistency with the California Mitigation Fee Act (MFA) nexus requirements and support the City's long-term transportation funding strategy.

GOLETA TRAVEL MODEL UPDATE

The VISUM Goleta Travel Model is an analytical tool that enables the City of Goleta to generate technical information relevant to understanding 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 (CIP), analysis of specific transportation projects and programs, and General Plan land use and transportation strategies and policies.

The Goleta Travel Model estimates peak-hour traffic (AM and PM) for both existing year and future year conditions, providing roadway segment volumes and intersection turning movements that support detailed operational analyses. The ability to predict future volume sets helps determine whether a given road segment or intersection will operate acceptably under future conditions, as well as the extent to which new development within and outside the City will contribute to future infrastructure deficiencies identified within the City of Goleta.

KEY MODEL UPDATES

A comprehensive update to the Goleta Travel Model was completed in August 2025. The following key update tasks were performed as part of the update:

- Upgraded software platform from PTV VISUM version 16.0 to version 25.1
- Updated baseline land use from 2013 to reflect 2024 conditions based on the following information:

  City of Goleta:
  - Residential and Non-residential land use permit data (2013-2024)
  - GP Update Resolutions
  - Elementary, Middle School, High School 2024 Enrollment
  - Built Housing Unit Summaries 2013-2024 (back check)

  County of Santa Barbara:
  - Residential and Non-residential land use permit data (2013-2024)
  - County GP Rezones

  City of Santa Barbara
  - Residential and Non-residential land use permit data (2013-2024)
  - La Cumbre Plaza GP Rezones

  UCSB:
  - Residential permit data (2013-2024)
  - Student Enrollment (2024)
- All City of Goleta land use was QA-QC by the City – including land use of neighboring jurisdictions. The County of Santa Barbara, City of Santa Barbara, and UCSB land use updated were informed and coordinated with the County and the City. Ground truthing new development was also verified/checked using web resources (Google Earth, Google Maps, etc.).
- Conducted a comprehensive data collection effort in 2024, including recording counts in the model link attribute fields (AM and PM peak hours segment and intersection turning movements counts). Data collection report is provided in **Attachment A** to this memorandum.
- Updated external traffic (i.e., model boundary conditions) using most recent traffic counts at external stations.
- Network coding to reflect roadway geometrics
- Updated trip generation estimates to the ITE Trip Generation Manual (11th Edition)
- Updated Master Land Use File to include the following land use selections:
  - Baseline Land Use (2024)
  - GPU Land Use (2050) – reflects City build out conditions. A Cumulative land use is available that reflects EPAP – existing plus approved and pending developments.
- Adjusted for County rezone areas to reflect new development near Ward Memorial Boulevard and Hollister Avenue that was previously zoned for agriculture
- Updated "Flow Bundle" districts to track future trips by jurisdictions (City, County, City of Santa Barbara, and University of California at Santa Barbara (UCSB))

MODEL CALIBRATION AND VALIDATION ANALYSIS

Static and Dynamic validations of both the AM and PM peak hour models were performed to evaluate the veracity of the Goleta Travel Model to accurately predict travel behavior. Goleta's 2024 baseline model results were evaluated relative to several key validation criteria consistent with the following related travel demand model publications:

- 2024 Regional Transportation Plan Guidelines (California Transportation Commission)
- Travel Forecasting Guidelines (California Department Transportation, 1992)

To facilitate the validation assessment, the following 2024 baseline model files were reviewed:

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

Additional model validation criteria from the following state/federal documents were also referenced, although not all were directly relevant to this review:

- 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)
- A Manual of Regional Transportation Modeling Practice for Air Quality Analysis
- Transportation-Air Quality Planning: Issues & Analysis Needs
- EPA Section 187 Vehicles Miles Traveled (VMT) Forecasting and Tracking Guidance (March 1992)
- Guidance for the Use of Latest Planning Assumptions in Transportation Conformity Determinations (December 2008)

STATIC VALIDATION

Based on the review of the aforementioned documents, the following static criteria shown in **Table 1** were selected for this evaluation.

TABLE 1: PRIMARY STATIC VALIDATION 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%

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.

Figure 2 also identifies the model validation screenlines. 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 within the Goleta modeling domain are provided in **Table 2** and **Table 3**. Results indicate that baseline model volumes are within acceptable error tolerances proscribed by validation criteria for screenlines. Although within error tolerance, Screenline 8 (Santa Barbara Airport) and Screenline 9 (UCSB) exhibit the greatest deviation from traffic counts. This is not surprising given the a-typical trip generation and distribution of these "special generators".

Figure 3 and **Figure 4** show the Goleta Model Coefficient of Determination for AM peak and PM peak, respectively. As shown in the figures, the correlation coefficient between the Goleta Travel Model baseline volumes and traffic counts is 0.95 for AM peak hour and 0,94 for PM peak hour, which meets established acceptance criteria. Another statistic for identifying the consistency between the model outputs and the existing year counts is the percent Root Mean Square Error (RSME). The percent RMSE for the Goleta Travel Model baseline is 30.0 percent, which is well below the maximum acceptable range of 40 percent. These static validation tests confirm that the model meets established criteria for validation of travel demand models.

DYNAMIC VALIDATION

In addition to performing these static validation analyses, dynamic validation tests were conducted to evaluate the model's behavioral response to changes in input assumptions. Dynamic validation assesses whether the model "behaves" appropriately when land use or network inputs are modified. The model's behavior was analyzed for the AM and PM peak hour periods for the following scenarios:

- Addition of 300 single-family swelling units to the TAZ 10
- Addition of total of 250,000 square feet of regional commercial area to TAZ 15
- Addition of a bypass with the inclusion of La Patera and Elwood Station freeway crossings[1]

Table 4 and **Table 5** summarize the AM and PM peak hour dynamic validation results for the Goleta Travel Model baseline model, respectively. As shown, the addition of 300 single family residential units and 250,000 square feet of commercial floor results in VMT increases in both the AM and PM peak hour models. The freeway crossing results indicate that Elwood Station crossing results in a VMT decrease in both the AM/PM peak hours while the La Patera crossing results in a minimal VMT increase in both the AM/PM peak hours. These dynamic validation results reflect a reasonable response by the Goleta Travel Model to changes in model inputs.

MODEL CALIBRATION AND VALIDATION FINDINGS

Based on the results of both the static and dynamic validation tests, it was determined that the Goleta Travel Model meets or exceeds established calibration and validation criteria for travel demand model existing year calibration and validation.

[1] All dynamic validation scenarios were included solely as theoretical tests of model responsiveness and are not intended to represent future projects or planning horizon improvements.

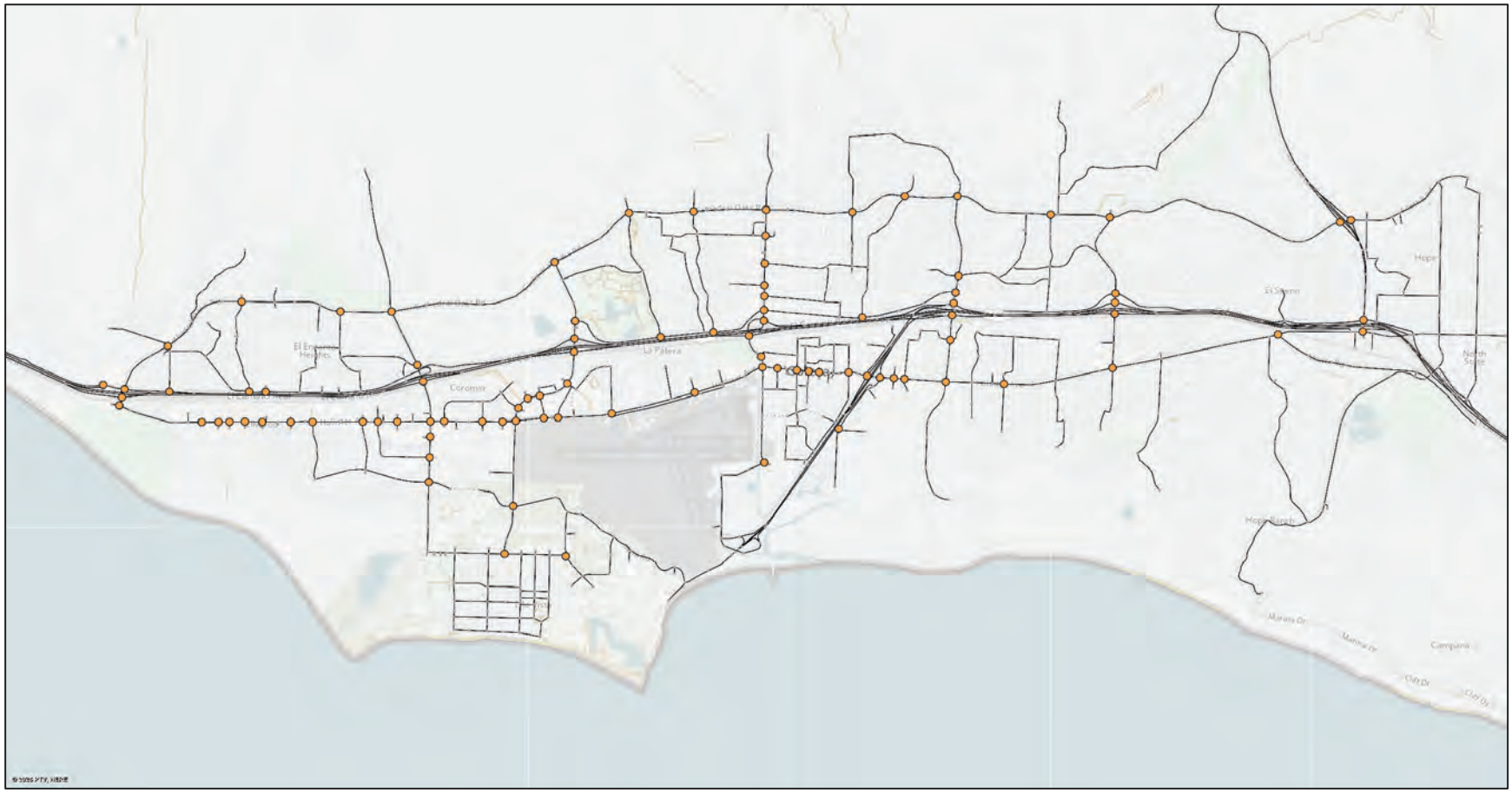


FIGURE 1: GOLATA TRAVEL MODEL INTERSECTION COUNT LOCATIONS

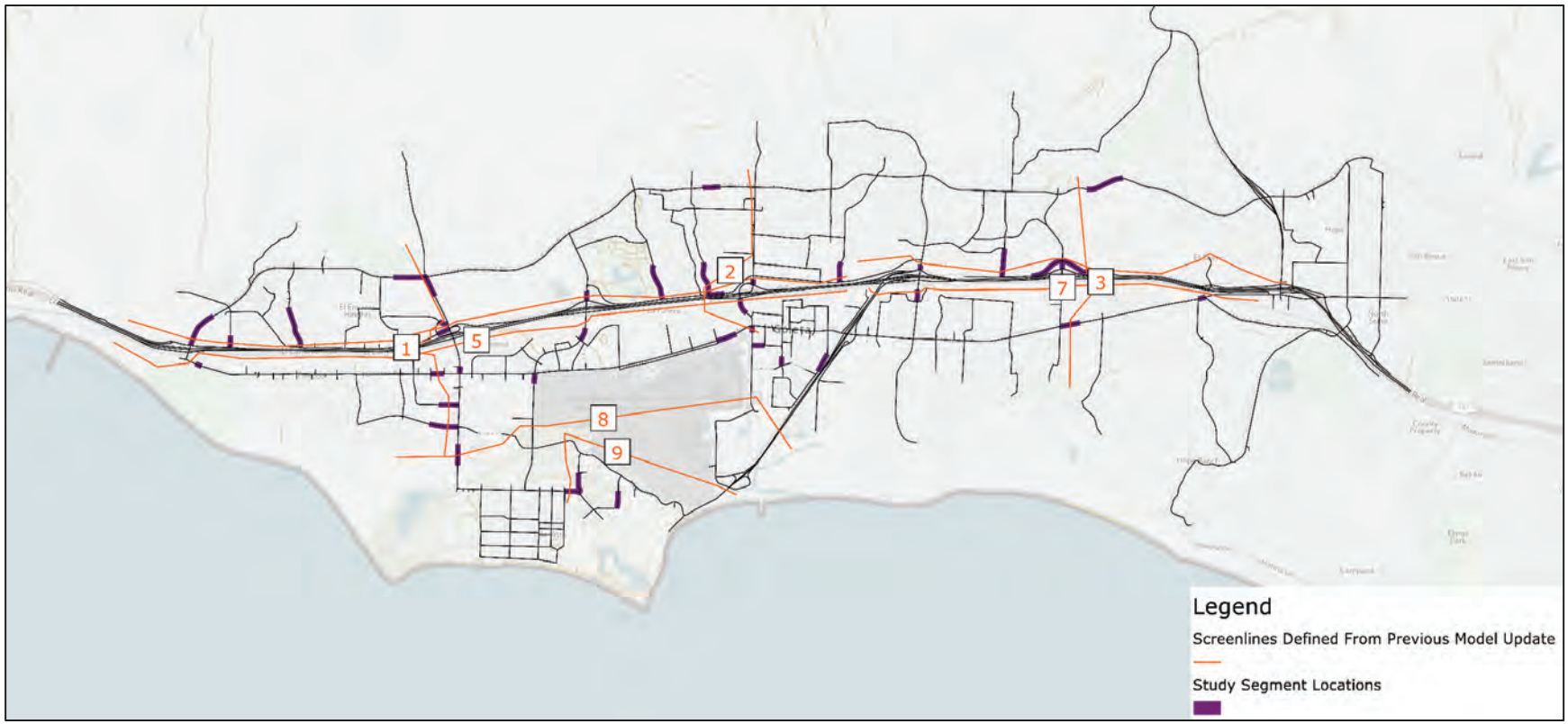


FIGURE 2: GOLETA TRAVEL MODEL ROADWAY SEGMENT COUNT LOCATIONS AND SCREENLINES

TABLE 2: AM PEAK HOUR STATIC VALIDATION RESULTS BY SCREENLINE

SCRRENLINE #	SCRRENLINE NAME	MODEL AMF	COUNT AMF	MODEL AMB	COUNT AMB	MODEL AMT	COUNT AMT	% AMT	ABS %	ALLOW AMT
1	NS - W/o Storke/Glenn Annie	4150	3771	2786	2504	6937	6275	11%	11%	30%
2	NS - W/o Fairview	4600	4778	5250	4762	9850	9540	3%	3%	25%
3	NS - E/o Turnpike	5999	6059	6657	5790	12656	11849	7%	7%	23%
4	EW - N/o Hwy 101 West	3072	3497	4249	4011	7321	7508	-2%	2%	28%
5	EW - S/o Hwy 101 West	2491	2881	4109	3710	6600	6591	0%	0%	29%
6	EW - N/o Hwy 101 East	2419	2591	3288	3168	5707	5759	-1%	1%	31%
7	EW - S/o Hwy 101 East	2797	2961	3891	3650	6687	6611	1%	1%	29%
8	EW - SB Airport	1661	1392	2394	2078	4055	3470	17%	17%	40%
9	EW - N/o UCSB	663	600	1816	1582	2479	2182	14%	14%	46%
	Total	**27853**	**28530**	**34440**	**31255**	**62293**	**59785**	**4%**	**4%**	**15%**

TABLE 3: PM PEAK HOUR STATIC VALIDATION RESULTS BY SCREENLINE

SCRRENLINE #	SCRRENLINE NAME	MODEL PMF	COUNT PMF	MODEL PMB	COUNT PMB	MODEL PMT	COUNT PMT	% PMT	ABS %	ALLOW PMT
1	NS - W/o Storke/Glenn Annie	3177	3183	4847	4441	8024	7624	5%	5%	28%
2	NS - W/o Fairview	6033	5072	4987	5411	11020	10483	5%	5%	25%
3	NS - E/o Turnpike	7183	6270	6374	6365	13557	12635	7%	7%	22%
4	EW - N/o Hwy 101 West	5054	4646	3620	4123	8674	8769	-1%	1%	26%
5	EW - S/o Hwy 101 West	5314	4401	2574	3306	7888	7707	2%	2%	28%
6	EW - N/o Hwy 101 East	3576	3494	2917	3058	6494	6552	-1%	1%	29%
7	EW - S/o Hwy 101 East	4241	3871	3362	3375	7603	7246	5%	5%	28%
8	EW - SB Airport	3167	2832	1890	2133	5057	4965	2%	2%	34%
9	EW - N/o UCSB	2522	2086	911	1304	3433	3390	1%	1%	40%
	Total	**40268**	**35855**	**31483**	**33516**	**71751**	**69371**	**3%**	**3%**	**15%**

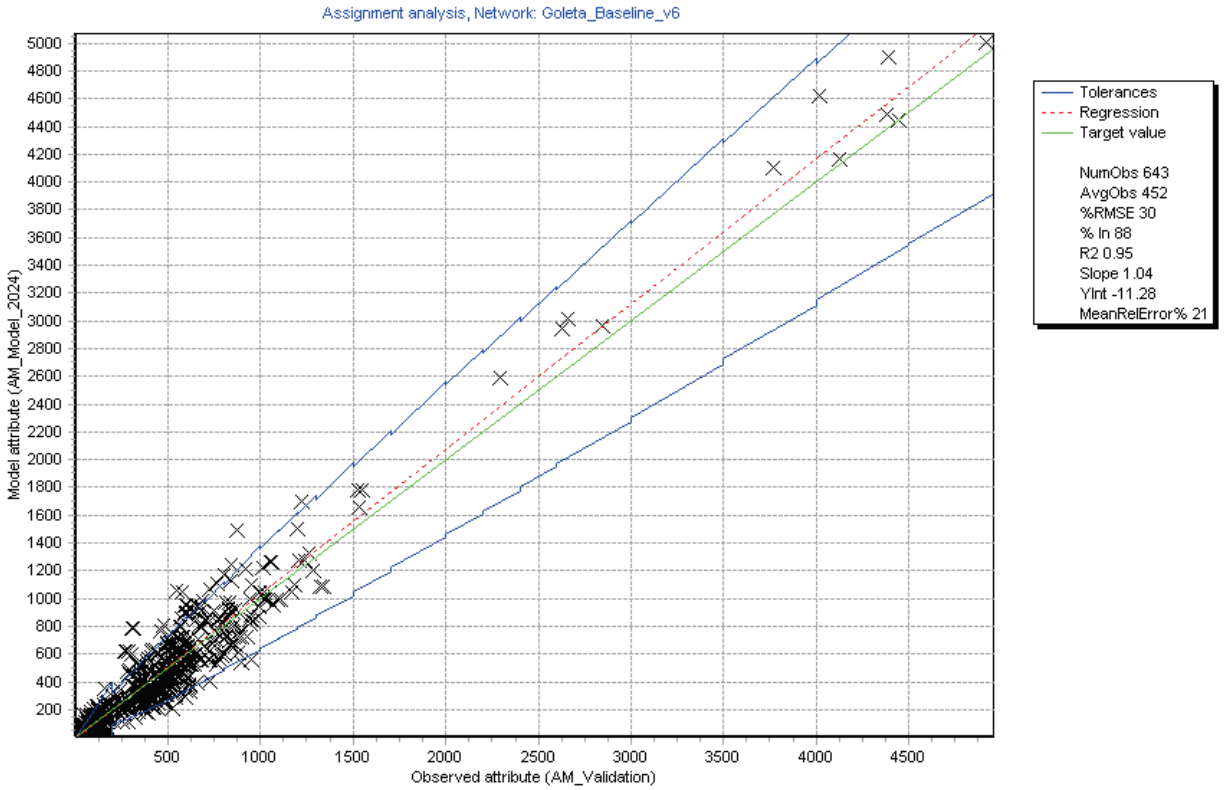


FIGURE 3: AM PEAK HOUR GOLETA MODEL COEFFICIENT OF DETERMINATION

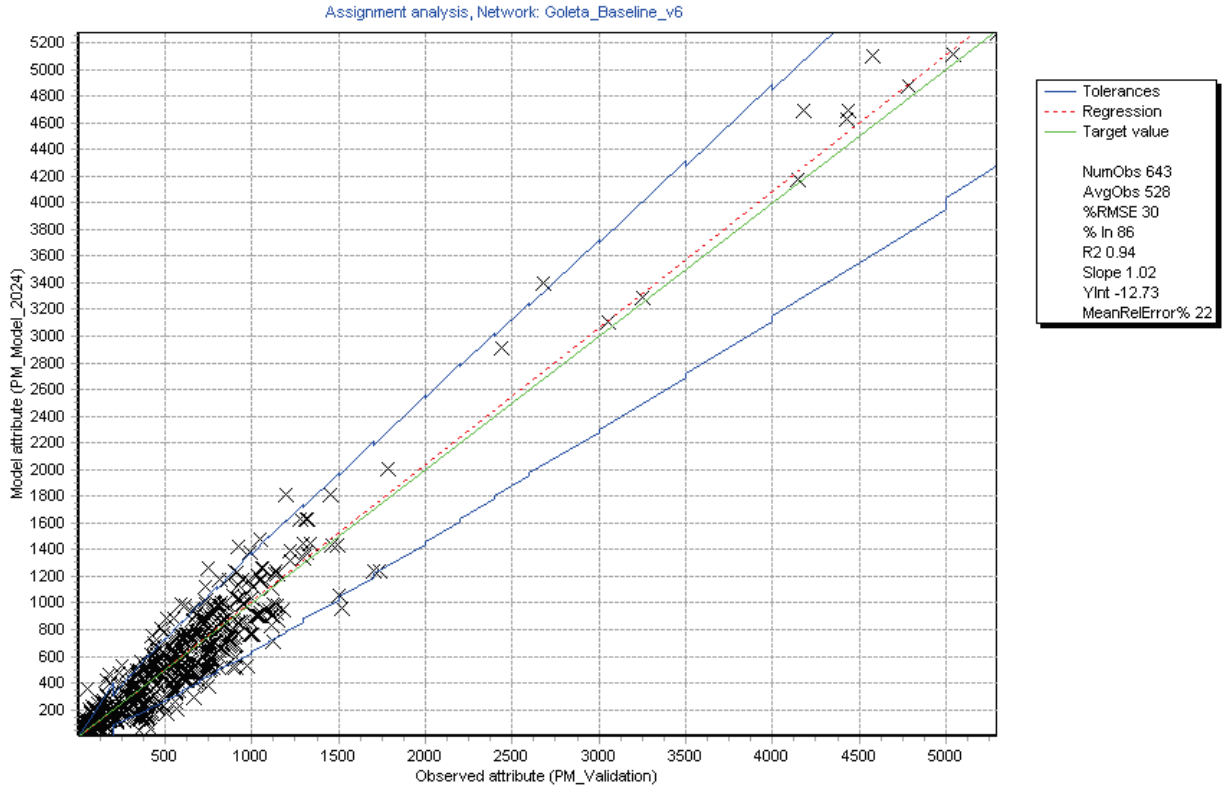


FIGURE 4: PM PEAK HOUR GOLETA MODEL COEFFICIENT OF DETERMINATION

TABLE 4: GOLETA BASELINE TRAVEL MODEL DYNAMIC VALIDATION RESULTS FOR THE AM SCENARIO

AM SCENARIO	VMT	VHT	AVG. SPEED	CHANGE FROM BASE		
				VMT	VHT	Avg. Speed
AM BASE	53866	1272	42.36	0	0	0
PLUS 300 SFDU IN TAZ 10	54190	1282	42.28	324	10	-0.08
PLUS 250 KS REG COMM IN TAZ 15	54063	1279	42.27	197	7	-0.09
ADDED LA PATERA CROSSING	53939	1270	42.48	73	-2	0.12
ADDED ELWOOD STATION	53685	1266	42.41	-181	-6	0.04

TABLE 5: GOLETA BASELINE TRAVEL MODEL DYNAMIC VALIDATION RESULTS FOR THE PM SCENARIO

PM SCENARIO	VMT	VHT	AVG. SPEED	CHANGE FROM BASE		
				VMT	VHT	Avg. Speed
PM BASE	62,216	1,573	39.56	0	0	0
PLUS 300 SFDU IN TAZ 10	62,579	1,589	39.39	363	16	-0.17
PLUS 250 KS REG COMM IN TAZ 15	62,786	1,601	39.21	571	29	-0.35
ADDED LA PATERA CROSSING	62,300	1,560	39.94	85	-13	0.37
ADDED ELWOOD STATION	62,067	1,565	39.67	-149	-8	0.11

MODEL PLANNING HORIZON

The baseline year for the Goleta Traffic Model data is 2024. The planning horizon for this fee assessment is 2050. This forecast horizon is consistent with the planning horizon used by the Santa Barbara County Association of Governments (SBCAG) for its' countywide regional travel model. A planning horizon of 2050 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.

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 General Plan residential and non-residential development list as defined in the Eastern Goleta Valley Community Plan, the Isla Vista Specific Plan and the Gaviota Community Plan. This update also reflects the recent re-zones for unincorporated areas previously zoned for agriculture

- Buildout of the UCSB Long Range Plan
- K-12 school enrollment projections
- External traffic growth (i.e., model boundary conditions) based 2050 forecast information from SBCAG's regional travel demand model
- Buildout of the City of Santa Barbara's Santa Barbara Airport Master Plan and Airport Specific Plan

Table 6 through **Table 10** provide a summary of the net development growth assumed to occur between 2024 and 2050 stratified by model land use category, for the entire model area, the City of Goleta, Santa Barbara County, the City of Santa Barbara, and UCSB, respectively. A generalized map of the various sub-areas of interest within the Goleta Model modeling domain is provided in **Figure 3**. **Figure 4** and **Figure 5** show the mix of single-family dwelling units, multi-family dwelling units, and student housing for the 2024 baseline and 2050 build-out respectively.

MODEL PLOTS

The following model plots are available up request:

- Goleta Model TAZ Structure
- Goleta Model Baseline 2024 AM Peak Hour Traffic Volumes
- Goleta Model Baseline 2024 PM Peak Hour Traffic Volumes
- Goleta Model Baseline 2024 Daily Traffic Volumes (PM Peak Hour / 0.1)
- Goleta Model Baseline 2024 Intersection Control Type
- Goleta Model Baseline 2024 Number of Lanes
- Goleta Model GPU Buildout 2050 AM Peak Hour Traffic Volumes
- Goleta Model GPU Buildout 2050 PM Peak Hour Traffic Volumes
- Goleta Model GPU Buildout 2050 Daily Traffic Volumes (PM Peak Hour / 0.1)
- Goleta Model GPU Buildout 2050 Intersection Control Type

TABLE 6: MODEL LAND USE GROWTH SUMMARY – TOTAL MODEL AREA

Land Use Category	Model ID	Units	2024 Existing	2050 GPU	Change
Single Family	SFDU	DU	14,187	16,871	2,684
Multi Family	MFDU	DU	13,285	24,682	11,397
Regional Commercial	REG_COMM	KSF	640	937	297
Neighborhood Commercial	NB_COMM	KSF	1,881	2,753	872
Office	OFFICE	KSF	3,552	5,585	2,033
Research & Development	R_D	KSF	-	66	66
Light Industrial	LT_INDUST	KSF	6,801	7,682	881
Heavy Industrial	HV_INDUST	KSF	1,386	1,530	144
Agriculture	AGRI	Acres	6,815	6,868	53
Hotel/Motel	HOTEL	Rooms	949	1,456	507
Restaurant	RESTR	KSF	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	KSF	220	357	137
Park Recreation	PARK_REC	Acres	1,078	1,152	74
Theater	THEATER	KSF	9	90	81
Auto	AUTO	KSF	530	632	102
Hospital	HOSP	KSF	135	195	60
Indoor Recreation	INDOOR_REC	KSF	441	618	177
Santa Barbara Airport	SB_AIRPORT	Pax/Day	1,741	3,127	1,386
UCSB	UCSB	Students	19,039	25,000	5,961
Student Housing (Off Campus)	STU_HSE	DU	65	65	-
Student Housing (On Campus)	STUDENT_HO	DU	6,887	7,216	329
La Cumbre Mall	LA_CUMBRA	KSF	651	398	(253)
Resort Hotel	RESORT_HOT	Rooms	360	422	62
UCSB Faculty/Staff	FACULTY_ST	Emp	9,528	11,400	1,872
Bank	BANK	KSF	23	37	14
Fast Food Restaurant	F_FOOD	KSF	35	38	3
Golf Course	GOLF	Holes	63	45	(18)

TABLE 7: MODEL LAND USE GROWTH SUMMARY – CITY OF GOLETA

Land Use Category	Model ID	Units	2024 Existing	2050 GPU	Change
Single Family	SFDU	DU	6,101	6,571	470
Multi Family	MFDU	DU	7,516	9,973	2,457
Regional Commercial	REG_COMM	KSF	491	528	37
Neighborhood Commercial	NB_COMM	KSF	1,225	1,861	636
Office	OFFICE	KSF	2,936	4,672	1,736
Research & Development	R_D	KSF	-	66	66
Light Industrial	LT_INDUST	KSF	6,410	7,088	678
Heavy Industrial	HV_INDUST	KSF	274	418	144
Agriculture	AGRI	Acres	369	367	(2)
Hotel/Motel	HOTEL	Rooms	630	1,022	392
Restaurant	RESTR	KSF	210	244	34
Elementary School	K_SCHOOL	Students	2,555	2,752	197
Middle-High School	H_SCHOOL	Students	3,170	4,367	1,197
Medical	MEDICAL	KSF	150	225	75
Park Recreation	PARK_REC	Acres	595	629	34
Theater	THEATER	KSF	-	65	65
Auto	AUTO	KSF	424	499	75
Hospital	HOSP	KSF	101	161	60
Indoor Recreation	INDOOR_REC	KSF	254	368	114
Santa Barbara Airport	SB_AIRPORT	Pax/Day	-	-	-
UCSB	UCSB	Students	-	-	-
Student Housing (Off Campus)	STU_HSE	DU	-	-	-
Student Housing (On Campus)	STUDENT_HO	DU	-	-	-
La Cumbre Mall	LA_CUMBRA	KSF	-	-	-
Resort Hotel	RESORT_HOT	Rooms	360	422	62
UCSB Faculty/Staff	FACULTY_ST	Emp	-	-	-
Bank	BANK	KSF	23	28	5
Fast Food Restaurant	F_FOOD	KSF	35	35	-
Golf Course	GOLF	Holes	18	18	-

TABLE 8: MODEL LAND USE GROWTH SUMMARY – SANTA BARBARA COUNTY

Land Use Category	Model ID	Units	2024 Existing	2050 GPU	Change
Single Family	SFDU	DU	7,353	9,333	1,980
Multi Family	MFDU	DU	3,524	9,318	5,794
Regional Commercial	REG_COMM	KSF	149	383	234
Neighborhood Commercial	NB_COMM	KSF	571	719	148
Office	OFFICE	KSF	316	355	39
Research & Development	R_D	KSF	-	-	-
Light Industrial	LT_INDUST	KSF	287	319	32
Heavy Industrial	HV_INDUST	KSF	344	344	-
Agriculture	AGRI	Acres	6,446	6,501	55
Hotel/Motel	HOTEL	Rooms	157	272	115
Restaurant	RESTR	KSF	44	81	37
Elementary School	K_SCHOOL	Students	2,941	3,056	115
Middle-High School	H_SCHOOL	Students	2,500	2,500	-
Medical	MEDICAL	KSF	-	-	-
Park Recreation	PARK_REC	Acres	450	490	40
Theater	THEATER	KSF	9	16	7
Auto	AUTO	KSF	11	14	3
Hospital	HOSP	KSF	17	17	-
Indoor Recreation	INDOOR_REC	KSF	166	219	53
Santa Barbara Airport	SB_AIRPORT	Pax/Day	-	-	-
UCSB	UCSB	Students	-	-	-
Student Housing (Off Campus)	STU_HSE	DU	65	65	-
Student Housing (On Campus)	STUDENT_HO	DU	3,619	3,619	-
La Cumbre Mall	LA_CUMBRA	KSF	-	-	-
Resort Hotel	RESORT_HOT	Rooms	-	-	-
UCSB Faculty/Staff	FACULTY_ST	Emp	-	-	-
Bank	BANK	KSF	-	9	9
Fast Food Restaurant	F_FOOD	KSF	-	3	3
Golf Course	GOLF	Holes	24	6	(18)

TABLE 9: MODEL LAND USE GROWTH SUMMARY – CITY OF SANTA BARBARA

Land Use Category	Model ID	Units	2024 Existing	2050 GPU	Change
Single Family	SFDU	DU	697	729	32
Multi Family	MFDU	DU	2,223	4,963	2,740
Regional Commercial	REG_COMM	KSF	-	26	26
Neighborhood Commercial	NB_COMM	KSF	85	173	88
Office	OFFICE	KSF	300	558	258
Research & Development	R_D	KSF	-	-	-
Light Industrial	LT_INDUST	KSF	104	275	171
Heavy Industrial	HV_INDUST	KSF	768	768	-
Agriculture	AGRI	Acres	-	-	-
Hotel/Motel	HOTEL	Rooms	162	162	-
Restaurant	RESTR	KSF	31	39	8
Elementary School	K_SCHOOL	Students	834	1,054	220
Middle-High School	H_SCHOOL	Students	1,306	1,384	78
Medical	MEDICAL	KSF	70	132	62
Park Recreation	PARK_REC	Acres	33	33	-
Theater	THEATER	KSF	-	9	9
Auto	AUTO	KSF	95	119	24
Hospital	HOSP	KSF	17	17	-
Indoor Recreation	INDOOR_REC	KSF	21	31	10
Santa Barbara Airport	SB_AIRPORT	Pax/Day	1,741	3,127	1,386
UCSB	UCSB	Students	-	-	-
Student Housing (Off Campus)	STU_HSE	DU	-	-	-
Student Housing (On Campus)	STUDENT_HO	DU	-	-	-
La Cumbre Mall	LA_CUMBRA	KSF	651	398	(253)
Resort Hotel	RESORT_HOT	Rooms	-	-	-
UCSB Faculty/Staff	FACULTY_ST	Emp	-	-	-
Bank	BANK	KSF	-	-	-
Fast Food Restaurant	F_FOOD	KSF	-	-	-
Golf Course	GOLF	Holes	9	9	-

TABLE 10: MODEL LAND USE GROWTH SUMMARY – UC SANTA BARBARA

Land Use Category	Model ID	Units	2024 Existing	2050 GPU	Change
Single Family	SFDU	DU	36	89	53
Multi Family	MFDU	DU	22	127	105
Regional Commercial	REG_COMM	KSF	-	-	-
Neighborhood Commercial	NB_COMM	KSF	-	-	-
Office	OFFICE	KSF	-	-	-
Research & Development	R_D	KSF	-	-	-
Light Industrial	LT_INDUST	KSF	-	-	-
Heavy Industrial	HV_INDUST	KSF	-	-	-
Agriculture	AGRI	Acres	-	-	-
Hotel/Motel	HOTEL	Rooms	-	-	-
Restaurant	RESTR	KSF	-	-	-
Elementary School	K_SCHOOL	Students	-	-	-
Middle-High School	H_SCHOOL	Students	-	-	-
Medical	MEDICAL	KSF	-	-	-
Park Recreation	PARK_REC	Acres	-	-	-
Theater	THEATER	KSF	-	-	-
Auto	AUTO	KSF	-	-	-
Hospital	HOSP	KSF	-	-	-
Indoor Recreation	INDOOR_REC	KSF	-	-	-
Santa Barbara Airport	SB_AIRPORT	Pax/Day	-	-	-
UCSB	UCSB	Students	19,039	25,000	5,961
Student Housing (Off Campus)	STU_HSE	DU	-	-	-
Student Housing (On Campus)	STUDENT_HO	DU	2,909	3,238	329
La Cumbre Mall	LA_CUMBRA	KSF	-	-	-
Resort Hotel	RESORT_HOT	Rooms	-	-	-
UCSB Faculty/Staff	FACULTY_ST	Emp	9,528	11,400	1,872
Bank	BANK	KSF	-	-	-
Fast Food Restaurant	F_FOOD	KSF	-	-	-
Golf Course	GOLF	Holes	3	3	-

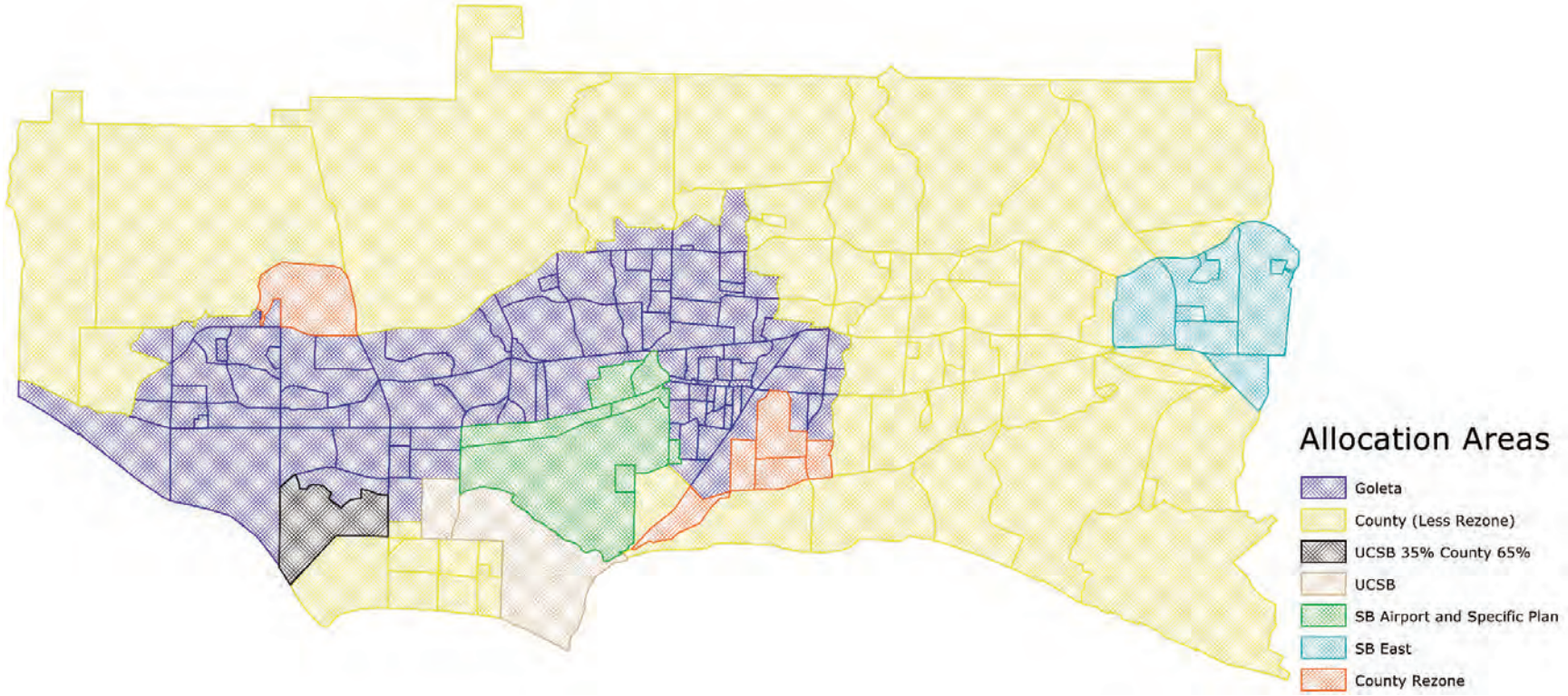


FIGURE 3: GOLETA TRAVEL MODEL SUB-AREAS

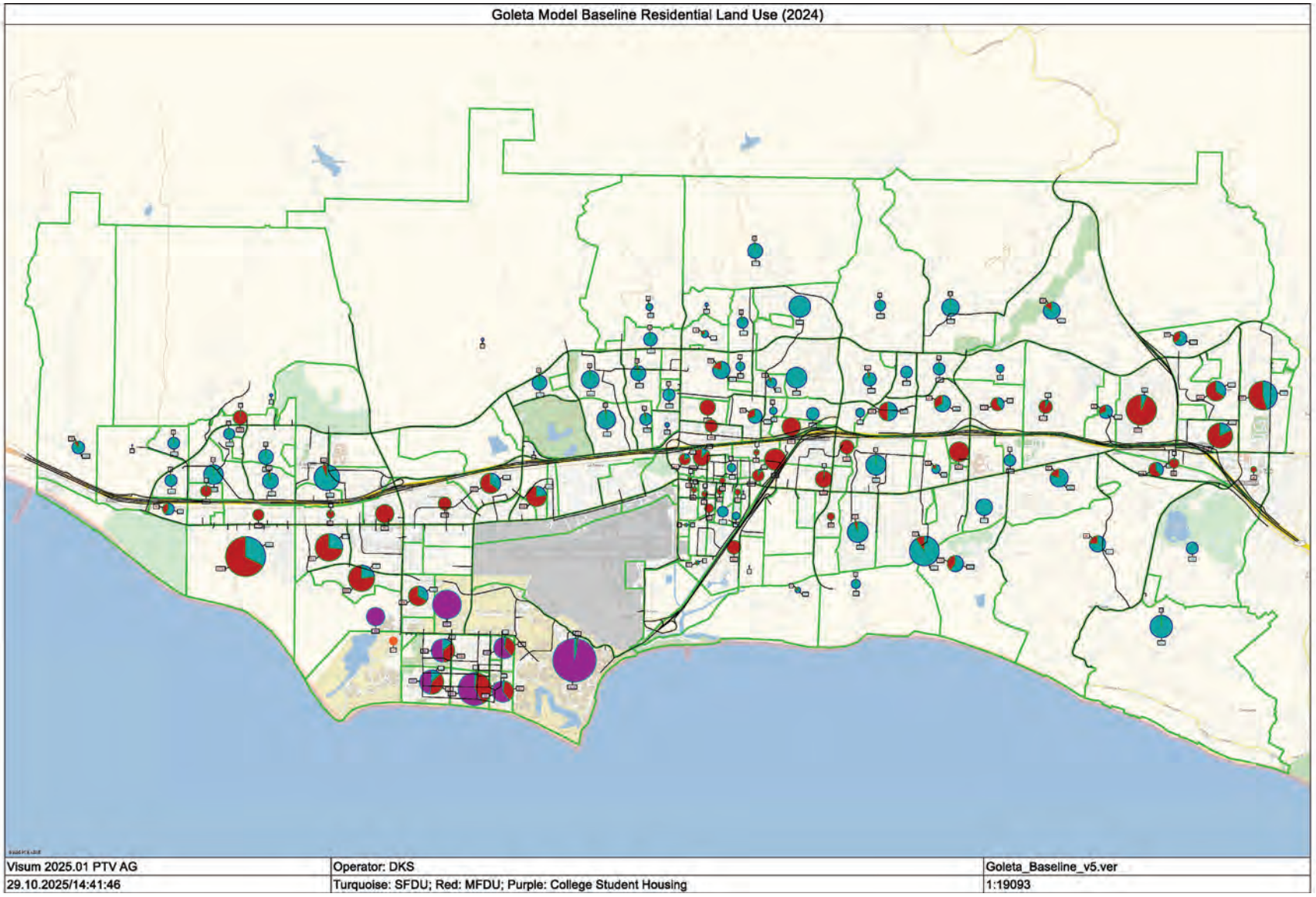


FIGURE 4: GOLETA MODEL BASELINE RESIDENTIAL LAND USE

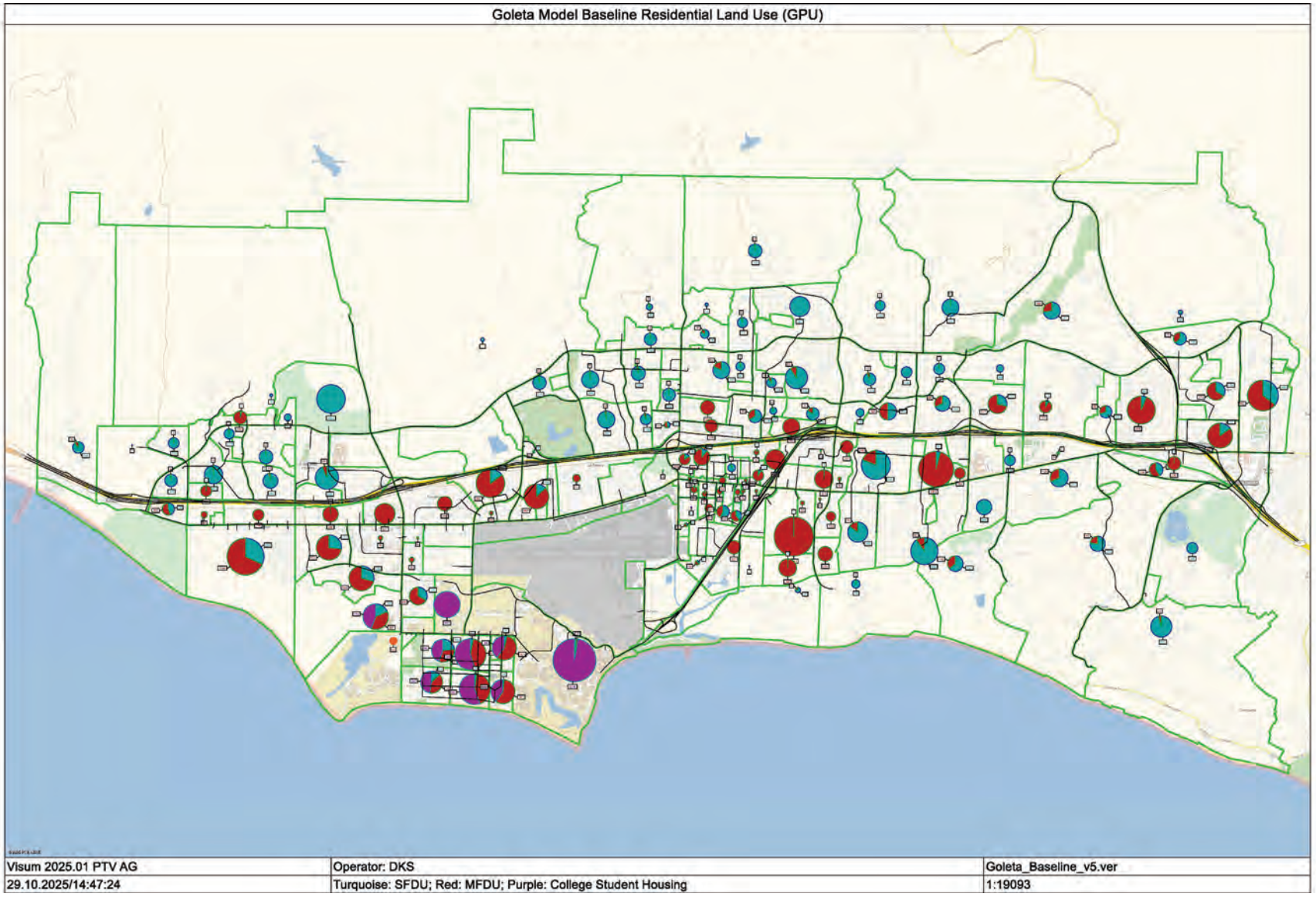


FIGURE 5: GOLETA MODEL GPU 2050 RESIDENTIAL LAND USE

ATTACHMENT A

CITY OF GOLETA 2024 TRAFFIC COUNT SUMMARY

MODEL PLOTS (AVAILABLE UPON REQUEST)

DKS 428 J STREET, SUITE 340 • SACRAMENTO, CA 95814 • 916.368.2000 • DKSASSOCIATES.COM

DATE: August 30, 2024

TO: Nina Buelna | City of Goleta
Gerald Comati | COM3 Program Manager

FROM: Jim Damkowitch | DKS Associates

SUBJECT: Goleta Traffic Count Summary

INTRODUCTION

As part of the Goleta Travel Model update and the update to the City's Development Impact Fee update, the City of Goleta commissioned a city-wide traffic count data collection effort. A total of 94 AM/PM peak period intersection turn movement counts were performed including 43 roadway segment 72-hour continues counts (daily counts). The intersection turn movement counts provide pedestrian, bicycle, and truck classifications. The ADT segment counts include vehicle classification.

A complete listing of the count locations is provided in **Attachment A**. All traffic counts were performed by Quality Counts, a data collection vendor under contract with DKS Associates. All traffic counts were performed with video between May 7th-9th 2024. Video cameras were mounted outside of Caltrans State right-of-way. The City's encroachment permit for the traffic count effort is provided in **Attachment B**.

The 2024 traffic counts will be used to validate the Goleta Travel Model updated 2024 baseline and will be instrumental in the DIF deficiency assessment. The counts can be viewed through an interactive web-based mapping tool provided by Quality Counts called DataPoint. Access to DataPoint and the 2024 count data is provided by the following link: https://dks.data-point.io/. See **Attachment C** for screenshots of DataPoint.

QA-QC CHECKS

DKS performed QA-QC checks on the collected data. These checks included: Ramp to Ramp Volume Balancing (all State Highway ramp intersections); and, Volume checks between segment counts and intersection approach volumes sums (25 intersections with segment counts nearby).

Given that no access points typically exist between most ramp intersections, perfect balance is expected (slight deviations are acceptable and typically reflect slightly off-set count time signatures). Given the presence of access points (side streets or driveways), volume checks between segment and intersection approach volumes should reveal some degree of volume imbalance. These were checked for reasonableness. Based on the QA-QC checks performed, all traffic counts checks were determined to be reasonably satisfied.

TREND COMPARISONS (2013 – 2024)

The last city-wide traffic data collection occurred in 2013. Some counts performed in 2014-15 were added and/or substituted in. It is this data set that informed the last update of the Goleta Traffic Model (2015) and the subsequent DIF update (2019). Given that the 2013 count locations (i.e., intersections and roadway segments) were the same as those collected in May 2024, a comparative analysis between the two data sets was possible to discern traffic growth trends in the City of Goleta over the 11-year period. Note, that this time span includes the suppressed traffic effects experienced during the pandemic (shelter in place orders). A common question that most jurisdictions have today is whether or not current traffic trends have rebounded to pre-pandemic levels.

Beside performing counts at state owned and operated ramp intersections, several counts were also performed at locations that are owned and operated by the County of Santa Barbara. These counts were performed by the City given that the Goleta Travel Model covers areas outside the City limits. This better ensures that circulation patterns in the greater Goleta Valley are properly reflected accounted for by the Goleta Travel Model.

US 101 TRENDS

The city-wide traffic data collection did not entail performing US 101 mainline counts. This data was provided through the Caltrans Performance Measurement System (PeMS). This data is collected statewide in real-time from nearly 40,000 individual detectors spanning the freeway system across all major metropolitan areas of California. PeMS is also an Archived Data User Service (ADUS) that provides over ten years of data for historical analysis. It integrates a wide variety of information from Caltrans and other local agency systems, including:

- Traffic Detectors
- Incidents
- Lane Closures
- Census Traffic Counts
- Vehicle Classification
- Weight-In-Motion
- Roadway Inventory

There are four active PeMS stations along US 101 that pass through the City of Goleta. These are on US 101 at Patterson, Fairview, Los Carneros and Glenn Annie. Based on review the data, only the Fairview station located at Post Mile 22.13 provided a complete data set from 2013 to 2024. **Figure 1** shows the Annual Average Daily (AADT) Traffic for US 101 at this location. **Figure 2** provides the same historical trend but averages all the active PeMS data collected on US 101 throughout Santa Barbara County. Note the dip experienced in 2016 is likely the result of construction activity.

CITY VOLUME TRENDS

To compare trends on all other roadways in the City of Goleta (including SR 217), the screenlines denoted in **Figure 3** were used to compare sums of traffic passing through each screenline. This enables the percentage change in traffic between 2013 and 2024 affecting portions of the City to be determined. **Table 1** provides the 2013 vs. 2024 daily volume sums and the difference by screenline.

Figure 1. US 101 at Fairview Avenue Annual Average Daily Volumes (PeMS Data)

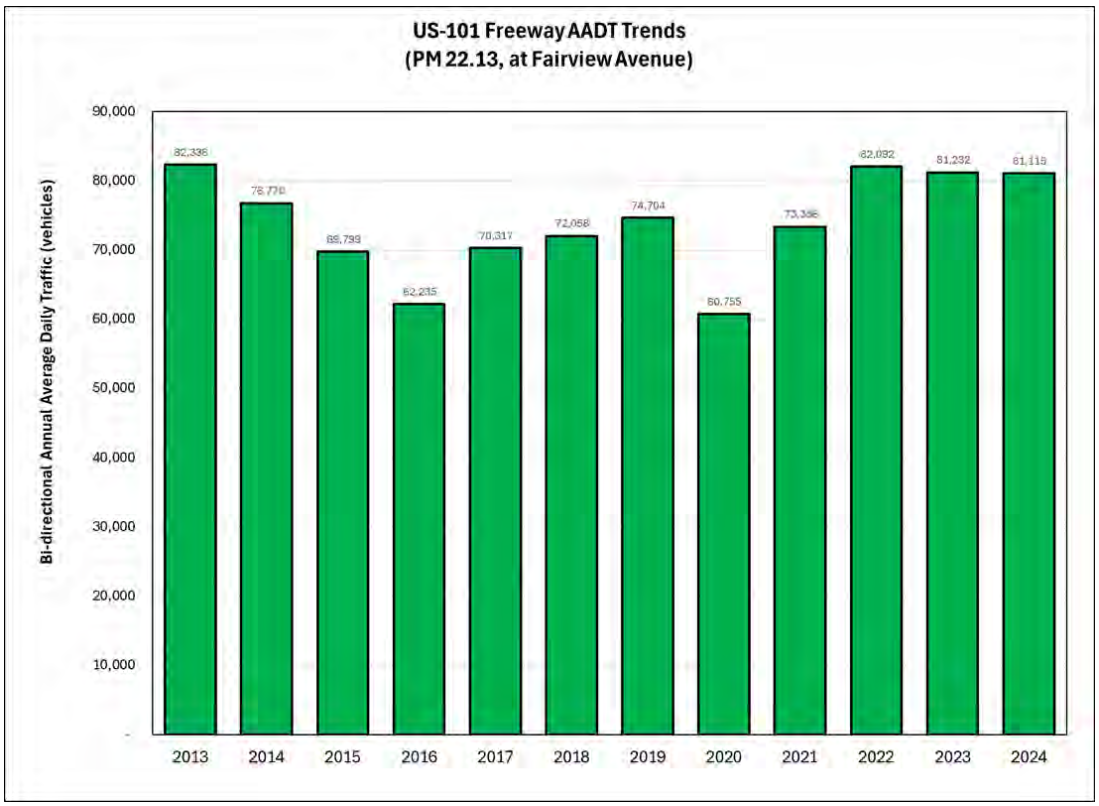


Figure 2. US 101 Countywide Annual Average Daily Volumes (PeMS Data)

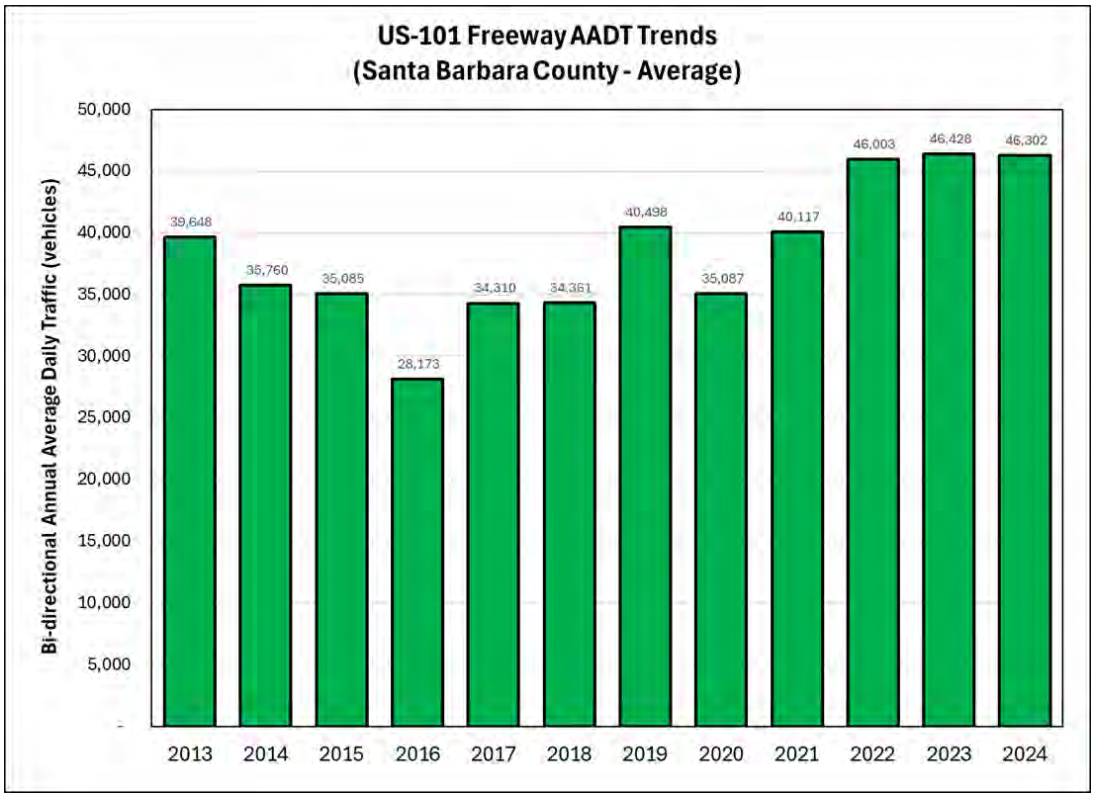


Figure 3. Goleta Screenlines

East-West Screenlines (less US 101) **Screenlines 1-3**
North-South Screenlies (Less Airport and UCSB) **Screenlines 4-7**
Airport Screenline **Screenline 8**
UCSB Screenline **Screenline 9**

Table 1. Goleta Screenline Volume Sum Comparisons

Screenline	Segment ID	Segment Roadway	2013 ADT	2024 ADT	Delta	Growth
1	1a	Cathedral Oaks Rd near Glen Annie Rd	9,174	8,979	-195	-2.13%
	1b	Del Norte Dr near Colusa Dr	1,328	7,371	6,043	455.05%
	1c	Calle Real near Amador Ave	14,781	10,063	-4,718	-31.92%
	1d	Hollister Ave near Glen Annie Rd	25,593	26,392	799	3.12%
	1e	Santa Felicia Dr near Storke Rd	4,030	3,895	-135	-3.35%
	1f	Phelps Rd near Storke Rd	3,776	2,933	-843	-22.33%
			58,682	**59,633**	**951**	**1.62%**
2	2a	Cathedral Oaks Rd near Santa Marguerita Dr	6,896	2,655	-4,241	-61.50%
	2b	Calle Real near Vega Dr	10,414	11,033	619	5.94%
	2c	Hollister Ave west of Fairview Ave	18,240	20,019	1,779	9.75%
	2e	Carson St near S Fairview Ave	2,946	1,906	-1,040	-35.30%
			38,496	**35,613**	**-2,883**	**-7.49%**
3	3a	Cathedral Oaks Rd near El Rodeo Rd	8,961	10,658	1,697	18.94%
	3b	Calle Real near Via Lee	6,128	8,231	2,103	34.32%
	3c	Calle Real near N Turnpike Rd	6,458	9,482	3,024	46.83%
	3d	Hollister Ave near Puente Dr	15,510	15,725	215	1.39%
			37,057	**44,096**	**7,039**	**19.00%**
4	4b	Cathedral Oaks Rd near Calle Real	2,725	3,310	585	21.47%
	4c	Winchester Canyon Rd near Calle Real	3,050	3,775	725	23.77%
	4d	Brandon Dr near Calle Real	2,507	1,553	-954	-38.05%
	4e	Glen Annie Rd near Cathedral Oaks Dr	7,654	7,339	-315	-4.12%
	4f	Los Carneros Rd near El Camino Real WB Ramps	10,096	11,741	1,645	16.29%
	4g	La Patera Ln near Shamrock Ave	3,237	2,204	-1,033	-31.91%
	4h	Carlo Dr near Verdura Ave	1,971	1,298	-673	-34.15%
	4i	Fairview Ave near Calle Real	25,788	23,969	-1,819	-7.05%
	4j	Kellogg Ave near Marbury Dr	6,207	3,693	-2,514	-40.50%
			63,235	**58,882**	**-4,353**	**-6.88%**
5	5a	Hollister Ave near Cathedral Oaks Rd	6,212	6,759	547	8.81%
	5b	Storke Rd south of Highway 101	34,122	26,392	-7,730	-22.65%
	5c	Los Carneros Rd near Calle Koral	22,050	23,720	1,670	7.57%
	5d	Fairview Ave south of US-101 Interchange	23,700	22,413	-1,287	-5.43%
	5d (2d)	Fairview Ave near Hollister Ave	9,025	20,859	11,834	131.12%
			95,109	**100,143**	**5,034**	**5.29%**
6	6a	Patterson Ave near Calle Real	25,885	14,670	-11,215	-43.33%
	6b	San Marcos Rd near Patricia Ln	3,091	3,102	11	0.36%
	6c	Turnpike Rd near El Camino Real WB Ramps	18,918	21,402	2,484	13.13%
			47,894	**39,174**	**-8,720**	**-18.21%**
7	7a	Ward Memorial Blvd near US 101	21,900	25,156	3,256	14.87%
	7b	Patterson Ave near Overpass Rd	20,086	22,446	2,360	11.75%
	7c	Turnpike Rd near El Camino Real EB Ramps	21,222	23,636	2,414	11.37%
	7d	Hollister Ave near N Arboleda Rd	13,557	16,864	3,307	24.39%
			76,765	**88,102**	**11,337**	**14.77%**
8	8a	Storke Rd near Willowgrove Dr	13,280	13,788	508	3.83%
	8b	Los Carneros Rd south of Hollister Ave	15,420	19,463	4,043	26.22%
	8c	Ward Memorial Blvd north of Sandspit Rd	12,000	16,412	4,412	36.77%
			40,700	**49,663**	**8,963**	**22.02%**
9	9a	El Colegio Rd near Embarcadero Del Norte	9,785	11,703	1,918	19.60%
	9b	Stadium Rd near El Colegio Rd	3,279	2,437	-842	-25.68%
	9c	Ocean Rd near El Colegio Rd	9,009	10,005	996	11.06%
	9d	Ward Memorial Blvd near Mesa Rd	11,600	16,401	4,801	41.39%
			33,673	**40,546**	**6,873**	**20.41%**

xx: Count comparison suspect – segment count location shift
xx: Volume shift between Fairview and Patterson of approximately 11,500 vehicles is construction related diversion.

ATTACHMENT A

TRAFFIC COUNT LOCATIONS
(All locations are listed/labeled twice)

Location & Location: Denotes Intersection Turn Movement Count
Location E of/W of/N of/S of Location: Denotes a 72-hr Segment Count

Quality Counts (QC)

City of Goleta Traffic Counts – 05-01-2024

LOCATIONS

Order ID: **165701**

Project Name: **City of Goleta Area Traffic Counts - 05-01-2024**

Site Code:	Intersection/Location
16570101	Glen Annie Rd & Cathedral Oaks Rd
16570102	Glen Annie Rd & Cathedral Oaks Rd
16570103	Cathedral Oaks Rd & Calle Real
16570104	Cathedral Oaks Rd & Calle Real
16570105	Hwy 101 NB On Ramp & Calle Real
16570106	Hwy 101 NB On Ramp & Calle Real
16570107	Cathedral Oaks Rd & Hwy 101 SB Ramps
16570108	Cathedral Oaks Rd & Hwy 101 SB Ramps
16570109	Cathedral Oaks Rd & Hollister Ave
16570110	Cathedral Oaks Rd & Hollister Ave
16570111	Winchester Canyon Rd & Calle Real/Hwy 101 NB Off Ramp
16570112	Winchester Canyon Rd & Calle Real/Hwy 101 NB Off Ramp
16570113	Winchester Canyon Rd & Cathedral Oaks Rd
16570114	Winchester Canyon Rd & Cathedral Oaks Rd
16570115	Brandon Dr & Calle Real
16570116	Brandon Dr & Calle Real
16570117	San Rossano Dr & Calle Real
16570118	San Rossano Dr & Calle Real
16570119	Cannon Green Dr & Hollister Ave
16570120	Cannon Green Dr & Hollister Ave
16570121	Entrance Rd & Hollister Ave
16570122	Entrance Rd & Hollister Ave
16570123	Alameda Ave & Cathedral Oaks Rd
16570124	Alameda Ave & Cathedral Oaks Rd
16570125	Pacific Oaks Rd & Hollister Ave
16570126	Pacific Oaks Rd & Hollister Ave
16570127	Santa Felicia Dr & Hollister Ave
16570128	Santa Felicia Dr & Hollister Ave
16570129	Village Way & Hollister Ave
16570130	Village Way & Hollister Ave
16570131	Storke Rd & Hollister Ave
16570132	Storke Rd & Hollister Ave
16570133	Cortona Dr & Hollister Ave
16570134	Cortona Dr & Hollister Ave
16570135	Storke Rd & Santa Felicia Dr
16570136	Storke Rd & Santa Felicia Dr
16570137	Storke Rd & Phelps Rd
16570138	Storke Rd & Phelps Rd
16570139	Storke Rd & Storke Plaza
16570140	Storke Rd & Storke Plaza
16570141	Los Carneros Rd & El Colegio Rd
16570142	Los Carneros Rd & El Colegio Rd
16570143	Los Carneros Rd & Mesa Rd
16570144	Los Carneros Rd & Mesa Rd
16570145	Los Carneros Rd & Hollister Ave
16570146	Los Carneros Rd & Hollister Ave
16570147	Deckers Outdoor Access & Hollister Ave
16570148	Deckers Outdoor Access & Hollister Ave

Order ID: **165701**

Project Name: **City of Goleta Area Traffic Counts - 05-01-2024**

Site Code:	Intersection/Location
16570149	Coromar Dr & Hollister Ave
16570150	Coromar Dr & Hollister Ave
16570151	Los Carneros Rd & Castilian Dr
16570152	Los Carneros Rd & Castilian Dr
16570153	Los Carneros Rd & Calle Koral
16570154	Los Carneros Rd & Calle Koral
16570155	Los Carneros Rd & Cremona Dr
16570156	Los Carneros Rd & Cremona Dr
16570157	Cremona Dr & Hollister Ave
16570158	Cremona Dr & Hollister Ave
16570159	Los Carneros Way & Hollister Ave
16570160	Los Carneros Way & Hollister Ave
16570161	Los Carneros Rd & Calle Koral
16570162	Los Carneros Rd & Calle Koral
16570163	Los Carneros Rd & US 101 SB Ramps
16570164	Los Carneros Rd & US 101 SB Ramps
16570165	Aero Camino & Hollister Ave
16570166	Aero Camino & Hollister Ave
16570167	Stadium Rd & El Colegio Rd
16570168	Stadium Rd & El Colegio Rd
16570169	Los Carneros Rd & Cathedral Oaks Rd
16570170	Los Carneros Rd & Cathedral Oaks Rd
16570171	David Love Pl & Hollister Ave
16570172	David Love Pl & Hollister Ave
16570173	S Fairview Ave & James Fowler Rd
16570174	S Fairview Ave & James Fowler Rd
16570175	S Fairview Ave & Hollister Ave
16570176	S Fairview Ave & Hollister Ave
16570177	N Fairview Ave & S Fairview Ave
16570178	N Fairview Ave & S Fairview Ave
16570179	N Los Carneros Rd & US 101 SB Ramps
16570180	N Los Carneros Rd & US 101 SB Ramps
16570181	S Orange Ave & Hollister Ave
16570182	S Orange Ave & Hollister Ave
16570183	Nectarine Ave & Hollister Ave
16570184	Nectarine Ave & Hollister Ave
16570185	Rutherford St & Hollister Ave
16570186	Rutherford St & Hollister Ave
16570187	Community Center W Dwy & Hollister Ave
16570188	Community Center W Dwy & Hollister Ave
16570189	S Kellogg Ave & Hollister Ave
16570190	S Kellogg Ave & Hollister Ave
16570191	US 217 WB Ramps & Hollister Ave
16570192	US 217 WB Ramps & Hollister Ave
16570193	US 217 EB Ramp/Ward Dr & Hollister Ave
16570194	US 217 EB Ramp/Ward Dr & Hollister Ave
16570195	St Josephs St & Hollister Ave
16570196	St Josephs St & Hollister Ave

Order ID: **165701**

Project Name: **City of Goleta Area Traffic Counts - 05-01-2024**

Site Code:	Intersection/Location
16570197	Sumida Gardens Ln & Hollister Ave
16570198	Sumida Gardens Ln & Hollister Ave
16570199	Ward Dr & Ekwill St
165701100	Ward Dr & Ekwill St
165701101	S Patterson Ave & Hollister Ave
165701102	S Patterson Ave & Hollister Ave
165701103	Walnut Ln & Hollister Ave
165701104	Walnut Ln & Hollister Ave
165701105	S Patterson Ave & Overpass Rd
165701106	S Patterson Ave & Overpass Rd
165701107	S Patterson Ave & US 101 SB Ramps
165701108	S Patterson Ave & US 101 SB Ramps
165701109	S Patterson Ave & US 101 NB Ramps
165701110	S Patterson Ave & US 101 NB Ramps
165701111	N Fairview Ave & US 101 NB Ramps
165701112	N Fairview Ave & US 101 NB Ramps
165701113	N Fairview Ave & Calle Real
165701114	N Fairview Ave & Calle Real
165701115	N Fairview Ave & Encina Rd
165701116	N Fairview Ave & Encina Rd
165701117	N Fairview Ave & Shirrell Way
165701118	N Fairview Ave & Shirrell Way
165701119	N Kellogg Ave & Calle Real
165701120	N Kellogg Ave & Calle Real
165701121	N Fairview Ave & Berkeley Rd
165701122	N Fairview Ave & Berkeley Rd
165701123	N Fairview Ave & Stow Canyon Rd
165701124	N Fairview Ave & Stow Canyon Rd
165701125	N Fairview Ave & Cathedral Oaks Rd
165701126	N Fairview Ave & Cathedral Oaks Rd
165701127	Cambridge Dr & Cathedral Oaks Rd
165701128	Cambridge Dr & Cathedral Oaks Rd
165701129	N Kellogg Ave & Cathedral Oaks Rd
165701130	N Kellogg Ave & Cathedral Oaks Rd
165701131	N Patterson Ave & Cathedral Oaks Rd
165701132	N Patterson Ave & Cathedral Oaks Rd
165701133	N Patterson Ave & University Dr
165701134	N Patterson Ave & University Dr
165701135	N Patterson Ave & Calle Real
165701136	N Patterson Ave & Calle Real
165701137	S Turnpike Rd & Hollister Ave
165701138	S Turnpike Rd & Hollister Ave
165701139	N Turnpike Rd & Cathedral Oaks Rd
165701140	N Turnpike Rd & Cathedral Oaks Rd
165701141	N Turnpike Rd & Calle Real
165701142	N Turnpike Rd & Calle Real
165701143	S Turnpike Rd & US 101 NB Ramps
165701144	S Turnpike Rd & US 101 NB Ramps

Order ID: **165701**

Project Name: **City of Goleta Area Traffic Counts - 05-01-2024**

Site Code:	Intersection/Location
165701145	S Patterson Ave & US 101 SB Ramps
165701146	S Patterson Ave & US 101 SB Ramps
165701147	Sperling Preserve/Ellwood Dwy & Hollister Ave
165701148	Sperling Preserve/Ellwood Dwy & Hollister Ave
165701149	Pebble Beach Dr & Hollister Ave
165701150	Pebble Beach Dr & Hollister Ave
165701151	Santa Barbara Shores Dr & Hollister Ave
165701152	Santa Barbara Shores Dr & Hollister Ave
165701153	Palo Alto Dr & Hollister Ave
165701154	Palo Alto Dr & Hollister Ave
165701155	Coronado Dr & Hollister Ave
165701156	Coronado Dr & Hollister Ave
165701157	Brandon Dr & Cathedral Oaks Rd
165701158	Brandon Dr & Cathedral Oaks Rd
165701159	Glen Annie Rd & Del Norte Dr
165701160	Glen Annie Rd & Del Norte Dr
165701161	Glen Annie Rd & Calle Real
165701162	Glen Annie Rd & Calle Real
165701163	Glen Annie Rd/Storke Rd & US 101 SB Ramps
165701164	Glen Annie Rd/Storke Rd & US 101 SB Ramps
165701165	Los Carneros Rd & US 101 NB Ramps
165701166	Los Carneros Rd & US 101 NB Ramps
165701167	Los Carneros Rd & Calle Real
165701168	Los Carneros Rd & Calle Real
165701169	N La Patera Ln & Cathedral Oaks Rd
165701170	N La Patera Ln & Cathedral Oaks Rd
165701171	Carlo Dr & Cathedral Oaks Rd
165701172	Carlo Dr & Cathedral Oaks Rd
165701173	N La Patera Ln & Calle Real
165701174	N La Patera Ln & Calle Real
165701175	Carlo Dr & Calle Real
165701176	Carlo Dr & Calle Real
165701177	San Marcos Rd & Cathedral Oaks Rd
165701178	San Marcos Rd & Cathedral Oaks Rd
165701179	Modoc Rd & Hollister Ave
165701180	Modoc Rd & Hollister Ave
165701181	CA 154 SB Ramps & Cathedral Oaks Rd
165701182	CA 154 SB Ramps & Cathedral Oaks Rd
165701183	CA 154 NB Ramps & Cathedral Oaks Rd
165701184	CA 154 NB Ramps & Cathedral Oaks Rd
165701185	CA 154 & Calle Real
165701186	CA 154 & Calle Real
165701187	CA 154 & State St
165701188	CA 154 & State St
165701189	Cathedral Oaks Rd W of Glen Annie Rd
165701190	Cathedral Oaks Rd N of Calle Real
165701191	Hollister Ave E of Cathedral Oaks Rd
165701192	Winchester Canyon Rd N of Calle Real

Order ID: **165701**

Project Name: **City of Goleta Area Traffic Counts - 05-01-2024**

Site Code:	Intersection/Location
165701193	Brandon Dr North of Calle Real
165701194	Del Norte Dr W of Glen Annie Rd
165701195	Calle Real btwn Amador Ave & Colusa Dr
165701196	Glen Annie Rd Btwn Del Norte Dr & Cathedral Oaks Rd
165701197	Storke Rd Btwn Hwy 101 SB Ramps & Hollister Ave
165701198	Hollister Ave btwn Village Way & Glen Annie Rd
165701199	Phelps Rd W of Whitman St
165701200	Santa Felicia Dr W of Storke Rd
165701201	Los Carneros Rd S of Hollister Ave
165701202	Los Carneros Rd N of Calle Koral
165701203	Los Carneros Rd S of Calle Real
165701204	N La Patera Ln btwn Shamrock Ave and Calle Real
165701205	Carlo Dr btwn Caleta Ave & Verdura Ave
165701206	Cathedral Oaks Rd E of Santa Margerita Dr
165701207	Calle Real btwn Carlo Dr & Vega Dr
165701208	N Fairview Ave S of Calle Real
165701209	S Fairview Ave N of Hollister Ave
165701210	Hollister Ave W of Fairview Ave
165701211	S Fairview Ave S of Hollister Ave
165701212	Carson St E of Fairview Ave
165701213	Pine Ave N of Thornwood Dr
165701214	S Kellogg Ave S of Kellogg Way
165701215	CA 217 N of Sandspit Rd
165701216	CA 217 S of Sandspit Rd
165701217	Ocean Ave S of Mesa Rd
165701218	El Colegio Rd W of Stadium Rd
165701219	Stadium Rd N of El Colegio Rd
165701220	Storke Rd S of Whittier Dr
165701221	N Kellogg Ave S of Marbury Dr
165701222	N Patterson Ave S of Calle Real
165701223	S Patterson Ave N of Overpass Rd
165701224	CA 217 N of Hollister Ave
165701225	San Marcos Rd N of Calle Real
165701226	S Turnpike Rd S of Calle Real
165701227	Calle Real W of Turnpike Rd
165701228	Calle Real E of Turnpike Rd
165701229	S Turnpike Rd N of San Gordiano Ave
165701230	Hollister Ave btwn S Turnpike Rd and Manga Vista St
165701231	Cathedral Oaks Rd btwn N Turnpike Rd and El Rodeo Rd
165701232	Hollister Ave btwn Nogal Dr and Modoc Rd

ATTACHMENT B

TRAFFIC COUNT CITY ENCROACHMENT PERMIT

Encroachment
EP-24-084
Date Printed: 05/02/2024

Property Information

Owner:		**Tax ID:**	
Phone:		**Lot Number:**	
Address:	Various locations throughout the City of Goleta		
Subdivision:			

Applicant/Mail to:

Gerald Comati

Goleta , CA 93117

Permittee:

Owner:

Responsible Party:

CITY OF GOLETA
130 CREMONA DRIVE
GOLETA CA 93117

On-Site Company Representative:

Quality Counts LLC
None

Permission is hereby granted for work in the public right-of-way, as noted below. All work shall be done in accordance with the Santa Barbara County Department of Public Works Transportation Division Engineering Design Standards and all other applicable State and Local laws, ordinances, and regulations.

Permit Information — Status: Issued

Expiration Date:	06/29/2024		
Permit Number:	EP-24-084	**Issued Date:**	05/02/2024
Permit Type:	Encroachment	**Total Fees:**	$0.00
Notes:	Installation of temporary traffic count cameras		

General Information

Duration:	15	**Duration Type:**	Days
Start Work:	05/17/2024	**End Work:**	05/31/2024

Asphalt Concrete (AC) Roadway - Cut, Trench or Boring Pits, etc.

Work Required?: No

Paint or Street Marking Obliteration

Work Required?: No

Concrete Removal

Work Required?: No

Use of Public Right-of-Way

Work Required?:	Yes	**Type:**	Other
Other:	traffic cameras		

Traffic Control Plan - Impacts to Vehicle, Bicycle, Pedestrian Travel Way

Work Required?: No

Temporary No Parking Required - No other roadway impacts

Work Required?: No

Other Impacts

Will power be	No	**Impact to MTD Bus**	No

Various locations throughout the City of Goleta

ENCROACHMENT PERMIT

City of Goleta
130 Cremona Drive, Suite B Goleta, CA 93117-3011
Tel: (805) 961-7500 Email: pwpermits@cityofgoleta.org
Fax: (805)685-2635 www.cityofgoleta.org

Permit No. _____
Date _____
Deposit Acct #: _____

Location (Be Specific): See attached street list and map.

Permit Start Date: May 6, 2024 **End Work:** May 17, 2024 **Permit Expires:** May 31, 2024

Work Duration: 8:00 AM to 4:00 PM ■ **Days** □ **Weeks** □ **Months** **USA #:** NA

Typical Hours of Work 7:30am - 4:30pm Monday - Friday Exception to Work Hours Requested: NA

Description of Work: **USA Ticket Required Prior to Start of Work**

		Column for City Use Only: Fees
1	**Asphalt Concrete (AV) Roadway - Cut, Trench or Boring Pits, etc.:**	
	☑ No	
	☐ Yes If Yes: Length _____' X Width _____' X Depth _____'/27 = _____CY	$
	General Description of work _____	
2	**Paint or Street Marking Obliteration**	
	☑ No	
	☐ Yes Provide aerial or sketch of impacted area showing paint or markings	$
	General Description of work _____	
3	**Concrete Removal**	
	☑ No	
	☐ Yes Length _____ x Width _____ = _____ SF □ Sidewalk □ Curb □ Gutter □ Other _____	$
	General Description of work _____	
4	**Use of Public Right-of-Way**	
	☐ No	
	☑ Yes □ Haul Route □ Crane/Equipment □ Vault Access □ Parking □ Other Traffic Camera I	$
	General Description of activity Installation of temporary traffic count cameras and City intersections	
5	**Traffic Control Plan - Impacts to Vehicle, Bicycle, Pedestrian Travel Way**	
	☑ No	
	☐ Yes If Yes, submit Traffic Control Plan (TCP). Must include lane closures, detours for vehicle, bicycles and ADA pedestrian access in accordance with MUTCD. If parking restrictions are required, show on plan	$
6	**Temporary No Parking Required - No other roadway impacts**	
	☑ No	
	☐ Yes If Yes, provide plan of area. Temporary No Parking signs must include day(s), date(s), time and Contractor's name and phone number	$
7	**Other Impacts**	

Will power be interrupted?	☐ Yes	☑ No	Provide notification and outage area map with application.
Impact to MTD Bus Stops	☐ Yes	☑ No	If Yes. Include on Traffic Control Plan (TCP).
Impact to Street Trees	☐ Yes	☑ No	If yes provide details.
Impact to Medians	☐ Yes	☑ No	If yes provide details.
Impact to Signals	☐ Yes	☑ No	If yes provide details.
Other Impacts:	☐ Yes	☑ No	If yes provide details.

Construction Standards To Be Used: **Permit #:**

☐ APWA ☐ CalTrans ☐ County of Santa Barbara Standard Details ☐ Green Book (Current Edition)

Additional Information Provided: NA

LIST OF PERMIT ATTACHMENTS:

Site Plans/Maps Attached?	☐ Yes	☐ No	Dated:
Traffic Control Plans Attached?	☐ Yes	☐ No	Dated:
Striping Plans Attached?	☐ Yes	☐ No	Dated:
Schedule/Phasing Attached?	☐ Yes	☐ No	Dated:
Haul Route Attached?	☐ Yes	☐ No	Dated:

Other Attachments: List of locations and map where traffic count cameras will be located

(To Be Filled in by City): Inspection Fees: _____ hours X $_____/hour $

PERMITTEE

Party Doing the Actual Permitted Work. This includes a Contractor, Sub-Contractor, Homeowner, Property Owner, Utility Owner etc.

Permittee:

Name: Brian Durrett

Company: Quality Counts (QC)

Address: 2455 Bates Ave. C

City: Concord State: Ca Zip: 94520

Phone No. 386-478-9964

Contractor's License Number: _____

City Business License Number: _____

Field/On Site Representative: Brian Durrett

On-site Phone Number: 386 478 9964

Financially Responsible ☑ Yes ☐ No

Carry Insurance for permit ☐ Yes ☐ No

Insurance Expiration Date: 2/01/2025

Insurance Carrier**: Hanover American

OWNER

Party Having Work Done on their Behalf. This includes the Property Owner, Developer, Utility Owner, Businsess Owner, Homeowner etc.

Owner:

Name: _____

Company: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone No. _____

_____

Emergency Contact: _____

Emergency Phone: _____

Financially Responsible ☐ Yes ☐ No

Carry Insurance for permit ☐ Yes ☐ No

Insurance Expiration Date: _____

Insurance Carrier**: _____

**** Note: A current insurance certificate & endorsement to the City must be provided and approved before permit is issued.**

In consideration of the granting of this permit, it is agreed by the applicant that the City of Goleta, and any of their officers or employees thereof shall be saved harmless by the applicant from any liability or responsibility for any accident, loss, or damage to persons or property, happening or occurring at the proximate result of any of the work undertaken under the terms of this application and the permit or permits which may be granted in response thereto, and that all of said liabilities are hereby assumed by the applicant. It is further agreed that if any part of this installation interferes with the future use of the highway by the general public, it must be removed or relocated, as designated by the City Engineer at the expense of the Permittee or his successor in interest.

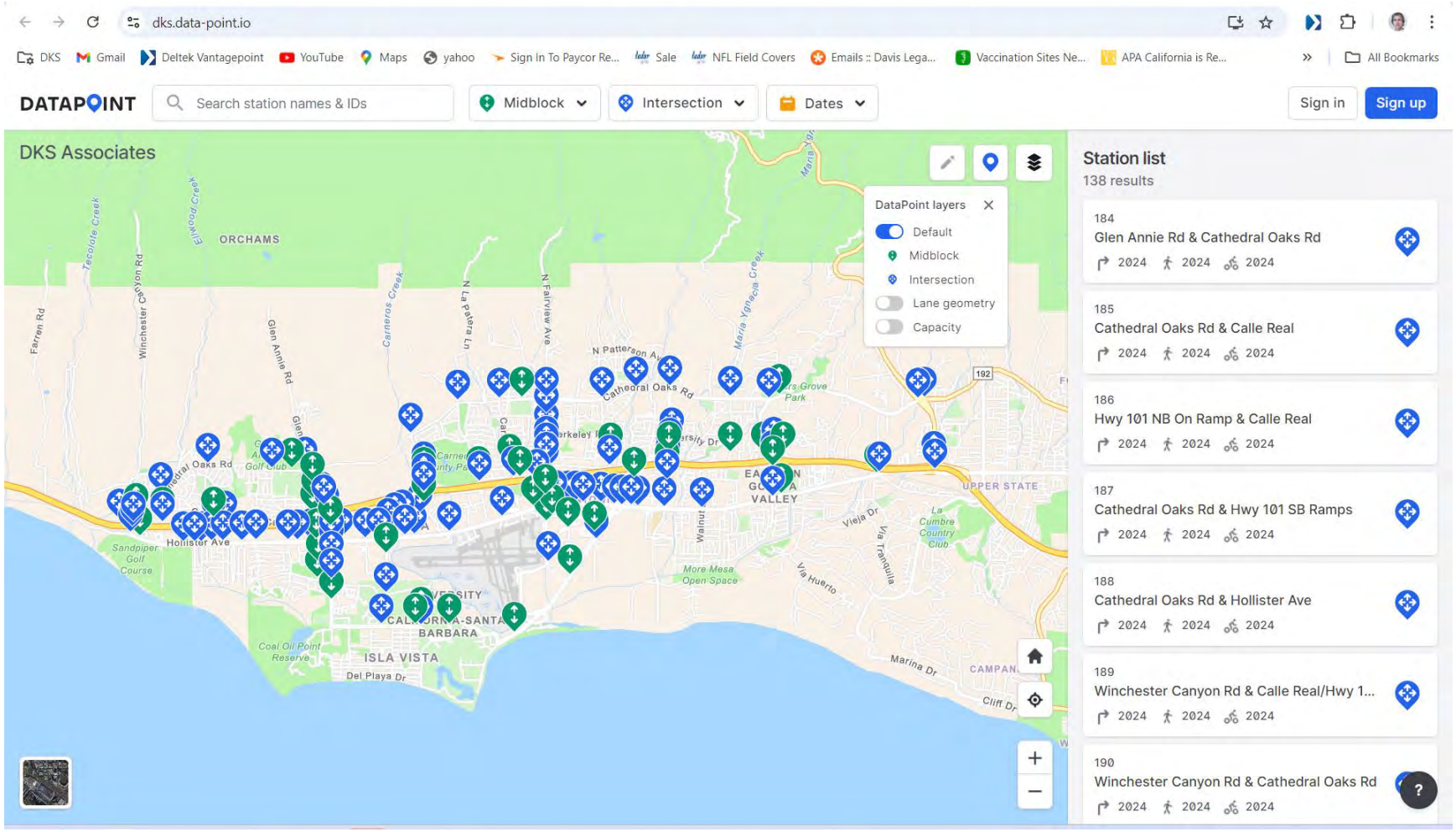
Signature: _____ Print Name: Brian Durrett Date: 5/1/2024

ATTACHMENT C

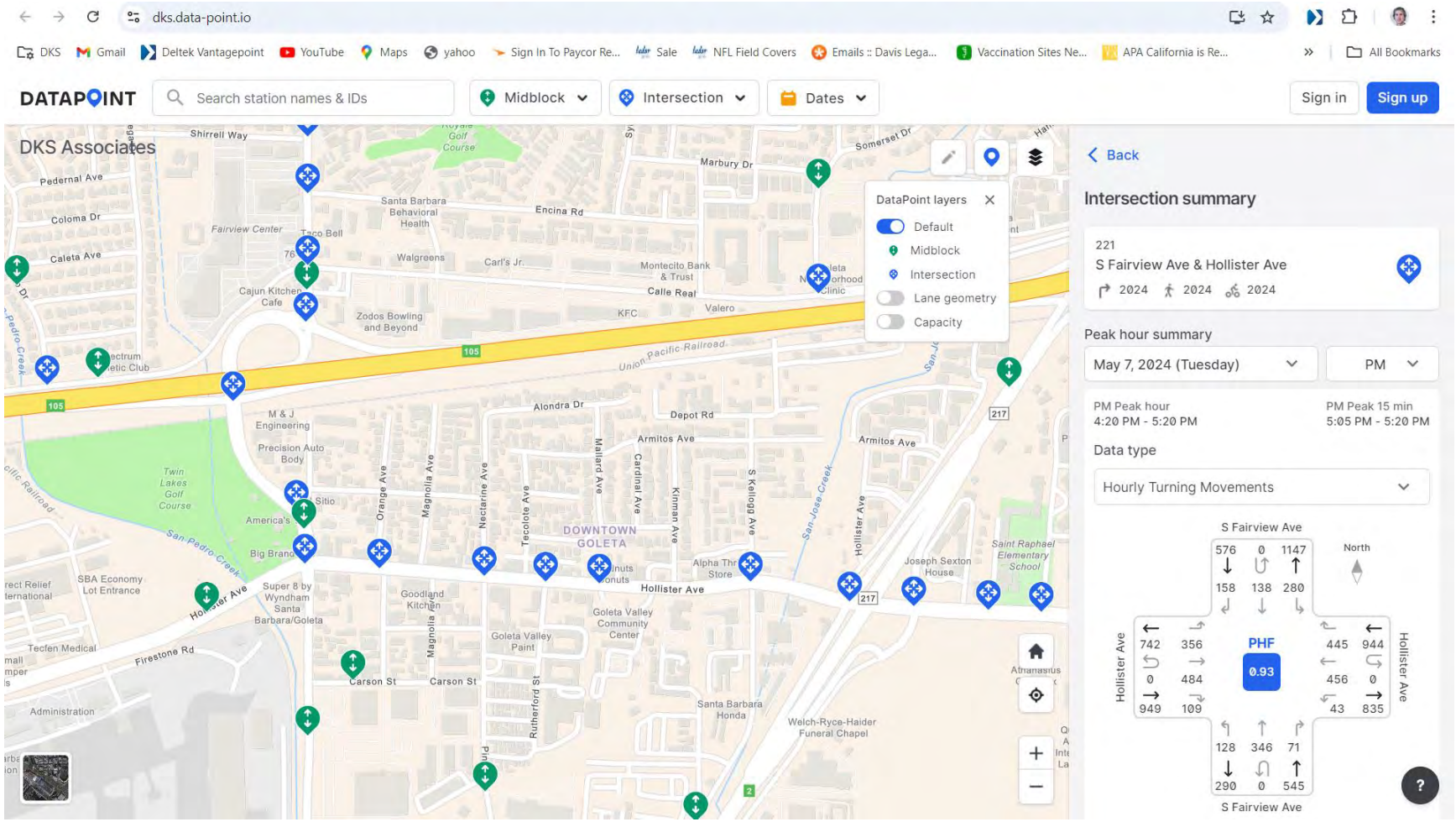
QUALITY COUNTS DATAPOINT WEB PORTAL
Screenshots

Access to DataPoint by clicking the following link: https://dks.data-point.io/

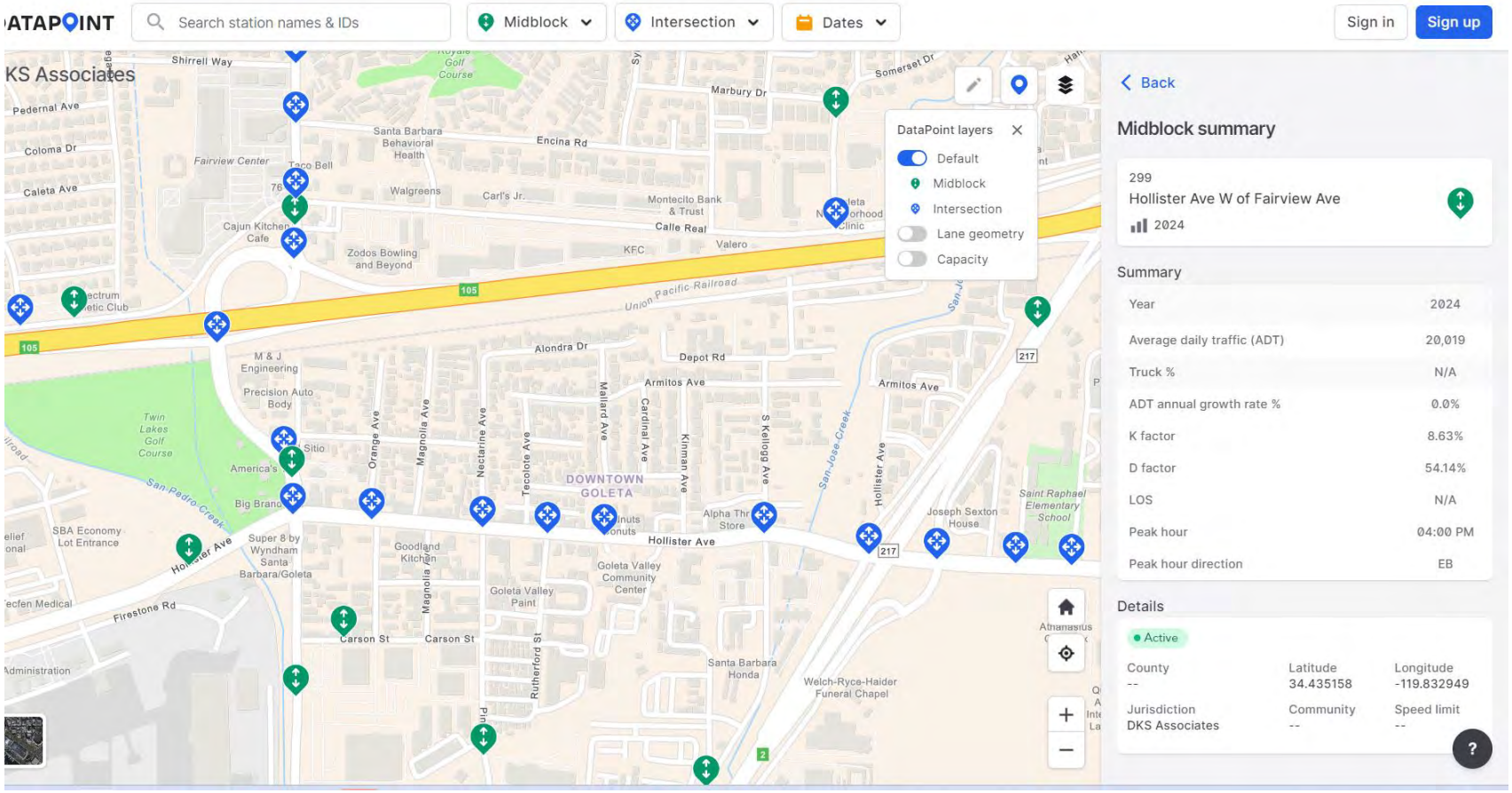
Overall Study Area – Blue are Intersections | Green are Segments



Zoomed In – Intersection Selection (S. Fairview Ave & Hollister Avenue)



Zoomed In – Roadway Selection (Hollister Avenue West of Fairview Avenue)



FINDINGS

Based on US 101 PeMS AADT trends, daily volumes on US 101 have fully recovered from the traffic suppression caused by the pandemic. Traffic is now emulating the peak daily volumes experienced in 2013 (the highest traffic year experienced in Goleta). The daily volume screenline analysis is summarized below. As shown, summing across all screenlines indicates that citywide, traffic has increased by approximately 5 percent since 2013. This is primarily attributable to east-west travel and to a lesser extent north-south trip interchanges across US 101. The most significant growth on a percentage basis has occurred at the Airport and UCSB screenlines that each increased over 20 percent since 2013. This can be attributable to increased airport operations at the Santa Barbara City Airport and increased UCSB enrollment since 2013. UCSB total enrollment has increase from 19,362 (graduate and undergraduate combined) in 2013 to 25,198 students in 2024 – a 30 percent increase[1]. Conversely, Santa Barbara City College enrollment has declined since 2014. Despite this, City College student housing has continued to shift to Isla Vista and become part of the overall growth in UCSB traffic/screenline. UCSB has also developed new student housing to absorb its enrollment increases.

	2013	2024	Delta	% Change	Screenline
Citywide (All Screenlines Summed)	491,611	515,852	24,241	**4.93%**	1-9
East-West Screenlines (less US 101)	134,235	139,342	5,107	**3.80%**	1-3
North-South Screenlies (Less Airport and UCSB)	283,003	286,301	3,298	**1.17%**	4-7
Airport Screenline	40,700	49,663	8,963	**22.02%**	8
UCSB Screenline	33,673	40,546	6,873	**20.41%**	9

[1] https://www.google.com/search?q=ucsb+enrollment+by+year&sca_esv=cdc61fbb8ee1234c&rlz=1C1ONGR_enUS1101US1101&ei=IQzVZo7xMI6a0PEPpIS30QU&oq=UCSB+Enrollment+&gs_lp=Egxnd3Mtd2I6LXNlcnAiEFVDU0IgRW5yb2xsbWVudCAqAggFMgoQABiwAxjWBBhHMgoQABiwAxjWBBhHMgoQABiwAxjWBBhHMgoQABiwAxjWBBhHMgoQABiwAxjWBBhHMgoQABiwAxjWBBhHMgoQABiwAxjWBBhHSNsyUABYAHABeACQAQCYAXigAXiqAQMwLjG4AQHIAQCYAgGgAgOYAwCIBgGQBgiSBwExoAfpBA&sclient=gws-wiz-serp

ATTACHMENT A.2

CITY OF GOLETA OPERATIONAL CRITERIA

Local Transportation Deficiency Criteria

The City of Goleta defines transportation deficiency criteria through the City General Plan Circulation Element. The primary policies of concern for this study are TE 4, which defines target LOS standards, TE 5, which defines planned street and road improvements, and TE 13, which defines traffic impacts for new developments. From these policies, the City defines a traffic impact as any project which causes an intersection on a major arterial, minor arterial, or collector roadway to degrade below a LOS C except at the intersection of Storke and Hollister where an LOS D standard will be maintained. Projects are required to evaluate the creation of safety hazards, potential adverse effects on local neighborhood streets, and other substantial transportation concerns. The following criteria has been used in this study to identify intersection deficiencies where the projects may be considered responsible for improving the intersection:

- **At signalized and roundabout intersections:**
  - The traffic generated by the project results in an intersection operating at an acceptable LOS to deteriorate to an unacceptable LOS.
  - The traffic generated by the project results in an increase to average delay of more than 5 seconds at an intersection that is operating at an unacceptable LOS without the project.
  - Results in increasing the length of an existing queue beyond the available storage at any intersection's right- or left-turn storage pocket by more than one vehicle length (25-feet).
  - Results in increasing the length of an existing queue already exceeding the available storage at any intersection's right- or left-turn storage pocket by more than one vehicle length (25-feet).
  - Results in queueing into adjacent intersections.
- **At unsignalized intersections:**
  - The traffic generated by the project results in an unsignalized intersection movement/approach operating at an acceptable LOS to deteriorate to an unacceptable LOS, and results in the intersection meeting a traffic signal warrant.
  - For an unsignalized intersection that meets a signal warrant, traffic generated by the project increases the delay by more than 5 seconds at a movement/approach that is operating at an unacceptable LOS without the project.
  - Results in increasing the length of an existing queue beyond the available storage at any intersection's right- or left-turn storage pocket by more than one vehicle length (25-feet).
  - Result in increasing the length of an existing queue already exceeding the available storage at any intersection's right- or left-turn storage pocket by more than one vehicle length (25-feet).

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) 7th 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 1 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 1**.

Table 1. Level of Service Criteria – Unsignalized Intersections

Level of Service	Average Delay[1] (seconds/veh)
A	0.0 - 10.0
B	10.1 - 15.0
C	15.1 - 25.0
D	25.1 - 35.0
E	35.1 - 50.0
F	>50.0

[1] Weighted average of delay

Source: *Highway Capacity Manual 2000*, Transportation Research Board, Washington DC

Signalized Intersections ICU Planning Method

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

Table 2 – ICU Level of Service Criteria for Signalized Intersections

Level of Service (LOS)	Volume/Capacity Ratio	Description
A	0.000–0.600	**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.
B	0.601–0.700	**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.
C	0.701–0.800	**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.
D	0.801–0.900	**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.
E	0.901–1.000	**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.
F	>1.000	**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.

Signalized & Non-Signalized Intersections HCM Operational Method

The Level of Service (LOS) is an intersection performance measure commonly used to provide an overview of how each movement and the overall intersection is operating. The LOS provides a "report card" rating of letters A through F based on average vehicle delay through the intersection. LOS A indicates free flow conditions with minimal delay traveling through an intersection while LOS F indicates excessive vehicle delay and demand is greater than capacity. For signals, intersection average delay and LOS are based on the average for all vehicles, while at two-way stop-controlled intersections, it's based on the movement with the highest delay. The Highway Capacity Manual has LOS criteria for unsignalized and signalized intersections as shown in **Table 3**.

Traffic operations analysis for traffic signals and stop controlled intersections in the study area was conducted using Synchro 12. Roundabout intersections were analyzed using Sidra 10. Both software platforms employ the methodologies from the *Highway Capacity Manual* (HCM) *7th Edition.*

Table 3: Intersection Level-of-Service

LEVEL OF SERVICE (LOS)	TOTAL DELAY PER VEHICLE (SECONDS)	
	SIGNALIZED	UNSIGNALIZED
A	< 10	< 10
B	> 10 and < 20	> 10 and < 15
C	> 20 and < 35	> 15 and < 25
D	> 35 and < 55	> 25 and < 35
E	> 55 and < 80	> 35 and < 50
F	> 80	> 50

1. Source: Highway Capacity Manual 7th Edition, Transportation Research Board.

Intersection Queuing Analysis

95th percentile queue results are defined as the length of the queue which is exceeded five percent of the time during the analysis time period. The 95th percentile queue is useful in determining the appropriate storage requirements such as length of turn pockets but is not representative of what an average driver would experience during their commute. Queue lengths were estimated using Synchro 12 for stop-controlled and signalized intersections and Sidra 10 for roundabout intersections.

Roadway Segment Level of Service

Table 4 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.

Freeway Mainline Segment and Merge-Diverge

Highway 101 basic freeway segment and merge-diverge LOS methodologies published in HCM 7th Edition were applied. The HCM methods for mainline and ramps analyses were performed using HCS validated Excel spreadsheets. **Table 4** shows LOS criteria for freeway and ramps analysis.

Table 4 – 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[1]	2 Lanes	4 Lanes	4+ Lanes[1]
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-foot wide lanes with shoulders. Signals are typically spaced at a minimum 0.5-mile intervals.	17,900	42,480	58,750	14,300	34,000	47,000
Minor Arterial (MNA)	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 of 12-foot 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 conect streets of higher calssifications 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 serve 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.
[1] 4+Lanes includes 5 or 6 lane roadways.

* Source: City of Goleta

Table 1 – Freeway and Ramp LOS Criteria

Level of Service Criteria For Basic Freeway Segments

Level of Service	Density pc/mi/ln FFS = 70	Density pc/mi/ln FFS = 65	Density pc/mi/ln FFS = 60	Density pc/mi/ln FFS = 55
A	11	11	11	11
B	18	18	18	18
C	26	26	26	26
D	35	35	35	35
E	45	45	45	45
F	-	-	-	-

Level of Service Criteria For Ramp Merge-Diverge Areas

Level of Service	Density pc/mi/ln
A	≤ 10
B	> 10-20
C	> 20-28
D	> 28-35
E	> 35
F	-

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 2024 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 A.3

BASELINE AND FUTURE ICU LOS WORKSHEETS

Node 151: Cathedral Oaks & Kellogg

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.29
Loss Time	0
Cycle Length	100
Adj V/C	0.39

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	107	14	55	33	466	94	18	8	63	14	470	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	27	4	14	8	117	24	5	2	16	4	118	4
Adjusted Volume	107	14	55	33	466	94	18	8	63	14	470	17

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	3	4	0	1	8	9	5	6
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	121	55	33	560	26	63	14	487

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	3	4	0	1	8	9	5	6
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	107	14	55	33	466	94	18	8	63	14	470	17
Volume / Saturation Flow Rate	0.067	0.076	0.034	0.021	0.175	0.175	0.011	0.016	0.039	0.009	0.152	0.152
Overlap adjusted Volume / Saturation Flow Rate	0.067	0.076	0.034	0.021	0.175	0.175	0.011	0.016	0.039	0.009	0.152	0.152
Critical Movement	Y					Y			Y	Y		

Node 164: Cathedral Oaks & La Patera

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	1.25
Worst Case Delay	28.7
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	4.00	2.00	1.00	44.00	473.00	7.00	5.00	0.00	43.00	10.00	422.00	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	4.35	2.17	1.09	47.83	514.13	7.61	5.43	0.00	46.74	10.87	458.70	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	4.35	2.17	1.09	47.83			5.43	0.00	46.74	10.87		
Conflicting Volume (Veh)	1123.91	1107.07	517.93	471.74			1102.17	1104.35	465.22	521.74		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1123.91	1107.07	517.93	471.74			1102.17	1104.35	465.22	521.74		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	184.27	211.94	561.59	1100.65			190.68	212.72	601.37	1054.92		
Capacity	157.31	196.17	561.59	1100.65			174.34	196.90	601.37	1054.92		

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 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	0.00			0.20	0.20	0.10	0.00		
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	4.35	2.17	1.09	47.83	514.13	7.61	5.43	0.00	46.74	10.87	458.70	13.04
cmx, Capacity	157.31	196.17	561.59	1100.65			174.34	196.90	601.37	1054.92		
V / C	0.03	0.01	0.00	0.04			0.03	0.00	0.08	0.01		
d, Delay	28.70	24.17	12.23	8.42			26.57	24.20	11.90	8.45		
LOS	D	C	B	A			D	C	B	A		
dA, Approach Delay		25.05			0.71			13.43			0.19	
Approach LOS		D						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	7.61	47.83	521.74	52.17	10.87	471.74
Flared Storage Size						
cmx, Capacity	187.15			479.13		
V / C	0.04			0.11		
Q95, 95% Queue Length	0.13			0.37		
d, Delay	25.05			13.43		
LOS	D			B		
dA, Approach Delay	25.05	0.71		13.43	0.19	
Approach LOS	D			B		

Node 169: Carlo Dr & Cathedral Oaks Rd

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	1.73
Worst Case Delay	25.97
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	10.00	1.00	4.00	10.00	461.00	11.00	37.00	3.00	21.00	3.00	409.00	55.00
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	1.09	4.35	10.87	501.09	11.96	40.22	3.26	22.83	3.26	444.57	59.78

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	10.87	1.09	4.35	10.87			40.22	3.26	22.83	3.26		
Conflicting Volume (Veh)	1011.41	1039.67	507.07	504.35			1012.50	1015.76	474.46	513.04		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1011.41	1039.67	507.07	504.35			1012.50	1015.76	474.46	513.04		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	219.84	232.25	569.58	1070.61			219.46	239.89	594.21	1062.74		
Capacity	205.51	228.90	569.58	1070.61			213.64	236.43	594.21	1062.74		

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,l, Base Critical Headway (Stage I)												
tc,base,ll, 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	0.00			0.20	0.20	0.10	0.00		
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,l, Critical Headway (Stage I)												
tc,ll, 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	10.87	1.09	4.35	10.87	501.09	11.96	40.22	3.26	22.83	3.26	444.57	59.78
cmx, Capacity	205.51	228.90	569.58	1070.61			213.64	236.43	594.21	1062.74		
V / C	0.05	0.00	0.01	0.01			0.19	0.01	0.04	0.00		
d, Delay	23.52	21.73	12.33	8.40			25.97	24.35	15.18	8.39		
LOS	C	C	B	A			D	C	C	A		
dA, Approach Delay		20.42			0.17			22.18			0.05	
Approach LOS		C						C				
dRank1, Rank 1 Delay					0.00						0.04	

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
Movements	L1, T, R1		T, R1	L1, T, R1	L1, T, R1
vx, Volume	16.30	10.87	513.04	66.30	507.61
Flared Storage Size					
cmx, Capacity	249.79			275.75	1758.32
V / C	0.07			0.24	0.29
Q95, 95% Queue Length	0.21			0.94	0.01
d, Delay	20.42			22.18	8.39
LOS	C			C	
dA, Approach Delay	20.42	0.17		22.18	0.05
Approach LOS	C			C	

Node 171: Cathedral Oaks & Fairview

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.353
Loss Time	0
Cycle Length	100
Adj V/C	0.453

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	51	16	237	344	28	81	45	144	14	265	108
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	13	4	59	86	7	20	11	36	4	66	27
Adjusted Volume	47	51	16	237	344	28	81	45	144	14	265	108

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	L	C	L	C	L	C	L	C
ID	16	17	13	14	22	23	19	20
Lanes	L	T, RT	L	T, RT	L	T, RT	L	T, RT
Volume	47	67	237	372	81	189	14	373

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	16	17	13	14	22	23	19	20
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	47	51	16	237	344	28	81	45	144	14	265	108
Volume / Saturation Flow Rate	0.029	0.021	0.021	0.148	0.116	0.116	0.051	0.059	0.059	0.009	0.117	0.117
Overlap adjusted Volume / Saturation Flow Rate	0.029	0.021	0.021	0.148	0.116	0.116	0.051	0.059	0.059	0.009	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	0.263
Loss Time	0
Cycle Length	100
Adj V/C	0.363

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	8	75	25	549	17	33	10	35	29	458	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	7	2	19	6	137	4	8	3	9	7	115	6
Adjusted Volume	29	8	75	25	549	17	33	10	35	29	458	22

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	28	29	25	26	33	34	30	31
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	37	75	25	566	43	35	29	480

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	28	29	25	26	33	34	30	31
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	29	8	75	25	549	17	33	10	35	29	458	22
Volume / Saturation Flow Rate	0.018	0.023	0.047	0.016	0.177	0.177	0.021	0.027	0.022	0.018	0.150	0.150
Overlap adjusted Volume / Saturation Flow Rate	0.018	0.023	0.047	0.016	0.177	0.177	0.021	0.027	0.022	0.018	0.150	0.150
Critical Movement			Y			Y	Y			Y		

Node 195: Cathedral Oaks & Los Carneros	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	3.01
Worst Case Delay	23.61
Worst Case LOS	C

Volume and Adjustments						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	114.00	367.00	38.00	77.00	316.00	55.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	123.91	398.91	41.30	83.70	343.48	59.78

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	123.91		41.30	83.70		
Conflicting Volume (Veh)	403.26		990.22	343.48		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	403.26		990.22	343.48		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	1166.37		275.50	703.82		
Capacity	1166.37		237.89	703.82		

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	0.00		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	123.91	398.91	41.30	83.70	343.48	59.78
cmx, Capacity	1166.37		237.89	703.82		
V / C	0.11		0.17	0.12		
d, Delay	8.45		23.61	13.59		
LOS	A		C	B		
dA, Approach Delay	2.00		16.90		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	123.91	398.91	125.00	343.48	59.78
Flared Storage Size					
cmx, Capacity			427.29		
V / C			0.29		
Q95, 95% Queue Length			1.23		
d, Delay			16.90		
LOS			C		
dA, Approach Delay	2.00		16.90	0.00	
Approach LOS			C		

Node 203: Stow Canyon & Fairview

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	8.27
Worst Case Delay	43.83
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	6.00	287.00	96.00	3.00	2.00	3.00	255.00	201.00	5.00	34.00	0.00	256.00
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	6.52	311.96	104.35	3.26	2.17	3.26	277.17	218.48	5.43	36.96	0.00	278.26

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	6.52			3.26	2.17	3.26	277.17			36.96	0.00	278.26
Conflicting Volume (Veh)	223.91			944.57	1204.89	111.96	416.30			1041.85	1155.43	208.15
Conflicting Volume (Ped)	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
Conflicting Volume	223.91			944.57	1204.89	111.96	416.30			1041.85	1155.43	208.15
Two-Stage Gap Acceptance				No	No					No	No	
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	1356.76			219.72	185.43	926.17	1153.57			186.69	198.41	804.08
Capacity	1356.76			103.63	133.75	926.17	1153.57			132.60	143.11	804.08

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	0.00			0.20	0.20	0.10	0.00			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	6.52	311.96	104.35	3.26	2.17	3.26	277.17	218.48	5.43	36.96	0.00	278.26
cmx, Capacity	1356.76			103.63	133.75	926.17	1153.57			132.60	143.11	804.08
V / C	0.00			0.03	0.02	0.00	0.24			0.28	0.00	0.35
d, Delay	7.67			40.88	33.06	10.03	9.11			43.83	41.83	21.16
LOS	A			E	D	B	A			E	E	C
dA, Approach Delay	0.12			27.36			5.04			23.81		
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 1
Movements			T, R1	L1, T, R1		T, R1	L1, T, R1
vx, Volume	6.52	208.15	208.15	8.70	277.17	223.91	315.22
Flared Storage Size							
cmx, Capacity				169.70			504.54
V / C				0.05			0.62
Q95, 95% Queue Length				0.16			4.76
d, Delay				27.36			23.81
LOS				D			C
dA, Approach Delay	0.12			27.36	5.04		23.81
Approach LOS				D			C

Node 204: Fairview & Berkeley	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.278
Loss Time	0
Cycle Length	100
Adj V/C	0.378

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	563	4	62	8	45	4	486	39	5	0	14
PHF	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
Peak 15 Volume	7	153	1	17	2	12	1	132	11	1	0	4
Adjusted Volume	28	612	4	67	9	49	4	528	42	5	0	15

Volume and Adjustments by Lane Group						
Approach	N		E	S		W
Lane Group	L	C	C	L	C	C
ID	59	60	58	63	64	62
Lanes	L	T, RT	LTR	L	T, RT	LTR
Volume	28	616	125	4	571	21

Saturation Flow Rate						
Approach	N		E	S		W
Lane Group	59	60	58	63	64	62
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	28	612	4	67	9	49	4	528	42	5	0	15
Volume / Saturation Flow Rate	0.018	0.193	0.193	0.042	0.078	0.078	0.003	0.178	0.178	0.003	0.000	0.013
Overlap adjusted Volume / Saturation Flow Rate	0.018	0.193	0.193	0.042	0.078	0.078	0.003	0.178	0.178	0.003	0.000	0.013
Critical Movement	Y				Y			Y		Y		

Node 240: Fairview & Shirrell Way	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	2.04
Worst Case Delay	26.32
Worst Case LOS	D

Volume and Adjustments						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
Base Volume	595.00	49.00	31.00	476.00	58.00	46.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	646.74	53.26	33.70	517.39	63.04	50.00

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		63.04	50.00
Conflicting Volume (Veh)			700.00		999.46	350.00
Conflicting Volume (Ped)			0.00		0.00	0.00
Conflicting Volume			700.00		999.46	350.00
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity			906.22		243.44	652.01
Capacity			906.22		232.87	652.01

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			0.00		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	646.74	53.26	33.70	517.39	63.04	50.00
cmx, Capacity			906.22		232.87	652.01
V / C			0.04		0.27	0.08
d, Delay			9.13		26.32	16.38
LOS			A		D	C
dA, Approach Delay	0.00		0.56		21.92	
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	350.00	350.00	33.70	258.70	258.70	113.04
Flared Storage Size						
cmx, Capacity						325.39
V / C						0.35
Q95, 95% Queue Length						1.57
d, Delay						21.92
LOS						C
dA, Approach Delay	0.00		0.56			21.92
Approach LOS						C

Node 241: Encina & Fairview	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.274
Loss Time	0
Cycle Length	100
Adj V/C	0.374

Volume and Adjustments by Movement						
Approach	N		E		S	
Movement	L1	T	L1	R1	T	R1
Base Volume	109	526	52	79	447	55
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	27	132	13	20	112	14
Adjusted Volume	109	526	52	79	447	55

Volume and Adjustments by Lane Group					
Approach	N		E		S
Lane Group	L	C	L	R	C
ID	68	69	66	67	71
Lanes	L	T, T	L	R	T, RT
Volume	109	526	52	79	502

Saturation Flow Rate					
Approach	N		E		S
Lane Group	68	69	66	67	71
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	109	526	52	79	447	55
Volume / Saturation Flow Rate	0.068	0.164	0.033	0.049	0.157	0.157
Overlap adjusted Volume / Saturation Flow Rate	0.068	0.164	0.033	0.049	0.157	0.157
Critical Movement	Y			Y		Y

Node 273: Cathedral Oaks & Brandon

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	3.83
Worst Case Delay	12.23
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	13.00	2.00	6.00	56.00	50.00	2.00	17.00	1.00	64.00	1.00	124.00	52.00
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	14.13	2.17	6.52	60.87	54.35	2.17	18.48	1.09	69.57	1.09	134.78	56.52

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	14.13	2.17	6.52	60.87			18.48	1.09	69.57	1.09		
Conflicting Volume (Veh)	376.63	369.57	54.35	191.30			318.48	315.22	134.78	56.52		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	376.63	369.57	54.35	191.30			318.48	315.22	134.78	56.52		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	584.43	563.08	1018.39	1394.43			638.19	603.81	919.45	1561.00		
Capacity	514.58	537.33	1018.39	1394.43			602.77	576.20	919.45	1561.00		

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,l, Base Critical Headway (Stage I)												
tc,base,ll, 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	0.00			0.20	0.20	0.10	0.00		
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,l, Critical Headway (Stage I)												
tc,ll, 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	14.13	2.17	6.52	60.87	54.35	2.17	18.48	1.09	69.57	1.09	134.78	56.52
cmx, Capacity	514.58	537.33	1018.39	1394.43			602.77	576.20	919.45	1561.00		
V / C	0.03	0.00	0.01	0.04			0.03	0.00	0.08	0.00		
d, Delay	12.23	11.94	8.77	7.70			11.50	11.78	9.45	7.31		
LOS	B	B	A	A			B	B	A	A		
dA, Approach Delay		11.21			3.99			9.90			0.04	
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	22.83	60.87	54.35	2.17	89.13	1.09	134.78	56.52
Flared Storage Size								
cmx, Capacity	602.11				823.75			
V / C	0.04				0.11			
Q95, 95% Queue Length	0.12				0.36			
d, Delay	11.21				9.90			
LOS	B				A			
dA, Approach Delay	11.21	3.99			9.90	0.04		
Approach LOS	B				A			

Node 276: Cathedral Oaks & Alameda	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.328
Loss Time	0
Cycle Length	100
Adj V/C	0.428

Volume and Adjustments by Movement							
Approach	N	E		S		W	
Movement		L1	T	L1	R1	T	R1
Base Volume		122	186	15	153	250	81
PHF		1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume		31	47	4	38	63	20
Adjusted Volume		122	186	15	153	250	81

Volume and Adjustments by Lane Group							
Approach	N	E		S		W	
Lane Group		L	C	L	R	C	R
ID		111	112	115	116	113	114
Lanes		L	T	L	R	T	R
Volume		122	186	15	153	250	81

Saturation Flow Rate							
Approach	N	E		S		W	
Lane Group		111	112	115	116	113	114
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	N	E		S		W	
Movement		L1	T	L1	R1	T	R1
Volume		122	186	15	153	250	81
Volume / Saturation Flow Rate		0.076	0.116	0.009	0.096	0.156	0.051
Overlap adjusted Volume / Saturation Flow Rate		0.076	0.116	0.009	0.096	0.156	0.051
Critical Movement		Y			Y	Y	

Node 277: Cathedral Oaks & Glen Anne

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.396
Loss Time	0
Cycle Length	100
Adj V/C	0.496

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	25	7	57	284	11	248	34	82	11	297	188
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	14	71	3	62	9	21	3	74	47
Adjusted Volume	9	25	7	57	284	11	248	34	82	11	297	188

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	123	124	120	121	122	117	118	119	125	126	127
Lanes	L	RT	L	T	R	L	T	R	L	T	R
Volume	9	32	57	284	11	248	34	82	11	297	188

Saturation Flow Rate

Approach	N		E			S			W		
Lane Group	123	124	120	121	122	117	118	119	125	126	127
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	25	7	57	284	11	248	34	82	11	297	188
Volume / Saturation Flow Rate	0.006	0.020	0.020	0.036	0.178	0.007	0.155	0.021	0.051	0.007	0.186	0.118
Overlap adjusted Volume / Saturation Flow Rate	0.006	0.020	0.020	0.036	0.178	0.007	0.155	0.021	0.051	0.007	0.186	0.118
Critical Movement		Y		Y			Y				Y	

Node 279:Calle Real & Los Caneros	
Control Type	Roundabout
Method	HCM 7th Edition
Average Delay	5.59
Average LOS	A
Worst Case Delay	5.84
Worst Case LOS	A

Volume by Movement						
Approach	N		E		S	
Movement	L1	T	L1	R1	T	R1
Base Volume (veh/h)	24.00	218.00	248.00	9.00	152.00	256.00
PHF	0.92	0.92	0.92	0.92	0.92	0.92
Volume, Lane Flow Rate (veh/h)	26.09	236.96	269.57	9.78	165.22	278.26

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)	263.043	279.348	443.478
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)	263.043	279.348	443.478
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)	263.043	279.348	443.478

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)	263.04	279.35	443.48
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)	269.57	165.22	26.09
v_ex,pce, Conflicting Volume for Bypass Lane (pc/h)			
c_pce, Capacity (pc/h)	1048.26	1165.98	1343.76
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
Proportion of CAVs	0.000	0.000	0.000
c, Capacity (veh/h)	1048.26	1165.98	1343.76

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 (veh/h)	263.04	279.35	443.48
c, Capacity (veh/h)	1048.26	1165.98	1343.76
x, Volume-to-Capacity Ratio	0.25	0.24	0.33
Q_95, 95% Queue Length (veh)	1.00	0.94	1.47
d, Delay (s/veh)	5.84	5.26	5.65
LOS	A	A	A
Approach Delay (s/veh)	5.84	5.26	5.65
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)	26.09	236.96	269.57	9.78	165.22	278.26
c, Capacity (veh/h)	1048.26	1048.26	1165.98	1165.98	1343.76	1343.76
x, Volume-to-Capacity Ratio	0.02	0.23	0.23	0.01	0.12	0.21
d, Delay (s/veh)	5.84	5.84	5.26	5.26	5.65	5.65
LOS	A	A	A	A	A	A
Approach Delay (s/veh)	5.84		5.26		5.65	
Approach LOS	A		A		A	

Node 280: Calle Real & La Patera	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	2.47
Worst Case Delay	11.08
Worst Case LOS	B

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	63.00	19.00	100.00	60.00	12.00	140.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	68.48	20.65	108.70	65.22	13.04	152.17

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	68.48	20.65			13.04	
Conflicting Volume (Veh)	319.57	141.30			173.91	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	319.57	141.30			173.91	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	677.99	911.85			1414.93	
Capacity	671.16	911.85			1414.93	

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			0.00	
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	68.48	20.65	108.70	65.22	13.04	152.17
cmx, Capacity	671.16	911.85			1414.93	
V / C	0.10	0.02			0.01	
d, Delay	11.08	9.66			7.56	
LOS	B	A			A	
dA, Approach Delay	10.75		0.00		0.60	
Approach LOS	B					
dRank1, Rank 1 Delay			0.00		0.08	

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	89.13	173.91	165.22
Flared Storage Size			
cmx, Capacity	714.89		1800.00
V / C	0.12		0.09
Q95, 95% Queue Length	0.43		0.02
d, Delay	10.75		7.56
LOS	B		
dA, Approach Delay	10.75	0.00	0.60
Approach LOS	B		

Node 282: Calle Real & Carlo Dr	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	2.42
Worst Case Delay	17.32
Worst Case LOS	C

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	54.00	58.00	281.00	16.00	70.00	415.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	58.70	63.04	305.43	17.39	76.09	451.09

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	58.70	63.04			76.09	
Conflicting Volume (Veh)	691.85	161.41			322.83	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	691.85	161.41			322.83	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	382.46	861.32			1248.36	
Capacity	355.81	861.32			1248.36	

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			0.00	
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	58.70	63.04	305.43	17.39	76.09	451.09
cmx, Capacity	355.81	861.32			1248.36	
V / C	0.16	0.07			0.06	
d, Delay	17.32	11.38			8.07	
LOS	C	B			A	
dA, Approach Delay	14.24		0.00		1.16	
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 1	Lane 2	Lane 3
Movements	L1, R1	T, R1			
vx, Volume	121.74	322.83	76.09	225.54	225.54
Flared Storage Size					
cmx, Capacity	511.17				
V / C	0.24				
Q95, 95% Queue Length	0.93				
d, Delay	14.24				
LOS	B				
dA, Approach Delay	14.24	0.00	1.16		
Approach LOS	B				

Node 288: Calle Real & Fairview	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.598
Loss Time	0
Cycle Length	100
Adj V/C	0.698

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	63	471	44	167	103	34	267	452	185	35	121	349
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	118	11	42	26	9	67	113	46	9	30	87
Adjusted Volume	63	471	44	167	103	34	267	452	185	35	121	349

Volume and Adjustments by Lane Group									
Approach	N		E		S		W		
Lane Group	L	C	L	C	C	R	L	C	R
ID	134	135	131	133	128	130	137	138	139
Lanes	L	T, RT	L, L	RT	LT, T	R	L	T	R
Volume	63	515	167	137	719	185	35	121	349

Saturation Flow Rate									
Approach	N		E		S		W		
Lane Group	134	135	131	133	128	130	137	138	139
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	63	471	44	167	103	34	267	452	185	35	121	349
Volume / Saturation Flow Rate	0.039	0.161	0.161	0.052	0.086	0.086	0.167	0.225	0.116	0.022	0.076	0.218
Overlap adjusted Volume / Saturation Flow Rate	0.039	0.161	0.161	0.052	0.086	0.086	0.167	0.225	0.116	0.022	0.076	0.218
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	0.537
Loss Time	0
Cycle Length	100
Adj V/C	0.637

Volume and Adjustments by Movement						
Approach	N	E		S	W	
Movement	T	T	R1		L1	R1
Base Volume	137	426	516		413	118
PHF	1.000	1.000	1.000		1.000	1.000
Peak 15 Volume	34	107	129		103	30
Adjusted Volume	137	426	516		413	118

Volume and Adjustments by Lane Group						
Approach	N	E		S	W	
Lane Group	C	C	R		L	R
ID	142	140	141		143	145
Lanes	T	T	R		L, L	R
Volume	137	426	516		413	118

Saturation Flow Rate						
Approach	N	E		S	W	
Lane Group	142	140	141		143	145
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	137	426	516		413	118
Volume / Saturation Flow Rate	0.086	0.266	0.323		0.129	0.074
Overlap adjusted Volume / Saturation Flow Rate	0.086	0.266	0.323		0.129	0.074
Critical Movement	Y		Y		Y	

Node 296: Calle Real & Kellogg	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.267
Loss Time	0
Cycle Length	100
Adj V/C	0.367

Volume and Adjustments by Movement						
Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Base Volume	178	53	313	110	38	343
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	45	13	78	28	10	86
Adjusted Volume	178	53	313	110	38	343

Volume and Adjustments by Lane Group					
Approach	N		E	W	
Lane Group	L	R	C	L	C
ID	148	149	146	150	151
Lanes	L	R	T, RT	L	T, T
Volume	178	53	423	38	343

Saturation Flow Rate					
Approach	N		E	W	
Lane Group	148	149	146	150	151
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	178	53	313	110	38	343
Volume / Saturation Flow Rate	0.111	0.033	0.132	0.132	0.024	0.107
Overlap adjusted Volume / Saturation Flow Rate	0.111	0.033	0.132	0.132	0.024	0.107
Critical Movement	Y		Y		Y	

Node 305: Patterson & Overpass

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.43
Loss Time	0
Cycle Length	100
Adj V/C	0.53

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	953	108	21	2	48	14	577	32	95	1	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	11	238	27	5	1	12	4	144	8	24	0	3
Adjusted Volume	42	953	108	21	2	48	14	577	32	95	1	11

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	L	C	C	R	L	C	C	R
ID	155	156	153	154	160	161	158	159
Lanes	L	T, RT	LT	R	L	T, RT	LT	R
Volume	42	1061	23	48	14	609	96	11

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	155	156	153	154	160	161	158	159
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	42	953	108	21	2	48	14	577	32	95	1	11
Volume / Saturation Flow Rate	0.026	0.332	0.332	0.013	0.014	0.030	0.009	0.190	0.190	0.059	0.060	0.007
Overlap adjusted Volume / Saturation Flow Rate	0.026	0.332	0.332	0.013	0.014	0.030	0.009	0.190	0.190	0.059	0.060	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	0.788
Loss Time	0
Cycle Length	100
Adj V/C	0.888

Volume and Adjustments by Movement								
Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	611	726		444	279	168	6	364
PHF	1.000	1.000		1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	153	182		111	70	42	2	91
Adjusted Volume	611	726		444	279	168	6	364

Volume and Adjustments by Lane Group						
Approach	N		E	S		W
Lane Group	L	C		C	R	C
ID	163	164		167	169	165
Lanes	L	T		T, T	R	L, LTR
Volume	611	726		444	279	538

Saturation Flow Rate						
Approach	N		E	S		W
Lane Group	163	164		167	169	165
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	S		W		
Movement	L1	T		T	R1	L1	T	R1
Volume	611	726		444	279	168	6	364
Volume / Saturation Flow Rate	0.382	0.454		0.139	0.174	0.053	0.168	0.168
Overlap adjusted Volume / Saturation Flow Rate	0.382	0.454		0.139	0.174	0.053	0.168	0.168
Critical Movement	Y				Y		Y	

Node 307: Patterson & US 101 NB Ramp	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.53
Loss Time	0
Cycle Length	100
Adj V/C	0.63

Volume and Adjustments by Movement								
Approach	N		E			S		W
Movement	T	R1	L1	T	R1	L1	T	
Base Volume	895	341	430	21	379	230	376	
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Peak 15 Volume	224	85	108	5	95	58	94	
Adjusted Volume	895	341	430	21	379	230	376	

Volume and Adjustments by Lane Group						
Approach	N		E	S		W
Lane Group	C	R	C	L	C	
ID	174	177	171	178	179	
Lanes	T, T, T	R	L, LTR, R	L	T, T	
Volume	895	341	830	230	376	

Saturation Flow Rate						
Approach	N		E	S		W
Lane Group	174	177	171	178	179	
Base Saturation Flow Rate	1600	1600	1600	1600	1600	
Number of Lanes	3	1	3	1	2	
Saturation Flow Rate	4800	1600	4800	1600	3200	

Capacity Analysis								
Approach	N		E			S		W
Movement	T	R1	L1	T	R1	L1	T	
Volume	895	341	430	21	379	230	376	
Volume / Saturation Flow Rate	0.186	0.213	0.134	0.173	0.173	0.144	0.118	
Overlap adjusted Volume / Saturation Flow Rate	0.186	0.213	0.134	0.173	0.173	0.144	0.118	
Critical Movement		Y		Y		Y		

Node 359: Cathedral Oaks & Winchester Canyon	
Control Type	AWSC
Method	HCM 7th Edition
Average Delay	8.75
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	26.00	10.00	50.00	7.00	93.00	6.00	62.00	18.00	36.00	3.00	99.00	11.00
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	28.26	10.87	54.35	7.61	101.09	6.52	67.39	19.57	39.13	3.26	107.61	11.96
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	93.48	7.61	107.61	86.96	39.13	3.26	119.57
Left Turn Flow Rate	28.26	7.61	0.00	67.39	0.00	3.26	0.00
Right Turn Flow Rate	54.35	0.00	6.52	0.00	39.13	0.00	11.96
PLT, Proportion LT	0.30	1.00	0.00	0.78	0.00	1.00	0.00
PRT, Proportion RT	0.58	0.00	0.06	0.00	1.00	0.00	0.10
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	-0.29	0.50	-0.04	0.39	-0.70	0.50	-0.07

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	93.48	7.61	107.61	86.96	39.13	3.26	119.57
hd initial	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x initial	0.08	0.01	0.10	0.08	0.03	0.00	0.11
hd, iteration 1	4.70	5.44	4.89	5.33	4.24	5.43	4.86
Difference, iteration 1	1.50	2.24	1.69	2.13	1.04	2.23	1.66
hd, iteration 2	4.96	5.67	5.12	5.56	4.47	5.66	5.09
Difference, iteration 2	0.26	0.23	0.23	0.23	0.23	0.23	0.23
hd, iteration 3	4.99	5.70	5.16	5.59	4.50	5.70	5.12
Difference, iteration 3	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	4.99	5.70	5.16	5.59	4.50	5.70	5.12
x final, Degree of Utilization	0.13	0.01	0.15	0.14	0.05	0.01	0.17

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	93.48	7.61	107.61	86.96	39.13	3.26	119.57
hd, Departure Headway	4.99	5.70	5.16	5.59	4.50	5.70	5.12
x, Degree of Utilization	0.13	0.01	0.15	0.14	0.05	0.01	0.17
m, Move Up Time	2.00	2.30	2.30	2.30	2.30	2.30	2.30
ts, Service Time	2.99	3.40	2.86	3.29	2.20	3.40	2.82
Capacity	720.99	630.42	697.56	643.34	799.06	631.77	702.33
Delay	8.73	8.47	8.80	9.16	7.43	8.42	8.87
LOS	A	A	A	A	A	A	A
Q95, 95% Queue Length	0.45	0.04	0.55	0.47	0.15	0.02	0.61
Approach Delay	8.73	8.78		8.63		8.86	
Approach LOS	A	A		A		A	
Intersection Delay	8.75						
Intersection LOS	A						

Node 372: Glen Annie & Del Norte	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	0.8
Worst Case Delay	9.4
Worst Case LOS	A

Volume and Adjustments				
Approach	N (Major)		S (Major)	W
Movement	T	R1	T	R1
Base Volume	243.00	23.00	370.00	59.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920
V, Adjusted Volume	264.13	25.00	402.17	64.13

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				64.13
Conflicting Volume (Veh)				144.57
Conflicting Volume (Ped)				0.00
Conflicting Volume				144.57
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median Refuge Area				
cpx, Potential Capacity				882.90
Capacity				882.90

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	264.13	25.00	402.17	64.13
cmx, Capacity				882.90
V / C				0.07
d, Delay				9.40
LOS				A
dA, Approach Delay	0.00		0.00	9.40
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	144.57	144.57	201.09	201.09	64.13
Flared Storage Size					
cmx, Capacity					
V / C					
Q95, 95% Queue Length					
d, Delay					
LOS					
dA, Approach Delay	0.00		0.00		9.40
Approach LOS					A

Node 375: Los Caneros & US101 SB Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.484
Loss Time	0
Cycle Length	100
Adj V/C	0.584

Volume and Adjustments by Movement								
Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	75	944		235	394	249	54	223
PHF	1.000	1.000		1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	19	236		59	99	62	14	56
Adjusted Volume	75	944		235	394	249	54	223

Volume and Adjustments by Lane Group						
Approach	N		E	S	W	
Lane Group	L	C		C	C	R
ID	255	256		260	258	259
Lanes	L	T, T		T, RT	LT	R
Volume	75	944		629	303	223

Saturation Flow Rate						
Approach	N		E	S	W	
Lane Group	255	256		260	258	259
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	75	944		235	394	249	54	223
Volume / Saturation Flow Rate	0.047	0.295		0.197	0.197	0.156	0.189	0.139
Overlap adjusted Volume / Saturation Flow Rate	0.047	0.295		0.197	0.197	0.156	0.189	0.139
Critical Movement		Y					Y	

Node 376: Los Carneros & US 101 NB Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.395
Loss Time	0
Cycle Length	100
Adj V/C	0.495

Volume and Adjustments by Movement								
Approach	N		E			S		W
Movement	T	R1	L1	T	R1	L1	T	
Base Volume	354	140	639	3	55	37	337	
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Peak 15 Volume	89	35	160	1	14	9	84	
Adjusted Volume	354	140	639	3	55	37	337	

Volume and Adjustments by Lane Group					
Approach	N	E	S		W
Lane Group	C	C	L	C	
ID	264	262	266	267	
Lanes	T, RT	L, LTR	L	T, T	
Volume	494	697	37	337	

Saturation Flow Rate					
Approach	N	E	S		W
Lane Group	264	262	266	267	
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	354	140	639	3	55	37	337	
Volume / Saturation Flow Rate	0.154	0.154	0.200	0.218	0.218	0.023	0.105	
Overlap adjusted Volume / Saturation Flow Rate	0.154	0.154	0.200	0.218	0.218	0.023	0.105	
Critical Movement		Y			Y	Y		

Node 383: Fairview & US 101 SB Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.531
Loss Time	0
Cycle Length	100
Adj V/C	0.631

Volume and Adjustments by Movement								
Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	438	821		467	397	137	1	234
PHF	1.000	1.000		1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	110	205		117	99	34	0	59
Adjusted Volume	438	821		467	397	137	1	234

Volume and Adjustments by Lane Group							
Approach	N		E	S		W	
Lane Group	L	C		C	R	C	R
ID	272	274		269	271	276	277
Lanes	L, L	T, T		T, T	R	LT	R
Volume	438	821		467	397	138	234

Saturation Flow Rate							
Approach	N		E	S		W	
Lane Group	272	274		269	271	276	277
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	438	821		467	397	137	1	234
Volume / Saturation Flow Rate	0.137	0.257		0.146	0.248	0.086	0.086	0.146
Overlap adjusted Volume / Saturation Flow Rate	0.137	0.257		0.146	0.248	0.086	0.086	0.146
Critical Movement	Y				Y			Y

Node 385: Hollister & Fairview

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.513
Loss Time	0
Cycle Length	100
Adj V/C	0.613

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	298	254	401	39	253	261	76	129	35	165	258	91
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	64	100	10	63	65	19	32	9	41	65	23
Adjusted Volume	298	254	401	39	253	261	76	129	35	165	258	91

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	285	287	289	281	282	284	278	279	290	292	294
Lanes	L, L	T, T	R	L	T, T	R	L	T, RT	L, L	T, T	R
Volume	298	254	401	39	253	261	76	164	165	258	91

Saturation Flow Rate

Approach	N			E			S			W		
Lane Group	285	287	289	281	282	284	278	279	290	292	294	
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	298	254	401	39	253	261	76	129	35	165	258	91
Volume / Saturation Flow Rate	0.093	0.079	0.251	0.024	0.079	0.163	0.048	0.051	0.051	0.052	0.081	0.057
Overlap adjusted Volume / Saturation Flow Rate	0.093	0.079	0.251	0.024	0.079	0.163	0.048	0.051	0.051	0.052	0.081	0.057
Critical Movement			Y			Y	Y			Y		

Node 386: Fairview & Mandarin	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	3.3
Worst Case Delay	59.72
Worst Case LOS	F

Volume and Adjustments						
Approach	N (Major)		E		S (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	84.00	967.00	47.00	215.00	628.00	23.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	91.30	1051.09	51.09	233.70	682.61	25.00

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	91.30		51.09	233.70		
Conflicting Volume (Veh)	707.61		1390.76	341.30		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	707.61		1390.76	341.30		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	900.35		135.63	660.47		
Capacity	900.35		116.21	660.47		

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		7.50	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	0.00		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)		E		S (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Volume	91.30	1051.09	51.09	233.70	682.61	25.00
cmx, Capacity	900.35		116.21	660.47		
V / C	0.10		0.44	0.35		
d, Delay	9.45		59.72	13.43		
LOS	A		F	B		
dA, Approach Delay	0.76		21.73		0.00	
Approach LOS			C			
dRank1, Rank 1 Delay	0.00				0.00	

Delay and Level of Service by Lane								
Approach	N (Major)			E		S (Major)		
Lane	Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 1	Lane 2	Lane 3
Movements								
vx, Volume	91.30	525.54	525.54	51.09	233.70	341.30	341.30	25.00
Flared Storage Size								
cmx, Capacity								
V / C								
Q95, 95% Queue Length								
d, Delay								
LOS								
dA, Approach Delay	0.76			21.73		0.00		
Approach LOS				C				

Node 387: Hollister & Orange

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	1.19
Worst Case Delay	46.06
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	4.00	0.00	19.00	46.00	787.00	8.00	19.00	0.00	17.00	7.00	565.00	36.00
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	4.35	0.00	20.65	50.00	855.43	8.70	20.65	0.00	18.48	7.61	614.13	39.13

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	4.35	0.00	20.65	50.00			20.65	0.00	18.48	7.61		
Conflicting Volume (Veh)	1282.07	1628.26	432.07	653.26			1176.63	1613.04	326.63	864.13		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1282.07	1628.26	432.07	653.26			1176.63	1613.04	326.63	864.13		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	124.50	102.95	577.17	943.14			148.81	105.18	674.99	787.24		
Capacity	111.25	94.58	577.17	943.14			131.82	96.63	674.99	787.24		

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	0.00			0.20	0.20	0.10	0.00		
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	4.35	0.00	20.65	50.00	855.43	8.70	20.65	0.00	18.48	7.61	614.13	39.13
cmx, Capacity	111.25	94.58	577.17	943.14			131.82	96.63	674.99	787.24		
V / C	0.04	0.00	0.04	0.05			0.16	0.00	0.03	0.01		
d, Delay	38.23	43.93	12.11	9.03			36.12	46.06	14.14	9.62		
LOS	E	E	B	A			E	E	B	A		
dA, Approach Delay		16.65			0.49			25.74			0.11	
Approach LOS		C						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 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	25.00	50.00	432.07	432.07	39.13	7.61	326.63	326.63
Flared Storage Size								
cmx, Capacity	333.94				212.62			
V / C	0.07				0.18			
Q95, 95% Queue Length	0.24				0.67			
d, Delay	16.65				25.74			
LOS	C				D			
dA, Approach Delay	16.65	0.49			25.74	0.11		
Approach LOS	C				D			

Node 390: Hollister & Pine/Nectarine

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.296
Loss Time	0
Cycle Length	100
Adj V/C	0.396

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	9	25	57	519	20	58	7	72	7	409	92
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	6	14	130	5	15	2	18	2	102	23
Adjusted Volume	29	9	25	57	519	20	58	7	72	7	409	92

Volume and Adjustments by Lane Group

Approach	N	E		S	W	
Lane Group	C	L	C	C	L	C
ID	298	295	296	302	299	300
Lanes	LTR	L	T, RT	LTR	L	T, RT
Volume	63	57	539	137	7	501

Saturation Flow Rate

Approach	N	E		S	W	
Lane Group	298	295	296	302	299	300
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	29	9	25	57	519	20	58	7	72	7	409	92
Volume / Saturation Flow Rate	0.018	0.039	0.039	0.036	0.168	0.168	0.036	0.086	0.086	0.004	0.157	0.157
Overlap adjusted Volume / Saturation Flow Rate	0.018	0.039	0.039	0.036	0.168	0.168	0.036	0.086	0.086	0.004	0.157	0.157
Critical Movement	Y			Y				Y				Y

Node 394: Hollister & Rutherford	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.227
Loss Time	0
Cycle Length	100
Adj V/C	0.327

Volume and Adjustments by Movement						
Approach	E		S		W	
Movement	L1	T	L1	R1	T	R1
Base Volume	48	575	17	32	495	37
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	12	144	4	8	124	9
Adjusted Volume	48	575	17	32	495	37

Volume and Adjustments by Lane Group				
Approach	E		S	W
Lane Group	L	C	C	C
ID	303	304	308	306
Lanes	L	T, T	LTR	T, RT
Volume	48	575	49	532

Saturation Flow Rate				
Approach	E		S	W
Lane Group	303	304	308	306
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	48	575	17	32	495	37
Volume / Saturation Flow Rate	0.030	0.180	0.011	0.031	0.166	0.166
Overlap adjusted Volume / Saturation Flow Rate	0.030	0.180	0.011	0.031	0.166	0.166
Critical Movement	Y			Y	Y	

Node 396: Hollister & Community Center West Driveway	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	0.3
Worst Case Delay	8.75
Worst Case LOS	A

Volume and Adjustments					
Approach	E (Major)		S	W (Major)	
Movement	L1	T		T	R1
Base Volume	41.00	636.00		503.00	29.00
PHF, Peak-hour factor	0.920	0.920		0.920	0.920
V, Adjusted Volume	44.57	691.30		546.74	31.52

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	44.57				
Conflicting Volume (Veh)	578.26				
Conflicting Volume (Ped)	0.00				
Conflicting Volume	578.26				
Two-Stage Gap Acceptance					
Number of Storage Spaces in Median Refuge Area					
cpx, Potential Capacity	1005.41				
Capacity	1005.41				

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	0.00				
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	44.57	691.30		546.74	31.52
cmx, Capacity	1005.41				
V / C	0.04				
d, Delay	8.75				
LOS	A				
dA, Approach Delay	0.53		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	44.57	345.65	345.65		289.13	289.13
Flared Storage Size						
cmx, Capacity						
V / C						
Q95, 95% Queue Length						
d, Delay						
LOS						
dA, Approach Delay	0.53			0.00	0.00	
Approach LOS				A		

Node 399: Hollister & Kellogg	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.396
Loss Time	0
Cycle Length	100
Adj V/C	0.496

Volume and Adjustments by Movement										
Approach	N			E			S	W		
Movement	L1	T	R1	L1	T	R1	R1	L1	T	R1
Base Volume	96	4	33	271	594	83	116	35	469	55
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	24	1	8	68	149	21	29	9	117	14
Adjusted Volume	96	4	33	271	594	83	116	35	469	55

Volume and Adjustments by Lane Group							
Approach	N		E		S	W	
Lane Group	C	R	L	C	R	L	C
ID	321	322	318	319	317	323	324
Lanes	LT	R	L	T, RT	R	L	T, RT
Volume	100	33	271	677	116	35	524

Saturation Flow Rate							
Approach	N		E		S	W	
Lane Group	321	322	318	319	317	323	324
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	2	1	1	2
Saturation Flow Rate	1600	1600	1600	3200	1600	1600	3200

Capacity Analysis										
Approach	N			E			S	W		
Movement	L1	T	R1	L1	T	R1	R1	L1	T	R1
Volume	96	4	33	271	594	83	116	35	469	55
Volume / Saturation Flow Rate	0.060	0.063	0.021	0.169	0.212	0.212	0.073	0.022	0.164	0.164
Overlap adjusted Volume / Saturation Flow Rate	0.060	0.063	0.021	0.169	0.212	0.212	0.073	0.022	0.164	0.164
Critical Movement		Y		Y						Y

Node 402: Hollister & SR-217 SB Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.487
Loss Time	0
Cycle Length	100
Adj V/C	0.587

Volume and Adjustments by Movement								
Approach	N			E		S	W	
Movement	L1	T	R1	L1	T		T	R1
Base Volume	165	0	414	99	417		734	47
PHF	1.000	1.000	1.000	1.000	1.000		1.000	1.000
Peak 15 Volume	41	0	104	25	104		184	12
Adjusted Volume	165	0	414	99	417		734	47

Volume and Adjustments by Lane Group						
Approach	N	E			S	W
Lane Group	C	L	C	C		C
ID	331	326	327	328		333
Lanes	LTR, R	L	T, T	T, T		T, RT
Volume	579	99	265	152		781

Saturation Flow Rate						
Approach	N	E			S	W
Lane Group	331	326	327	328		333
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	165	0	414	99	417		734	47
Volume / Saturation Flow Rate	0.103	0.000	0.181	0.062	0.083		0.244	0.244
Overlap adjusted Volume / Saturation Flow Rate	0.103	0.000	0.181	0.062	0.083		0.244	0.244
Critical Movement			Y	Y			Y	

Node 405: Hollister & SR-217 NB Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.319
Loss Time	0
Cycle Length	100
Adj V/C	0.419

Volume and Adjustments by Movement										
Approach	N	E			S			W		
Movement		L1	T	R1	L1	T	R1	L1	T	R1
Base Volume		39	432	79	57	61	64	352	443	132
PHF		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume		10	108	20	14	15	16	88	111	33
Adjusted Volume		39	432	79	57	61	64	352	443	132

Volume and Adjustments by Lane Group								
Approach	N	E			S		W	
Lane Group		L	C	R	C	R	L	C
ID		337	338	340	335	336	341	343
Lanes		L	T, T	R	LT	R	L, L	T, RT
Volume		39	432	79	118	64	352	575

Saturation Flow Rate								
Approach	N	E			S		W	
Lane Group		337	338	340	335	336	341	343
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		39	432	79	57	61	64	352	443	132
Volume / Saturation Flow Rate		0.024	0.135	0.049	0.036	0.074	0.040	0.110	0.180	0.180
Overlap adjusted Volume / Saturation Flow Rate		0.024	0.135	0.049	0.036	0.074	0.040	0.110	0.180	0.180
Critical Movement			Y			Y		Y		

Node 441: Calle Real & NB 101 OnRamp	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	4.37
Worst Case Delay	9.99
Worst Case LOS	A

Volume and Adjustments					
Approach	E (Major)		S (Major)	W	
Movement	L1	T		T	R1
Base Volume	65.00	34.00		77.00	0.00
PHF, Peak-hour factor	0.920	0.920		0.920	0.920
V, Adjusted Volume	70.65	36.96		83.70	0.00

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		2	2
vx, Volume				83.70	0.00
Conflicting Volume (Veh)				89.13	89.13
Conflicting Volume (Ped)				0.00	0.00
Conflicting Volume				89.13	89.13
Two-Stage Gap Acceptance					
Number of Storage Spaces in Median Refuge Area					
cpx, Potential Capacity				804.78	974.42
Capacity				804.78	974.42

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	70.65	36.96		83.70	0.00
cmx, Capacity				804.78	974.42
V / C				0.10	0.00
d, Delay				9.99	9.21
LOS				A	A
dA, Approach Delay	0.00		0.00	9.99	
Approach LOS				A	
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	107.61		83.70
Flared Storage Size			
cmx, Capacity			804.78
V / C			0.10
Q95, 95% Queue Length			0.35
d, Delay			9.99
LOS			A
dA, Approach Delay	0.00	0.00	9.99
Approach LOS			A

Node 445: Calle Real & Winchester Canyon	
Control Type	AWSC
Method	HCM 7th Edition
Average Delay	8.43
Average LOS	A

Volume and Adjustments				
Approach	N	E		W
Movement	R1	T	R1	L1
Base Volume	155.00	202.00	79.00	54.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920
Flow Rate	168.48	219.57	85.87	58.70
Geometry Group	1	1		1

Saturation Headway			
Approach	N	E	W
Lanes	Lane 1	Lane 1	Lane 1
Total Lane Flow Rate	168.48	305.43	58.70
Left Turn Flow Rate	0.00	0.00	58.70
Right Turn Flow Rate	168.48	85.87	0.00
PLT, Proportion LT	0.00	0.00	1.00
PRT, Proportion RT	1.00	0.28	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	-0.17	0.20

Departure Headway			
Approach	N	E	W
Lanes	Lane 1	Lane 1	Lane 1
Total Lane Flow Rate	168.48	305.43	58.70
hd initial	3.20	3.20	3.20
x initial	0.15	0.27	0.05
hd, iteration 1	3.40	4.07	4.39
Difference, iteration 1	0.20	0.87	1.19
hd, iteration 2	3.44	4.11	4.41
Difference, iteration 2	0.04	0.04	0.02
Convergence	Y	Y	Y
hd final, Departure Headway	3.44	4.11	4.41
x final, Degree of Utilization	0.16	0.35	0.07

Capacity and Level of Service			
Approach	N	E	W
Lanes	Lane 1	Lane 1	Lane 1
Total Lane Flow Rate	168.48	305.43	58.70
hd, Departure Headway	3.44	4.11	4.41
x, Degree of Utilization	0.16	0.35	0.07
m, Move Up Time	2.00	2.00	2.00
ts, Service Time	1.44	2.11	2.41
Capacity	1046.65	876.34	816.18
Delay	7.10	9.30	7.75
LOS	A	A	A
Q95, 95% Queue Length	0.57	1.60	0.23
Approach Delay	7.10	9.30	7.75
Approach LOS	A	A	A
Intersection Delay	8.43		
Intersection LOS	A		

Node 450: Calle Real & Brandon Dr.	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	4.4
Worst Case Delay	11.31
Worst Case LOS	B

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	152.00	14.00	45.00	92.00	5.00	124.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	165.22	15.22	48.91	100.00	5.43	134.78

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	165.22	15.22			5.43	
Conflicting Volume (Veh)	244.57	98.91			148.91	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	244.57	98.91			148.91	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	748.20	962.38			1444.90	
Capacity	745.16	962.38			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 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			0.00	
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	165.22	15.22	48.91	100.00	5.43	134.78
cmx, Capacity	745.16	962.38			1444.90	
V / C	0.22	0.02			0.00	
d, Delay	11.31	10.22			7.50	
LOS	B	B			A	
dA, Approach Delay	11.21		0.00		0.29	
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	180.43	148.91	140.22
Flared Storage Size			
cmx, Capacity	759.62		1800.00
V / C	0.24		0.08
Q95, 95% Queue Length	0.93		0.01
d, Delay	11.21		7.50
LOS	B		
dA, Approach Delay	11.21	0.00	0.29
Approach LOS	B		

Node 451: San Rossano Dr & Calle Real	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	1.87
Worst Case Delay	12.38
Worst Case LOS	B

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	62.00	12.00	138.00	16.00	6.00	266.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	67.39	13.04	150.00	17.39	6.52	289.13

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	67.39	13.04			6.52	
Conflicting Volume (Veh)	460.87	158.70			167.39	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	460.87	158.70			167.39	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	562.44	891.86			1422.69	
Capacity	559.37	891.86			1422.69	

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			0.00	
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	67.39	13.04	150.00	17.39	6.52	289.13
cmx, Capacity	559.37	891.86			1422.69	
V / C	0.12	0.01			0.00	
d, Delay	12.38	9.98			7.54	
LOS	B	A			A	
dA, Approach Delay	11.99		0.00		0.17	
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	80.43	167.39	295.65
Flared Storage Size			
cmx, Capacity	595.36		1800.00
V / C	0.14		0.16
Q95, 95% Queue Length	0.47		0.01
d, Delay	11.99		7.54
LOS	B		
dA, Approach Delay	11.99	0.00	0.17
Approach LOS	B		

Node 461: Storke & US 101 NB Ramps

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.518
Loss Time	0
Cycle Length	100
Adj V/C	0.618

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	4	296	9	677	327	180	118	157	37	29	3	555
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	74	2	169	82	45	30	39	9	7	1	139
Adjusted Volume	4	296	9	677	327	180	118	157	37	29	3	555

Volume and Adjustments by Lane Group

Approach	N		E	S		W	
Lane Group	L	C	C	L	C	L	C
ID	381	382	378	374	376	384	385
Lanes	L	T, RT	L, LT, RT	L, L	T, RT	L	RT, R
Volume	4	305	1184	118	194	29	558

Saturation Flow Rate

Approach	N		E	S		W	
Lane Group	381	382	378	374	376	384	385
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	4	296	9	677	327	180	118	157	37	29	3	555
Volume / Saturation Flow Rate	0.003	0.095	0.095	0.212	0.247	0.247	0.037	0.061	0.061	0.018	0.174	0.174
Overlap adjusted Volume / Saturation Flow Rate	0.003	0.095	0.095	0.212	0.247	0.247	0.037	0.061	0.061	0.018	0.174	0.174
Critical Movement		Y		Y			Y					Y

Node 462: Storke & US 101 SB Ramp	
Control Type	Signalized
Method	ICU Method 1
LOS	C
Critical V/C	0.74
Loss Time	0
Cycle Length	100
Adj V/C	0.84

Volume and Adjustments by Movement								
Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	509	1038		270	770	14	4	160
PHF	1.000	1.000		1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	127	260		68	193	4	1	40
Adjusted Volume	509	1038		270	770	14	4	160

Volume and Adjustments by Lane Group							
Approach	N		E	S		W	
Lane Group	L	C		C	R	C	R
ID	390	392		387	389	394	395
Lanes	L, L	T, T		T, T	R	LT	R
Volume	509	1038		270	770	18	160

Saturation Flow Rate							
Approach	N		E	S		W	
Lane Group	390	392		387	389	394	395
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	509	1038		270	770	14	4	160
Volume / Saturation Flow Rate	0.159	0.324		0.084	0.481	0.009	0.011	0.100
Overlap adjusted Volume / Saturation Flow Rate	0.159	0.324		0.084	0.481	0.009	0.011	0.100
Critical Movement	Y				Y			Y

Node 465: Los Carneros Rd & Calle Koral (west/south)	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	0.21
Worst Case Delay	11.31
Worst Case LOS	B

Volume and Adjustments				
Approach	N (Major)		S (Major)	W
Movement	T	R1	T	R1
Base Volume	746.00	11.00	449.00	23.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920
V, Adjusted Volume	810.87	11.96	488.04	25.00

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				25.00
Conflicting Volume (Veh)				411.41
Conflicting Volume (Ped)				0.00
Conflicting Volume				411.41
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median Refuge Area				
cpx, Potential Capacity				595.18
Capacity				595.18

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	810.87	11.96	488.04	25.00
cmx, Capacity				595.18
V / C				0.04
d, Delay				11.31
LOS				B
dA, Approach Delay	0.00		0.00	11.31
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	411.41	411.41	244.02	244.02	25.00
Flared Storage Size					
cmx, Capacity					
V / C					
Q95, 95% Queue Length					
d, Delay					
LOS					
dA, Approach Delay	0.00		0.00		11.31
Approach LOS					B

Node 466: Los Carneros & Cremona	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.263
Loss Time	0
Cycle Length	100
Adj V/C	0.363

Volume and Adjustments by Movement										
Approach	N	E			S			W		
Movement	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	2	93	753	5	10	1	22	8	439	2
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	23	188	1	3	0	6	2	110	1
Adjusted Volume	2	93	753	5	10	1	22	8	439	2

Volume and Adjustments by Lane Group						
Approach	N	E		S	W	
Lane Group	R	L	C	C	L	C
ID	400	397	398	396	402	403
Lanes	R, R	L	T, RT	LTR	L	T, RT
Volume	2	93	758	33	8	441

Saturation Flow Rate						
Approach	N	E		S	W	
Lane Group	400	397	398	396	402	403
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	2	93	753	5	10	1	22	8	439	2
Volume / Saturation Flow Rate	0.001	0.058	0.237	0.237	0.006	0.021	0.021	0.005	0.138	0.138
Overlap adjusted Volume / Saturation Flow Rate	0.001	0.058	0.237	0.237	0.006	0.021	0.021	0.005	0.138	0.138
Critical Movement			Y				Y	Y		

Node 467: Los Carneros & Calle Koral

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.403
Loss Time	0
Cycle Length	100
Adj V/C	0.503

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	172	827	52	35	8	120	10	448	10	101	8	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	43	207	13	9	2	30	3	112	3	25	2	6
Adjusted Volume	172	827	52	35	8	120	10	448	10	101	8	25

Volume and Adjustments by Lane Group

Approach	N			E			S		W	
Lane Group	L	C	R	L	C	R	L	C	L	C
ID	408	409	411	405	406	407	414	415	412	413
Lanes	L	T, T	R	L	T	R	L	T, T, RT	L	RT
Volume	172	827	52	35	8	120	10	458	101	33

Saturation Flow Rate

Approach	N			E			S		W	
Lane Group	408	409	411	405	406	407	414	415	412	413
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	172	827	52	35	8	120	10	448	10	101	8	25
Volume / Saturation Flow Rate	0.108	0.258	0.033	0.022	0.005	0.075	0.006	0.095	0.095	0.063	0.021	0.021
Overlap adjusted Volume / Saturation Flow Rate	0.108	0.258	0.033	0.022	0.005	0.075	0.006	0.095	0.095	0.063	0.021	0.021
Critical Movement		Y				Y	Y			Y		

Node 489: Hollister & Patterson	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.45
Loss Time	0
Cycle Length	100
Adj V/C	0.55

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	256	363	184	73	362	405	31	134	62	65	300	51
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	64	91	46	18	91	101	8	34	16	16	75	13
Adjusted Volume	256	363	184	73	362	405	31	134	62	65	300	51

Volume and Adjustments by Lane Group								
Approach	N		E		S		W	
Lane Group	L	C	L	C	L	C	L	C
ID	428	430	425	426	436	437	432	434
Lanes	L, L	T, RT	L	T, RT	L	T, RT	L, L	T, RT
Volume	256	547	73	767	31	196	65	351

Saturation Flow Rate								
Approach	N		E		S		W	
Lane Group	428	430	425	426	436	437	432	434
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	256	363	184	73	362	405	31	134	62	65	300	51
Volume / Saturation Flow Rate	0.080	0.171	0.171	0.046	0.240	0.240	0.019	0.061	0.061	0.020	0.110	0.110
Overlap adjusted Volume / Saturation Flow Rate	0.080	0.171	0.171	0.046	0.240	0.240	0.019	0.061	0.061	0.020	0.110	0.110
Critical Movement		Y			Y		Y			Y		

Node 506: Cathedral Oaks 101 SB-Ramp	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	6.93
Worst Case Delay	63.56
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	252.00		114.00	226.00	52.00	6.00	87.00
PHF, Peak-hour factor	0.920	0.920		0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	308.70	273.91		123.91	245.65	56.52	6.52	94.57

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	3	3	2
vx, Volume	308.70					56.52	6.52	94.57
Conflicting Volume (Veh)	369.57					1138.04	1260.87	273.91
Conflicting Volume (Ped)	0.00					0.00	0.00	0.00
Conflicting Volume	369.57					1138.04	1260.87	273.91
Two-Stage Gap Acceptance						No	No	
Number of Storage Spaces in Median Refuge Area								
cpx, Potential Capacity	1200.07					180.22	171.71	769.66
Capacity	1200.07					125.54	119.62	769.66

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	0.00					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	308.70	273.91		123.91	245.65	56.52	6.52	94.57
cmx, Capacity	1200.07					125.54	119.62	769.66
V / C	0.26					0.45	0.05	0.12
d, Delay	9.04					62.14	63.56	10.33
LOS	A					F	F	B
dA, Approach Delay	4.79		0.00	0.00		31.12		
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	273.91		369.57	63.04	94.57
Flared Storage Size						
cmx, Capacity					124.90	
V / C					0.50	
Q95, 95% Queue Length					2.80	
d, Delay					62.29	
LOS					F	
dA, Approach Delay	4.79		0.00	0.00	31.12	
Approach LOS			A		D	

Node 511: Hollister & Pebble Beach Rd

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	1.27
Worst Case Delay	16.55
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	22.00	0.00	35.00	5.00	370.00	8.00	11.00	0.00	5.00	5.00	305.00	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	23.91	0.00	38.04	5.43	402.17	8.70	11.96	0.00	5.43	5.43	331.52	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	23.91	0.00	38.04	5.43			11.96	0.00	5.43	5.43		
Conflicting Volume (Veh)	589.67	760.87	201.09	336.96			576.09	766.85	168.48	410.87		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	589.67	760.87	201.09	336.96			576.09	766.85	168.48	410.87		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	395.61	337.55	812.49	1233.57			404.54	334.88	852.42	1158.89		
Capacity	388.83	333.89	812.49	1233.57			381.42	331.25	852.42	1158.89		

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,l, Base Critical Headway (Stage I)												
tc,base,ll, 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	0.00			0.20	0.20	0.10	0.00		
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	23.91	0.00	38.04	5.43	402.17	8.70	11.96	0.00	5.43	5.43	331.52	5.43
cmx, Capacity	388.83	333.89	812.49	1233.57			381.42	331.25	852.42	1158.89		
V / C	0.06	0.00	0.05	0.00			0.03	0.00	0.01	0.00		
d, Delay	15.02	16.55	10.20	7.93			14.74	16.17	9.53	8.12		
LOS	C	C	B	A			B	C	A	A		
dA, Approach Delay		12.06			0.10			13.11			0.13	
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	61.96	5.43	402.17	8.70	17.39	5.43	168.48	168.48
Flared Storage Size								
cmx, Capacity	571.96				461.03			
V / C	0.11				0.04			
Q95, 95% Queue Length	0.36				0.12			
d, Delay	12.06				13.11			
LOS	B				B			
dA, Approach Delay	12.06		0.10		13.11		0.13	
Approach LOS	B				B			

Node 512: Hollister & Palo Alto Dr

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	1.38
Worst Case Delay	17.77
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	0.00	1.00	8.00	336.00	14.00	19.00	0.00	20.00	47.00	285.00	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	5.43	0.00	1.09	8.70	365.22	15.22	20.65	0.00	21.74	51.09	309.78	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	5.43	0.00	1.09	8.70			20.65	0.00	21.74	51.09		
Conflicting Volume (Veh)	647.28	813.04	190.22	320.65			617.39	815.22	160.33	380.43		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	647.28	813.04	190.22	320.65			617.39	815.22	160.33	380.43		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	359.83	314.92	825.59	1250.65			377.98	314.01	862.69	1189.10		
Capacity	331.53	297.65	825.59	1250.65			356.78	296.79	862.69	1189.10		

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,l, Base Critical Headway (Stage I)												
tc,base,ll, 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	0.00			0.20	0.20	0.10	0.00		
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,l, Critical Headway (Stage I)												
tc,ll, 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	0.00	1.09	8.70	365.22	15.22	20.65	0.00	21.74	51.09	309.78	10.87
cmx, Capacity	331.53	297.65	825.59	1250.65			356.78	296.79	862.69	1189.10		
V / C	0.02	0.00	0.00	0.01			0.06	0.00	0.03	0.04		
d, Delay	16.04	17.27	9.54	7.90			15.73	17.77	9.81	8.16		
LOS	C	C	A	A			C	C	A	A		
dA, Approach Delay		14.95			0.18			12.69			1.12	
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	6.52	8.70	190.22	190.22	42.39	51.09	160.33	160.33
Flared Storage Size								
cmx, Capacity	368.25				510.23			
V / C	0.02				0.08			
Q95, 95% Queue Length	0.05				0.27			
d, Delay	14.95				12.69			
LOS	B				B			
dA, Approach Delay	14.95	0.18			12.69	1.12		
Approach LOS	B				B			

Node 513: Hollister & Coronado	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	1.81
Worst Case Delay	13.68
Worst Case LOS	B

Volume and Adjustments						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	16.00	305.00	46.00	54.00	287.00	20.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	17.39	331.52	50.00	58.70	311.96	21.74

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	17.39		50.00	58.70		
Conflicting Volume (Veh)	333.70		523.37	166.85		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	333.70		523.37	166.85		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	1236.97		488.33	854.46		
Capacity	1236.97		480.77	854.46		

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	0.00		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	331.52	50.00	58.70	311.96	21.74
cmx, Capacity	1236.97		480.77	854.46		
V / C	0.01		0.10	0.07		
d, Delay	7.95		13.68	10.41		
LOS	A		B	B		
dA, Approach Delay	0.40		11.91		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	17.39	165.76	165.76	108.70	166.85	166.85
Flared Storage Size						
cmx, Capacity				629.41		
V / C				0.17		
Q95, 95% Queue Length				0.62		
d, Delay				11.91		
LOS				B		
dA, Approach Delay	0.40			11.91	0.00	
Approach LOS				B		

Node 515: Hollister & Cannon Green	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	2.67
Worst Case Delay	22.6
Worst Case LOS	C

Volume and Adjustments						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	54.00	300.00	40.00	107.00	561.00	25.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	58.70	326.09	43.48	116.30	609.78	27.17

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	58.70		43.48	116.30		
Conflicting Volume (Veh)	636.96		903.80	318.48		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	636.96		903.80	318.48		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	956.36		280.37	683.19		
Capacity	956.36		261.45	683.19		

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	0.00		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	58.70	326.09	43.48	116.30	609.78	27.17
cmx, Capacity	956.36		261.45	683.19		
V / C	0.06		0.17	0.17		
d, Delay	9.01		22.60	14.10		
LOS	A		C	B		
dA, Approach Delay	1.37		16.42		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	58.70	163.04	163.04	159.78	318.48	318.48
Flared Storage Size						
cmx, Capacity				474.79		
V / C				0.34		
Q95, 95% Queue Length				1.51		
d, Delay				16.42		
LOS				C		
dA, Approach Delay	1.37			16.42	0.00	
Approach LOS				C		

Node 517: Hollister & Pacific Oaks	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.288
Loss Time	0
Cycle Length	100
Adj V/C	0.388

Volume and Adjustments by Movement										
Approach	N			E		S		W		
Movement	L1	T	R1	L1	T	L1	R1	L1	T	R1
Base Volume	0	0	0	47	339	75	121	0	581	95
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	0	0	0	12	85	19	30	0	145	24
Adjusted Volume	0	0	0	47	339	75	121	0	581	95

Volume and Adjustments by Lane Group							
Approach	N	E		S		W	
Lane Group	C	L	C	L	R	L	C
ID	462	459	460	466	467	463	464
Lanes	LTR	L	T, T	L	R	L	T, RT
Volume	0	47	339	75	121	0	676

Saturation Flow Rate							
Approach	N	E		S		W	
Lane Group	462	459	460	466	467	463	464
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	0	0	0	47	339	75	121	0	581	95
Volume / Saturation Flow Rate	0.000	0.000	0.000	0.029	0.106	0.047	0.076	0.000	0.211	0.211
Overlap adjusted Volume / Saturation Flow Rate	0.000	0.000	0.000	0.029	0.106	0.047	0.076	0.000	0.211	0.211
Critical Movement				Y		Y				Y

Node 518: Hollister & Santa Felicia

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	1.95
Worst Case Delay	36.91
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	0.00	3.00	87.00	368.00	33.00	10.00	2.00	71.00	4.00	691.00	26.00
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	0.00	3.26	94.57	400.00	35.87	10.87	2.17	77.17	4.35	751.09	28.26

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	0.00	3.26	94.57			10.87	2.17	77.17	4.35		
Conflicting Volume (Veh)	992.39	1395.11	217.93	779.35			1163.04	1398.91	389.67	435.87		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	992.39	1395.11	217.93	779.35			1163.04	1398.91	389.67	435.87		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	202.83	142.64	792.57	846.70			152.26	141.89	614.73	1134.62		
Capacity	151.34	123.61	792.57	846.70			131.40	122.95	614.73	1134.62		

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,l, Base Critical Headway (Stage I)												
tc,base,ll, 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	0.00			0.20	0.20	0.10	0.00		
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,l, Critical Headway (Stage I)												
tc,ll, 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	8.70	0.00	3.26	94.57	400.00	35.87	10.87	2.17	77.17	4.35	751.09	28.26
cmx, Capacity	151.34	123.61	792.57	846.70			131.40	122.95	614.73	1134.62		
V / C	0.06	0.00	0.00	0.11			0.08	0.02	0.13	0.00		
d, Delay	30.00	35.34	10.76	9.79			35.02	36.91	13.48	8.19		
LOS	D	E	B	A			E	E	B	A		
dA, Approach Delay		24.75			1.74			16.64			0.05	
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	11.96	94.57	217.93	217.93	90.22	4.35	389.67	389.67
Flared Storage Size								
cmx, Capacity	194.18				399.29			
V / C	0.06				0.23			
Q95, 95% Queue Length	0.20				0.87			
d, Delay	24.75				16.64			
LOS	C				C			
dA, Approach Delay	24.75	1.74			16.64	0.05		
Approach LOS	C				C			

Node 521: Storke & Marketplace	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.29
Loss Time	0
Cycle Length	100
Adj V/C	0.39

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	31	390	257	26	12	29	50	492	45	179	15	67
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	98	64	7	3	7	13	123	11	45	4	17
Adjusted Volume	31	390	257	26	12	29	50	492	45	179	15	67

Volume and Adjustments by Lane Group								
Approach	N			E		S		W
Lane Group	L	C	R	C	R	L	C	C
ID	470	471	473	468	469	476	477	474
Lanes	L	T, T	R	LT	R	L	T, RT	L, LTR
Volume	31	390	257	38	29	50	537	261

Saturation Flow Rate									
Approach	N			E		S			W
Lane Group	470		471	473	468	469	476	477	474
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	614	3200	1600	1600	1600	1520	771	3200	3200

Capacity Analysis												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	31	390	257	26	12	29	50	492	45	179	15	67
Volume / Saturation Flow Rate	0.019	0.122	0.161	0.016	0.024	0.018	0.031	0.168	0.168	0.056	0.082	0.082
Overlap adjusted Volume / Saturation Flow Rate	0.019	0.122	0.161	0.016	0.024	0.018	0.031	0.168	0.168	0.056	0.082	0.082
Critical Movement			Y	Y			Y				Y	

Node 522: Hollister & Storke

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.399
Loss Time	0
Cycle Length	100
Adj V/C	0.499

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	164	423	285	164	157	96	31	539	154	381	314	64
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	41	106	71	41	39	24	8	135	39	95	79	16
Adjusted Volume	164	423	285	164	157	96	31	539	154	381	314	64

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	484	486	488	479	481	483	494	496	498	489	491	493
Lanes	L, L	T, T	R	L, L	T, T	R	L, L	T, T	R	L, L	T, T	R
Volume	164	423	285	164	157	96	31	539	154	381	314	64

Saturation Flow Rate

Approach	N			E			S			W		
Lane Group	484	486	488	479	481	483	494	496	498	489	491	493
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	164	423	285	164	157	96	31	539	154	381	314	64
Volume / Saturation Flow Rate	0.051	0.132	0.178	0.051	0.049	0.060	0.010	0.168	0.096	0.119	0.098	0.040
Overlap adjusted Volume / Saturation Flow Rate	0.051	0.132	0.178	0.051	0.049	0.060	0.010	0.168	0.096	0.119	0.098	0.040
Critical Movement	Y					Y		Y		Y		

Node 524: Hollister & Coromar Project Access

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.217
Loss Time	0
Cycle Length	100
Adj V/C	0.317

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	19	3	20	37	466	18	6	3	9	23	523	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	5	1	5	9	117	5	2	1	2	6	131	6
Adjusted Volume	19	3	20	37	466	18	6	3	9	23	523	24

Volume and Adjustments by Lane Group

Approach	N	E		S		W		
Lane Group	C	L	C	C	R	L	C	R
ID	504	501	502	499	500	505	506	508
Lanes	LTR	L	T, RT	LT	R	L	T, T	R
Volume	42	37	484	9	9	23	523	24

Saturation Flow Rate

Approach	N	E		S		W		
Lane Group	504	501	502	499	500	505	506	508
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	19	3	20	37	466	18	6	3	9	23	523	24
Volume / Saturation Flow Rate	0.012	0.026	0.026	0.023	0.151	0.151	0.004	0.006	0.006	0.014	0.163	0.015
Overlap adjusted Volume / Saturation Flow Rate	0.012	0.026	0.026	0.023	0.151	0.151	0.004	0.006	0.006	0.014	0.163	0.015
Critical Movement		Y		Y			Y				Y	

Node 525: Hollister & Los Carneros

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.306
Loss Time	0
Cycle Length	100
Adj V/C	0.406

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	34	285	122	76	278	18	54	346	121	43	268	145
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	9	71	31	19	70	5	14	87	30	11	67	36
Adjusted Volume	34	285	122	76	278	18	54	346	121	43	268	145

Volume and Adjustments by Lane Group

Approach	N			E		S			W	
Lane Group	L	C	R	L	C	L	C	R	L	C
ID	512	513	515	509	510	520	522	524	516	518
Lanes	L	T, T	R	L	T, RT	L, L	T, T	R	L, L	T, RT
Volume	34	285	122	76	296	54	346	121	43	413

Saturation Flow Rate

Approach	N			E		S			W	
Lane Group	512	513	515	509	510	520	522	524	516	518
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	34	285	122	76	278	18	54	346	121	43	268	145
Volume / Saturation Flow Rate	0.021	0.089	0.076	0.048	0.093	0.093	0.017	0.108	0.076	0.013	0.129	0.129
Overlap adjusted Volume / Saturation Flow Rate	0.021	0.089	0.076	0.048	0.093	0.093	0.017	0.108	0.076	0.013	0.129	0.129
Critical Movement	Y			Y				Y			Y	

Node 526: Cremona Dr & Hollister Ave	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	0.48
Worst Case Delay	15.56
Worst Case LOS	C

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	6.00	10.00	392.00	16.00	29.00	434.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	6.52	10.87	426.09	17.39	31.52	471.74

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	6.52	10.87			31.52	
Conflicting Volume (Veh)	733.70	221.74			443.48	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	733.70	221.74			443.48	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	359.82	788.14			1127.33	
Capacity	348.24	788.14			1127.33	

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			0.00	
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	6.52	10.87	426.09	17.39	31.52	471.74
cmx, Capacity	348.24	788.14			1127.33	
V / C	0.02	0.01			0.03	
d, Delay	15.56	9.79			8.23	
LOS	C	A			A	
dA, Approach Delay	11.96		0.00		0.52	
Approach LOS	B					
dRank1, Rank 1 Delay			0.00		0.23	

Delay and Level of Service by Lane					
Approach	N	E (Major)		W (Major)	
Lane	Lane 1	Lane 1	Lane 2	Lane 1	Lane 2
Movements	L1, R1		T, R1	L1, T	
vx, Volume	17.39	221.74	221.74	251.63	251.63
Flared Storage Size					
cmx, Capacity	534.80			1800.00	
V / C	0.03			0.14	
Q95, 95% Queue Length	0.10			0.05	
d, Delay	11.96			8.23	
LOS	B				
dA, Approach Delay	11.96	0.00		0.52	
Approach LOS	B				

Node 528: Hollister & Los Carneros Way	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.162
Loss Time	0
Cycle Length	100
Adj V/C	0.262

Volume and Adjustments by Movement						
Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Base Volume	69	20	389	35	12	427
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	17	5	97	9	3	107
Adjusted Volume	69	20	389	35	12	427

Volume and Adjustments by Lane Group					
Approach	N		E	W	
Lane Group	L	R	C	L	C
ID	527	529	525	530	531
Lanes	L, L	R	T, RT	L	T, T
Volume	69	20	424	12	427

Saturation Flow Rate					
Approach	N		E	W	
Lane Group	527	529	525	530	531
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	69	20	389	35	12	427
Volume / Saturation Flow Rate	0.022	0.013	0.133	0.133	0.008	0.133
Overlap adjusted Volume / Saturation Flow Rate	0.022	0.013	0.133	0.133	0.008	0.133
Critical Movement	Y		Y		Y	

Node 530: Hollister & Aero Camino

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.186
Loss Time	0
Cycle Length	100
Adj V/C	0.286

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	32	2	36	3	385	57	6	1	6	34	418	28
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	1	9	1	96	14	2	0	2	9	105	7
Adjusted Volume	32	2	36	3	385	57	6	1	6	34	418	28

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	538	539	535	536	533	534	540	541
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	34	36	3	442	7	6	34	446

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	538	539	535	536	533	534	540	541
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	32	2	36	3	385	57	6	1	6	34	418	28
Volume / Saturation Flow Rate	0.020	0.021	0.023	0.002	0.138	0.138	0.004	0.004	0.004	0.021	0.139	0.139
Overlap adjusted Volume / Saturation Flow Rate	0.020	0.021	0.023	0.002	0.138	0.138	0.004	0.004	0.004	0.021	0.139	0.139
Critical Movement			Y		Y		Y			Y		

Node 553: Storke & Santa Felicia	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	0.89
Worst Case Delay	18.65
Worst Case LOS	C

Volume and Adjustments						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
Base Volume	410.00	31.00	42.00	569.00	17.00	29.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	445.65	33.70	45.65	618.48	18.48	31.52

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			45.65		18.48	31.52
Conflicting Volume (Veh)			479.35		863.04	239.67
Conflicting Volume (Ped)			0.00		0.00	0.00
Conflicting Volume			479.35		863.04	239.67
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity			1093.57		297.71	767.57
Capacity			1093.57		282.70	767.57

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			0.00		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	445.65	33.70	45.65	618.48	18.48	31.52
cmx, Capacity			1093.57		282.70	767.57
V / C			0.04		0.07	0.04
d, Delay			8.44		18.65	10.60
LOS			A		C	B
dA, Approach Delay	0.00		0.58		13.58	
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	239.67	239.67	45.65	309.24	309.24	50.00
Flared Storage Size						
cmx, Capacity						469.79
V / C						0.11
Q95, 95% Queue Length						0.36
d, Delay						13.58
LOS						B
dA, Approach Delay	0.00		0.58			13.58
Approach LOS						B

Node 556: Fowler & Fairview	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	0.94
Worst Case Delay	10.89
Worst Case LOS	B

Volume and Adjustments						
Approach	N (Major)		S		W (Major)	
Movement	T	R1	L1	T	L1	R1
Base Volume	18.00	181.00	1.00	20.00	145.00	5.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	19.57	196.74	1.09	21.74	157.61	5.43

Pedestrians						
Approach	N (Major)		S		W (Major)	
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		W (Major)	
Movement	T	R1	L1	T	L1	R1
Rank	2	1	3	2	1	1
vx, Volume	19.57		1.09	21.74		
Conflicting Volume (Veh)	160.33		376.63	160.33		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	160.33		376.63	160.33		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	1431.14		628.83	735.58		
Capacity	1431.14		627.84	735.58		

Critical Headway and Follow Up Headway						
Approach	N (Major)		S		W (Major)	
Movement	T	R1	L1	T	L1	R1
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	0.00		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)		S		W (Major)	
Movement	T	R1	L1	T	L1	R1
vx, Volume	19.57	196.74	1.09	21.74	157.61	5.43
cmx, Capacity	1431.14		627.84	735.58		
V / C	0.01		0.00	0.03		
d, Delay	7.55		10.89	10.05		
LOS	A		B	B		
dA, Approach Delay	0.68		10.09		0.00	
Approach LOS			B			
dRank1, Rank 1 Delay	0.00				0.00	

Delay and Level of Service by Lane			
Approach	N (Major)	S	W (Major)
Lane	Lane 1	Lane 1	Lane 1
Movements	T, R1	L1, T	L1, R1
vx, Volume	216.30	22.83	163.04
Flared Storage Size			
cmx, Capacity	1431.14	729.62	
V / C	0.15	0.03	
Q95, 95% Queue Length	0.53	0.10	
d, Delay	7.55	10.09	
LOS		B	
dA, Approach Delay	0.68	10.09	0.00
Approach LOS		B	

Node 562: Storke & Phelps

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.318
Loss Time	0
Cycle Length	100
Adj V/C	0.418

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	56	305	40	10	6	110	32	342	12	149	6	58
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	10	3	2	28	8	86	3	37	2	15
Adjusted Volume	56	305	40	10	6	110	32	342	12	149	6	58

Volume and Adjustments by Lane Group

Approach	N		E	S		W	
Lane Group	L	C	C	L	C	L	C
ID	544	545	543	549	550	547	548
Lanes	L	T, RT	LTR	L	T, RT	L	RT
Volume	56	345	126	32	354	149	64

Saturation Flow Rate

Approach	N		E	S		W	
Lane Group	544	545	543	549	550	547	548
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	56	305	40	10	6	110	32	342	12	149	6	58
Volume / Saturation Flow Rate	0.035	0.108	0.108	0.006	0.079	0.079	0.020	0.111	0.111	0.093	0.040	0.040
Overlap adjusted Volume / Saturation Flow Rate	0.035	0.108	0.108	0.006	0.079	0.079	0.020	0.111	0.111	0.093	0.040	0.040
Critical Movement	Y				Y			Y		Y		

Node 564: Mesa & Los Carneros	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.108
Loss Time	0
Cycle Length	100
Adj V/C	0.208

Volume and Adjustments by Movement							
Approach	N	E		S		W	
Movement		L1	T	L1	R1	T	R1
Base Volume		40	7	16	98	34	32
PHF		1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume		10	2	4	25	9	8
Adjusted Volume		40	7	16	98	34	32

Volume and Adjustments by Lane Group						
Approach	N	E	S		W	
Lane Group		C	L	R	C	R
ID		552	555	556	553	554
Lanes		LT	L	R	T	R
Volume		47	16	98	34	32

Saturation Flow Rate						
Approach	N	E	S		W	
Lane Group		552	555	556	553	554
Base Saturation Flow Rate		1600	1600	1600	1600	1600
Number of Lanes		1	1	1	1	1
Saturation Flow Rate		1600	1600	1600	1600	1600

Capacity Analysis							
Approach	N	E		S		W	
Movement		L1	T	L1	R1	T	R1
Volume		40	7	16	98	34	32
Volume / Saturation Flow Rate		0.025	0.029	0.010	0.061	0.021	0.020
Overlap adjusted Volume / Saturation Flow Rate		0.025	0.029	0.010	0.061	0.021	0.020
Critical Movement		Y			Y	Y	

Node 617: Los Caneros & Castilian

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.268
Loss Time	0
Cycle Length	100
Adj V/C	0.368

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	32	456	282	0	2	4	29	417	6	24	1	15
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	114	71	0	1	1	7	104	2	6	0	4
Adjusted Volume	32	456	282	0	2	4	29	417	6	24	1	15

Volume and Adjustments by Lane Group

Approach	N		E	S		W	
Lane Group	L	C	C	L	C	C	R
ID	603	604	602	608	609	606	607
Lanes	L	T, RT	LTR	L	T, RT	LT	R
Volume	32	738	6	29	423	25	15

Saturation Flow Rate

Approach	N		E	S		W	
Lane Group	603	604	602	608	609	606	607
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	32	456	282	0	2	4	29	417	6	24	1	15
Volume / Saturation Flow Rate	0.020	0.231	0.231	0.000	0.004	0.004	0.018	0.132	0.132	0.015	0.016	0.009
Overlap adjusted Volume / Saturation Flow Rate	0.020	0.231	0.231	0.000	0.004	0.004	0.018	0.132	0.132	0.015	0.016	0.009
Critical Movement		Y				Y	Y			Y		

Node 624: Cathedral Oaks & Calle Real	
Control Type	AWSC
Method	HCM 7th Edition
Average Delay	15.09
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	0.00	189.00	25.00	325.00	44.00	5.00	52.00	98.00	51.00	6.00	5.00	65.00
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	0.00	205.43	27.17	353.26	47.83	5.43	56.52	106.52	55.43	6.52	5.43	70.65
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	0.00	232.61	353.26	53.26	56.52	161.96	82.61
Left Turn Flow Rate	0.00	0.00	353.26	0.00	56.52	0.00	6.52
Right Turn Flow Rate	0.00	27.17	0.00	5.43	0.00	55.43	70.65
PLT, Proportion LT	0.00	0.00	1.00	0.00	1.00	0.00	0.08
PRT, Proportion RT	0.00	0.12	0.00	0.10	0.00	0.34	0.86
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	0.00	-0.08	0.50	-0.07	0.50	-0.24	-0.50

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	0.00	232.61	353.26	53.26	56.52	161.96	82.61
hd initial	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x initial	0.00	0.21	0.31	0.05	0.05	0.14	0.07
hd, iteration 1	5.45	5.37	5.78	5.21	5.96	5.22	5.08
Difference, iteration 1	2.25	2.17	2.58	2.01	2.76	2.02	1.88
hd, iteration 2	6.18	6.09	6.30	5.73	6.72	5.97	5.88
Difference, iteration 2	0.72	0.72	0.52	0.52	0.75	0.75	0.81
hd, iteration 3	6.36	6.28	6.48	5.91	6.91	6.17	6.13
Difference, iteration 3	0.18	0.18	0.18	0.18	0.20	0.19	0.25
hd, iteration 4	6.42	6.33	6.53	5.95	6.98	6.23	6.20
Difference, iteration 4	0.06	0.06	0.05	0.05	0.06	0.06	0.07
Convergence	Y	Y	Y	Y	Y	Y	Y
hd final, Departure Headway	6.42	6.33	6.53	5.95	6.98	6.23	6.20
x final, Degree of Utilization	0.00	0.41	0.64	0.09	0.11	0.28	0.14

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	0.00	232.61	353.26	53.26	56.52	161.96	82.61
hd, Departure Headway	6.42	6.33	6.53	5.95	6.98	6.23	6.20
x, Degree of Utilization	0.00	0.41	0.64	0.09	0.11	0.28	0.14
m, Move Up Time	2.30	2.30	2.30	2.30	2.30	2.30	2.00
ts, Service Time	4.12	4.03	4.23	3.65	4.68	3.93	4.20
Capacity	560.45	567.89	551.28	604.85	516.04	577.60	580.68
Delay	9.12	13.41	20.66	9.23	10.53	11.34	10.23
LOS	A	B	C	A	B	B	B
Q95, 95% Queue Length	0.00	2.05	5.09	0.29	0.37	1.16	0.50
Approach Delay	13.41		19.16		11.13		10.23
Approach LOS	B		C		B		B
Intersection Delay	15.09						
Intersection LOS	C						

Node 630: Hollister & Marketplace/Village Way

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.323
Loss Time	0
Cycle Length	100
Adj V/C	0.423

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	68	7	14	46	464	48	29	2	41	26	715	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	17	2	4	12	116	12	7	1	10	7	179	10
Adjusted Volume	68	7	14	46	464	48	29	2	41	26	715	38

Volume and Adjustments by Lane Group

Approach	N	E			S		W	
Lane Group	C	L	C	R	C	R	L	C
ID	618	613	615	617	611	612	619	620
Lanes	LTR	L, L	T, T	R	LT	R	L	T, RT
Volume	89	46	464	48	31	41	26	753

Saturation Flow Rate

Approach	N	E			S		W	
Lane Group	618	613	615	617	611	612	619	620
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	68	7	14	46	464	48	29	2	41	26	715	38
Volume / Saturation Flow Rate	0.043	0.056	0.056	0.014	0.145	0.030	0.018	0.019	0.026	0.016	0.235	0.235
Overlap adjusted Volume / Saturation Flow Rate	0.043	0.056	0.056	0.014	0.145	0.030	0.018	0.019	0.026	0.016	0.235	0.235
Critical Movement		Y		Y			Y					Y

Node 636: Hollister & Cathedral Oaks	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	0.95
Worst Case Delay	14.71
Worst Case LOS	B

Volume and Adjustments						
Approach	N (Major)		E (Major)		W	
Movement	L1	R1	T	R1	L1	T
Base Volume	276.00	83.00	28.00	320.00	22.00	14.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	300.00	90.22	30.43	347.83	23.91	15.22

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			30.43		23.91	15.22
Conflicting Volume (Veh)			345.11		723.37	345.11
Conflicting Volume (Ped)			0.00		0.00	0.00
Conflicting Volume			345.11		723.37	345.11
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity			1225.11		395.86	581.08
Capacity			1225.11		394.67	581.08

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			0.00		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	300.00	90.22	30.43	347.83	23.91	15.22
cmx, Capacity			1225.11		394.67	581.08
V / C			0.02		0.06	0.03
d, Delay			8.01		14.71	11.36
LOS			A		B	B
dA, Approach Delay	0.00		0.64		13.41	
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	300.00	90.22	30.43	347.83	23.91	15.22
Flared Storage Size						
cmx, Capacity						
V / C						
Q95, 95% Queue Length						
d, Delay						
LOS						
dA, Approach Delay	0.00		0.64		13.41	
Approach LOS					B	

Node 717: Hollister & Entrance

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.29
Loss Time	0
Cycle Length	100
Adj V/C	0.39

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	10	1	1	48	276	19	77	3	213	5	346	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	3	0	0	12	69	5	19	1	53	1	87	10
Adjusted Volume	10	1	1	48	276	19	77	3	213	5	346	39

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	627	628	624	625	622	623	629	630
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	11	1	48	295	80	213	5	385

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	627	628	624	625	622	623	629	630
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	10	1	1	48	276	19	77	3	213	5	346	39
Volume / Saturation Flow Rate	0.006	0.007	0.001	0.030	0.092	0.092	0.048	0.050	0.133	0.003	0.120	0.120
Overlap adjusted Volume / Saturation Flow Rate	0.006	0.007	0.001	0.030	0.092	0.092	0.048	0.050	0.133	0.003	0.120	0.120
Critical Movement	Y			Y					Y		Y	

Node 856: Hollister & Cortona

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	2
Worst Case Delay	33.91
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	10.00	0.00	82.00	0.00	326.00	19.00	0.00	0.00	0.00	140.00	583.00	0.00
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	0.00	89.13	0.00	354.35	20.65	0.00	0.00	0.00	152.17	633.70	0.00

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	10.87	0.00	89.13	0.00			0.00	0.00	0.00	152.17		
Conflicting Volume (Veh)	985.87	1302.72	187.50	633.70			1115.22	1313.04	316.85	375.00		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	985.87	1302.72	187.50	633.70			1115.22	1313.04	316.85	375.00		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	205.06	162.09	828.90	959.02			165.04	159.80	684.84	1194.57		
Capacity	173.35	137.03	828.90	959.02			124.52	135.09	684.84	1194.57		

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	0.00			0.20	0.20	0.10	0.00		
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	0.00	89.13	0.00	354.35	20.65	0.00	0.00	0.00	152.17	633.70	0.00
cmx, Capacity	173.35	137.03	828.90	959.02			124.52	135.09	684.84	1194.57		
V / C	0.06	0.00	0.11	0.00			0.00	0.00	0.00	0.13		
d, Delay	27.02	32.53	10.60	8.75			33.91	31.65	10.26	8.45		
LOS	D	D	B	A			D	D	B	A		
dA, Approach Delay		12.38			0.00			25.27			1.64	
Approach LOS		B						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 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	100.00	187.50	187.50	0.00	152.17	316.85	316.85
Flared Storage Size							
cmx, Capacity	587.44	0.00		177.59			
V / C	0.17	0.00		0.00			
Q95, 95% Queue Length	0.61	0.00		0.00			
d, Delay	12.38	4.38		25.27			
LOS	B			D			
dA, Approach Delay	12.38	0.00		25.27	1.64		
Approach LOS	B			D			

Node 864: Deckers Outdoor Access & Hollister Ave	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	0.02
Worst Case Delay	10.15
Worst Case LOS	B

Volume and Adjustments				
Approach	E (Major)	S	W (Major)	
Movement	T	R1	T	R1
Base Volume	520.00	2.00	551.00	3.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920
V, Adjusted Volume	565.22	2.17	598.91	3.26

Pedestrians				
Approach	E (Major)	S	W (Major)	
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	E (Major)	S	W (Major)	
Movement	T	R1	T	R1
Rank	1	2	1	1
vx, Volume		2.17		
Conflicting Volume (Veh)		301.09		
Conflicting Volume (Ped)		0.00		
Conflicting Volume		301.09		
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median Refuge Area				
cpx, Potential Capacity		701.00		
Capacity		701.00		

Critical Headway and Follow Up Headway				
Approach	E (Major)	S	W (Major)	
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	E (Major)	S	W (Major)	
Movement	T	R1	T	R1
vx, Volume	565.22	2.17	598.91	3.26
cmx, Capacity		701.00		
V / C		0.00		
d, Delay		10.15		
LOS		B		
dA, Approach Delay	0.00	10.15	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					T, R1
vx, Volume	282.61	282.61	2.17	301.09	301.09
Flared Storage Size					
cmx, Capacity					
V / C					
Q95, 95% Queue Length					
d, Delay					
LOS					
dA, Approach Delay	0.00		10.15	0.00	
Approach LOS			B		

Node 877: Hollister & Sumida Gardens

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.199
Loss Time	0
Cycle Length	100
Adj V/C	0.299

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	2	60	7	444	12	8	2	7	20	394	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	13	1	15	2	111	3	2	1	2	5	99	10
Adjusted Volume	52	2	60	7	444	12	8	2	7	20	394	40

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	L	C	L	C	L	C	L	C
ID	635	636	632	633	640	641	637	638
Lanes	L	RT	L	T, RT	L	RT	L	T, RT
Volume	52	62	7	456	8	9	20	434

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	635	636	632	633	640	641	637	638
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	52	2	60	7	444	12	8	2	7	20	394	40
Volume / Saturation Flow Rate	0.033	0.039	0.039	0.004	0.143	0.143	0.005	0.006	0.006	0.013	0.136	0.136
Overlap adjusted Volume / Saturation Flow Rate	0.033	0.039	0.039	0.004	0.143	0.143	0.005	0.006	0.006	0.013	0.136	0.136
Critical Movement			Y		Y		Y			Y		

Node 1042: Hollister & Santa Babara Shores	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	0.92
Worst Case Delay	13.52
Worst Case LOS	B

Volume and Adjustments						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	7.00	346.00	33.00	17.00	321.00	8.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	7.61	376.09	35.87	18.48	348.91	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	7.61		35.87	18.48		
Conflicting Volume (Veh)	357.61		556.52	178.80		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	357.61		556.52	178.80		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	1212.25		465.49	839.57		
Capacity	1212.25		462.22	839.57		

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	0.00		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	7.61	376.09	35.87	18.48	348.91	8.70
cmx, Capacity	1212.25		462.22	839.57		
V / C	0.01		0.08	0.02		
d, Delay	7.99		13.52	10.02		
LOS	A		B	B		
dA, Approach Delay	0.16		12.33		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	7.61	188.04	188.04	54.35	178.80	178.80
Flared Storage Size						
cmx, Capacity				545.60		
V / C				0.10		
Q95, 95% Queue Length				0.33		
d, Delay				12.33		
LOS				B		
dA, Approach Delay	0.16			12.33	0.00	
Approach LOS				B		

Node 1141: Sperling Preserve/Ellwood Dwy & Hollister Ave

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	3.65
Worst Case Delay	22.03
Worst Case LOS	C

Volume and Adjustments

Approach	N		E (Major)			S			W (Major)		
Movement	L1	T	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	89.00	3.00	19.00	247.00	148.00	3.00	0.00	13.00	77.00	212.00	4.00
PHF, Peak-hour factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
V, Adjusted Volume	89.00	3.00	19.00	247.00	148.00	3.00	0.00	13.00	77.00	212.00	4.00

Pedestrians

Approach	N		E (Major)			S			W (Major)		
Movement	L1	T	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		
w, Lane Width (ft)	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		
fpb, Percent Blockage	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	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	1	1	4	3	2	2	1	1
vx, Volume	89.00	3.00	19.00			3.00	0.00	13.00	77.00		
Conflicting Volume (Veh)	733.50	729.00	216.00			728.50	801.00	214.00	395.00		
Conflicting Volume (Ped)	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	733.50	729.00	216.00			728.50	801.00	214.00	395.00		
Two-Stage Gap Acceptance	No	No				No	No				
Number of Storage Spaces in Median Refuge Area											
cpx, Potential Capacity	338.58	352.11	1365.81			341.20	320.01	831.05	1174.55		
Capacity	302.83	319.94	1365.81			307.38	290.77	831.05	1174.55		

Critical Headway and Follow Up Headway

Approach	N		E (Major)			S			W (Major)		
Movement	L1	T	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Headway	7.10	6.50	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		
Phv, % Heavy Vehicles	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Factor	0.20	0.20	0.00			0.20	0.20	0.10	0.00		
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		
tc, Critical Headway	7.10	6.50	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	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		
tf, Follow-Up Headway	3.50	4.00	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	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	89.00	3.00	19.00	247.00	148.00	3.00	0.00	13.00	77.00	212.00	4.00
cmx, Capacity	302.83	319.94	1365.81			307.38	290.77	831.05	1174.55		
V / C	0.29	0.01	0.01			0.01	0.00	0.02	0.07		
d, Delay	22.03	21.40	7.66			16.86	17.53	9.48	8.16		
LOS	C	C	A			C	C	A	A		
dA, Approach Delay	22.01		0.35			10.86			2.14		
Approach LOS	C					B					
dRank1, Rank 1 Delay			0.14						0.61		

Delay and Level of Service by Lane

Approach	N	E (Major)	S	W (Major)
Lane	Lane 1	Lane 1	Lane 1	Lane 1
Movements	L1, T	L1, T, R1	L1, T, R1	L1, T, R1
vx, Volume	92.00	414.00	16.00	293.00
Flared Storage Size				
cmx, Capacity	303.36	1674.52	629.85	1793.36
V / C	0.30	0.25	0.03	0.16
Q95, 95% Queue Length	1.29	0.03	0.08	0.13
d, Delay	22.01	7.66	10.86	8.16
LOS	C		B	
dA, Approach Delay	22.01	0.35	10.86	2.14
Approach LOS	C		B	

Node 1182: Ward & Ekwill	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	2.04
Worst Case Delay	10.1
Worst Case LOS	B

Volume and Adjustments						
Approach	N (Major)		E		S (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	37.00	78.00	1.00	18.00	82.00	1.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	40.22	84.78	1.09	19.57	89.13	1.09

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	40.22		1.09	19.57		
Conflicting Volume (Veh)	90.22		254.89	89.67		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	90.22		254.89	89.67		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	1517.66		738.14	973.74		
Capacity	1517.66		717.61	973.74		

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	0.00		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	40.22	84.78	1.09	19.57	89.13	1.09
cmx, Capacity	1517.66		717.61	973.74		
V / C	0.03		0.00	0.02		
d, Delay	7.42		10.10	8.78		
LOS	A		B	A		
dA, Approach Delay	2.39		8.85		0.00	
Approach LOS			A			
dRank1, Rank 1 Delay	0.21				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	125.00	20.65	90.22
Flared Storage Size			
cmx, Capacity	1800.00	955.79	
V / C	0.07	0.02	
Q95, 95% Queue Length	0.07	0.07	
d, Delay	7.42	8.85	
LOS		A	
dA, Approach Delay	2.39	8.85	0.00
Approach LOS		A	

Node 151: Cathedral Oaks & Kellogg

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.256
Loss Time	0
Cycle Length	100
Adj V/C	0.356

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	9	17	65	419	66	14	12	49	19	485	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	11	2	4	16	105	17	4	3	12	5	121	4
Adjusted Volume	44	9	17	65	419	66	14	12	49	19	485	17

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	659	660	656	657	664	665	661	662
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	53	17	65	485	26	49	19	502

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	659	660	656	657	664	665	661	662
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	44	9	17	65	419	66	14	12	49	19	485	17
Volume / Saturation Flow Rate	0.028	0.033	0.011	0.041	0.152	0.152	0.009	0.016	0.031	0.012	0.157	0.157
Overlap adjusted Volume / Saturation Flow Rate	0.028	0.033	0.011	0.041	0.152	0.152	0.009	0.016	0.031	0.012	0.157	0.157
Critical Movement	Y			Y					Y		Y	

Node 151: Cathedral Oaks & Kellogg

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.357
Loss Time	0
Cycle Length	100
Adj V/C	0.457

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	17	59	38	652	106	18	9	66	16	477	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	28	4	15	10	163	27	5	2	17	4	119	4
Adjusted Volume	110	17	59	38	652	106	18	9	66	16	477	17

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	1315	1316	1312	1313	1320	1321	1317	1318
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	127	59	38	758	27	66	16	494

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	1315	1316	1312	1313	1320	1321	1317	1318
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	110	17	59	38	652	106	18	9	66	16	477	17
Volume / Saturation Flow Rate	0.069	0.079	0.037	0.024	0.237	0.237	0.011	0.017	0.041	0.010	0.154	0.154
Overlap adjusted Volume / Saturation Flow Rate	0.069	0.079	0.037	0.024	0.237	0.237	0.011	0.017	0.041	0.010	0.154	0.154
Critical Movement	Y					Y			Y	Y		

Node 164: Cathedral Oaks & La Patera

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	1.42
Worst Case Delay	42.01
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	4.00	2.00	1.00	49.00	608.00	7.00	8.00	0.00	51.00	10.00	490.00	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	4.35	2.17	1.09	53.26	660.87	7.61	8.70	0.00	55.43	10.87	532.61	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	4.35	2.17	1.09	53.26			8.70	0.00	55.43	10.87		
Conflicting Volume (Veh)	1362.50	1344.02	664.67	551.09			1336.41	1338.59	541.85	668.48		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1362.50	1344.02	664.67	551.09			1336.41	1338.59	541.85	668.48		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	126.35	153.10	463.72	1028.93			131.70	154.26	544.39	930.97		
Capacity	102.37	138.11	463.72	1028.93			116.83	139.15	544.39	930.97		

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	7.10	6.50	6.20	4.10			7.10	6.50	6.20	4.10		
tc,base,l, Base Critical Headway (Stage I)												
tc,base,ll, 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	0.00			0.20	0.20	0.10	0.00		
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,l, Critical Headway (Stage I)												
tc,ll, 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	4.35	2.17	1.09	53.26	660.87	7.61	8.70	0.00	55.43	10.87	532.61	18.48
cmx, Capacity	102.37	138.11	463.72	1028.93			116.83	139.15	544.39	930.97		
V / C	0.04	0.02	0.00	0.05			0.07	0.00	0.10	0.01		
d, Delay	42.01	32.91	14.61	8.69			37.93	32.99	13.73	8.91		
LOS	E	D	B	A			E	D	B	A		
dA, Approach Delay		35.50			0.64			17.01			0.17	
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	7.61	53.26	668.48	64.13	10.87	551.09
Flared Storage Size						
cmx, Capacity	125.64			363.85		
V / C	0.06			0.18		
Q95, 95% Queue Length	0.19			0.64		
d, Delay	35.50			17.01		
LOS	E			C		
dA, Approach Delay	35.50	0.64		17.01	0.17	
Approach LOS	E			C		

Node 169: Carlo Dr & Cathedral Oaks Rd

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	3.01
Worst Case Delay	46.26
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	10.00	1.00	4.00	23.00	597.00	11.00	52.00	4.00	21.00	3.00	442.00	98.00
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	1.09	4.35	25.00	648.91	11.96	56.52	4.35	22.83	3.26	480.43	106.52

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	10.87	1.09	4.35	25.00			56.52	4.35	22.83	3.26		
Conflicting Volume (Veh)	1247.28	1298.37	654.89	586.96			1247.83	1251.09	533.70	660.87		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1247.28	1298.37	654.89	586.96			1247.83	1251.09	533.70	660.87		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	151.68	163.07	469.70	997.99			151.55	174.04	550.20	937.03		
Capacity	137.48	158.15	469.70	997.99			144.65	168.79	550.20	937.03		

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	7.10	6.50	6.20	4.10			7.10	6.50	6.20	4.10		
tc,base,l, Base Critical Headway (Stage I)												
tc,base,ll, 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	0.00			0.20	0.20	0.10	0.00		
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,l, Critical Headway (Stage I)												
tc,ll, 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	10.87	1.09	4.35	25.00	648.91	11.96	56.52	4.35	22.83	3.26	480.43	106.52
cmx, Capacity	137.48	158.15	469.70	997.99			144.65	168.79	550.20	937.03		
V / C	0.08	0.01	0.01	0.03			0.39	0.03	0.04	0.00		
d, Delay	33.39	29.97	14.87	8.70			46.26	42.70	27.92	8.85		
LOS	D	D	B	A			E	E	D	A		
dA, Approach Delay		28.23			0.32			41.07			0.05	
Approach LOS		D						E				
dRank1, Rank 1 Delay					0.00						0.05	

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
Movements	L1, T, R1		T, R1	L1, T, R1	L1, T, R1
vx, Volume	16.30	25.00	660.87	83.70	590.22
Flared Storage Size					
cmx, Capacity	171.27			182.74	1736.95
V / C	0.10			0.46	0.34
Q95, 95% Queue Length	0.31			2.42	0.01
d, Delay	28.23			41.07	8.85
LOS	D			E	
dA, Approach Delay	28.23	0.32		41.07	0.05
Approach LOS	D			E	

Node 171: Cathedral Oaks & Fairview

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.429
Loss Time	0
Cycle Length	100
Adj V/C	0.529

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	57	19	281	489	33	81	45	160	14	275	122
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	14	5	70	122	8	20	11	40	4	69	31
Adjusted Volume	47	57	19	281	489	33	81	45	160	14	275	122

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	L	C	L	C	L	C	L	C
ID	1328	1329	1325	1326	1334	1335	1331	1332
Lanes	L	T, RT	L	T, RT	L	T, RT	L	T, RT
Volume	47	76	281	522	81	205	14	397

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	1328	1329	1325	1326	1334	1335	1331	1332
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	47	57	19	281	489	33	81	45	160	14	275	122
Volume / Saturation Flow Rate	0.029	0.024	0.024	0.176	0.163	0.163	0.051	0.064	0.064	0.009	0.124	0.124
Overlap adjusted Volume / Saturation Flow Rate	0.029	0.024	0.024	0.176	0.163	0.163	0.051	0.064	0.064	0.009	0.124	0.124
Critical Movement	Y			Y					Y		Y	

Node 173: Cathedral Oaks & Cambridge	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.326
Loss Time	0
Cycle Length	100
Adj V/C	0.426

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	9	88	45	721	17	33	11	38	31	477	29
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	22	11	180	4	8	3	10	8	119	7
Adjusted Volume	29	9	88	45	721	17	33	11	38	31	477	29

Volume and Adjustments by Lane Group								
Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	1340	1341	1337	1338	1345	1346	1342	1343
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	38	88	45	738	44	38	31	506

Saturation Flow Rate								
Approach	N		E		S		W	
Lane Group	1340	1341	1337	1338	1345	1346	1342	1343
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	29	9	88	45	721	17	33	11	38	31	477	29
Volume / Saturation Flow Rate	0.018	0.024	0.055	0.028	0.231	0.231	0.021	0.028	0.024	0.019	0.158	0.158
Overlap adjusted Volume / Saturation Flow Rate	0.018	0.024	0.055	0.028	0.231	0.231	0.021	0.028	0.024	0.019	0.158	0.158
Critical Movement			Y			Y	Y			Y		

Node 195: Cathedral Oaks & Los Carneros	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	8.33
Worst Case Delay	64.42
Worst Case LOS	F

Volume and Adjustments						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	173.00	418.00	81.00	84.00	360.00	168.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	188.04	454.35	88.04	91.30	391.30	182.61

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	188.04		88.04	91.30		
Conflicting Volume (Veh)	573.91		1221.74	391.30		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	573.91		1221.74	391.30		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	1009.14		200.28	661.72		
Capacity	1009.14		150.36	661.72		

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	0.00		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	188.04	454.35	88.04	91.30	391.30	182.61
cmx, Capacity	1009.14		150.36	661.72		
V / C	0.19		0.59	0.14		
d, Delay	9.38		64.42	45.92		
LOS	A		F	E		
dA, Approach Delay	2.75		55.00		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	188.04	454.35	179.35	391.30	182.61
Flared Storage Size					
cmx, Capacity			247.88		
V / C			0.72		
Q95, 95% Queue Length			6.59		
d, Delay			55.00		
LOS			F		
dA, Approach Delay	2.75		55.00	0.00	
Approach LOS			F		

Node 203: Stow Canyon & Fairview

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	68
Worst Case Delay	283.48
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	6.00	315.00	136.00	6.00	3.00	4.00	319.00	201.00	7.00	48.00	2.00	301.00
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	6.52	342.39	147.83	6.52	3.26	4.35	346.74	218.48	7.61	52.17	2.17	327.17

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	6.52			6.52	3.26	4.35	346.74			52.17	2.17	327.17
Conflicting Volume (Veh)	226.09			1101.09	1419.02	113.04	490.22			1233.70	1348.91	245.11
Conflicting Volume (Ped)	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
Conflicting Volume	226.09			1101.09	1419.02	113.04	490.22			1233.70	1348.91	245.11
Two-Stage Gap Acceptance				No	No					No	No	
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	1354.29			169.01	137.98	924.70	1083.53			135.12	152.07	761.44
Capacity	1354.29			59.84	86.91	924.70	1083.53			82.68	95.79	761.44

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,l, Base Critical Headway (Stage I)												
tc,base,ll, 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	0.00			0.20	0.20	0.10	0.00			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,l, Critical Headway (Stage I)												
tc,ll, 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	6.52	342.39	147.83	6.52	3.26	4.35	346.74	218.48	7.61	52.17	2.17	327.17
cmx, Capacity	1354.29			59.84	86.91	924.70	1083.53			82.68	95.79	761.44
V / C	0.00			0.11	0.04	0.00	0.32			0.63	0.02	0.43
d, Delay	7.67			71.99	53.25	15.73	9.88			283.48	277.53	244.67
LOS	A			F	F	C	A			F	F	F
dA, Approach Delay	0.10			50.36			5.98			250.17		
Approach LOS				F						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 3	Lane 1	Lane 1	Lane 2	Lane 1
Movements			T, R1	L1, T, R1		T, R1	L1, T, R1
vx, Volume	6.52	245.11	245.11	14.13	346.74	226.09	381.52
Flared Storage Size							
cmx, Capacity				93.45			352.16
V / C				0.15			1.08
Q95, 95% Queue Length				0.53			32.36
d, Delay				50.36			250.17
LOS				F			F
dA, Approach Delay	0.10			50.36	5.98		250.17
Approach LOS				F			F

Node 204: Fairview & Berkeley

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.325
Loss Time	0
Cycle Length	100
Adj V/C	0.425

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	634	6	86	8	49	6	544	44	9	1	24
PHF	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
Peak 15 Volume	8	172	2	23	2	13	2	148	12	2	0	7
Adjusted Volume	32	689	7	93	9	53	7	591	48	10	1	26

Volume and Adjustments by Lane Group

Approach	N		E	S		W
Lane Group	L	C	C	L	C	C
ID	1371	1372	1370	1375	1376	1374
Lanes	L	T, RT	LTR	L	T, RT	LTR
Volume	32	696	155	7	639	37

Saturation Flow Rate

Approach	N		E	S		W
Lane Group	1371	1372	1370	1375	1376	1374
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	32	689	7	93	9	53	7	591	48	10	1	26
Volume / Saturation Flow Rate	0.020	0.217	0.217	0.058	0.097	0.097	0.004	0.200	0.200	0.006	0.023	0.023
Overlap adjusted Volume / Saturation Flow Rate	0.020	0.217	0.217	0.058	0.097	0.097	0.004	0.200	0.200	0.006	0.023	0.023
Critical Movement			Y		Y		Y			Y		

Node 240: Fairview & Shirrell Way	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	2.65
Worst Case Delay	36.32
Worst Case LOS	E

Volume and Adjustments						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
Base Volume	695.00	54.00	38.00	539.00	60.00	57.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	755.43	58.70	41.30	585.87	65.22	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			41.30		65.22	61.96
Conflicting Volume (Veh)			814.13		1160.33	407.07
Conflicting Volume (Ped)			0.00		0.00	0.00
Conflicting Volume			814.13		1160.33	407.07
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity			821.80		191.67	599.04
Capacity			821.80		180.16	599.04

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			0.00		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	755.43	58.70	41.30	585.87	65.22	61.96
cmx, Capacity			821.80		180.16	599.04
V / C			0.05		0.36	0.10
d, Delay			9.61		36.32	22.35
LOS			A		E	C
dA, Approach Delay	0.00		0.63		29.51	
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	407.07	407.07	41.30	292.93	292.93	127.17
Flared Storage Size						
cmx, Capacity						273.25
V / C						0.47
Q95, 95% Queue Length						2.52
d, Delay						29.51
LOS						D
dA, Approach Delay	0.00		0.63			29.51
Approach LOS						D

Node 241: Encina & Fairview	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.302
Loss Time	0
Cycle Length	100
Adj V/C	0.402

Volume and Adjustments by Movement						
Approach	N		E		S	
Movement	L1	T	L1	R1	T	R1
Base Volume	113	632	61	83	512	61
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	28	158	15	21	128	15
Adjusted Volume	113	632	61	83	512	61

Volume and Adjustments by Lane Group					
Approach	N		E		S
Lane Group	L	C	L	R	C
ID	1380	1381	1378	1379	1383
Lanes	L	T, T	L	R	T, RT
Volume	113	632	61	83	573

Saturation Flow Rate					
Approach	N		E		S
Lane Group	1380	1381	1378	1379	1383
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	113	632	61	83	512	61
Volume / Saturation Flow Rate	0.071	0.198	0.038	0.052	0.179	0.179
Overlap adjusted Volume / Saturation Flow Rate	0.071	0.198	0.038	0.052	0.179	0.179
Critical Movement	Y			Y	Y	

Node 273: Cathedral Oaks & Brandon

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	3.91
Worst Case Delay	12.9
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	13.00	2.00	6.00	64.00	68.00	2.00	20.00	1.00	69.00	3.00	124.00	56.00
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	14.13	2.17	6.52	69.57	73.91	2.17	21.74	1.09	75.00	3.26	134.78	60.87

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	14.13	2.17	6.52	69.57			21.74	1.09	75.00	3.26		
Conflicting Volume (Veh)	422.83	415.22	73.91	195.65			359.78	356.52	134.78	76.09		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	422.83	415.22	73.91	195.65			359.78	356.52	134.78	76.09		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	544.86	530.87	993.42	1389.35			599.54	572.61	919.45	1535.69		
Capacity	472.30	502.00	993.42	1389.35			560.90	541.47	919.45	1535.69		

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 Headway	7.10	6.50	6.20	4.10			7.10	6.50	6.20	4.10		
tc,base,l, Base Critical Headway (Stage I)												
tc,base,ll, 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	0.00			0.20	0.20	0.10	0.00		
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,l, Critical Headway (Stage I)												
tc,ll, 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	14.13	2.17	6.52	69.57	73.91	2.17	21.74	1.09	75.00	3.26	134.78	60.87
cmx, Capacity	472.30	502.00	993.42	1389.35			560.90	541.47	919.45	1535.69		
V / C	0.03	0.00	0.01	0.05			0.04	0.00	0.08	0.00		
d, Delay	12.90	12.45	8.90	7.73			12.05	12.28	9.54	7.35		
LOS	B	B	A	A			B	B	A	A		
dA, Approach Delay		11.71			3.69			10.13			0.12	
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	22.83	69.57	73.91	2.17	97.83	3.26	134.78	60.87
Flared Storage Size								
cmx, Capacity	559.27				799.66			
V / C	0.04				0.12			
Q95, 95% Queue Length	0.13				0.42			
d, Delay	11.71				10.13			
LOS	B				B			
dA, Approach Delay	11.71	3.69			10.13	0.12		
Approach LOS	B				B			

Node 276: Cathedral Oaks & Alameda	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.339
Loss Time	0
Cycle Length	100
Adj V/C	0.439

Volume and Adjustments by Movement							
Approach	N	E		S		W	
Movement		L1	T	L1	R1	T	R1
Base Volume		140	189	17	153	250	83
PHF		1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume		35	47	4	38	63	21
Adjusted Volume		140	189	17	153	250	83

Volume and Adjustments by Lane Group							
Approach	N	E		S		W	
Lane Group		L	C	L	R	C	R
ID		1423	1424	1427	1428	1425	1426
Lanes		L	T	L	R	T	R
Volume		140	189	17	153	250	83

Saturation Flow Rate							
Approach	N	E		S		W	
Lane Group		1423	1424	1427	1428	1425	1426
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	N	E		S		W	
Movement		L1	T	L1	R1	T	R1
Volume		140	189	17	153	250	83
Volume / Saturation Flow Rate		0.088	0.118	0.011	0.096	0.156	0.052
Overlap adjusted Volume / Saturation Flow Rate		0.088	0.118	0.011	0.096	0.156	0.052
Critical Movement		Y			Y	Y	

Node 277: Cathedral Oaks & Glen Anne

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.579
Loss Time	0
Cycle Length	100
Adj V/C	0.679

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	110	48	78	352	14	272	55	84	36	418	200
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	28	12	20	88	4	68	14	21	9	105	50
Adjusted Volume	42	110	48	78	352	14	272	55	84	36	418	200

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	1435	1436	1432	1433	1434	1429	1430	1431	1437	1438	1439
Lanes	L	RT	L	T	R	L	T	R	L	T	R
Volume	42	158	78	352	14	272	55	84	36	418	200

Saturation Flow Rate

Approach	N		E			S			W		
Lane Group	1435	1436	1432	1433	1434	1429	1430	1431	1437	1438	1439
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	42	110	48	78	352	14	272	55	84	36	418	200
Volume / Saturation Flow Rate	0.026	0.099	0.099	0.049	0.220	0.009	0.170	0.034	0.053	0.023	0.261	0.125
Overlap adjusted Volume / Saturation Flow Rate	0.026	0.099	0.099	0.049	0.220	0.009	0.170	0.034	0.053	0.023	0.261	0.125
Critical Movement		Y		Y			Y				Y	

Node 279:Calle Real & Los Caneros	
Control Type	Roundabout
Method	HCM 7th Edition
Average Delay	7.54
Average LOS	A
Worst Case Delay	9.4
Worst Case LOS	A

Volume by Movement						
Approach	N		E		S	
Movement	L1	T	L1	R1	T	R1
Base Volume (veh/h)	38.00	380.00	323.00	14.00	202.00	297.00
PHF	0.92	0.92	0.92	0.92	0.92	0.92
Volume, Lane Flow Rate (veh/h)	41.30	413.04	351.09	15.22	219.57	322.83

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)	454.348	366.304	542.391
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)	454.348	366.304	542.391
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)	454.348	366.304	542.391

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)	454.35	366.30	542.39
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)	351.09	219.57	41.30
v_ex,pce, Conflicting Volume for Bypass Lane (pc/h)			
c_pce, Capacity (pc/h)	964.62	1103.10	1323.07
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
Proportion of CAVs	0.000	0.000	0.000
c, Capacity (veh/h)	964.62	1103.10	1323.07

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)	454.35	366.30	542.39
c, Capacity (veh/h)	964.62	1103.10	1323.07
x, Volume-to-Capacity Ratio	0.47	0.33	0.41
Q_95, 95% Queue Length (veh)	2.64	1.49	2.07
d, Delay (s/veh)	9.40	6.54	6.66
LOS	A	A	A
Approach Delay (s/veh)	9.40	6.54	6.66
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)	41.30	413.04	351.09	15.22	219.57	322.83
c, Capacity (veh/h)	964.62	964.62	1103.10	1103.10	1323.07	1323.07
x, Volume-to-Capacity Ratio	0.04	0.43	0.32	0.01	0.17	0.24
d, Delay (s/veh)	9.40	9.40	6.54	6.54	6.66	6.66
LOS	A	A	A	A	A	A
Approach Delay (s/veh)	9.40		6.54		6.66	
Approach LOS	A		A		A	

Node 280: Calle Real & La Patera	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	2.11
Worst Case Delay	12.37
Worst Case LOS	B

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	63.00	20.00	187.00	64.00	12.00	168.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	68.48	21.74	203.26	69.57	13.04	182.61

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	68.48	21.74			13.04	
Conflicting Volume (Veh)	446.74	238.04			272.83	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	446.74	238.04			272.83	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	573.09	805.87			1302.08	
Capacity	566.70	805.87			1302.08	

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			0.00	
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	68.48	21.74	203.26	69.57	13.04	182.61
cmx, Capacity	566.70	805.87			1302.08	
V / C	0.12	0.03			0.01	
d, Delay	12.37	10.49			7.78	
LOS	B	B			A	
dA, Approach Delay	11.92		0.00		0.52	
Approach LOS	B					
dRank1, Rank 1 Delay			0.00		0.09	

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	90.22	272.83	195.65
Flared Storage Size			
cmx, Capacity	610.35		1800.00
V / C	0.15		0.11
Q95, 95% Queue Length	0.52		0.02
d, Delay	11.92		7.78
LOS	B		
dA, Approach Delay	11.92	0.00	0.52
Approach LOS	B		

Node 282: Calle Real & Carlo Dr	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	2.38
Worst Case Delay	19.65
Worst Case LOS	C

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	54.00	59.00	358.00	16.00	70.00	439.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	58.70	64.13	389.13	17.39	76.09	477.17

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	58.70	64.13			76.09	
Conflicting Volume (Veh)	788.59	203.26			406.52	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	788.59	203.26			406.52	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	332.07	809.89			1163.16	
Capacity	307.03	809.89			1163.16	

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			0.00	
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	58.70	64.13	389.13	17.39	76.09	477.17
cmx, Capacity	307.03	809.89			1163.16	
V / C	0.19	0.08			0.07	
d, Delay	19.65	12.37			8.31	
LOS	C	B			A	
dA, Approach Delay	15.85		0.00		1.14	
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	122.83	406.52	76.09	238.59	238.59
Flared Storage Size					
cmx, Capacity	454.31				
V / C	0.27				
Q95, 95% Queue Length	1.10				
d, Delay	15.85				
LOS	C				
dA, Approach Delay	15.85	0.00	1.14		
Approach LOS	C				

Node 288: Calle Real & Fairview	
Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.632
Loss Time	0
Cycle Length	100
Adj V/C	0.732

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	524	83	184	166	82	267	468	185	45	146	349
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	131	21	46	42	21	67	117	46	11	37	87
Adjusted Volume	88	524	83	184	166	82	267	468	185	45	146	349

Volume and Adjustments by Lane Group									
Approach	N		E		S		W		
Lane Group	L	C	L	C	C	R	L	C	R
ID	1446	1447	1443	1445	1440	1442	1449	1450	1451
Lanes	L	T, RT	L, L	RT	LT, T	R	L	T	R
Volume	88	607	184	248	735	185	45	146	349

Saturation Flow Rate									
Approach	N		E		S		W		
Lane Group	1446	1447	1443	1445	1440	1442	1449	1450	1451
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	88	524	83	184	166	82	267	468	185	45	146	349
Volume / Saturation Flow Rate	0.055	0.190	0.190	0.058	0.155	0.155	0.167	0.230	0.116	0.028	0.091	0.218
Overlap adjusted Volume / Saturation Flow Rate	0.055	0.190	0.190	0.058	0.155	0.155	0.167	0.230	0.116	0.028	0.091	0.218
Critical Movement			Y	Y			Y					Y

Node 289: Fairview & US 101 NB Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.629
Loss Time	0
Cycle Length	100
Adj V/C	0.729

Volume and Adjustments by Movement						
Approach	N	E		S	W	
Movement	T	T	R1		L1	R1
Base Volume	137	662	519		415	120
PHF	1.000	1.000	1.000		1.000	1.000
Peak 15 Volume	34	166	130		104	30
Adjusted Volume	137	662	519		415	120

Volume and Adjustments by Lane Group						
Approach	N	E		S	W	
Lane Group	C	C	R		L	R
ID	1454	1452	1453		1455	1457
Lanes	T	T	R		L, L	R
Volume	137	662	519		415	120

Saturation Flow Rate						
Approach	N	E		S	W	
Lane Group	1454	1452	1453		1455	1457
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	137	662	519		415	120
Volume / Saturation Flow Rate	0.086	0.414	0.324		0.130	0.075
Overlap adjusted Volume / Saturation Flow Rate	0.086	0.414	0.324		0.130	0.075
Critical Movement	Y	Y			Y	

Node 296: Calle Real & Kellogg	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.304
Loss Time	0
Cycle Length	100
Adj V/C	0.404

Volume and Adjustments by Movement						
Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Base Volume	178	85	424	110	42	385
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	45	21	106	28	11	96
Adjusted Volume	178	85	424	110	42	385

Volume and Adjustments by Lane Group					
Approach	N		E	W	
Lane Group	L	R	C	L	C
ID	1460	1461	1458	1462	1463
Lanes	L	R	T, RT	L	T, T
Volume	178	85	534	42	385

Saturation Flow Rate					
Approach	N		E	W	
Lane Group	1460	1461	1458	1462	1463
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	178	85	424	110	42	385
Volume / Saturation Flow Rate	0.111	0.053	0.167	0.167	0.026	0.120
Overlap adjusted Volume / Saturation Flow Rate	0.111	0.053	0.167	0.167	0.026	0.120
Critical Movement	Y		Y		Y	

Node 305: Patterson & Overpass

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.489
Loss Time	0
Cycle Length	100
Adj V/C	0.589

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	1001	159	22	4	48	41	958	41	113	2	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	13	250	40	6	1	12	10	240	10	28	1	4
Adjusted Volume	50	1001	159	22	4	48	41	958	41	113	2	16

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	L	C	C	R	L	C	C	R
ID	1467	1468	1465	1466	1472	1473	1470	1471
Lanes	L	T, RT	LT	R	L	T, RT	LT	R
Volume	50	1160	26	48	41	999	115	16

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	1467	1468	1465	1466	1472	1473	1470	1471
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	50	1001	159	22	4	48	41	958	41	113	2	16
Volume / Saturation Flow Rate	0.031	0.362	0.363	0.014	0.016	0.030	0.026	0.312	0.312	0.071	0.072	0.010
Overlap adjusted Volume / Saturation Flow Rate	0.031	0.362	0.363	0.014	0.016	0.030	0.026	0.312	0.312	0.071	0.072	0.010
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	0.923
Loss Time	0
Cycle Length	100
Adj V/C	1.023

Volume and Adjustments by Movement								
Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	613	755		707	414	191	6	443
PHF	1.000	1.000		1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	153	189		177	104	48	2	111
Adjusted Volume	613	755		707	414	191	6	443

Volume and Adjustments by Lane Group						
Approach	N		E	S		W
Lane Group	L	C		C	R	C
ID	1475	1476		1479	1481	1477
Lanes	L	T		T, T	R	L, LTR
Volume	613	755		707	414	640

Saturation Flow Rate						
Approach	N		E	S		W
Lane Group	1475	1476		1479	1481	1477
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	S		W		
Movement	L1	T		T	R1	L1	T	R1
Volume	613	755		707	414	191	6	443
Volume / Saturation Flow Rate	0.383	0.472		0.221	0.259	0.060	0.200	0.200
Overlap adjusted Volume / Saturation Flow Rate	0.383	0.472		0.221	0.259	0.060	0.200	0.200
Critical Movement	Y				Y		Y	

Node 307: Patterson & US 101 NB Ramp	
Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.647
Loss Time	0
Cycle Length	100
Adj V/C	0.747

Volume and Adjustments by Movement								
Approach	N		E			S		W
Movement	T	R1	L1	T	R1	L1	T	
Base Volume	921	456	436	21	379	300	598	
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Peak 15 Volume	230	114	109	5	95	75	150	
Adjusted Volume	921	456	436	21	379	300	598	

Volume and Adjustments by Lane Group						
Approach	N		E	S		W
Lane Group	C	R	C	L	C	
ID	1492	1495	1489	1496	1497	
Lanes	T, T, T	R	L, LTR, R	L	T, T	
Volume	921	456	836	300	598	

Saturation Flow Rate						
Approach	N		E	S		W
Lane Group	1492	1495	1489	1496	1497	
Base Saturation Flow Rate	1600	1600	1600	1600	1600	
Number of Lanes	3	1	3	1	2	
Saturation Flow Rate	4800	1600	4800	1600	3200	

Capacity Analysis								
Approach	N		E			S		W
Movement	T	R1	L1	T	R1	L1	T	
Volume	921	456	436	21	379	300	598	
Volume / Saturation Flow Rate	0.192	0.285	0.136	0.174	0.174	0.188	0.187	
Overlap adjusted Volume / Saturation Flow Rate	0.192	0.285	0.136	0.174	0.174	0.188	0.187	
Critical Movement		Y		Y		Y		

Node 359: Cathedral Oaks & Winchester Canyon	
Control Type	AWSC
Method	HCM 7th Edition
Average Delay	9.03
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	26.00	10.00	50.00	8.00	123.00	6.00	71.00	18.00	44.00	3.00	103.00	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	28.26	10.87	54.35	8.70	133.70	6.52	77.17	19.57	47.83	3.26	111.96	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	93.48	8.70	140.22	96.74	47.83	3.26	125.00
Left Turn Flow Rate	28.26	8.70	0.00	77.17	0.00	3.26	0.00
Right Turn Flow Rate	54.35	0.00	6.52	0.00	47.83	0.00	13.04
PLT, Proportion LT	0.30	1.00	0.00	0.80	0.00	1.00	0.00
PRT, Proportion RT	0.58	0.00	0.05	0.00	1.00	0.00	0.10
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	-0.29	0.50	-0.03	0.40	-0.70	0.50	-0.07

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	93.48	8.70	140.22	96.74	47.83	3.26	125.00
hd initial	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x initial	0.08	0.01	0.12	0.09	0.04	0.00	0.11
hd, iteration 1	4.78	5.47	4.94	5.40	4.30	5.48	4.91
Difference, iteration 1	1.58	2.27	1.74	2.20	1.10	2.28	1.71
hd, iteration 2	5.09	5.73	5.20	5.68	4.58	5.75	5.18
Difference, iteration 2	0.31	0.26	0.26	0.27	0.27	0.27	0.27
hd, iteration 3	5.13	5.77	5.24	5.72	4.62	5.80	5.22
Difference, iteration 3	0.05	0.04	0.04	0.04	0.04	0.04	0.04
Convergence	Y	Y	Y	Y	Y	Y	Y
hd final, Departure Headway	5.13	5.77	5.24	5.72	4.62	5.80	5.22
x final, Degree of Utilization	0.13	0.01	0.20	0.15	0.06	0.01	0.18

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	93.48	8.70	140.22	96.74	47.83	3.26	125.00
hd, Departure Headway	5.13	5.77	5.24	5.72	4.62	5.80	5.22
x, Degree of Utilization	0.13	0.01	0.20	0.15	0.06	0.01	0.18
m, Move Up Time	2.00	2.30	2.30	2.30	2.30	2.30	2.30
ts, Service Time	3.13	3.47	2.94	3.42	2.32	3.50	2.92
Capacity	701.18	623.42	686.57	629.09	779.00	620.41	688.96
Delay	8.92	8.56	9.28	9.46	7.62	8.53	9.07
LOS	A	A	A	A	A	A	A
Q95, 95% Queue Length	0.46	0.04	0.77	0.54	0.20	0.02	0.66
Approach Delay	8.92	9.24		8.85		9.06	
Approach LOS	A	A		A		A	
Intersection Delay	9.03						
Intersection LOS	A						

Node 372: Glen Annie & Del Norte	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	3.14
Worst Case Delay	12.17
Worst Case LOS	B

Volume and Adjustments				
Approach	N (Major)		S (Major)	W
Movement	T	R1	T	R1
Base Volume	360.00	23.00	417.00	278.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920
V, Adjusted Volume	391.30	25.00	453.26	302.17

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				302.17
Conflicting Volume (Veh)				208.15
Conflicting Volume (Ped)				0.00
Conflicting Volume				208.15
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median Refuge Area				
cpx, Potential Capacity				804.08
Capacity				804.08

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	391.30	25.00	453.26	302.17
cmx, Capacity				804.08
V / C				0.38
d, Delay				12.17
LOS				B
dA, Approach Delay	0.00		0.00	12.17
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	208.15	208.15	226.63	226.63	302.17
Flared Storage Size					
cmx, Capacity					
V / C					
Q95, 95% Queue Length					
d, Delay					
LOS					
dA, Approach Delay	0.00		0.00		12.17
Approach LOS					B

Node 375: Los Caneros & US101 SB Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.582
Loss Time	0
Cycle Length	100
Adj V/C	0.682

Volume and Adjustments by Movement								
Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	80	1229		291	428	262	54	223
PHF	1.000	1.000		1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	20	307		73	107	66	14	56
Adjusted Volume	80	1229		291	428	262	54	223

Volume and Adjustments by Lane Group						
Approach	N		E	S	W	
Lane Group	L	C		C	C	R
ID	1567	1568		1572	1570	1571
Lanes	L	T, T		T, RT	LT	R
Volume	80	1229		719	316	223

Saturation Flow Rate						
Approach	N		E	S	W	
Lane Group	1567	1568		1572	1570	1571
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	80	1229		291	428	262	54	223
Volume / Saturation Flow Rate	0.050	0.384		0.225	0.225	0.164	0.198	0.139
Overlap adjusted Volume / Saturation Flow Rate	0.050	0.384		0.225	0.225	0.164	0.198	0.139
Critical Movement		Y					Y	

Node 376: Los Carneros & US 101 NB Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.498
Loss Time	0
Cycle Length	100
Adj V/C	0.598

Volume and Adjustments by Movement								
Approach	N		E			S		W
Movement	T	R1	L1	T	R1	L1	T	
Base Volume	592	140	691	3	89	39	405	
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Peak 15 Volume	148	35	173	1	22	10	101	
Adjusted Volume	592	140	691	3	89	39	405	

Volume and Adjustments by Lane Group					
Approach	N	E	S		W
Lane Group	C	C	L	C	
ID	1576	1574	1578	1579	
Lanes	T, RT	L, LTR	L	T, T	
Volume	732	783	39	405	

Saturation Flow Rate					
Approach	N	E	S		W
Lane Group	1576	1574	1578	1579	
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	592	140	691	3	89	39	405	
Volume / Saturation Flow Rate	0.229	0.229	0.216	0.245	0.245	0.024	0.127	
Overlap adjusted Volume / Saturation Flow Rate	0.229	0.229	0.216	0.245	0.245	0.024	0.127	
Critical Movement		Y		Y		Y		

Node 383: Fairview & US 101 SB Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.636
Loss Time	0
Cycle Length	100
Adj V/C	0.736

Volume and Adjustments by Movement								
Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	438	1136		481	506	137	1	293
PHF	1.000	1.000		1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	110	284		120	127	34	0	73
Adjusted Volume	438	1136		481	506	137	1	293

Volume and Adjustments by Lane Group							
Approach	N		E	S		W	
Lane Group	L	C		C	R	C	R
ID	1584	1586		1581	1583	1588	1589
Lanes	L, L	T, T		T, T	R	LT	R
Volume	438	1136		481	506	138	293

Saturation Flow Rate							
Approach	N		E	S		W	
Lane Group	1584	1586		1581	1583	1588	1589
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	438	1136		481	506	137	1	293
Volume / Saturation Flow Rate	0.137	0.355		0.150	0.316	0.086	0.086	0.183
Overlap adjusted Volume / Saturation Flow Rate	0.137	0.355		0.150	0.316	0.086	0.086	0.183
Critical Movement	Y				Y			Y

Node 385: Hollister & Fairview

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.655
Loss Time	0
Cycle Length	100
Adj V/C	0.755

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	377	376	535	61	509	302	101	161	45	221	293	102
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	94	94	134	15	127	76	25	40	11	55	73	26
Adjusted Volume	377	376	535	61	509	302	101	161	45	221	293	102

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	1597	1599	1601	1593	1594	1596	1590	1591	1602	1604	1606
Lanes	L, L	T, T	R	L	T, T	R	L	T, RT	L, L	T, T	R
Volume	377	376	535	61	509	302	101	206	221	293	102

Saturation Flow Rate

Approach	N			E			S		W		
Lane Group	1597	1599	1601	1593	1594	1596	1590	1591	1602	1604	1606
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	377	376	535	61	509	302	101	161	45	221	293	102
Volume / Saturation Flow Rate	0.118	0.118	0.334	0.038	0.159	0.189	0.063	0.064	0.064	0.069	0.092	0.064
Overlap adjusted Volume / Saturation Flow Rate	0.118	0.118	0.334	0.038	0.159	0.189	0.063	0.064	0.064	0.069	0.092	0.064
Critical Movement			Y			Y	Y			Y		

Node 386: Fairview & Mandarin	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	8.2
Worst Case Delay	333.31
Worst Case LOS	F

Volume and Adjustments						
Approach	N (Major)		E		S (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	119.00	1307.00	47.00	227.00	740.00	37.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	129.35	1420.65	51.09	246.74	804.35	40.22

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	129.35		51.09	246.74		
Conflicting Volume (Veh)	844.57		1773.37	402.17		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	844.57		1773.37	402.17		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	800.59		75.74	603.42		
Capacity	800.59		55.53	603.42		

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		7.50	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	0.00		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)		E		S (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Volume	129.35	1420.65	51.09	246.74	804.35	40.22
cmx, Capacity	800.59		55.53	603.42		
V / C	0.16		0.92	0.41		
d, Delay	10.36		333.31	15.08		
LOS	B		F	C		
dA, Approach Delay	0.86		69.66		0.00	
Approach LOS			F			
dRank1, Rank 1 Delay	0.00				0.00	

Delay and Level of Service by Lane								
Approach	N (Major)			E		S (Major)		
Lane	Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 1	Lane 2	Lane 3
Movements								
vx, Volume	129.35	710.33	710.33	51.09	246.74	402.17	402.17	40.22
Flared Storage Size								
cmx, Capacity								
V / C								
Q95, 95% Queue Length								
d, Delay								
LOS								
dA, Approach Delay	0.86			69.66		0.00		
Approach LOS				F				

Node 387: Hollister & Orange

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	9.05
Worst Case Delay	291.28
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	2.00	23.00	99.00	1084.00	11.00	38.00	2.00	25.00	14.00	649.00	70.00
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	2.17	25.00	107.61	1178.26	11.96	41.30	2.17	27.17	15.22	705.43	76.09

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	2.17	25.00	107.61			41.30	2.17	27.17	15.22		
Conflicting Volume (Veh)	1783.70	2211.41	595.11	781.52			1579.35	2179.35	390.76	1190.22		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1783.70	2211.41	595.11	781.52			1579.35	2179.35	390.76	1190.22		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	52.70	44.62	452.38	845.12			74.96	46.75	613.74	593.74		
Capacity	37.48	34.84	452.38	845.12			52.57	36.51	613.74	593.74		

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,l, Base Critical Headway (Stage I)												
tc,base,ll, 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	0.00			0.20	0.20	0.10	0.00		
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,l, Critical Headway (Stage I)												
tc,ll, 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	7.61	2.17	25.00	107.61	1178.26	11.96	41.30	2.17	27.17	15.22	705.43	76.09
cmx, Capacity	37.48	34.84	452.38	845.12			52.57	36.51	613.74	593.74		
V / C	0.20	0.06	0.06	0.13			0.79	0.06	0.04	0.03		
d, Delay	116.51	123.79	28.43	9.88			261.15	291.28	198.54	11.22		
LOS	F	F	D	A			F	F	F	B		
dA, Approach Delay		53.66			0.82			237.99			0.21	
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	34.78	107.61	595.11	595.11	70.65	15.22	390.76	390.76
Flared Storage Size								
cmx, Capacity	108.48				79.43			
V / C	0.32				0.89			
Q95, 95% Queue Length	1.37				8.33			
d, Delay	53.66				237.99			
LOS	F				F			
dA, Approach Delay	53.66	0.82			237.99	0.21		
Approach LOS	F				F			

Node 390: Hollister & Pine/Nectarine

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.385
Loss Time	0
Cycle Length	100
Adj V/C	0.485

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	17	54	90	803	29	80	9	72	10	409	156
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	4	14	23	201	7	20	2	18	3	102	39
Adjusted Volume	29	17	54	90	803	29	80	9	72	10	409	156

Volume and Adjustments by Lane Group

Approach	N	E		S	W	
Lane Group	C	L	C	C	L	C
ID	1610	1607	1608	1614	1611	1612
Lanes	LTR	L	T, RT	LTR	L	T, RT
Volume	100	90	832	161	10	565

Saturation Flow Rate

Approach	N	E		S	W	
Lane Group	1610	1607	1608	1614	1611	1612
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	29	17	54	90	803	29	80	9	72	10	409	156
Volume / Saturation Flow Rate	0.018	0.063	0.063	0.056	0.260	0.260	0.050	0.101	0.101	0.006	0.177	0.177
Overlap adjusted Volume / Saturation Flow Rate	0.018	0.063	0.063	0.056	0.260	0.260	0.050	0.101	0.101	0.006	0.177	0.177
Critical Movement	Y				Y			Y		Y		

Node 394: Hollister & Rutherford	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.312
Loss Time	0
Cycle Length	100
Adj V/C	0.412

Volume and Adjustments by Movement						
Approach	E		S		W	
Movement	L1	T	L1	R1	T	R1
Base Volume	118	869	24	40	495	37
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	30	217	6	10	124	9
Adjusted Volume	118	869	24	40	495	37

Volume and Adjustments by Lane Group				
Approach	E		S	W
Lane Group	L	C	C	C
ID	1615	1616	1620	1618
Lanes	L	T, T	LTR	T, RT
Volume	118	869	64	532

Saturation Flow Rate				
Approach	E		S	W
Lane Group	1615	1616	1620	1618
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	118	869	24	40	495	37
Volume / Saturation Flow Rate	0.074	0.272	0.015	0.040	0.166	0.166
Overlap adjusted Volume / Saturation Flow Rate	0.074	0.272	0.015	0.040	0.166	0.166
Critical Movement		Y		Y		

Node 396: Hollister & Community Center West Driveway	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	0.25
Worst Case Delay	8.77
Worst Case LOS	A

Volume and Adjustments					
Approach	E (Major)		S	W (Major)	
Movement	L1	T		T	R1
Base Volume	45.00	1002.00		503.00	30.00
PHF, Peak-hour factor	0.920	0.920		0.920	0.920
V, Adjusted Volume	48.91	1089.13		546.74	32.61

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	48.91				
Conflicting Volume (Veh)	579.35				
Conflicting Volume (Ped)	0.00				
Conflicting Volume	579.35				
Two-Stage Gap Acceptance					
Number of Storage Spaces in Median Refuge Area					
cpx, Potential Capacity	1004.48				
Capacity	1004.48				

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	0.00				
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	48.91	1089.13		546.74	32.61
cmx, Capacity	1004.48				
V / C	0.05				
d, Delay	8.77				
LOS	A				
dA, Approach Delay	0.38		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	48.91	544.57	544.57		289.67	289.67
Flared Storage Size						
cmx, Capacity						
V / C						
Q95, 95% Queue Length						
d, Delay						
LOS						
dA, Approach Delay	0.38			0.00	0.00	
Approach LOS				A		

Node 399: Hollister & Kellogg	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.448
Loss Time	0
Cycle Length	100
Adj V/C	0.548

Volume and Adjustments by Movement										
Approach	N			E			S	W		
Movement	L1	T	R1	L1	T	R1	R1	L1	T	R1
Base Volume	105	12	36	327	931	141	142	52	469	77
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	26	3	9	82	233	35	36	13	117	19
Adjusted Volume	105	12	36	327	931	141	142	52	469	77

Volume and Adjustments by Lane Group							
Approach	N		E		S	W	
Lane Group	C	R	L	C	R	L	C
ID	1633	1634	1630	1631	1629	1635	1636
Lanes	LT	R	L	T, RT	R	L	T, RT
Volume	117	36	327	1072	142	52	546

Saturation Flow Rate							
Approach	N		E		S	W	
Lane Group	1633	1634	1630	1631	1629	1635	1636
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	2	1	1	2
Saturation Flow Rate	1600	1600	1600	3200	1600	1600	3200

Capacity Analysis										
Approach	N			E			S	W		
Movement	L1	T	R1	L1	T	R1	R1	L1	T	R1
Volume	105	12	36	327	931	141	142	52	469	77
Volume / Saturation Flow Rate	0.066	0.073	0.023	0.204	0.335	0.335	0.089	0.033	0.171	0.171
Overlap adjusted Volume / Saturation Flow Rate	0.066	0.073	0.023	0.204	0.335	0.335	0.089	0.033	0.171	0.171
Critical Movement		Y		Y					Y	

Node 402: Hollister & SR-217 SB Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.551
Loss Time	0
Cycle Length	100
Adj V/C	0.651

Volume and Adjustments by Movement								
Approach	N			E		S	W	
Movement	L1	T	R1	L1	T		T	R1
Base Volume	204	0	488	144	798		734	50
PHF	1.000	1.000	1.000	1.000	1.000		1.000	1.000
Peak 15 Volume	51	0	122	36	200		184	13
Adjusted Volume	204	0	488	144	798		734	50

Volume and Adjustments by Lane Group						
Approach	N	E			S	W
Lane Group	C	L	C	C		C
ID	1643	1638	1639	1640		1645
Lanes	LTR, R	L	T, T	T, T		T, RT
Volume	692	144	508	290		784

Saturation Flow Rate						
Approach	N	E			S	W
Lane Group	1643	1638	1639	1640		1645
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	204	0	488	144	798		734	50
Volume / Saturation Flow Rate	0.128	0.000	0.216	0.090	0.159		0.245	0.245
Overlap adjusted Volume / Saturation Flow Rate	0.128	0.000	0.216	0.090	0.159		0.245	0.245
Critical Movement			Y	Y			Y	

Node 405: Hollister & SR-217 NB Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.512
Loss Time	0
Cycle Length	100
Adj V/C	0.612

Volume and Adjustments by Movement										
Approach	N	E			S			W		
Movement		L1	T	R1	L1	T	R1	L1	T	R1
Base Volume		94	792	108	122	125	129	352	447	132
PHF		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume		24	198	27	31	31	32	88	112	33
Adjusted Volume		94	792	108	122	125	129	352	447	132

Volume and Adjustments by Lane Group								
Approach	N	E			S		W	
Lane Group		L	C	R	C	R	L	C
ID		1649	1650	1652	1647	1648	1653	1655
Lanes		L	T, T	R	LT	R	L, L	T, RT
Volume		94	792	108	247	129	352	579

Saturation Flow Rate								
Approach	N	E			S		W	
Lane Group		1649	1650	1652	1647	1648	1653	1655
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		94	792	108	122	125	129	352	447	132
Volume / Saturation Flow Rate		0.059	0.248	0.068	0.076	0.154	0.081	0.110	0.181	0.181
Overlap adjusted Volume / Saturation Flow Rate		0.059	0.248	0.068	0.076	0.154	0.081	0.110	0.181	0.181
Critical Movement			Y			Y		Y		

Node 441: Calle Real & NB 101 OnRamp	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	4.41
Worst Case Delay	10.04
Worst Case LOS	B

Volume and Adjustments					
Approach	E (Major)		S (Major)	W	
Movement	L1	T		T	R1
Base Volume	65.00	38.00		80.00	1.00
PHF, Peak-hour factor	0.920	0.920		0.920	0.920
V, Adjusted Volume	70.65	41.30		86.96	1.09

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		2	2
vx, Volume				86.96	1.09
Conflicting Volume (Veh)				91.30	91.30
Conflicting Volume (Ped)				0.00	0.00
Conflicting Volume				91.30	91.30
Two-Stage Gap Acceptance					
Number of Storage Spaces in Median Refuge Area					
cpx, Potential Capacity				802.58	971.73
Capacity				802.58	971.73

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	70.65	41.30		86.96	1.09
cmx, Capacity				802.58	971.73
V / C				0.11	0.00
d, Delay				10.04	9.25
LOS				B	A
dA, Approach Delay	0.00		0.00	10.03	
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	111.96		88.04
Flared Storage Size			
cmx, Capacity			804.31
V / C			0.11
Q95, 95% Queue Length			0.37
d, Delay			10.03
LOS			B
dA, Approach Delay	0.00	0.00	10.03
Approach LOS			B

Node 445: Calle Real & Winchester Canyon	
Control Type	AWSC
Method	HCM 7th Edition
Average Delay	8.7
Average LOS	A

Volume and Adjustments				
Approach	N	E		W
Movement	R1	T	R1	L1
Base Volume	160.00	225.00	82.00	55.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920
Flow Rate	173.91	244.57	89.13	59.78
Geometry Group	1	1		1

Saturation Headway			
Approach	N	E	W
Lanes	Lane 1	Lane 1	Lane 1
Total Lane Flow Rate	173.91	333.70	59.78
Left Turn Flow Rate	0.00	0.00	59.78
Right Turn Flow Rate	173.91	89.13	0.00
PLT, Proportion LT	0.00	0.00	1.00
PRT, Proportion RT	1.00	0.27	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	-0.16	0.20

Departure Headway			
Approach	N	E	W
Lanes	Lane 1	Lane 1	Lane 1
Total Lane Flow Rate	173.91	333.70	59.78
hd initial	3.20	3.20	3.20
x initial	0.15	0.30	0.05
hd, iteration 1	3.40	4.09	4.40
Difference, iteration 1	0.20	0.89	1.20
hd, iteration 2	3.44	4.13	4.42
Difference, iteration 2	0.04	0.04	0.02
Convergence	Y	Y	Y
hd final, Departure Headway	3.44	4.13	4.42
x final, Degree of Utilization	0.17	0.38	0.07

Capacity and Level of Service			
Approach	N	E	W
Lanes	Lane 1	Lane 1	Lane 1
Total Lane Flow Rate	173.91	333.70	59.78
hd, Departure Headway	3.44	4.13	4.42
x, Degree of Utilization	0.17	0.38	0.07
m, Move Up Time	2.00	2.00	2.00
ts, Service Time	1.44	2.13	2.42
Capacity	1045.94	871.39	813.78
Delay	7.13	9.68	7.77
LOS	A	A	A
Q95, 95% Queue Length	0.60	1.85	0.24
Approach Delay	7.13	9.68	7.77
Approach LOS	A	A	A
Intersection Delay	8.7		
Intersection LOS	A		

Node 450: Calle Real & Brandon Dr.	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	4.38
Worst Case Delay	11.63
Worst Case LOS	B

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	160.00	15.00	46.00	120.00	6.00	124.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	173.91	16.30	50.00	130.43	6.52	134.78

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	173.91	16.30			6.52	
Conflicting Volume (Veh)	263.04	115.22			180.43	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	263.04	115.22			180.43	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	730.29	942.64			1407.21	
Capacity	726.63	942.64			1407.21	

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			0.00	
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	173.91	16.30	50.00	130.43	6.52	134.78
cmx, Capacity	726.63	942.64			1407.21	
V / C	0.24	0.02			0.00	
d, Delay	11.63	10.49			7.57	
LOS	B	B			A	
dA, Approach Delay	11.53		0.00		0.35	
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	190.22	180.43	141.30
Flared Storage Size			
cmx, Capacity	741.19		1800.00
V / C	0.26		0.08
Q95, 95% Queue Length	1.03		0.01
d, Delay	11.53		7.57
LOS	B		
dA, Approach Delay	11.53	0.00	0.35
Approach LOS	B		

Node 451: San Rossano Dr & Calle Real	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	1.84
Worst Case Delay	12.84
Worst Case LOS	B

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	62.00	13.00	168.00	16.00	7.00	269.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	67.39	14.13	182.61	17.39	7.61	292.39

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	67.39	14.13			7.61	
Conflicting Volume (Veh)	498.91	191.30			200.00	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	498.91	191.30			200.00	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	534.70	855.51			1384.29	
Capacity	531.19	855.51			1384.29	

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			0.00	
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	67.39	14.13	182.61	17.39	7.61	292.39
cmx, Capacity	531.19	855.51			1384.29	
V / C	0.13	0.02			0.01	
d, Delay	12.84	10.27			7.61	
LOS	B	B			A	
dA, Approach Delay	12.39		0.00		0.19	
Approach LOS	B					
dRank1, Rank 1 Delay			0.00		0.05	

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	81.52	200.00	300.00
Flared Storage Size			
cmx, Capacity	568.55		1800.00
V / C	0.14		0.17
Q95, 95% Queue Length	0.50		0.01
d, Delay	12.39		7.61
LOS	B		
dA, Approach Delay	12.39	0.00	0.19
Approach LOS	B		

Node 461: Storke & US 101 NB Ramps

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.661
Loss Time	0
Cycle Length	100
Adj V/C	0.761

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	630	10	693	550	213	134	173	37	29	3	646
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	158	3	173	138	53	34	43	9	7	1	162
Adjusted Volume	5	630	10	693	550	213	134	173	37	29	3	646

Volume and Adjustments by Lane Group

Approach	N		E	S		W	
Lane Group	L	C	C	L	C	L	C
ID	1693	1694	1690	1686	1688	1696	1697
Lanes	L	T, RT	L, LT, RT	L, L	T, RT	L	RT, R
Volume	5	640	1456	134	210	29	649

Saturation Flow Rate

Approach	N		E	S		W	
Lane Group	1693	1694	1690	1686	1688	1696	1697
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	630	10	693	550	213	134	173	37	29	3	646
Volume / Saturation Flow Rate	0.003	0.200	0.200	0.217	0.303	0.303	0.042	0.066	0.066	0.018	0.203	0.203
Overlap adjusted Volume / Saturation Flow Rate	0.003	0.200	0.200	0.217	0.303	0.303	0.042	0.066	0.066	0.018	0.203	0.203
Critical Movement		Y		Y			Y					Y

Node 462: Storke & US 101 SB Ramp	
Control Type	Signalized
Method	ICU Method 1
LOS	C
Critical V/C	0.78
Loss Time	0
Cycle Length	100
Adj V/C	0.88

Volume and Adjustments by Movement								
Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	565	1423		281	806	14	4	160
PHF	1.000	1.000		1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	141	356		70	202	4	1	40
Adjusted Volume	565	1423		281	806	14	4	160

Volume and Adjustments by Lane Group							
Approach	N		E	S		W	
Lane Group	L	C		C	R	C	R
ID	1702	1704		1699	1701	1706	1707
Lanes	L, L	T, T		T, T	R	LT	R
Volume	565	1423		281	806	18	160

Saturation Flow Rate							
Approach	N		E	S		W	
Lane Group	1702	1704		1699	1701	1706	1707
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	565	1423		281	806	14	4	160
Volume / Saturation Flow Rate	0.177	0.445		0.088	0.504	0.009	0.011	0.100
Overlap adjusted Volume / Saturation Flow Rate	0.177	0.445		0.088	0.504	0.009	0.011	0.100
Critical Movement	Y				Y			Y

Node 465: Los Carneros Rd & Calle Koral (west/south)	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	0.28
Worst Case Delay	13
Worst Case LOS	B

Volume and Adjustments				
Approach	N (Major)		S (Major)	W
Movement	T	R1	T	R1
Base Volume	997.00	13.00	465.00	32.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920
V, Adjusted Volume	1083.70	14.13	505.43	34.78

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				34.78
Conflicting Volume (Veh)				548.91
Conflicting Volume (Ped)				0.00
Conflicting Volume				548.91
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median Refuge Area				
cpx, Potential Capacity				484.80
Capacity				484.80

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	1083.70	14.13	505.43	34.78
cmx, Capacity				484.80
V / C				0.07
d, Delay				13.00
LOS				B
dA, Approach Delay	0.00		0.00	13.00
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	548.91	548.91	252.72	252.72	34.78
Flared Storage Size					
cmx, Capacity					
V / C					
Q95, 95% Queue Length					
d, Delay					
LOS					
dA, Approach Delay	0.00		0.00		13.00
Approach LOS					B

Node 466: Los Carneros & Cremona	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.351
Loss Time	0
Cycle Length	100
Adj V/C	0.451

Volume and Adjustments by Movement										
Approach	N	E			S			W		
Movement	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	22	155	984	8	14	6	35	11	446	8
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	39	246	2	4	2	9	3	112	2
Adjusted Volume	22	155	984	8	14	6	35	11	446	8

Volume and Adjustments by Lane Group						
Approach	N	E		S	W	
Lane Group	R	L	C	C	L	C
ID	1712	1709	1710	1708	1714	1715
Lanes	R, R	L	T, RT	LTR	L	T, RT
Volume	22	155	992	55	11	454

Saturation Flow Rate						
Approach	N	E		S	W	
Lane Group	1712	1709	1710	1708	1714	1715
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	22	155	984	8	14	6	35	11	446	8
Volume / Saturation Flow Rate	0.007	0.097	0.310	0.310	0.009	0.034	0.034	0.007	0.142	0.142
Overlap adjusted Volume / Saturation Flow Rate	0.007	0.097	0.310	0.310	0.009	0.034	0.034	0.007	0.142	0.142
Critical Movement			Y			Y		Y		

Node 467: Los Carneros & Calle Koral

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.504
Loss Time	0
Cycle Length	100
Adj V/C	0.604

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	218	1046	64	47	14	155	10	486	17	118	16	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	55	262	16	12	4	39	3	122	4	30	4	14
Adjusted Volume	218	1046	64	47	14	155	10	486	17	118	16	54

Volume and Adjustments by Lane Group

Approach	N			E			S		W	
Lane Group	L	C	R	L	C	R	L	C	L	C
ID	1720	1721	1723	1717	1718	1719	1726	1727	1724	1725
Lanes	L	T, T	R	L	T	R	L	T, T, RT	L	RT
Volume	218	1046	64	47	14	155	10	503	118	70

Saturation Flow Rate

Approach	N			E			S		W	
Lane Group	1720	1721	1723	1717	1718	1719	1726	1727	1724	1725
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	218	1046	64	47	14	155	10	486	17	118	16	54
Volume / Saturation Flow Rate	0.136	0.327	0.040	0.029	0.009	0.097	0.006	0.105	0.105	0.074	0.044	0.044
Overlap adjusted Volume / Saturation Flow Rate	0.136	0.327	0.040	0.029	0.009	0.097	0.006	0.105	0.105	0.074	0.044	0.044
Critical Movement		Y				Y	Y			Y		

Node 489: Hollister & Patterson

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.692
Loss Time	0
Cycle Length	100
Adj V/C	0.792

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	258	387	217	115	539	604	129	243	79	210	329	103
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	65	97	54	29	135	151	32	61	20	53	82	26
Adjusted Volume	258	387	217	115	539	604	129	243	79	210	329	103

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	L	C	L	C	L	C	L	C
ID	1740	1742	1737	1738	1748	1749	1744	1746
Lanes	L, L	T, RT	L	T, RT	L	T, RT	L, L	T, RT
Volume	258	604	115	1143	129	322	210	432

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	1740	1742	1737	1738	1748	1749	1744	1746
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	258	387	217	115	539	604	129	243	79	210	329	103
Volume / Saturation Flow Rate	0.081	0.189	0.189	0.072	0.357	0.357	0.081	0.101	0.101	0.066	0.135	0.135
Overlap adjusted Volume / Saturation Flow Rate	0.081	0.189	0.189	0.072	0.357	0.357	0.081	0.101	0.101	0.066	0.135	0.135
Critical Movement		Y			Y		Y			Y		

Node 506: Cathedral Oaks 101 SB-Ramp	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	9.65
Worst Case Delay	130.14
Worst Case LOS	F

Volume and Adjustments								
Approach	N (Major)		E	S (Major)		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	305.00	318.00		124.00	276.00	52.00	6.00	87.00
PHF, Peak-hour factor	0.920	0.920		0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	331.52	345.65		134.78	300.00	56.52	6.52	94.57

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	3	3	2
vx, Volume	331.52					56.52	6.52	94.57
Conflicting Volume (Veh)	434.78					1293.48	1443.48	345.65
Conflicting Volume (Ped)	0.00					0.00	0.00	0.00
Conflicting Volume	434.78					1293.48	1443.48	345.65
Two-Stage Gap Acceptance						No	No	
Number of Storage Spaces in Median Refuge Area								
cpx, Potential Capacity	1135.66					140.98	133.36	701.85
Capacity	1135.66					90.05	85.18	701.85

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	0.00					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	331.52	345.65		134.78	300.00	56.52	6.52	94.57
cmx, Capacity	1135.66					90.05	85.18	701.85
V / C	0.29					0.63	0.08	0.13
d, Delay	9.48					127.85	130.14	10.93
LOS	A					F	F	B
dA, Approach Delay	4.64		0.00	0.00		57.79		
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	331.52	345.65		434.78	63.04	94.57
Flared Storage Size						
cmx, Capacity					89.52	
V / C					0.70	
Q95, 95% Queue Length					5.14	
d, Delay					128.09	
LOS					F	
dA, Approach Delay	4.64		0.00	0.00	57.79	
Approach LOS			A		F	

Node 511: Hollister & Pebble Beach Rd

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	1.47
Worst Case Delay	19.75
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	22.00	0.00	46.00	8.00	438.00	27.00	20.00	0.00	5.00	5.00	376.00	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	23.91	0.00	50.00	8.70	476.09	29.35	21.74	0.00	5.43	5.43	408.70	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	23.91	0.00	50.00	8.70			21.74	0.00	5.43	5.43		
Conflicting Volume (Veh)	708.70	918.48	238.04	414.13			702.72	945.11	207.07	505.43		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	708.70	918.48	238.04	414.13			702.72	945.11	207.07	505.43		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	325.15	273.49	769.42	1155.69			328.38	263.88	805.37	1069.63		
Capacity	317.81	269.14	769.42	1155.69			302.15	259.67	805.37	1069.63		

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,l, Base Critical Headway (Stage I)												
tc,base,ll, 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	0.00			0.20	0.20	0.10	0.00		
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,l, Critical Headway (Stage I)												
tc,ll, 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	23.91	0.00	50.00	8.70	476.09	29.35	21.74	0.00	5.43	5.43	408.70	5.43
cmx, Capacity	317.81	269.14	769.42	1155.69			302.15	259.67	805.37	1069.63		
V / C	0.08	0.00	0.06	0.01			0.07	0.00	0.01	0.01		
d, Delay	17.44	19.49	10.79	8.14			17.80	19.75	10.36	8.38		
LOS	C	C	B	A			C	C	B	A		
dA, Approach Delay		12.94			0.14			16.32			0.11	
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				L1, T, R1			T, R1
vx, Volume	73.91	8.70	476.09	29.35	27.17	5.43	207.07	207.07
Flared Storage Size								
cmx, Capacity	527.09				345.30			
V / C	0.14				0.08			
Q95, 95% Queue Length	0.49				0.26			
d, Delay	12.94				16.32			
LOS	B				C			
dA, Approach Delay	12.94	0.14			16.32	0.11		
Approach LOS	B				C			

Node 512: Hollister & Palo Alto Dr

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	1.31
Worst Case Delay	21.2
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	7.00	0.00	2.00	8.00	425.00	22.00	19.00	0.00	20.00	49.00	338.00	11.00
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	0.00	2.17	8.70	461.96	23.91	20.65	0.00	21.74	53.26	367.39	11.96

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	7.61	0.00	2.17	8.70			20.65	0.00	21.74	53.26		
Conflicting Volume (Veh)	781.52	977.17	242.93	379.35			728.26	983.15	189.67	485.87		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	781.52	977.17	242.93	379.35			728.26	983.15	189.67	485.87		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	288.22	252.72	763.89	1190.19			314.80	250.69	826.25	1087.54		
Capacity	262.93	236.77	763.89	1190.19			294.10	234.87	826.25	1087.54		

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,l, Base Critical Headway (Stage I)												
tc,base,ll, 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	0.00			0.20	0.20	0.10	0.00		
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,l, Critical Headway (Stage I)												
tc,ll, 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	7.61	0.00	2.17	8.70	461.96	23.91	20.65	0.00	21.74	53.26	367.39	11.96
cmx, Capacity	262.93	236.77	763.89	1190.19			294.10	234.87	826.25	1087.54		
V / C	0.03	0.00	0.00	0.01			0.07	0.00	0.03	0.05		
d, Delay	19.08	20.59	10.10	8.05			18.12	21.20	10.23	8.48		
LOS	C	C	B	A			C	C	B	A		
dA, Approach Delay		17.08			0.14			14.07			1.04	
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	9.78	8.70	242.93	242.93	42.39	53.26	189.67	189.67
Flared Storage Size								
cmx, Capacity	307.78				439.14			
V / C	0.03				0.10			
Q95, 95% Queue Length	0.10				0.32			
d, Delay	17.08				14.07			
LOS	C				B			
dA, Approach Delay	17.08	0.14			14.07	1.04		
Approach LOS	C				B			

Node 513: Hollister & Coronado	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	1.67
Worst Case Delay	15.39
Worst Case LOS	C

Volume and Adjustments						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	16.00	399.00	48.00	54.00	340.00	21.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	17.39	433.70	52.17	58.70	369.57	22.83

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		52.17	58.70		
Conflicting Volume (Veh)	392.39		632.61	196.20		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	392.39		632.61	196.20		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	1177.14		416.88	818.36		
Capacity	1177.14		409.88	818.36		

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	0.00		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	433.70	52.17	58.70	369.57	22.83
cmx, Capacity	1177.14		409.88	818.36		
V / C	0.01		0.13	0.07		
d, Delay	8.10		15.39	11.00		
LOS	A		C	B		
dA, Approach Delay	0.31		13.07		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	216.85	216.85	110.87	196.20	196.20
Flared Storage Size						
cmx, Capacity				557.09		
V / C				0.20		
Q95, 95% Queue Length				0.74		
d, Delay				13.07		
LOS				B		
dA, Approach Delay	0.31			13.07	0.00	
Approach LOS				B		

Node 515: Hollister & Cannon Green	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	2.96
Worst Case Delay	28.61
Worst Case LOS	D

Volume and Adjustments						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	54.00	467.00	43.00	130.00	606.00	30.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	58.70	507.61	46.74	141.30	658.70	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	58.70		46.74	141.30		
Conflicting Volume (Veh)	691.30		1046.20	345.65		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	691.30		1046.20	345.65		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	912.98		227.15	656.23		
Capacity	912.98		210.15	656.23		

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	0.00		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	58.70	507.61	46.74	141.30	658.70	32.61
cmx, Capacity	912.98		210.15	656.23		
V / C	0.06		0.22	0.22		
d, Delay	9.21		28.61	16.97		
LOS	A		D	C		
dA, Approach Delay	0.96		19.86		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	58.70	253.80	253.80	188.04	345.65	345.65
Flared Storage Size						
cmx, Capacity				429.58		
V / C				0.44		
Q95, 95% Queue Length				2.29		
d, Delay				19.86		
LOS				C		
dA, Approach Delay	0.96			19.86	0.00	
Approach LOS				C		

Node 517: Hollister & Pacific Oaks	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.369
Loss Time	0
Cycle Length	100
Adj V/C	0.469

Volume and Adjustments by Movement										
Approach	N			E		S		W		
Movement	L1	T	R1	L1	T	L1	R1	L1	T	R1
Base Volume	21	2	8	52	558	143	121	74	626	103
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	13	140	36	30	19	157	26
Adjusted Volume	21	2	8	52	558	143	121	74	626	103

Volume and Adjustments by Lane Group							
Approach	N	E		S		W	
Lane Group	C	L	C	L	R	L	C
ID	1774	1771	1772	1778	1779	1775	1776
Lanes	LTR	L	T, T	L	R	L	T, RT
Volume	31	52	558	143	121	74	729

Saturation Flow Rate							
Approach	N	E		S		W	
Lane Group	1774	1771	1772	1778	1779	1775	1776
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	21	2	8	52	558	143	121	74	626	103
Volume / Saturation Flow Rate	0.013	0.019	0.019	0.033	0.174	0.089	0.076	0.046	0.228	0.228
Overlap adjusted Volume / Saturation Flow Rate	0.013	0.019	0.019	0.033	0.174	0.089	0.076	0.046	0.228	0.228
Critical Movement		Y	Y	Y		Y			Y	

Node 518: Hollister & Santa Felicia

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	3.7
Worst Case Delay	76.76
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	18.00	1.00	7.00	118.00	581.00	53.00	17.00	3.00	86.00	12.00	737.00	29.00
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	19.57	1.09	7.61	128.26	631.52	57.61	18.48	3.26	93.48	13.04	801.09	31.52

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	19.57	1.09	7.61	128.26			18.48	3.26	93.48	13.04		
Conflicting Volume (Veh)	1345.11	1775.54	344.57	832.61			1415.76	1788.59	416.30	689.13		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1345.11	1775.54	344.57	832.61			1415.76	1788.59	416.30	689.13		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	111.86	83.58	657.29	808.86			99.18	82.04	590.87	914.68		
Capacity	70.79	65.46	657.29	808.86			75.78	64.26	590.87	914.68		

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,l, Base Critical Headway (Stage I)												
tc,base,ll, 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	0.00			0.20	0.20	0.10	0.00		
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,l, Critical Headway (Stage I)												
tc,ll, 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	19.57	1.09	7.61	128.26	631.52	57.61	18.48	3.26	93.48	13.04	801.09	31.52
cmx, Capacity	70.79	65.46	657.29	808.86			75.78	64.26	590.87	914.68		
V / C	0.28	0.02	0.01	0.16			0.24	0.05	0.16	0.01		
d, Delay	72.62	76.76	27.24	10.29			64.08	72.60	22.66	8.99		
LOS	F	F	D	B			F	F	C	A		
dA, Approach Delay		60.57			1.61			30.72			0.14	
Approach LOS		F						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 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	28.26	128.26	344.57	344.57	115.22	13.04	416.30	416.30
Flared Storage Size								
cmx, Capacity	92.79				254.46			
V / C	0.30				0.45			
Q95, 95% Queue Length	1.26				2.40			
d, Delay	60.57				30.72			
LOS	F				D			
dA, Approach Delay	60.57	1.61			30.72	0.14		
Approach LOS	F				D			

Node 521: Storke & Marketplace

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.359
Loss Time	0
Cycle Length	100
Adj V/C	0.459

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	34	518	292	29	12	33	66	656	47	221	16	83
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	9	130	73	7	3	8	17	164	12	55	4	21
Adjusted Volume	34	518	292	29	12	33	66	656	47	221	16	83

Volume and Adjustments by Lane Group

Approach	N			E		S		W
Lane Group	L	C	R	C	R	L	C	C
ID	1782	1783	1785	1780	1781	1788	1789	1786
Lanes	L	T, T	R	LT	R	L	T, RT	L, LTR
Volume	34	518	292	41	33	66	703	320

Saturation Flow Rate

Approach	N			E		S		W
Lane Group	1782	1783	1785	1780	1781	1788	1789	1786
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	441	3200	1600	1600	1600	1520	607	3200	3200

Capacity Analysis

Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	34	518	292	29	12	33	66	656	47	221	16	83
Volume / Saturation Flow Rate	0.021	0.162	0.183	0.018	0.026	0.021	0.041	0.220	0.220	0.069	0.100	0.100
Overlap adjusted Volume / Saturation Flow Rate	0.021	0.162	0.183	0.018	0.026	0.021	0.041	0.220	0.220	0.069	0.100	0.100
Critical Movement	Y			Y				Y			Y	

Node 522: Hollister & Storke

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.498
Loss Time	0
Cycle Length	100
Adj V/C	0.598

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	256	518	456	217	222	101	61	596	279	381	405	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	64	130	114	54	56	25	15	149	70	95	101	21
Adjusted Volume	256	518	456	217	222	101	61	596	279	381	405	84

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	1796	1798	1800	1791	1793	1795	1806	1808	1810	1801	1803	1805
Lanes	L, L	T, T	R	L, L	T, T	R	L, L	T, T	R	L, L	T, T	R
Volume	256	518	456	217	222	101	61	596	279	381	405	84

Saturation Flow Rate

Approach	N			E			S			W		
Lane Group	1796	1798	1800	1791	1793	1795	1806	1808	1810	1801	1803	1805
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	256	518	456	217	222	101	61	596	279	381	405	84
Volume / Saturation Flow Rate	0.080	0.162	0.285	0.068	0.069	0.063	0.019	0.186	0.174	0.119	0.127	0.053
Overlap adjusted Volume / Saturation Flow Rate	0.080	0.162	0.285	0.068	0.069	0.063	0.019	0.186	0.174	0.119	0.127	0.053
Critical Movement			Y	Y			Y				Y	

Node 524: Hollister & Coromar Project Access

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.345
Loss Time	0
Cycle Length	100
Adj V/C	0.445

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	28	10	40	137	558	124	14	7	24	23	647	88
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	3	10	34	140	31	4	2	6	6	162	22
Adjusted Volume	28	10	40	137	558	124	14	7	24	23	647	88

Volume and Adjustments by Lane Group

Approach	N	E		S		W		
Lane Group	C	L	C	C	R	L	C	R
ID	1816	1813	1814	1811	1812	1817	1818	1820
Lanes	LTR	L	T, RT	LT	R	L	T, T	R
Volume	78	137	682	21	24	23	647	88

Saturation Flow Rate

Approach	N	E		S		W		
Lane Group	1816	1813	1814	1811	1812	1817	1818	1820
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	28	10	40	137	558	124	14	7	24	23	647	88
Volume / Saturation Flow Rate	0.018	0.049	0.049	0.086	0.213	0.213	0.009	0.013	0.015	0.014	0.202	0.055
Overlap adjusted Volume / Saturation Flow Rate	0.018	0.049	0.049	0.086	0.213	0.213	0.009	0.013	0.015	0.014	0.202	0.055
Critical Movement		Y		Y			Y				Y	

Node 525: Hollister & Los Carneros

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.402
Loss Time	0
Cycle Length	100
Adj V/C	0.502

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	321	203	131	442	31	108	346	171	89	268	243
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	80	51	33	111	8	27	87	43	22	67	61
Adjusted Volume	55	321	203	131	442	31	108	346	171	89	268	243

Volume and Adjustments by Lane Group

Approach	N			E		S			W	
Lane Group	L	C	R	L	C	L	C	R	L	C
ID	1824	1825	1827	1821	1822	1832	1834	1836	1828	1830
Lanes	L	T, T	R	L	T, RT	L, L	T, T	R	L, L	T, RT
Volume	55	321	203	131	473	108	346	171	89	511

Saturation Flow Rate

Approach	N			E		S			W	
Lane Group	1824	1825	1827	1821	1822	1832	1834	1836	1828	1830
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	55	321	203	131	442	31	108	346	171	89	268	243
Volume / Saturation Flow Rate	0.034	0.100	0.127	0.082	0.148	0.148	0.034	0.108	0.107	0.028	0.160	0.160
Overlap adjusted Volume / Saturation Flow Rate	0.034	0.100	0.127	0.082	0.148	0.148	0.034	0.108	0.107	0.028	0.160	0.160
Critical Movement			Y	Y			Y				Y	

Node 526: Cremona Dr & Hollister Ave	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	0.94
Worst Case Delay	24.24
Worst Case LOS	C

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	19.00	20.00	614.00	50.00	49.00	482.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	20.65	21.74	667.39	54.35	53.26	523.91

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	20.65	21.74			53.26	
Conflicting Volume (Veh)	1063.04	360.87			721.74	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	1063.04	360.87			721.74	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	221.54	641.59			889.53	
Capacity	206.01	641.59			889.53	

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			0.00	
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	20.65	21.74	667.39	54.35	53.26	523.91
cmx, Capacity	206.01	641.59			889.53	
V / C	0.10	0.03			0.06	
d, Delay	24.24	12.37			9.11	
LOS	C	B			A	
dA, Approach Delay	18.15		0.00		0.84	
Approach LOS	C					
dRank1, Rank 1 Delay			0.00		0.53	

Delay and Level of Service by Lane					
Approach	N	E (Major)		W (Major)	
Lane	Lane 1	Lane 1	Lane 2	Lane 1	Lane 2
Movements	L1, R1		T, R1	L1, T	
vx, Volume	42.39	360.87	360.87	288.59	288.59
Flared Storage Size					
cmx, Capacity	316.05			1800.00	
V / C	0.13			0.16	
Q95, 95% Queue Length	0.46			0.09	
d, Delay	18.15			9.11	
LOS	C				
dA, Approach Delay	18.15	0.00		0.84	
Approach LOS	C				

Node 528: Hollister & Los Carneros Way	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.263
Loss Time	0
Cycle Length	100
Adj V/C	0.363

Volume and Adjustments by Movement						
Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Base Volume	114	74	590	53	37	464
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	29	19	148	13	9	116
Adjusted Volume	114	74	590	53	37	464

Volume and Adjustments by Lane Group				
Approach	N	E	W	
Lane Group	C	C	L	C
ID	1839	1837	1842	1843
Lanes	L, LTR, R	T, RT	L	T, T
Volume	188	643	37	464

Saturation Flow Rate				
Approach	N	E	W	
Lane Group	1839	1837	1842	1843
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	114	74	590	53	37	464
Volume / Saturation Flow Rate	0.036	0.039	0.201	0.201	0.023	0.145
Overlap adjusted Volume / Saturation Flow Rate	0.036	0.039	0.201	0.201	0.023	0.145
Critical Movement		Y	Y		Y	

Node 530: Hollister & Aero Camino

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.275
Loss Time	0
Cycle Length	100
Adj V/C	0.375

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	56	2	36	4	603	80	7	1	6	34	496	28
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	1	9	1	151	20	2	0	2	9	124	7
Adjusted Volume	56	2	36	4	603	80	7	1	6	34	496	28

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	1850	1851	1847	1848	1845	1846	1852	1853
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	58	36	4	683	8	6	34	524

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	1850	1851	1847	1848	1845	1846	1852	1853
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	56	2	36	4	603	80	7	1	6	34	496	28
Volume / Saturation Flow Rate	0.035	0.036	0.023	0.003	0.213	0.213	0.004	0.005	0.004	0.021	0.164	0.164
Overlap adjusted Volume / Saturation Flow Rate	0.035	0.036	0.023	0.003	0.213	0.213	0.004	0.005	0.004	0.021	0.164	0.164
Critical Movement		Y			Y		Y			Y		

Node 553: Storke & Santa Felicia	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	1.57
Worst Case Delay	29.6
Worst Case LOS	D

Volume and Adjustments						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
Base Volume	548.00	39.00	51.00	725.00	42.00	36.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	595.65	42.39	55.43	788.04	45.65	39.13

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			55.43		45.65	39.13
Conflicting Volume (Veh)			638.04		1121.74	319.02
Conflicting Volume (Ped)			0.00		0.00	0.00
Conflicting Volume			638.04		1121.74	319.02
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity			955.47		203.02	682.64
Capacity			955.47		187.94	682.64

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			0.00		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	595.65	42.39	55.43	788.04	45.65	39.13
cmx, Capacity			955.47		187.94	682.64
V / C			0.06		0.24	0.06
d, Delay			9.00		29.60	15.72
LOS			A		D	C
dA, Approach Delay	0.00		0.59		23.19	
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	319.02	319.02	55.43	394.02	394.02	84.78
Flared Storage Size						
cmx, Capacity						282.39
V / C						0.30
Q95, 95% Queue Length						1.27
d, Delay						23.19
LOS						C
dA, Approach Delay	0.00		0.59			23.19
Approach LOS						C

Node 556: Fowler & Fairview	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	0.8
Worst Case Delay	11.88
Worst Case LOS	B

Volume and Adjustments						
Approach	N (Major)		S		W (Major)	
Movement	T	R1	L1	T	L1	R1
Base Volume	18.00	225.00	2.00	21.00	202.00	11.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	19.57	244.57	2.17	22.83	219.57	11.96

Pedestrians						
Approach	N (Major)		S		W (Major)	
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		W (Major)	
Movement	T	R1	L1	T	L1	R1
Rank	2	1	3	2	1	1
vx, Volume	19.57		2.17	22.83		
Conflicting Volume (Veh)	225.54		489.67	225.54		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	225.54		489.67	225.54		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	1354.91		541.32	677.12		
Capacity	1354.91		540.12	677.12		

Critical Headway and Follow Up Headway						
Approach	N (Major)		S		W (Major)	
Movement	T	R1	L1	T	L1	R1
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	0.00		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)		S		W (Major)	
Movement	T	R1	L1	T	L1	R1
vx, Volume	19.57	244.57	2.17	22.83	219.57	11.96
cmx, Capacity	1354.91		540.12	677.12		
V / C	0.01		0.00	0.03		
d, Delay	7.70		11.88	10.53		
LOS	A		B	B		
dA, Approach Delay	0.57		10.65		0.00	
Approach LOS			B			
dRank1, Rank 1 Delay	0.00				0.00	

Delay and Level of Service by Lane			
Approach	N (Major)	S	W (Major)
Lane	Lane 1	Lane 1	Lane 1
Movements	T, R1	L1, T	L1, R1
vx, Volume	264.13	25.00	231.52
Flared Storage Size			
cmx, Capacity	1354.91	662.51	
V / C	0.19	0.04	
Q95, 95% Queue Length	0.73	0.12	
d, Delay	7.70	10.65	
LOS		B	
dA, Approach Delay	0.57	10.65	0.00
Approach LOS		B	

Node 562: Storke & Phelps

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.373
Loss Time	0
Cycle Length	100
Adj V/C	0.473

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	56	346	62	10	8	110	86	514	13	149	6	63
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	87	16	3	2	28	22	129	3	37	2	16
Adjusted Volume	56	346	62	10	8	110	86	514	13	149	6	63

Volume and Adjustments by Lane Group

Approach	N		E	S		W	
Lane Group	L	C	C	L	C	L	C
ID	1856	1857	1855	1861	1862	1859	1860
Lanes	L	T, RT	LTR	L	T, RT	L	RT
Volume	56	408	128	86	527	149	69

Saturation Flow Rate

Approach	N		E	S		W	
Lane Group	1856	1857	1855	1861	1862	1859	1860
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	56	346	62	10	8	110	86	514	13	149	6	63
Volume / Saturation Flow Rate	0.035	0.128	0.128	0.006	0.080	0.080	0.054	0.165	0.165	0.093	0.043	0.043
Overlap adjusted Volume / Saturation Flow Rate	0.035	0.128	0.128	0.006	0.080	0.080	0.054	0.165	0.165	0.093	0.043	0.043
Critical Movement	Y				Y			Y		Y		

Node 564: Mesa & Los Carneros	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.194
Loss Time	0
Cycle Length	100
Adj V/C	0.294

Volume and Adjustments by Movement							
Approach	N	E		S		W	
Movement		L1	T	L1	R1	T	R1
Base Volume		145	18	17	130	35	35
PHF		1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume		36	5	4	33	9	9
Adjusted Volume		145	18	17	130	35	35

Volume and Adjustments by Lane Group						
Approach	N	E	S		W	
Lane Group		C	L	R	C	R
ID		1864	1867	1868	1865	1866
Lanes		LT	L	R	T	R
Volume		163	17	130	35	35

Saturation Flow Rate						
Approach	N	E	S		W	
Lane Group		1864	1867	1868	1865	1866
Base Saturation Flow Rate		1600	1600	1600	1600	1600
Number of Lanes		1	1	1	1	1
Saturation Flow Rate		1600	1600	1600	1600	1600

Capacity Analysis							
Approach	N	E		S		W	
Movement		L1	T	L1	R1	T	R1
Volume		145	18	17	130	35	35
Volume / Saturation Flow Rate		0.091	0.102	0.011	0.081	0.022	0.022
Overlap adjusted Volume / Saturation Flow Rate		0.091	0.102	0.011	0.081	0.022	0.022
Critical Movement		Y			Y	Y	

Node 617: Los Caneros & Castilian

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.4
Loss Time	0
Cycle Length	100
Adj V/C	0.5

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	569	424	4	3	5	77	417	12	55	1	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	10	142	106	1	1	1	19	104	3	14	0	10
Adjusted Volume	38	569	424	4	3	5	77	417	12	55	1	39

Volume and Adjustments by Lane Group

Approach	N		E	S		W	
Lane Group	L	C	C	L	C	C	R
ID	1915	1916	1914	1920	1921	1918	1919
Lanes	L	T, RT	LTR	L	T, RT	LT	R
Volume	38	993	12	77	429	56	39

Saturation Flow Rate

Approach	N		E	S		W	
Lane Group	1915	1916	1914	1920	1921	1918	1919
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	38	569	424	4	3	5	77	417	12	55	1	39
Volume / Saturation Flow Rate	0.024	0.310	0.310	0.003	0.008	0.007	0.048	0.134	0.134	0.034	0.035	0.024
Overlap adjusted Volume / Saturation Flow Rate	0.024	0.310	0.310	0.003	0.008	0.007	0.048	0.134	0.134	0.034	0.035	0.024
Critical Movement		Y			Y		Y			Y		

Node 624: Cathedral Oaks & Calle Real	
Control Type	AWSC
Method	HCM 7th Edition
Average Delay	19.04
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	0.00	241.00	25.00	357.00	44.00	5.00	52.00	105.00	51.00	6.00	5.00	69.00
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	0.00	261.96	27.17	388.04	47.83	5.43	56.52	114.13	55.43	6.52	5.43	75.00
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	0.00	289.13	388.04	53.26	56.52	169.57	86.96
Left Turn Flow Rate	0.00	0.00	388.04	0.00	56.52	0.00	6.52
Right Turn Flow Rate	0.00	27.17	0.00	5.43	0.00	55.43	75.00
PLT, Proportion LT	0.00	0.00	1.00	0.00	1.00	0.00	0.08
PRT, Proportion RT	0.00	0.09	0.00	0.10	0.00	0.33	0.86
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	0.00	-0.07	0.50	-0.07	0.50	-0.23	-0.50

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	0.00	289.13	388.04	53.26	56.52	169.57	86.96
hd initial	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x initial	0.00	0.26	0.34	0.05	0.05	0.15	0.08
hd, iteration 1	5.52	5.46	5.89	5.32	6.08	5.34	5.21
Difference, iteration 1	2.32	2.26	2.69	2.12	2.88	2.14	2.01
hd, iteration 2	6.34	6.28	6.51	5.93	6.97	6.24	6.19
Difference, iteration 2	0.82	0.82	0.62	0.61	0.90	0.89	0.98
hd, iteration 3	6.58	6.51	6.74	6.16	7.24	6.50	6.53
Difference, iteration 3	0.23	0.23	0.23	0.23	0.27	0.27	0.34
hd, iteration 4	6.66	6.59	6.81	6.23	7.34	6.59	6.63
Difference, iteration 4	0.08	0.08	0.07	0.07	0.09	0.09	0.11
hd, iteration 5	6.69	6.62	6.83	6.26	7.36	6.62	6.67
Difference, iteration 5	0.03	0.03	0.02	0.02	0.03	0.03	0.04
Convergence	Y	Y	Y	Y	Y	Y	Y
hd final, Departure Headway	6.69	6.62	6.83	6.26	7.36	6.62	6.67
x final, Degree of Utilization	0.00	0.53	0.74	0.09	0.12	0.31	0.16

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	0.00	289.13	388.04	53.26	56.52	169.57	86.96
hd, Departure Headway	6.69	6.62	6.83	6.26	7.36	6.62	6.67
x, Degree of Utilization	0.00	0.53	0.74	0.09	0.12	0.31	0.16
m, Move Up Time	2.30	2.30	2.30	2.30	2.30	2.30	2.00
ts, Service Time	4.39	4.32	4.53	3.96	5.06	4.32	4.67
Capacity	537.48	543.81	525.98	575.21	488.71	543.14	539.32
Delay	9.39	16.77	27.94	9.60	11.03	12.32	10.95
LOS	A	C	D	A	B	B	B
Q95, 95% Queue Length	0.00	3.32	7.57	0.31	0.39	1.35	0.57
Approach Delay	16.77		25.73		12.00		10.95
Approach LOS	C		D		B		B
Intersection Delay	19.04						
Intersection LOS	C						

Node 630: Hollister & Marketplace/Village Way	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.373
Loss Time	0
Cycle Length	100
Adj V/C	0.473

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	86	8	25	63	708	66	35	3	58	27	780	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	22	2	6	16	177	17	9	1	15	7	195	10
Adjusted Volume	86	8	25	63	708	66	35	3	58	27	780	41

Volume and Adjustments by Lane Group								
Approach	N	E			S		W	
Lane Group	C	L	C	R	C	R	L	C
ID	1930	1925	1927	1929	1923	1924	1931	1932
Lanes	LTR	L, L	T, T	R	LT	R	L	T, RT
Volume	119	63	708	66	38	58	27	821

Saturation Flow Rate								
Approach	N	E			S		W	
Lane Group	1930	1925	1927	1929	1923	1924	1931	1932
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	86	8	25	63	708	66	35	3	58	27	780	41
Volume / Saturation Flow Rate	0.054	0.074	0.074	0.020	0.221	0.041	0.022	0.024	0.036	0.017	0.257	0.257
Overlap adjusted Volume / Saturation Flow Rate	0.054	0.074	0.074	0.020	0.221	0.041	0.022	0.024	0.036	0.017	0.257	0.257
Critical Movement		Y		Y			Y					Y

Node 636: Hollister & Cathedral Oaks	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	1.43
Worst Case Delay	17.02
Worst Case LOS	C

Volume and Adjustments						
Approach	N (Major)		E (Major)		W	
Movement	L1	R1	T	R1	L1	T
Base Volume	318.00	94.00	41.00	370.00	33.00	31.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	345.65	102.17	44.57	402.17	35.87	33.70

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			44.57		35.87	33.70
Conflicting Volume (Veh)			396.74		843.48	396.74
Conflicting Volume (Ped)			0.00		0.00	0.00
Conflicting Volume			396.74		843.48	396.74
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity			1172.82		336.49	543.69
Capacity			1172.82		335.33	543.69

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			0.00		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	345.65	102.17	44.57	402.17	35.87	33.70
cmx, Capacity			1172.82		335.33	543.69
V / C			0.04		0.11	0.06
d, Delay			8.19		17.02	12.06
LOS			A		C	B
dA, Approach Delay	0.00		0.82		14.62	
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	345.65	102.17	44.57	402.17	35.87	33.70
Flared Storage Size						
cmx, Capacity						
V / C						
Q95, 95% Queue Length						
d, Delay						
LOS						
dA, Approach Delay	0.00		0.82		14.62	
Approach LOS					B	

Node 717: Hollister & Entrance

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.306
Loss Time	0
Cycle Length	100
Adj V/C	0.406

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	14	1	3	48	378	42	80	3	213	5	390	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	4	0	1	12	95	11	20	1	53	1	98	10
Adjusted Volume	14	1	3	48	378	42	80	3	213	5	390	40

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	1939	1940	1936	1937	1934	1935	1941	1942
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	15	3	48	420	83	213	5	430

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	1939	1940	1936	1937	1934	1935	1941	1942
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	14	1	3	48	378	42	80	3	213	5	390	40
Volume / Saturation Flow Rate	0.009	0.009	0.002	0.030	0.131	0.131	0.050	0.052	0.133	0.003	0.134	0.134
Overlap adjusted Volume / Saturation Flow Rate	0.009	0.009	0.002	0.030	0.131	0.131	0.050	0.052	0.133	0.003	0.134	0.134
Critical Movement	Y			Y					Y		Y	

Node 856: Hollister & Cortona

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	95.52
Worst Case Delay	2115.38
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	19.00	2.00	97.00	17.00	430.00	33.00	55.00	8.00	14.00	236.00	788.00	76.00
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	2.17	105.43	18.48	467.39	35.87	59.78	8.70	15.22	256.52	856.52	82.61

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	20.65	2.17	105.43	18.48			59.78	8.70	15.22	256.52		
Conflicting Volume (Veh)	1467.93	1974.46	251.63	939.13			1682.61	1951.09	469.57	503.26		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1467.93	1974.46	251.63	939.13			1682.61	1951.09	469.57	503.26		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	90.73	62.88	754.15	737.99			62.76	65.03	545.81	1071.60		
Capacity	48.43	40.36	754.15	737.99			33.43	41.74	545.81	1071.60		

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,l, Base Critical Headway (Stage I)												
tc,base,ll, 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	0.00			0.20	0.20	0.10	0.00		
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,l, Critical Headway (Stage I)												
tc,ll, 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	20.65	2.17	105.43	18.48	467.39	35.87	59.78	8.70	15.22	256.52	856.52	82.61
cmx, Capacity	48.43	40.36	754.15	737.99			33.43	41.74	545.81	1071.60		
V / C	0.43	0.05	0.14	0.03			1.79	0.21	0.03	0.24		
d, Delay	106.66	121.52	37.09	9.90			2115.38	2093.94	2014.29	9.42		
LOS	F	F	E	A			F	F	F	A		
dA, Approach Delay		49.73			0.35			2094.77			2.02	
Approach LOS		E						F				
dRank1, Rank 1 Delay					0.27						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	128.26	260.87	260.87	83.70	256.52	469.57	469.57
Flared Storage Size							
cmx, Capacity	206.83	1800.00		41.34			
V / C	0.62	0.14		2.02			
Q95, 95% Queue Length	4.40	0.03		26.01			
d, Delay	49.73	9.90		2094.77			
LOS	E			F			
dA, Approach Delay	49.73	0.35		2094.77	2.02		
Approach LOS	E			F			

Node 864: Deckers Outdoor Access & Hollister Ave	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	0.04
Worst Case Delay	10.84
Worst Case LOS	B

Volume and Adjustments				
Approach	E (Major)	S	W (Major)	
Movement	T	R1	T	R1
Base Volume	818.00	5.00	689.00	13.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920
V, Adjusted Volume	889.13	5.43	748.91	14.13

Pedestrians				
Approach	E (Major)	S	W (Major)	
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	E (Major)	S	W (Major)	
Movement	T	R1	T	R1
Rank	1	2	1	1
vx, Volume		5.43		
Conflicting Volume (Veh)		381.52		
Conflicting Volume (Ped)		0.00		
Conflicting Volume		381.52		
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median Refuge Area				
cpx, Potential Capacity		622.22		
Capacity		622.22		

Critical Headway and Follow Up Headway				
Approach	E (Major)	S	W (Major)	
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	E (Major)	S	W (Major)	
Movement	T	R1	T	R1
vx, Volume	889.13	5.43	748.91	14.13
cmx, Capacity		622.22		
V / C		0.01		
d, Delay		10.84		
LOS		B		
dA, Approach Delay	0.00	10.84	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					T, R1
vx, Volume	444.57	444.57	5.43	381.52	381.52
Flared Storage Size					
cmx, Capacity					
V / C					
Q95, 95% Queue Length					
d, Delay					
LOS					
dA, Approach Delay	0.00		10.84	0.00	
Approach LOS			B		

Node 877: Hollister & Sumida Gardens

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.432
Loss Time	0
Cycle Length	100
Adj V/C	0.532

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	7	68	81	657	14	234	20	255	29	394	122
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	2	17	20	164	4	59	5	64	7	99	31
Adjusted Volume	52	7	68	81	657	14	234	20	255	29	394	122

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	L	C	L	C	L	C	L	C
ID	1947	1948	1944	1945	1952	1953	1949	1950
Lanes	L	RT	L	T, RT	L	RT	L	T, RT
Volume	52	75	81	671	234	275	29	516

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	1947	1948	1944	1945	1952	1953	1949	1950
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	52	7	68	81	657	14	234	20	255	29	394	122
Volume / Saturation Flow Rate	0.033	0.047	0.047	0.051	0.210	0.210	0.146	0.172	0.172	0.018	0.161	0.161
Overlap adjusted Volume / Saturation Flow Rate	0.033	0.047	0.047	0.051	0.210	0.210	0.146	0.172	0.172	0.018	0.161	0.161
Critical Movement	Y				Y				Y	Y		

Node 1042: Hollister & Santa Babara Shores	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	0.83
Worst Case Delay	15.12
Worst Case LOS	C

Volume and Adjustments						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	7.00	436.00	33.00	17.00	377.00	9.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	7.61	473.91	35.87	18.48	409.78	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	7.61		35.87	18.48		
Conflicting Volume (Veh)	419.57		666.85	209.78		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	419.57		666.85	209.78		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	1150.39		396.64	802.15		
Capacity	1150.39		393.62	802.15		

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	0.00		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	7.61	473.91	35.87	18.48	409.78	9.78
cmx, Capacity	1150.39		393.62	802.15		
V / C	0.01		0.09	0.02		
d, Delay	8.15		15.12	10.46		
LOS	A		C	B		
dA, Approach Delay	0.13		13.54		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	7.61	236.96	236.96	54.35	209.78	209.78
Flared Storage Size						
cmx, Capacity				476.05		
V / C				0.11		
Q95, 95% Queue Length				0.39		
d, Delay				13.54		
LOS				B		
dA, Approach Delay	0.13			13.54	0.00	
Approach LOS				B		

Node 1141: Sperling Preserve/Ellwood Dwy & Hollister Ave

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	4.27
Worst Case Delay	31.78
Worst Case LOS	D

Volume and Adjustments

Approach	N		E (Major)			S			W (Major)		
Movement	L1	T	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	94.00	3.00	19.00	329.00	155.00	3.00	1.00	14.00	85.00	268.00	4.00
PHF, Peak-hour factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
V, Adjusted Volume	94.00	3.00	19.00	329.00	155.00	3.00	1.00	14.00	85.00	268.00	4.00

Pedestrians

Approach	N		E (Major)			S			W (Major)		
Movement	L1	T	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		
w, Lane Width (ft)	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		
fpb, Percent Blockage	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	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	1	1	4	3	2	2	1	1
vx, Volume	94.00	3.00	19.00			3.00	1.00	14.00	85.00		
Conflicting Volume (Veh)	892.00	886.50	272.00			886.00	962.00	270.00	484.00		
Conflicting Volume (Ped)	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	892.00	886.50	272.00			886.00	962.00	270.00	484.00		
Two-Stage Gap Acceptance	No	No				No	No				
Number of Storage Spaces in Median Refuge Area											
cpx, Potential Capacity	264.85	285.48	1302.99			267.34	257.94	773.53	1089.26		
Capacity	230.42	253.93	1302.99			235.29	229.43	773.53	1089.26		

Critical Headway and Follow Up Headway

Approach	N		E (Major)			S			W (Major)		
Movement	L1	T	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Headway	7.10	6.50	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		
Phv, % Heavy Vehicles	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Factor	0.20	0.20	0.00			0.20	0.20	0.10	0.00		
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		
tc, Critical Headway	7.10	6.50	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	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		
tf, Follow-Up Headway	3.50	4.00	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	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	94.00	3.00	19.00	329.00	155.00	3.00	1.00	14.00	85.00	268.00	4.00
cmx, Capacity	230.42	253.93	1302.99			235.29	229.43	773.53	1089.26		
V / C	0.41	0.01	0.01			0.01	0.00	0.02	0.08		
d, Delay	31.78	30.33	7.79			20.56	20.95	9.91	8.40		
LOS	D	D	A			C	C	A	A		
dA, Approach Delay	31.73		0.29			12.30			2.00		
Approach LOS	D					B					
dRank1, Rank 1 Delay			0.16						0.77		

Delay and Level of Service by Lane

Approach	N	E (Major)	S	W (Major)
Lane	Lane 1	Lane 1	Lane 1	Lane 1
Movements	L1, T	L1, T, R1	L1, T, R1	L1, T, R1
vx, Volume	97.00	503.00	18.00	357.00
Flared Storage Size				
cmx, Capacity	231.08	1691.65	511.25	1794.72
V / C	0.42	0.30	0.04	0.20
Q95, 95% Queue Length	2.10	0.03	0.11	0.15
d, Delay	31.73	7.79	12.30	8.40
LOS	D		B	
dA, Approach Delay	31.73	0.29	12.30	2.00
Approach LOS	D		B	

Node 1182: Ward & Ekwill	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	2.33
Worst Case Delay	10.2
Worst Case LOS	B

Volume and Adjustments						
Approach	N (Major)		E		S (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	37.00	81.00	1.00	30.00	86.00	1.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	40.22	88.04	1.09	32.61	93.48	1.09

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	40.22		1.09	32.61		
Conflicting Volume (Veh)	94.57		262.50	94.02		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	94.57		262.50	94.02		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	1512.15		730.81	968.38		
Capacity	1512.15		710.37	968.38		

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	0.00		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	40.22	88.04	1.09	32.61	93.48	1.09
cmx, Capacity	1512.15		710.37	968.38		
V / C	0.03		0.00	0.03		
d, Delay	7.43		10.20	8.85		
LOS	A		B	A		
dA, Approach Delay	2.33		8.90		0.00	
Approach LOS			A			
dRank1, Rank 1 Delay	0.21				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	128.26	33.70	94.57
Flared Storage Size			
cmx, Capacity	1800.00	957.17	
V / C	0.07	0.04	
Q95, 95% Queue Length	0.07	0.11	
d, Delay	7.43	8.90	
LOS		A	
dA, Approach Delay	2.33	8.90	0.00
Approach LOS		A	

Node 164: Cathedral Oaks & La Patera

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	0.99
Worst Case Delay	21.27
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	11.00	2.00	4.00	26.00	364.00	5.00	2.00	0.00	22.00	3.00	409.00	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	11.96	2.17	4.35	28.26	395.65	5.43	2.17	0.00	23.91	3.26	444.57	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	11.96	2.17	4.35	28.26			2.17	0.00	23.91	3.26		
Conflicting Volume (Veh)	921.74	913.59	398.37	452.17			913.04	912.50	448.37	401.09		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	921.74	913.59	398.37	452.17			913.04	912.50	448.37	401.09		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	252.87	275.29	655.71	1119.06			256.32	275.70	614.65	1168.52		
Capacity	234.25	265.35	655.71	1119.06			243.48	265.74	614.65	1168.52		

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,l, Base Critical Headway (Stage I)												
tc,base,ll, 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	0.00			0.20	0.20	0.10	0.00		
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,l, Critical Headway (Stage I)												
tc,ll, 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	11.96	2.17	4.35	28.26	395.65	5.43	2.17	0.00	23.91	3.26	444.57	7.61
cmx, Capacity	234.25	265.35	655.71	1119.06			243.48	265.74	614.65	1168.52		
V / C	0.05	0.01	0.01	0.03			0.01	0.00	0.04	0.00		
d, Delay	21.27	19.47	11.39	8.30			20.12	18.88	11.19	8.09		
LOS	C	C	B	A			C	C	B	A		
dA, Approach Delay		18.74			0.55			11.93			0.06	
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	18.48	28.26	401.09	26.09	3.26	452.17
Flared Storage Size						
cmx, Capacity	280.55			545.37		
V / C	0.07			0.05		
Q95, 95% Queue Length	0.21			0.15		
d, Delay	18.74			11.93		
LOS	C			B		
dA, Approach Delay	18.74	0.55		11.93	0.06	
Approach LOS	C			B		

Node 169: Carlo Dr & Cathedral Oaks Rd

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	1.29
Worst Case Delay	21.08
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	13.00	2.00	5.00	14.00	376.00	7.00	15.00	2.00	21.00	6.00	414.00	13.00
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	14.13	2.17	5.43	15.22	408.70	7.61	16.30	2.17	22.83	6.52	450.00	14.13

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	14.13	2.17	5.43	15.22			16.30	2.17	22.83	6.52		
Conflicting Volume (Veh)	914.13	920.11	412.50	464.13			916.85	916.85	457.07	416.30		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	914.13	920.11	412.50	464.13			916.85	916.85	457.07	416.30		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	255.89	272.89	643.85	1107.77			254.80	274.09	607.76	1153.57		
Capacity	239.13	267.09	643.85	1107.77			245.31	268.26	607.76	1153.57		

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,l, Base Critical Headway (Stage I)												
tc,base,ll, 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	0.00			0.20	0.20	0.10	0.00		
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,l, Critical Headway (Stage I)												
tc,ll, 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	14.13	2.17	5.43	15.22	408.70	7.61	16.30	2.17	22.83	6.52	450.00	14.13
cmx, Capacity	239.13	267.09	643.85	1107.77			245.31	268.26	607.76	1153.57		
V / C	0.06	0.01	0.01	0.01			0.07	0.01	0.04	0.01		
d, Delay	21.08	19.50	11.62	8.30			20.91	19.65	12.16	8.13		
LOS	C	C	B	A			C	C	B	A		
dA, Approach Delay		18.56			0.29			16.01			0.11	
Approach LOS		C						C				
dRank1, Rank 1 Delay					0.00						0.06	

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
Movements	L1, T, R1		T, R1	L1, T, R1	L1, T, R1
vx, Volume	21.74	15.22	416.30	41.30	470.65
Flared Storage Size					
cmx, Capacity	287.28			368.38	1789.11
V / C	0.08			0.11	0.26
Q95, 95% Queue Length	0.25			0.38	0.01
d, Delay	18.56			16.01	8.13
LOS	C			C	
dA, Approach Delay	18.56	0.29		16.01	0.11
Approach LOS	C			C	

Node 171: Cathedral Oaks & Fairview

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.29
Loss Time	0
Cycle Length	100
Adj V/C	0.39

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	40	55	20	124	281	45	104	60	193	12	296	51
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	14	5	31	70	11	26	15	48	3	74	13
Adjusted Volume	40	55	20	124	281	45	104	60	193	12	296	51

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	L	C	L	C	L	C	L	C
ID	672	673	669	670	678	679	675	676
Lanes	L	T, RT	L	T, RT	L	T, RT	L	T, RT
Volume	40	75	124	326	104	253	12	347

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	672	673	669	670	678	679	675	676
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	40	55	20	124	281	45	104	60	193	12	296	51
Volume / Saturation Flow Rate	0.025	0.023	0.023	0.078	0.102	0.102	0.065	0.079	0.079	0.008	0.108	0.108
Overlap adjusted Volume / Saturation Flow Rate	0.025	0.023	0.023	0.078	0.102	0.102	0.065	0.079	0.079	0.008	0.108	0.108
Critical Movement	Y			Y				Y			Y	

Node 173: Cathedral Oaks & Cambridge	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.207
Loss Time	0
Cycle Length	100
Adj V/C	0.307

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	24	8	43	22	435	15	13	19	21	41	487	18
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	2	11	6	109	4	3	5	5	10	122	5
Adjusted Volume	24	8	43	22	435	15	13	19	21	41	487	18

Volume and Adjustments by Lane Group								
Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	684	685	681	682	689	690	686	687
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	32	43	22	450	32	21	41	505

Saturation Flow Rate								
Approach	N		E		S		W	
Lane Group	684	685	681	682	689	690	686	687
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	24	8	43	22	435	15	13	19	21	41	487	18
Volume / Saturation Flow Rate	0.015	0.020	0.027	0.014	0.141	0.141	0.008	0.020	0.013	0.026	0.158	0.158
Overlap adjusted Volume / Saturation Flow Rate	0.015	0.020	0.027	0.014	0.141	0.141	0.008	0.020	0.013	0.026	0.158	0.158
Critical Movement	Y			Y				Y				Y

Node 195: Cathedral Oaks & Los Carneros	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	3.38
Worst Case Delay	20
Worst Case LOS	C

Volume and Adjustments						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	74.00	292.00	37.00	125.00	337.00	37.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	80.43	317.39	40.22	135.87	366.30	40.22

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	80.43		40.22	135.87		
Conflicting Volume (Veh)	406.52		844.57	366.30		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	406.52		844.57	366.30		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	1163.16		335.99	683.42		
Capacity	1163.16		307.79	683.42		

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	0.00		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	80.43	317.39	40.22	135.87	366.30	40.22
cmx, Capacity	1163.16		307.79	683.42		
V / C	0.07		0.13	0.20		
d, Delay	8.32		20.00	13.57		
LOS	A		C	B		
dA, Approach Delay	1.68		15.04		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	80.43	317.39	176.09	366.30	40.22
Flared Storage Size					
cmx, Capacity			534.45		
V / C			0.33		
Q95, 95% Queue Length			1.46		
d, Delay			15.04		
LOS			C		
dA, Approach Delay	1.68		15.04	0.00	
Approach LOS			C		

Node 203: Stow Canyon & Fairview

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	2.42
Worst Case Delay	20.07
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	6.00	291.00	15.00	9.00	0.00	7.00	90.00	319.00	9.00	14.00	0.00	72.00
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	6.52	316.30	16.30	9.78	0.00	7.61	97.83	346.74	9.78	15.22	0.00	78.26

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	6.52			9.78	0.00	7.61	97.83			15.22	0.00	78.26
Conflicting Volume (Veh)	356.52			718.48	892.93	178.26	332.61			706.52	889.67	166.30
Conflicting Volume (Ped)	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
Conflicting Volume	356.52			718.48	892.93	178.26	332.61			706.52	889.67	166.30
Two-Stage Gap Acceptance				No	No					No	No	
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	1213.37			319.93	283.03	840.24	1238.10			326.32	284.27	855.15
Capacity	1213.37			260.41	253.58	840.24	1238.10			289.72	254.69	855.15

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,l, Base Critical Headway (Stage I)												
tc,base,ll, 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	0.00			0.20	0.20	0.10	0.00			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,l, Critical Headway (Stage I)												
tc,ll, 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	6.52	316.30	16.30	9.78	0.00	7.61	97.83	346.74	9.78	15.22	0.00	78.26
cmx, Capacity	1213.37			260.41	253.58	840.24	1238.10			289.72	254.69	855.15
V / C	0.01			0.04	0.00	0.01	0.08			0.05	0.00	0.09
d, Delay	7.98			19.30	19.67	9.76	8.16			18.36	20.07	10.14
LOS	A			C	C	A	A			C	C	B
dA, Approach Delay	0.15			15.12			1.76			11.48		
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	6.52	166.30	166.30	17.39	97.83	356.52	93.48
Flared Storage Size							
cmx, Capacity				373.04			648.97
V / C				0.05			0.14
Q95, 95% Queue Length				0.15			0.50
d, Delay				15.12			11.48
LOS				C			B
dA, Approach Delay	0.15			15.12	1.76		11.48
Approach LOS				C			B

Node 204: Fairview & Berkeley	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.211
Loss Time	0
Cycle Length	100
Adj V/C	0.311

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	17	396	5	48	1	16	7	393	52	6	2	6
PHF	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
Peak 15 Volume	5	108	1	13	0	4	2	107	14	2	1	2
Adjusted Volume	18	430	5	52	1	17	8	427	57	7	2	7

Volume and Adjustments by Lane Group						
Approach	N		E	S		W
Lane Group	L	C	C	L	C	C
ID	715	716	714	719	720	718
Lanes	L	T, RT	LTR	L	T, RT	LTR
Volume	18	436	71	8	484	15

Saturation Flow Rate						
Approach	N		E	S		W
Lane Group	715	716	714	719	720	718
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	18	430	5	52	1	17	8	427	57	7	2	7
Volume / Saturation Flow Rate	0.012	0.136	0.136	0.033	0.044	0.044	0.005	0.151	0.151	0.004	0.010	0.010
Overlap adjusted Volume / Saturation Flow Rate	0.012	0.136	0.136	0.033	0.044	0.044	0.005	0.151	0.151	0.004	0.010	0.010
Critical Movement	Y				Y			Y		Y		

Node 240: Fairview & Shirrell Way	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	2.89
Worst Case Delay	21.03
Worst Case LOS	C

Volume and Adjustments						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
Base Volume	400.00	60.00	54.00	354.00	80.00	52.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	434.78	65.22	58.70	384.78	86.96	56.52

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			58.70		86.96	56.52
Conflicting Volume (Veh)			500.00		777.17	250.00
Conflicting Volume (Ped)			0.00		0.00	0.00
Conflicting Volume			500.00		777.17	250.00
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity			1074.57		337.66	755.97
Capacity			1074.57		317.01	755.97

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			0.00		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	434.78	65.22	58.70	384.78	86.96	56.52
cmx, Capacity			1074.57		317.01	755.97
V / C			0.05		0.27	0.07
d, Delay			8.54		21.03	14.44
LOS			A		C	B
dA, Approach Delay	0.00		1.13		18.44	
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	250.00	250.00	58.70	192.39	192.39	143.48
Flared Storage Size						
cmx, Capacity						411.03
V / C						0.35
Q95, 95% Queue Length						1.59
d, Delay						18.44
LOS						C
dA, Approach Delay	0.00		1.13			18.44
Approach LOS						C

Node 241: Encina & Fairview	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.277
Loss Time	0
Cycle Length	100
Adj V/C	0.377

Volume and Adjustments by Movement						
Approach	N		E		S	
Movement	L1	T	L1	R1	T	R1
Base Volume	124	346	66	105	335	93
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	31	87	17	26	84	23
Adjusted Volume	124	346	66	105	335	93

Volume and Adjustments by Lane Group					
Approach	N		E		S
Lane Group	L	C	L	R	C
ID	724	725	722	723	727
Lanes	L	T, T	L	R	T, RT
Volume	124	346	66	105	428

Saturation Flow Rate					
Approach	N		E		S
Lane Group	724	725	722	723	727
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	124	346	66	105	335	93
Volume / Saturation Flow Rate	0.078	0.108	0.041	0.066	0.134	0.134
Overlap adjusted Volume / Saturation Flow Rate	0.078	0.108	0.041	0.066	0.134	0.134
Critical Movement	Y			Y	Y	

Node 273: Cathedral Oaks & Brandon

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	2.68
Worst Case Delay	12.3
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	12.00	2.00	4.00	45.00	131.00	15.00	13.00	2.00	36.00	3.00	120.00	22.00
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	2.17	4.35	48.91	142.39	16.30	14.13	2.17	39.13	3.26	130.43	23.91

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	2.17	4.35	48.91			14.13	2.17	39.13	3.26		
Conflicting Volume (Veh)	409.78	401.09	142.39	154.35			388.59	393.48	130.43	158.70		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	409.78	401.09	142.39	154.35			388.59	393.48	130.43	158.70		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	555.76	540.65	910.59	1438.33			573.93	545.99	924.56	1433.10		
Capacity	509.29	519.41	910.59	1438.33			546.54	524.53	924.56	1433.10		

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,l, Base Critical Headway (Stage I)												
tc,base,ll, 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	0.00			0.20	0.20	0.10	0.00		
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,l, Critical Headway (Stage I)												
tc,ll, 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	13.04	2.17	4.35	48.91	142.39	16.30	14.13	2.17	39.13	3.26	130.43	23.91
cmx, Capacity	509.29	519.41	910.59	1438.33			546.54	524.53	924.56	1433.10		
V / C	0.03	0.00	0.00	0.03			0.03	0.00	0.04	0.00		
d, Delay	12.30	12.16	9.18	7.59			11.95	12.23	9.26	7.52		
LOS	B	B	A	A			B	B	A	A		
dA, Approach Delay		11.59			1.79			10.06			0.16	
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	19.57	48.91	142.39	16.30	55.43	3.26	130.43	23.91
Flared Storage Size								
cmx, Capacity	565.94				766.50			
V / C	0.03				0.07			
Q95, 95% Queue Length	0.11				0.23			
d, Delay	11.59				10.06			
LOS	B				B			
dA, Approach Delay	11.59	1.79			10.06	0.16		
Approach LOS	B				B			

Node 276: Cathedral Oaks & Alameda	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.225
Loss Time	0
Cycle Length	100
Adj V/C	0.325

Volume and Adjustments by Movement							
Approach	N	E		S		W	
Movement		L1	T	L1	R1	T	R1
Base Volume		65	295	27	65	199	35
PHF		1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume		16	74	7	16	50	9
Adjusted Volume		65	295	27	65	199	35

Volume and Adjustments by Lane Group							
Approach	N	E		S		W	
Lane Group		L	C	L	R	C	R
ID		767	768	771	772	769	770
Lanes		L	T	L	R	T	R
Volume		65	295	27	65	199	35

Saturation Flow Rate							
Approach	N	E		S		W	
Lane Group		767	768	771	772	769	770
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	N	E		S		W	
Movement		L1	T	L1	R1	T	R1
Volume		65	295	27	65	199	35
Volume / Saturation Flow Rate		0.041	0.184	0.017	0.041	0.124	0.022
Overlap adjusted Volume / Saturation Flow Rate		0.041	0.184	0.017	0.041	0.124	0.022
Critical Movement			Y		Y		

Node 277: Cathedral Oaks & Glen Anne

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.369
Loss Time	0
Cycle Length	100
Adj V/C	0.469

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	31	47	15	109	209	22	201	50	82	12	218	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	12	4	27	52	6	50	13	21	3	55	41
Adjusted Volume	31	47	15	109	209	22	201	50	82	12	218	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	779	780	776	777	778	773	774	775	781	782	783
Lanes	L	RT	L	T	R	L	T	R	L	T	R
Volume	31	62	109	209	22	201	50	82	12	218	165

Saturation Flow Rate

Approach	N		E			S			W		
Lane Group	779	780	776	777	778	773	774	775	781	782	783
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	31	47	15	109	209	22	201	50	82	12	218	165
Volume / Saturation Flow Rate	0.019	0.039	0.039	0.068	0.131	0.014	0.126	0.031	0.051	0.008	0.136	0.103
Overlap adjusted Volume / Saturation Flow Rate	0.019	0.039	0.039	0.068	0.131	0.014	0.126	0.031	0.051	0.008	0.136	0.103
Critical Movement		Y		Y			Y				Y	

Node 279:Calle Real & Los Caneros	
Control Type	Roundabout
Method	HCM 7th Edition
Average Delay	7.36
Average LOS	A
Worst Case Delay	7.85
Worst Case LOS	A

Volume by Movement						
Approach	N		E		S	
Movement	L1	T	L1	R1	T	R1
Base Volume (veh/h)	18.00	122.00	384.00	32.00	223.00	367.00
PHF	0.92	0.92	0.92	0.92	0.92	0.92
Volume, Lane Flow Rate (veh/h)	19.57	132.61	417.39	34.78	242.39	398.91

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)	152.174	452.174	641.304
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)	152.174	452.174	641.304
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)	152.174	452.174	641.304

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)	152.17	452.17	641.30
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)	417.39	242.39	19.57
v_ex,pce, Conflicting Volume for Bypass Lane (pc/h)			
c_pce, Capacity (pc/h)	901.54	1077.72	1352.73
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
Proportion of CAVs	0.000	0.000	0.000
c, Capacity (veh/h)	901.54	1077.72	1352.73

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)	152.17	452.17	641.30
c, Capacity (veh/h)	901.54	1077.72	1352.73
x, Volume-to-Capacity Ratio	0.17	0.42	0.47
Q_95, 95% Queue Length (veh)	0.61	2.15	2.68
d, Delay (s/veh)	5.65	7.85	7.42
LOS	A	A	A
Approach Delay (s/veh)	5.65	7.85	7.42
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)	19.57	132.61	417.39	34.78	242.39	398.91
c, Capacity (veh/h)	901.54	901.54	1077.72	1077.72	1352.73	1352.73
x, Volume-to-Capacity Ratio	0.02	0.15	0.39	0.03	0.18	0.29
d, Delay (s/veh)	5.65	5.65	7.85	7.85	7.42	7.42
LOS	A	A	A	A	A	A
Approach Delay (s/veh)	5.65		7.85		7.42	
Approach LOS	A		A		A	

Node 280: Calle Real & La Patera	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	1.49
Worst Case Delay	17.71
Worst Case LOS	C

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	36.00	31.00	325.00	66.00	29.00	354.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	39.13	33.70	353.26	71.74	31.52	384.78

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	39.13	33.70			31.52	
Conflicting Volume (Veh)	836.96	389.13			425.00	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	836.96	389.13			425.00	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	339.48	663.58			1145.11	
Capacity	327.60	663.58			1145.11	

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			0.00	
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	39.13	33.70	353.26	71.74	31.52	384.78
cmx, Capacity	327.60	663.58			1145.11	
V / C	0.12	0.05			0.03	
d, Delay	17.71	12.15			8.18	
LOS	C	B			A	
dA, Approach Delay	15.14		0.00		0.62	
Approach LOS	C					
dRank1, Rank 1 Delay			0.00		0.29	

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	72.83	425.00	416.30
Flared Storage Size			
cmx, Capacity	427.82		1800.00
V / C	0.17		0.23
Q95, 95% Queue Length	0.61		0.05
d, Delay	15.14		8.18
LOS	C		
dA, Approach Delay	15.14	0.00	0.62
Approach LOS	C		

Node 282: Calle Real & Carlo Dr	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	1.64
Worst Case Delay	21.34
Worst Case LOS	C

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	33.00	54.00	514.00	48.00	49.00	411.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	35.87	58.70	558.70	52.17	53.26	446.74

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	58.70			53.26	
Conflicting Volume (Veh)	914.67	305.43			610.87	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	914.67	305.43			610.87	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	275.92	696.51			977.87	
Capacity	258.76	696.51			977.87	

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			0.00	
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	35.87	58.70	558.70	52.17	53.26	446.74
cmx, Capacity	258.76	696.51			977.87	
V / C	0.14	0.08			0.05	
d, Delay	21.34	12.60			8.89	
LOS	C	B			A	
dA, Approach Delay	15.91		0.00		0.95	
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	94.57	610.87	53.26	223.37	223.37
Flared Storage Size					
cmx, Capacity	424.27				
V / C	0.22				
Q95, 95% Queue Length	0.86				
d, Delay	15.91				
LOS	C				
dA, Approach Delay	15.91	0.00	0.95		
Approach LOS	C				

Node 288: Calle Real & Fairview	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.569
Loss Time	0
Cycle Length	100
Adj V/C	0.669

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	98	304	41	322	247	53	341	380	352	43	236	217
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	25	76	10	81	62	13	85	95	88	11	59	54
Adjusted Volume	98	304	41	322	247	53	341	380	352	43	236	217

Volume and Adjustments by Lane Group									
Approach	N		E		S		W		
Lane Group	L	C	L	C	C	R	L	C	R
ID	790	791	787	789	784	786	793	794	795
Lanes	L	T, RT	L, L	RT	LT, T	R	L	T	R
Volume	98	345	322	300	721	352	43	236	217

Saturation Flow Rate									
Approach	N		E		S		W		
Lane Group	790	791	787	789	784	786	793	794	795
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	98	304	41	322	247	53	341	380	352	43	236	217
Volume / Saturation Flow Rate	0.061	0.108	0.108	0.101	0.187	0.188	0.213	0.225	0.220	0.027	0.148	0.136
Overlap adjusted Volume / Saturation Flow Rate	0.061	0.108	0.108	0.101	0.187	0.188	0.213	0.225	0.220	0.027	0.148	0.136
Critical Movement		Y		Y			Y				Y	

Node 289: Fairview & US 101 NB Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.651
Loss Time	0
Cycle Length	100
Adj V/C	0.751

Volume and Adjustments by Movement						
Approach	N	E		S	W	
Movement	T	T	R1		L1	R1
Base Volume	252	253	503		572	203
PHF	1.000	1.000	1.000		1.000	1.000
Peak 15 Volume	63	63	126		143	51
Adjusted Volume	252	253	503		572	203

Volume and Adjustments by Lane Group						
Approach	N	E		S	W	
Lane Group	C	C	R		L	R
ID	798	796	797		799	801
Lanes	T	T	R		L, L	R
Volume	252	253	503		572	203

Saturation Flow Rate						
Approach	N	E		S	W	
Lane Group	798	796	797		799	801
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	252	253	503		572	203
Volume / Saturation Flow Rate	0.158	0.158	0.314		0.179	0.127
Overlap adjusted Volume / Saturation Flow Rate	0.158	0.158	0.314		0.179	0.127
Critical Movement	Y		Y		Y	

Node 296: Calle Real & Kellogg	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.331
Loss Time	0
Cycle Length	100
Adj V/C	0.431

Volume and Adjustments by Movement						
Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Base Volume	106	47	636	112	49	578
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	27	12	159	28	12	145
Adjusted Volume	106	47	636	112	49	578

Volume and Adjustments by Lane Group					
Approach	N		E	W	
Lane Group	L	R	C	L	C
ID	804	805	802	806	807
Lanes	L	R	T, RT	L	T, T
Volume	106	47	748	49	578

Saturation Flow Rate					
Approach	N		E	W	
Lane Group	804	805	802	806	807
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	106	47	636	112	49	578
Volume / Saturation Flow Rate	0.066	0.029	0.234	0.234	0.031	0.181
Overlap adjusted Volume / Saturation Flow Rate	0.066	0.029	0.234	0.234	0.031	0.181
Critical Movement	Y		Y		Y	

Node 305: Patterson & Overpass

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.449
Loss Time	0
Cycle Length	100
Adj V/C	0.549

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	32	665	88	17	1	72	12	939	49	120	1	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	8	166	22	4	0	18	3	235	12	30	0	6
Adjusted Volume	32	665	88	17	1	72	12	939	49	120	1	25

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	L	C	C	R	L	C	C	R
ID	811	812	809	810	816	817	814	815
Lanes	L	T, RT	LT	R	L	T, RT	LT	R
Volume	32	753	18	72	12	988	121	25

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	811	812	809	810	816	817	814	815
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	32	665	88	17	1	72	12	939	49	120	1	25
Volume / Saturation Flow Rate	0.020	0.235	0.235	0.011	0.011	0.045	0.008	0.309	0.309	0.075	0.076	0.016
Overlap adjusted Volume / Saturation Flow Rate	0.020	0.235	0.235	0.011	0.011	0.045	0.008	0.309	0.309	0.075	0.076	0.016
Critical Movement	Y					Y		Y		Y		

Node 306: Patterson & US 101 SB Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	D
Critical V/C	0.801
Loss Time	0
Cycle Length	100
Adj V/C	0.901

Volume and Adjustments by Movement								
Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	495	513		675	475	385	2	237
PHF	1.000	1.000		1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	124	128		169	119	96	1	59
Adjusted Volume	495	513		675	475	385	2	237

Volume and Adjustments by Lane Group						
Approach	N		E	S		W
Lane Group	L	C		C	R	C
ID	819	820		823	825	821
Lanes	L	T		T, T	R	L, LTR
Volume	495	513		675	475	624

Saturation Flow Rate						
Approach	N		E	S		W
Lane Group	819	820		823	825	821
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	S		W		
Movement	L1	T		T	R1	L1	T	R1
Volume	495	513		675	475	385	2	237
Volume / Saturation Flow Rate	0.309	0.321		0.211	0.297	0.120	0.195	0.195
Overlap adjusted Volume / Saturation Flow Rate	0.309	0.321		0.211	0.297	0.120	0.195	0.195
Critical Movement	Y				Y			Y

Node 307: Patterson & US 101 NB Ramp	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.558
Loss Time	0
Cycle Length	100
Adj V/C	0.658

Volume and Adjustments by Movement								
Approach	N		E			S		W
Movement	T	R1	L1	T	R1	L1	T	
Base Volume	736	259	254	16	599	327	739	
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Peak 15 Volume	184	65	64	4	150	82	185	
Adjusted Volume	736	259	254	16	599	327	739	

Volume and Adjustments by Lane Group						
Approach	N		E	S		W
Lane Group	C	R	C	L	C	
ID	833	836	830	837	838	
Lanes	T, T, T	R	L, LTR, R	L	T, T	
Volume	736	259	869	327	739	

Saturation Flow Rate						
Approach	N		E	S		W
Lane Group	833	836	830	837	838	
Base Saturation Flow Rate	1600	1600	1600	1600	1600	
Number of Lanes	3	1	3	1	2	
Saturation Flow Rate	4800	1600	4800	1600	3200	

Capacity Analysis								
Approach	N		E			S		W
Movement	T	R1	L1	T	R1	L1	T	
Volume	736	259	254	16	599	327	739	
Volume / Saturation Flow Rate	0.153	0.162	0.079	0.181	0.181	0.204	0.231	
Overlap adjusted Volume / Saturation Flow Rate	0.153	0.162	0.079	0.181	0.181	0.204	0.231	
Critical Movement		Y		Y		Y		

Node 359: Cathedral Oaks & Winchester Canyon

Control Type	AWSC
Method	HCM 7th Edition
Average Delay	8.56
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	10.00	6.00	29.00	26.00	109.00	14.00	26.00	30.00	34.00	15.00	98.00	22.00
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	10.87	6.52	31.52	28.26	118.48	15.22	28.26	32.61	36.96	16.30	106.52	23.91
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	48.91	28.26	133.70	60.87	36.96	16.30	130.43
Left Turn Flow Rate	10.87	28.26	0.00	28.26	0.00	16.30	0.00
Right Turn Flow Rate	31.52	0.00	15.22	0.00	36.96	0.00	23.91
PLT, Proportion LT	0.22	1.00	0.00	0.46	0.00	1.00	0.00
PRT, Proportion RT	0.64	0.00	0.11	0.00	1.00	0.00	0.18
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	-0.34	0.50	-0.08	0.23	-0.70	0.50	-0.13

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	48.91	28.26	133.70	60.87	36.96	16.30	130.43
hd initial	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x initial	0.04	0.03	0.12	0.05	0.03	0.01	0.12
hd, iteration 1	4.72	5.32	4.74	5.25	4.31	5.33	4.70
Difference, iteration 1	1.52	2.12	1.54	2.05	1.11	2.13	1.50
hd, iteration 2	5.00	5.49	4.91	5.50	4.57	5.51	4.88
Difference, iteration 2	0.28	0.17	0.17	0.25	0.25	0.18	0.18
hd, iteration 3	5.03	5.52	4.94	5.52	4.59	5.53	4.90
Difference, iteration 3	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	5.03	5.52	4.94	5.52	4.59	5.53	4.90
x final, Degree of Utilization	0.07	0.04	0.18	0.09	0.05	0.03	0.18

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	48.91	28.26	133.70	60.87	36.96	16.30	130.43
hd, Departure Headway	5.03	5.52	4.94	5.52	4.59	5.53	4.90
x, Degree of Utilization	0.07	0.04	0.18	0.09	0.05	0.03	0.18
m, Move Up Time	2.00	2.30	2.30	2.30	2.30	2.30	2.30
ts, Service Time	3.03	3.22	2.64	3.22	2.29	3.23	2.60
Capacity	715.26	651.96	728.67	651.14	783.20	650.26	733.19
Delay	8.40	8.47	8.74	8.79	7.52	8.38	8.66
LOS	A	A	A	A	A	A	A
Q95, 95% Queue Length	0.22	0.14	0.67	0.31	0.15	0.08	0.65
Approach Delay	8.40	8.70		8.31		8.63	
Approach LOS	A	A		A		A	
Intersection Delay	8.56						
Intersection LOS	A						

Node 372: Glen Annie & Del Norte	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	0.45
Worst Case Delay	9.49
Worst Case LOS	A

Volume and Adjustments				
Approach	N (Major)		S (Major)	W
Movement	T	R1	T	R1
Base Volume	296.00	34.00	348.00	34.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920
V, Adjusted Volume	321.74	36.96	378.26	36.96

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				36.96
Conflicting Volume (Veh)				179.35
Conflicting Volume (Ped)				0.00
Conflicting Volume				179.35
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median Refuge Area				
cpx, Potential Capacity				838.90
Capacity				838.90

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	321.74	36.96	378.26	36.96
cmx, Capacity				838.90
V / C				0.04
d, Delay				9.49
LOS				A
dA, Approach Delay	0.00		0.00	9.49
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	179.35	179.35	189.13	189.13	36.96
Flared Storage Size					
cmx, Capacity					
V / C					
Q95, 95% Queue Length					
d, Delay					
LOS					
dA, Approach Delay	0.00		0.00		9.49
Approach LOS					A

Node 375: Los Caneros & US101 SB Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.501
Loss Time	0
Cycle Length	100
Adj V/C	0.601

Volume and Adjustments by Movement								
Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	26	700		648	631	136	0	47
PHF	1.000	1.000		1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	7	175		162	158	34	0	12
Adjusted Volume	26	700		648	631	136	0	47

Volume and Adjustments by Lane Group						
Approach	N		E	S	W	
Lane Group	L	C		C	L	R
ID	911	912		916	914	915
Lanes	L	T, T		T, RT	L	R
Volume	26	700		1279	136	47

Saturation Flow Rate						
Approach	N		E	S	W	
Lane Group	911	912		916	914	915
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	26	700		648	631	136	0	47
Volume / Saturation Flow Rate	0.016	0.219		0.400	0.400	0.085	0.000	0.029
Overlap adjusted Volume / Saturation Flow Rate	0.016	0.219		0.400	0.400	0.085	0.000	0.029
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	0.443
Loss Time	0
Cycle Length	100
Adj V/C	0.543

Volume and Adjustments by Movement								
Approach	N		E			S		W
Movement	T	R1	L1	T	R1	L1	T	
Base Volume	339	172	472	3	67	182	550	
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Peak 15 Volume	85	43	118	1	17	46	138	
Adjusted Volume	339	172	472	3	67	182	550	

Volume and Adjustments by Lane Group					
Approach	N	E	S		W
Lane Group	C	C	L	C	
ID	920	918	922	923	
Lanes	T, RT	L, LTR	L	T, T	
Volume	511	542	182	550	

Saturation Flow Rate					
Approach	N	E	S		W
Lane Group	920	918	922	923	
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	339	172	472	3	67	182	550	
Volume / Saturation Flow Rate	0.160	0.160	0.148	0.169	0.169	0.114	0.172	
Overlap adjusted Volume / Saturation Flow Rate	0.160	0.160	0.148	0.169	0.169	0.114	0.172	
Critical Movement		Y		Y		Y		

Node 383: Fairview & US 101 SB Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	C
Critical V/C	0.737
Loss Time	0
Cycle Length	100
Adj V/C	0.837

Volume and Adjustments by Movement								
Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	288	509		682	811	209	16	183
PHF	1.000	1.000		1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	72	127		171	203	52	4	46
Adjusted Volume	288	509		682	811	209	16	183

Volume and Adjustments by Lane Group							
Approach	N		E	S		W	
Lane Group	L	C		C	R	C	R
ID	928	930		925	927	932	933
Lanes	L, L	T, T		T, T	R	LT	R
Volume	288	509		682	811	225	183

Saturation Flow Rate							
Approach	N		E	S		W	
Lane Group	928	930		925	927	932	933
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	288	509		682	811	209	16	183
Volume / Saturation Flow Rate	0.090	0.159		0.213	0.507	0.131	0.141	0.114
Overlap adjusted Volume / Saturation Flow Rate	0.090	0.159		0.213	0.507	0.131	0.141	0.114
Critical Movement	Y				Y		Y	

Node 385: Hollister & Fairview

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.607
Loss Time	0
Cycle Length	100
Adj V/C	0.707

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	280	138	158	43	456	445	128	346	71	356	484	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	70	35	40	11	114	111	32	87	18	89	121	27
Adjusted Volume	280	138	158	43	456	445	128	346	71	356	484	109

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	941	943	945	937	938	940	934	935	946	948	950
Lanes	L, L	T, T	R	L	T, T	R	L	T, RT	L, L	T, T	R
Volume	280	138	158	43	456	445	128	417	356	484	109

Saturation Flow Rate

Approach	N			E			S		W		
Lane Group	941	943	945	937	938	940	934	935	946	948	950
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	280	138	158	43	456	445	128	346	71	356	484	109
Volume / Saturation Flow Rate	0.088	0.043	0.099	0.027	0.143	0.278	0.080	0.130	0.130	0.111	0.151	0.068
Overlap adjusted Volume / Saturation Flow Rate	0.088	0.043	0.099	0.027	0.143	0.278	0.080	0.130	0.130	0.111	0.151	0.068
Critical Movement	Y					Y		Y		Y		

Node 386: Fairview & Mandarin	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	18.44
Worst Case Delay	784.89
Worst Case LOS	F

Volume and Adjustments						
Approach	N (Major)		E		S (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	120.00	594.00	44.00	217.00	1249.00	64.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	130.43	645.65	47.83	235.87	1357.61	69.57

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	130.43		47.83	235.87		
Conflicting Volume (Veh)	1427.17		1941.30	678.80		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	1427.17		1941.30	678.80		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	482.71		58.47	398.92		
Capacity	482.71		39.22	398.92		

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		7.50	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	0.00		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)		E		S (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Volume	130.43	645.65	47.83	235.87	1357.61	69.57
cmx, Capacity	482.71		39.22	398.92		
V / C	0.27		1.22	0.59		
d, Delay	15.21		784.89	26.86		
LOS	C		F	D		
dA, Approach Delay	2.56		154.65		0.00	
Approach LOS			F			
dRank1, Rank 1 Delay	0.00				0.00	

Delay and Level of Service by Lane								
Approach	N (Major)			E		S (Major)		
Lane	Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 1	Lane 2	Lane 3
Movements								
vx, Volume	130.43	322.83	322.83	47.83	235.87	678.80	678.80	69.57
Flared Storage Size								
cmx, Capacity								
V / C								
Q95, 95% Queue Length								
d, Delay								
LOS								
dA, Approach Delay	2.56			154.65		0.00		
Approach LOS				F				

Node 387: Hollister & Orange

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	2.73
Worst Case Delay	111.53
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	4.00	1.00	31.00	37.00	1086.00	24.00	25.00	1.00	44.00	36.00	633.00	95.00
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	4.35	1.09	33.70	40.22	1180.43	26.09	27.17	1.09	47.83	39.13	688.04	103.26

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	4.35	1.09	33.70	40.22			27.17	1.09	47.83	39.13		
Conflicting Volume (Veh)	1696.74	2143.48	603.26	791.30			1489.13	2104.89	395.65	1206.52		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1696.74	2143.48	603.26	791.30			1489.13	2104.89	395.65	1206.52		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	61.25	49.25	446.89	838.06			87.50	52.09	609.29	585.37		
Capacity	46.58	41.52	446.89	838.06			66.69	43.91	609.29	585.37		

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,l, Base Critical Headway (Stage I)												
tc,base,ll, 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	0.00			0.20	0.20	0.10	0.00		
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,l, Critical Headway (Stage I)												
tc,ll, 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	4.35	1.09	33.70	40.22	1180.43	26.09	27.17	1.09	47.83	39.13	688.04	103.26
cmx, Capacity	46.58	41.52	446.89	838.06			66.69	43.91	609.29	585.37		
V / C	0.09	0.03	0.08	0.05			0.41	0.02	0.08	0.07		
d, Delay	86.61	96.03	17.38	9.51			83.53	111.53	35.45	11.59		
LOS	F	F	C	A			F	F	E	B		
dA, Approach Delay		27.26			0.31			53.71			0.55	
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 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	39.13	40.22	603.26	603.26	76.09	39.13	395.65	395.65
Flared Storage Size								
cmx, Capacity	200.75				148.97			
V / C	0.19				0.51			
Q95, 95% Queue Length	0.72				2.90			
d, Delay	27.26				53.71			
LOS	D				F			
dA, Approach Delay	27.26	0.31			53.71	0.55		
Approach LOS	D				F			

Node 390: Hollister & Pine/Nectarine

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.486
Loss Time	0
Cycle Length	100
Adj V/C	0.586

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	36	16	21	49	781	35	139	4	166	25	657	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	9	4	5	12	195	9	35	1	42	6	164	18
Adjusted Volume	36	16	21	49	781	35	139	4	166	25	657	71

Volume and Adjustments by Lane Group

Approach	N	E		S	W	
Lane Group	C	L	C	C	L	C
ID	954	951	952	958	955	956
Lanes	LTR	L	T, RT	LTR	L	T, RT
Volume	73	49	816	309	25	728

Saturation Flow Rate

Approach	N	E		S	W	
Lane Group	954	951	952	958	955	956
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	36	16	21	49	781	35	139	4	166	25	657	71
Volume / Saturation Flow Rate	0.023	0.046	0.046	0.031	0.255	0.255	0.087	0.193	0.193	0.016	0.228	0.227
Overlap adjusted Volume / Saturation Flow Rate	0.023	0.046	0.046	0.031	0.255	0.255	0.087	0.193	0.193	0.016	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	0.368
Loss Time	0
Cycle Length	100
Adj V/C	0.468

Volume and Adjustments by Movement						
Approach	E		S		W	
Movement	L1	T	L1	R1	T	R1
Base Volume	60	840	39	51	828	50
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	15	210	10	13	207	13
Adjusted Volume	60	840	39	51	828	50

Volume and Adjustments by Lane Group				
Approach	E		S	W
Lane Group	L	C	C	C
ID	959	960	964	962
Lanes	L	T, T	LTR	T, RT
Volume	60	840	90	878

Saturation Flow Rate				
Approach	E		S	W
Lane Group	959	960	964	962
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	60	840	39	51	828	50
Volume / Saturation Flow Rate	0.038	0.263	0.024	0.056	0.274	0.274
Overlap adjusted Volume / Saturation Flow Rate	0.038	0.263	0.024	0.056	0.274	0.274
Critical Movement	Y			Y	Y	

Node 396: Hollister & Community Center West Driveway	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	0.42
Worst Case Delay	10.53
Worst Case LOS	B

Volume and Adjustments					
Approach	E (Major)		S	W (Major)	
Movement	L1	T		T	R1
Base Volume	71.00	810.00		820.00	58.00
PHF, Peak-hour factor	0.920	0.920		0.920	0.920
V, Adjusted Volume	77.17	880.43		891.30	63.04

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	77.17				
Conflicting Volume (Veh)	954.35				
Conflicting Volume (Ped)	0.00				
Conflicting Volume	954.35				
Two-Stage Gap Acceptance					
Number of Storage Spaces in Median Refuge Area					
cpx, Potential Capacity	728.37				
Capacity	728.37				

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	0.00				
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	77.17	880.43		891.30	63.04
cmx, Capacity	728.37				
V / C	0.11				
d, Delay	10.53				
LOS	B				
dA, Approach Delay	0.85		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	77.17	440.22	440.22		477.17	477.17
Flared Storage Size						
cmx, Capacity						
V / C						
Q95, 95% Queue Length						
d, Delay						
LOS						
dA, Approach Delay	0.85			0.00	0.00	
Approach LOS				A		

Node 399: Hollister & Kellogg	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.473
Loss Time	0
Cycle Length	100
Adj V/C	0.573

Volume and Adjustments by Movement										
Approach	N			E			S	W		
Movement	L1	T	R1	L1	T	R1	R1	L1	T	R1
Base Volume	106	14	66	220	780	111	189	64	750	83
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	27	4	17	55	195	28	47	16	188	21
Adjusted Volume	106	14	66	220	780	111	189	64	750	83

Volume and Adjustments by Lane Group							
Approach	N		E		S	W	
Lane Group	C	R	L	C	R	L	C
ID	977	978	974	975	973	979	980
Lanes	LT	R	L	T, RT	R	L	T, RT
Volume	120	66	220	891	189	64	833

Saturation Flow Rate							
Approach	N		E		S	W	
Lane Group	977	978	974	975	973	979	980
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	2	1	1	2
Saturation Flow Rate	1600	1600	1600	3200	1600	1600	3200

Capacity Analysis										
Approach	N			E			S	W		
Movement	L1	T	R1	L1	T	R1	R1	L1	T	R1
Volume	106	14	66	220	780	111	189	64	750	83
Volume / Saturation Flow Rate	0.066	0.075	0.041	0.138	0.278	0.278	0.118	0.040	0.260	0.260
Overlap adjusted Volume / Saturation Flow Rate	0.066	0.075	0.041	0.138	0.278	0.278	0.118	0.040	0.260	0.260
Critical Movement		Y		Y						Y

Node 402: Hollister & SR-217 SB Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.595
Loss Time	0
Cycle Length	100
Adj V/C	0.695

Volume and Adjustments by Movement								
Approach	N			E		S	W	
Movement	L1	T	R1	L1	T		T	R1
Base Volume	77	1	530	92	650		1057	56
PHF	1.000	1.000	1.000	1.000	1.000		1.000	1.000
Peak 15 Volume	19	0	133	23	163		264	14
Adjusted Volume	77	1	530	92	650		1057	56

Volume and Adjustments by Lane Group						
Approach	N	E			S	W
Lane Group	C	L	C	C		C
ID	987	982	983	984		989
Lanes	LTR, R	L	T, T	T, T		T, RT
Volume	608	92	413	237		1113

Saturation Flow Rate						
Approach	N	E			S	W
Lane Group	987	982	983	984		989
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	77	1	530	92	650		1057	56
Volume / Saturation Flow Rate	0.048	0.190	0.190	0.058	0.129		0.348	0.348
Overlap adjusted Volume / Saturation Flow Rate	0.048	0.190	0.190	0.058	0.129		0.348	0.348
Critical Movement		Y		Y			Y	

Node 405: Hollister & SR-217 NB Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.503
Loss Time	0
Cycle Length	100
Adj V/C	0.603

Volume and Adjustments by Movement										
Approach	N	E			S			W		
Movement		L1	T	R1	L1	T	R1	L1	T	R1
Base Volume		23	594	74	142	131	142	469	573	102
PHF		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume		6	149	19	36	33	36	117	143	26
Adjusted Volume		23	594	74	142	131	142	469	573	102

Volume and Adjustments by Lane Group								
Approach	N	E			S		W	
Lane Group		L	C	R	C	R	L	C
ID		993	994	996	991	992	997	999
Lanes		L	T, T	R	LT	R	L, L	T, RT
Volume		23	594	74	273	142	469	675

Saturation Flow Rate								
Approach	N	E			S		W	
Lane Group		993	994	996	991	992	997	999
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		23	594	74	142	131	142	469	573	102
Volume / Saturation Flow Rate		0.014	0.186	0.046	0.089	0.171	0.089	0.147	0.211	0.211
Overlap adjusted Volume / Saturation Flow Rate		0.014	0.186	0.046	0.089	0.171	0.089	0.147	0.211	0.211
Critical Movement			Y			Y		Y		

Node 441: Calle Real & NB 101 OnRamp	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	2.26
Worst Case Delay	10.97
Worst Case LOS	B

Volume and Adjustments					
Approach	E (Major)		S (Major)	W	
Movement	L1	T		T	R1
Base Volume	185.00	57.00		62.00	1.00
PHF, Peak-hour factor	0.920	0.920		0.920	0.920
V, Adjusted Volume	201.09	61.96		67.39	1.09

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		2	2
vx, Volume				67.39	1.09
Conflicting Volume (Veh)				232.07	232.07
Conflicting Volume (Ped)				0.00	0.00
Conflicting Volume				232.07	232.07
Two-Stage Gap Acceptance					
Number of Storage Spaces in Median Refuge Area					
cpx, Potential Capacity				671.52	812.06
Capacity				671.52	812.06

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	201.09	61.96		67.39	1.09
cmx, Capacity				671.52	812.06
V / C				0.10	0.00
d, Delay				10.97	10.04
LOS				B	B
dA, Approach Delay	0.00		0.00	10.95	
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	263.04		68.48
Flared Storage Size			
cmx, Capacity			673.37
V / C			0.10
Q95, 95% Queue Length			0.34
d, Delay			10.95
LOS			B
dA, Approach Delay	0.00	0.00	10.95
Approach LOS			B

Node 445: Calle Real & Winchester Canyon	
Control Type	AWSC
Method	HCM 7th Edition
Average Delay	10.05
Average LOS	B

Volume and Adjustments				
Approach	N	E		W
Movement	R1	T	R1	L1
Base Volume	138.00	243.00	189.00	76.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920
Flow Rate	150.00	264.13	205.43	82.61
Geometry Group	1	1		1

Saturation Headway			
Approach	N	E	W
Lanes	Lane 1	Lane 1	Lane 1
Total Lane Flow Rate	150.00	469.57	82.61
Left Turn Flow Rate	0.00	0.00	82.61
Right Turn Flow Rate	150.00	205.43	0.00
PLT, Proportion LT	0.00	0.00	1.00
PRT, Proportion RT	1.00	0.44	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	-0.26	0.20

Departure Headway			
Approach	N	E	W
Lanes	Lane 1	Lane 1	Lane 1
Total Lane Flow Rate	150.00	469.57	82.61
hd initial	3.20	3.20	3.20
x initial	0.13	0.42	0.07
hd, iteration 1	3.44	3.96	4.36
Difference, iteration 1	0.24	0.76	1.16
hd, iteration 2	3.49	4.01	4.38
Difference, iteration 2	0.05	0.04	0.02
Convergence	Y	Y	Y
hd final, Departure Headway	3.49	4.01	4.38
x final, Degree of Utilization	0.15	0.52	0.10

Capacity and Level of Service			
Approach	N	E	W
Lanes	Lane 1	Lane 1	Lane 1
Total Lane Flow Rate	150.00	469.57	82.61
hd, Departure Headway	3.49	4.01	4.38
x, Degree of Utilization	0.15	0.52	0.10
m, Move Up Time	2.00	2.00	2.00
ts, Service Time	1.49	2.01	2.38
Capacity	1029.79	897.86	821.37
Delay	7.09	11.37	7.87
LOS	A	B	A
Q95, 95% Queue Length	0.51	3.24	0.33
Approach Delay	7.09	11.37	7.87
Approach LOS	A	B	A
Intersection Delay	10.05		
Intersection LOS	B		

Node 450: Calle Real & Brandon Dr.	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	1.89
Worst Case Delay	10.26
Worst Case LOS	B

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	50.00	6.00	109.00	64.00	3.00	81.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	54.35	6.52	118.48	69.57	3.26	88.04

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	54.35	6.52			3.26	
Conflicting Volume (Veh)	247.83	153.26			188.04	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	247.83	153.26			188.04	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	745.01	898.06			1398.25	
Capacity	743.18	898.06			1398.25	

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			0.00	
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	54.35	6.52	118.48	69.57	3.26	88.04
cmx, Capacity	743.18	898.06			1398.25	
V / C	0.07	0.01			0.00	
d, Delay	10.26	9.42			7.58	
LOS	B	A			A	
dA, Approach Delay	10.17		0.00		0.27	
Approach LOS	B					
dRank1, Rank 1 Delay			0.00		0.02	

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	60.87	188.04	91.30
Flared Storage Size			
cmx, Capacity	757.18		1800.00
V / C	0.08		0.05
Q95, 95% Queue Length	0.26		0.01
d, Delay	10.17		7.58
LOS	B		
dA, Approach Delay	10.17	0.00	0.27
Approach LOS	B		

Node 451: San Rossano Dr & Calle Real	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	1.13
Worst Case Delay	10.89
Worst Case LOS	B

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	31.00	4.00	155.00	58.00	7.00	124.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	33.70	4.35	168.48	63.04	7.61	134.78

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	33.70	4.35			7.61	
Conflicting Volume (Veh)	350.00	200.00			231.52	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	350.00	200.00			231.52	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	651.33	846.06			1348.12	
Capacity	647.36	846.06			1348.12	

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			0.00	
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	33.70	4.35	168.48	63.04	7.61	134.78
cmx, Capacity	647.36	846.06			1348.12	
V / C	0.05	0.01			0.01	
d, Delay	10.89	9.58			7.68	
LOS	B	A			A	
dA, Approach Delay	10.74		0.00		0.41	
Approach LOS	B					
dRank1, Rank 1 Delay			0.00		0.05	

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	38.04	231.52	142.39
Flared Storage Size			
cmx, Capacity	665.22		1800.00
V / C	0.06		0.08
Q95, 95% Queue Length	0.18		0.01
d, Delay	10.74		7.68
LOS	B		
dA, Approach Delay	10.74	0.00	0.41
Approach LOS	B		

Node 461: Storke & US 101 NB Ramps

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.608
Loss Time	0
Cycle Length	100
Adj V/C	0.708

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	328	8	1068	285	167	187	163	158	20	14	339
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	82	2	267	71	42	47	41	40	5	4	85
Adjusted Volume	5	328	8	1068	285	167	187	163	158	20	14	339

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	L	C	L	C	L	C	L	C
ID	1037	1038	1034	1036	1030	1032	1040	1041
Lanes	L	T, RT	L, L	RT	L, L	T, RT	L	RT, R
Volume	5	336	1068	452	187	321	20	353

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	1037	1038	1034	1036	1030	1032	1040	1041
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	2	2	1	2	2	1	2
Saturation Flow Rate	1600	3200	3200	1600	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	328	8	1068	285	167	187	163	158	20	14	339
Volume / Saturation Flow Rate	0.003	0.105	0.105	0.334	0.283	0.283	0.058	0.100	0.100	0.013	0.110	0.110
Overlap adjusted Volume / Saturation Flow Rate	0.003	0.105	0.105	0.334	0.283	0.283	0.058	0.100	0.100	0.013	0.110	0.110
Critical Movement		Y		Y			Y				Y	

Node 462: Storke & US 101 SB Ramp	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.525
Loss Time	0
Cycle Length	100
Adj V/C	0.625

Volume and Adjustments by Movement								
Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	256	1447		548	653	5	5	59
PHF	1.000	1.000		1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	64	362		137	163	1	1	15
Adjusted Volume	256	1447		548	653	5	5	59

Volume and Adjustments by Lane Group							
Approach	N		E	S		W	
Lane Group	L	C		C	R	C	R
ID	1046	1048		1043	1045	1050	1051
Lanes	L, L	T, T		T, T	R	LT	R
Volume	256	1447		548	653	10	59

Saturation Flow Rate							
Approach	N		E	S		W	
Lane Group	1046	1048		1043	1045	1050	1051
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	256	1447		548	653	5	5	59
Volume / Saturation Flow Rate	0.080	0.452		0.171	0.408	0.003	0.006	0.037
Overlap adjusted Volume / Saturation Flow Rate	0.080	0.452		0.171	0.408	0.003	0.006	0.037
Critical Movement	Y				Y			Y

Node 465: Los Carneros Rd & Calle Koral (west/south)	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	0.15
Worst Case Delay	10.66
Worst Case LOS	B

Volume and Adjustments				
Approach	N (Major)		S (Major)	W
Movement	T	R1	T	R1
Base Volume	607.00	22.00	923.00	22.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920
V, Adjusted Volume	659.78	23.91	1003.26	23.91

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				23.91
Conflicting Volume (Veh)				341.85
Conflicting Volume (Ped)				0.00
Conflicting Volume				341.85
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median Refuge Area				
cpx, Potential Capacity				659.94
Capacity				659.94

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	659.78	23.91	1003.26	23.91
cmx, Capacity				659.94
V / C				0.04
d, Delay				10.66
LOS				B
dA, Approach Delay	0.00		0.00	10.66
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	341.85	341.85	501.63	501.63	23.91
Flared Storage Size					
cmx, Capacity					
V / C					
Q95, 95% Queue Length					
d, Delay					
LOS					
dA, Approach Delay	0.00		0.00		10.66
Approach LOS					B

Node 466: Los Carneros & Cremona	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.334
Loss Time	0
Cycle Length	100
Adj V/C	0.434

Volume and Adjustments by Movement										
Approach	N	E			S			W		
Movement	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	6	3	614	0	4	1	68	10	915	1
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	154	0	1	0	17	3	229	0
Adjusted Volume	6	3	614	0	4	1	68	10	915	1

Volume and Adjustments by Lane Group						
Approach	N	E		S	W	
Lane Group	R	L	C	C	L	C
ID	1056	1053	1054	1052	1058	1059
Lanes	R, R	L	T, T	LTR	L	T, RT
Volume	6	3	614	73	10	916

Saturation Flow Rate						
Approach	N	E		S	W	
Lane Group	1056	1053	1054	1052	1058	1059
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	6	3	614	0	4	1	68	10	915	1
Volume / Saturation Flow Rate	0.002	0.002	0.192	0.000	0.003	0.046	0.046	0.006	0.286	0.286
Overlap adjusted Volume / Saturation Flow Rate	0.002	0.002	0.192	0.000	0.003	0.046	0.046	0.006	0.286	0.286
Critical Movement		Y				Y			Y	

Node 467: Los Carneros & Calle Koral	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.486
Loss Time	0
Cycle Length	100
Adj V/C	0.586

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	554	60	20	13	262	24	991	38	59	4	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	29	139	15	5	3	66	6	248	10	15	1	3
Adjusted Volume	114	554	60	20	13	262	24	991	38	59	4	12

Volume and Adjustments by Lane Group										
Approach	N			E			S		W	
Lane Group	L	C	R	L	C	R	L	C	L	C
ID	1064	1065	1067	1061	1062	1063	1070	1071	1068	1069
Lanes	L	T, T	R	L	T	R	L	T, T, RT	L	RT
Volume	114	554	60	20	13	262	24	1029	59	16

Saturation Flow Rate										
Approach	N			E			S		W	
Lane Group	1064	1065	1067	1061	1062	1063	1070	1071	1068	1069
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	114	554	60	20	13	262	24	991	38	59	4	12
Volume / Saturation Flow Rate	0.071	0.173	0.038	0.013	0.008	0.164	0.015	0.214	0.214	0.037	0.010	0.010
Overlap adjusted Volume / Saturation Flow Rate	0.071	0.173	0.038	0.013	0.008	0.164	0.015	0.214	0.214	0.037	0.010	0.010
Critical Movement	Y					Y			Y	Y		

Node 489: Hollister & Patterson

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.532
Loss Time	0
Cycle Length	100
Adj V/C	0.632

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	419	103	113	34	376	336	57	289	93	190	522	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	105	26	28	9	94	84	14	72	23	48	131	10
Adjusted Volume	419	103	113	34	376	336	57	289	93	190	522	40

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	L	C	L	C	L	C	L	C
ID	1084	1086	1081	1082	1092	1093	1088	1090
Lanes	L, L	T, RT	L	T, RT	L	T, RT	L, L	T, RT
Volume	419	216	34	712	57	382	190	562

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	1084	1086	1081	1082	1092	1093	1088	1090
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	419	103	113	34	376	336	57	289	93	190	522	40
Volume / Saturation Flow Rate	0.131	0.068	0.068	0.021	0.223	0.223	0.036	0.119	0.119	0.059	0.176	0.176
Overlap adjusted Volume / Saturation Flow Rate	0.131	0.068	0.068	0.021	0.223	0.223	0.036	0.119	0.119	0.059	0.176	0.176
Critical Movement	Y					Y		Y		Y		

Node 506: Cathedral Oaks 101 SB-Ramp	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	2.54
Worst Case Delay	31.1
Worst Case LOS	D

Volume and Adjustments								
Approach	N (Major)		E	S (Major)		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	111.00	342.00		295.00	182.00	36.00	1.00	43.00
PHF, Peak-hour factor	0.920	0.920		0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	120.65	371.74		320.65	197.83	39.13	1.09	46.74

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	3	3	2
vx, Volume	120.65					39.13	1.09	46.74
Conflicting Volume (Veh)	518.48					1032.61	1131.52	371.74
Conflicting Volume (Ped)	0.00					0.00	0.00	0.00
Conflicting Volume	518.48					1032.61	1131.52	371.74
Two-Stage Gap Acceptance						No	No	
Number of Storage Spaces in Median Refuge Area								
cpx, Potential Capacity	1057.84					212.66	204.99	678.64
Capacity	1057.84					182.09	175.53	678.64

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	0.00					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	120.65	371.74		320.65	197.83	39.13	1.09	46.74
cmx, Capacity	1057.84					182.09	175.53	678.64
V / C	0.11					0.21	0.01	0.07
d, Delay	8.84					30.36	31.10	10.70
LOS	A					D	D	B
dA, Approach Delay	2.17		0.00	0.00		19.80		
Approach LOS			A			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 1	Lane 1	Lane 2
Movements				T, R1	L1, T	
vx, Volume	120.65	371.74		518.48	40.22	46.74
Flared Storage Size						
cmx, Capacity					181.91	
V / C					0.22	
Q95, 95% Queue Length					0.84	
d, Delay					30.38	
LOS					D	
dA, Approach Delay	2.17		0.00	0.00	19.80	
Approach LOS			A		C	

Node 511: Hollister & Pebble Beach Rd

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	0.97
Worst Case Delay	21.42
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	9.00	0.00	20.00	12.00	498.00	39.00	5.00	0.00	7.00	33.00	314.00	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	9.78	0.00	21.74	13.04	541.30	42.39	5.43	0.00	7.61	35.87	341.30	15.22

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	9.78	0.00	21.74	13.04			5.43	0.00	7.61	35.87		
Conflicting Volume (Veh)	809.78	995.65	270.65	356.52			728.26	1030.43	178.26	583.70		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	809.78	995.65	270.65	356.52			728.26	1030.43	178.26	583.70		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	275.02	246.50	733.26	1213.37			314.80	235.17	840.24	1000.77		
Capacity	257.59	232.99	733.26	1213.37			288.72	222.28	840.24	1000.77		

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	7.50	6.50	6.90	4.10			7.50	6.50	6.90	4.10		
tc,base,l, Base Critical Headway (Stage I)												
tc,base,ll, 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	0.00			0.20	0.20	0.10	0.00		
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,l, Critical Headway (Stage I)												
tc,ll, 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	9.78	0.00	21.74	13.04	541.30	42.39	5.43	0.00	7.61	35.87	341.30	15.22
cmx, Capacity	257.59	232.99	733.26	1213.37			288.72	222.28	840.24	1000.77		
V / C	0.04	0.00	0.03	0.01			0.02	0.00	0.01	0.04		
d, Delay	19.54	21.01	10.47	8.00			17.69	21.42	9.51	8.73		
LOS	C	C	B	A			C	C	A	A		
dA, Approach Delay		13.28			0.17			12.92			0.80	
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	31.52	13.04	541.30	42.39	13.04	35.87	178.26	178.26
Flared Storage Size								
cmx, Capacity	466.13				467.86			
V / C	0.07				0.03			
Q95, 95% Queue Length	0.22				0.09			
d, Delay	13.28				12.92			
LOS	B				B			
dA, Approach Delay	13.28	0.17			12.92	0.80		
Approach LOS	B				B			

Node 512: Hollister & Palo Alto Dr

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	1.46
Worst Case Delay	20.59
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	15.00	0.00	30.00	26.00	508.00	2.00	19.00	0.00	14.00	9.00	295.00	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	16.30	0.00	32.61	28.26	552.17	2.17	20.65	0.00	15.22	9.78	320.65	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	16.30	0.00	32.61	28.26			20.65	0.00	15.22	9.78		
Conflicting Volume (Veh)	789.67	970.65	277.17	341.30			683.15	961.41	170.65	554.35		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	789.67	970.65	277.17	341.30			683.15	961.41	170.65	554.35		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	284.35	254.95	726.23	1229.05			339.16	258.15	849.70	1026.08		
Capacity	268.77	245.38	726.23	1229.05			311.77	248.45	849.70	1026.08		

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,l, Base Critical Headway (Stage I)												
tc,base,ll, 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	0.00			0.20	0.20	0.10	0.00		
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,l, Critical Headway (Stage I)												
tc,ll, 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	16.30	0.00	32.61	28.26	552.17	2.17	20.65	0.00	15.22	9.78	320.65	20.65
cmx, Capacity	268.77	245.38	726.23	1229.05			311.77	248.45	849.70	1026.08		
V / C	0.06	0.00	0.04	0.02			0.07	0.00	0.02	0.01		
d, Delay	19.31	20.59	10.87	8.00			17.32	20.27	10.01	8.54		
LOS	C	C	B	A			C	C	B	A		
dA, Approach Delay		13.69			0.39			14.22			0.24	
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	48.91	28.26	277.17	277.17	35.87	9.78	170.65	170.65
Flared Storage Size								
cmx, Capacity	463.35				426.25			
V / C	0.11				0.08			
Q95, 95% Queue Length	0.35				0.28			
d, Delay	13.69				14.22			
LOS	B				B			
dA, Approach Delay	13.69	0.39			14.22	0.24		
Approach LOS	B				B			

Node 513: Hollister & Coronado	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	1.42
Worst Case Delay	16.83
Worst Case LOS	C

Volume and Adjustments						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	56.00	514.00	30.00	39.00	283.00	44.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	60.87	558.70	32.61	42.39	307.61	47.83

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	60.87		32.61	42.39		
Conflicting Volume (Veh)	355.43		732.61	177.72		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	355.43		732.61	177.72		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	1214.48		360.39	840.91		
Capacity	1214.48		339.01	840.91		

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	0.00		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	60.87	558.70	32.61	42.39	307.61	47.83
cmx, Capacity	1214.48		339.01	840.91		
V / C	0.05		0.10	0.05		
d, Delay	8.12		16.83	10.49		
LOS	A		C	B		
dA, Approach Delay	0.80		13.24		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	60.87	279.35	279.35	75.00	177.72	177.72
Flared Storage Size						
cmx, Capacity				511.60		
V / C				0.15		
Q95, 95% Queue Length				0.51		
d, Delay				13.24		
LOS				B		
dA, Approach Delay	0.80			13.24	0.00	
Approach LOS				B		

Node 515: Hollister & Cannon Green	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	2.12
Worst Case Delay	29.25
Worst Case LOS	D

Volume and Adjustments						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	119.00	719.00	30.00	75.00	411.00	24.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	129.35	781.52	32.61	81.52	446.74	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	129.35		32.61	81.52		
Conflicting Volume (Veh)	472.83		1109.24	236.41		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	472.83		1109.24	236.41		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	1099.64		206.83	771.27		
Capacity	1099.64		175.76	771.27		

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	0.00		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	129.35	781.52	32.61	81.52	446.74	26.09
cmx, Capacity	1099.64		175.76	771.27		
V / C	0.12		0.19	0.11		
d, Delay	8.71		29.25	13.43		
LOS	A		D	B		
dA, Approach Delay	1.24		17.95		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	129.35	390.76	390.76	114.13	236.41	236.41
Flared Storage Size						
cmx, Capacity				391.89		
V / C				0.29		
Q95, 95% Queue Length				1.22		
d, Delay				17.95		
LOS				C		
dA, Approach Delay	1.24			17.95	0.00	
Approach LOS				C		

Node 517: Hollister & Pacific Oaks	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.366
Loss Time	0
Cycle Length	100
Adj V/C	0.466

Volume and Adjustments by Movement										
Approach	N			E		S		W		
Movement	L1	T	R1	L1	T	L1	R1	L1	T	R1
Base Volume	0	0	0	141	679	168	94	0	464	90
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	0	0	0	35	170	42	24	0	116	23
Adjusted Volume	0	0	0	141	679	168	94	0	464	90

Volume and Adjustments by Lane Group							
Approach	N	E		S		W	
Lane Group	C	L	C	L	R	L	C
ID	1118	1115	1116	1122	1123	1119	1120
Lanes	LTR	L	T, T	L	R	L	T, RT
Volume	0	141	679	168	94	0	554

Saturation Flow Rate							
Approach	N	E		S		W	
Lane Group	1118	1115	1116	1122	1123	1119	1120
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	0	0	0	141	679	168	94	0	464	90
Volume / Saturation Flow Rate	0.000	0.000	0.000	0.088	0.212	0.105	0.059	0.000	0.173	0.173
Overlap adjusted Volume / Saturation Flow Rate	0.000	0.000	0.000	0.088	0.212	0.105	0.059	0.000	0.173	0.173
Critical Movement				Y		Y			Y	

Node 518: Hollister & Santa Felicia

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	26.27
Worst Case Delay	264.57
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	24.00	4.00	26.00	217.00	755.00	33.00	37.00	0.00	160.00	4.00	482.00	75.00
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	4.35	28.26	235.87	820.65	35.87	40.22	0.00	173.91	4.35	523.91	81.52

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	26.09	4.35	28.26	235.87			40.22	0.00	173.91	4.35		
Conflicting Volume (Veh)	1580.98	1924.46	428.26	605.43			1457.61	1901.63	302.72	856.52		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1580.98	1924.46	428.26	605.43			1457.61	1901.63	302.72	856.52		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	74.75	67.56	580.45	982.41			92.34	69.81	699.31	792.41		
Capacity	37.88	45.57	580.45	982.41			55.31	47.08	699.31	792.41		

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,l, Base Critical Headway (Stage I)												
tc,base,ll, 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	0.00			0.20	0.20	0.10	0.00		
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,l, Critical Headway (Stage I)												
tc,ll, 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	26.09	4.35	28.26	235.87	820.65	35.87	40.22	0.00	173.91	4.35	523.91	81.52
cmx, Capacity	37.88	45.57	580.45	982.41			55.31	47.08	699.31	792.41		
V / C	0.69	0.10	0.05	0.24			0.73	0.00	0.25	0.01		
d, Delay	264.57	248.53	175.73	9.82			219.48	230.85	159.54	9.57		
LOS	F	F	F	A			F	F	F	A		
dA, Approach Delay		220.61			2.12			170.79			0.07	
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	58.70	235.87	428.26	428.26	214.13	4.35	302.72	302.72
Flared Storage Size								
cmx, Capacity	70.48				219.43			
V / C	0.83				0.98			
Q95, 95% Queue Length	6.89				16.64			
d, Delay	220.61				170.79			
LOS	F				F			
dA, Approach Delay	220.61	2.12			170.79	0.07		
Approach LOS	F				F			

Node 521: Storke & Marketplace	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.431
Loss Time	0
Cycle Length	100
Adj V/C	0.531

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	61	462	312	66	53	89	122	554	109	223	46	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	15	116	78	17	13	22	31	139	27	56	12	28
Adjusted Volume	61	462	312	66	53	89	122	554	109	223	46	111

Volume and Adjustments by Lane Group								
Approach	N			E		S		W
Lane Group	L	C	R	C	R	L	C	C
ID	1126	1127	1129	1124	1125	1132	1133	1130
Lanes	L	T, T	R	LT	R	L	T, RT	L, LTR
Volume	61	462	312	119	89	122	663	380

Saturation Flow Rate										
Approach	N			E		S			W	
Lane Group	1126		1127	1129	1124	1125	1132		1133	1130
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	480	3200	1600	1600	1600	1520	676	3200	3200

Capacity Analysis												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	61	462	312	66	53	89	122	554	109	223	46	111
Volume / Saturation Flow Rate	0.038	0.144	0.195	0.041	0.074	0.056	0.076	0.207	0.207	0.070	0.119	0.119
Overlap adjusted Volume / Saturation Flow Rate	0.038	0.144	0.195	0.041	0.074	0.056	0.076	0.207	0.207	0.070	0.119	0.119
Critical Movement			Y	Y			Y				Y	

Node 522: Hollister & Storke	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.6
Loss Time	0
Cycle Length	100
Adj V/C	0.7

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	117	469	371	282	500	246	120	647	135	558	382	76
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	117	93	71	125	62	30	162	34	140	96	19
Adjusted Volume	117	469	371	282	500	246	120	647	135	558	382	76

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	1140	1142	1144	1135	1137	1139	1150	1152	1154	1145	1147	1149
Lanes	L, L	T, T	R	L, L	T, T	R	L, L	T, T	R	L, L	T, T	R
Volume	117	469	371	282	500	246	120	647	135	558	382	76

Saturation Flow Rate												
Approach	N			E			S			W		
Lane Group	1140	1142	1144	1135	1137	1139	1150	1152	1154	1145	1147	1149
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	117	469	371	282	500	246	120	647	135	558	382	76
Volume / Saturation Flow Rate	0.037	0.147	0.232	0.088	0.156	0.154	0.038	0.202	0.084	0.174	0.119	0.048
Overlap adjusted Volume / Saturation Flow Rate	0.037	0.147	0.232	0.088	0.156	0.154	0.038	0.202	0.084	0.174	0.119	0.048
Critical Movement			Y		Y		Y			Y		

Node 524: Hollister & Coromar Project Access

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.38
Loss Time	0
Cycle Length	100
Adj V/C	0.48

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	17	1	37	25	989	26	24	2	53	21	719	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	4	0	9	6	247	7	6	1	13	5	180	3
Adjusted Volume	17	1	37	25	989	26	24	2	53	21	719	10

Volume and Adjustments by Lane Group

Approach	N	E		S		W		
Lane Group	C	L	C	C	R	L	C	R
ID	1160	1157	1158	1155	1156	1161	1162	1164
Lanes	LTR	L	T, RT	LT	R	L	T, T	R
Volume	55	25	1015	26	53	21	719	10

Saturation Flow Rate

Approach	N	E		S		W		
Lane Group	1160	1157	1158	1155	1156	1161	1162	1164
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	17	1	37	25	989	26	24	2	53	21	719	10
Volume / Saturation Flow Rate	0.011	0.034	0.034	0.016	0.317	0.317	0.015	0.016	0.033	0.013	0.225	0.006
Overlap adjusted Volume / Saturation Flow Rate	0.011	0.034	0.034	0.016	0.317	0.317	0.015	0.016	0.033	0.013	0.225	0.006
Critical Movement		Y			Y		Y			Y		

Node 525: Hollister & Los Carneros

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.465
Loss Time	0
Cycle Length	100
Adj V/C	0.565

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	437	206	142	585	32	239	494	157	196	308	175
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	109	52	36	146	8	60	124	39	49	77	44
Adjusted Volume	42	437	206	142	585	32	239	494	157	196	308	175

Volume and Adjustments by Lane Group

Approach	N			E		S			W	
Lane Group	L	C	R	L	C	L	C	R	L	C
ID	1168	1169	1171	1165	1166	1176	1178	1180	1172	1174
Lanes	L	T, T	R	L	T, RT	L, L	T, T	R	L, L	T, RT
Volume	42	437	206	142	617	239	494	157	196	483

Saturation Flow Rate

Approach	N			E		S			W	
Lane Group	1168	1169	1171	1165	1166	1176	1178	1180	1172	1174
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	437	206	142	585	32	239	494	157	196	308	175
Volume / Saturation Flow Rate	0.026	0.137	0.129	0.089	0.193	0.193	0.075	0.154	0.098	0.061	0.151	0.151
Overlap adjusted Volume / Saturation Flow Rate	0.026	0.137	0.129	0.089	0.193	0.193	0.075	0.154	0.098	0.061	0.151	0.151
Critical Movement		Y			Y		Y			Y		

Node 526: Cremona Dr & Hollister Ave	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	0.32
Worst Case Delay	23.95
Worst Case LOS	C

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	6.00	14.00	739.00	14.00	13.00	536.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	6.52	15.22	803.26	15.22	14.13	582.61

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	6.52	15.22			14.13	
Conflicting Volume (Veh)	1130.43	409.24			818.48	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	1130.43	409.24			818.48	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	200.41	597.11			818.74	
Capacity	196.28	597.11			818.74	

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			0.00	
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	6.52	15.22	803.26	15.22	14.13	582.61
cmx, Capacity	196.28	597.11			818.74	
V / C	0.03	0.03			0.02	
d, Delay	23.95	11.64			9.41	
LOS	C	B			A	
dA, Approach Delay	15.33		0.00		0.22	
Approach LOS	C					
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	Lane 2
Movements	L1, R1		T, R1	L1, T	
vx, Volume	21.74	409.24	409.24	298.37	298.37
Flared Storage Size					
cmx, Capacity	370.27			1800.00	
V / C	0.06			0.17	
Q95, 95% Queue Length	0.19			0.02	
d, Delay	15.33			9.41	
LOS	C				
dA, Approach Delay	15.33	0.00		0.22	
Approach LOS	C				

Node 528: Hollister & Los Carneros Way	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.287
Loss Time	0
Cycle Length	100
Adj V/C	0.387

Volume and Adjustments by Movement						
Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Base Volume	23	14	733	109	26	517
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	6	4	183	27	7	129
Adjusted Volume	23	14	733	109	26	517

Volume and Adjustments by Lane Group				
Approach	N	E	W	
Lane Group	C	C	L	C
ID	1183	1181	1186	1187
Lanes	L, LTR, R	T, RT	L	T, T
Volume	37	842	26	517

Saturation Flow Rate				
Approach	N	E	W	
Lane Group	1183	1181	1186	1187
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	23	14	733	109	26	517
Volume / Saturation Flow Rate	0.007	0.008	0.263	0.263	0.016	0.162
Overlap adjusted Volume / Saturation Flow Rate	0.007	0.008	0.263	0.263	0.016	0.162
Critical Movement		Y	Y		Y	

Node 530: Hollister & Aero Camino

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.311
Loss Time	0
Cycle Length	100
Adj V/C	0.411

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	40	3	32	8	783	49	22	0	19	16	493	28
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	8	2	196	12	6	0	5	4	123	7
Adjusted Volume	40	3	32	8	783	49	22	0	19	16	493	28

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	C	R	L	C	L	R	L	C
ID	1194	1195	1191	1192	1189	1190	1196	1197
Lanes	LT	R	L	T, RT	L	R	L	T, RT
Volume	43	32	8	832	22	19	16	521

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	1194	1195	1191	1192	1189	1190	1196	1197
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	40	3	32	8	783	49	22	0	19	16	493	28
Volume / Saturation Flow Rate	0.025	0.027	0.020	0.005	0.260	0.260	0.014	0.000	0.012	0.010	0.163	0.163
Overlap adjusted Volume / Saturation Flow Rate	0.025	0.027	0.020	0.005	0.260	0.260	0.014	0.000	0.012	0.010	0.163	0.163
Critical Movement		Y				Y	Y			Y		

Node 553: Storke & Santa Felicia	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	4.69
Worst Case Delay	65.78
Worst Case LOS	F

Volume and Adjustments						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
Base Volume	712.00	94.00	125.00	665.00	35.00	135.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	773.91	102.17	135.87	722.83	38.04	146.74

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			135.87		38.04	146.74
Conflicting Volume (Veh)			876.09		1458.15	438.04
Conflicting Volume (Ped)			0.00		0.00	0.00
Conflicting Volume			876.09		1458.15	438.04
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity			779.18		122.50	572.06
Capacity			779.18		95.77	572.06

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			0.00		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	773.91	102.17	135.87	722.83	38.04	146.74
cmx, Capacity			779.18		95.77	572.06
V / C			0.17		0.40	0.26
d, Delay			10.60		65.78	34.48
LOS			B		F	D
dA, Approach Delay	0.00		1.68		40.92	
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	438.04	438.04	135.87	361.41	361.41	184.78
Flared Storage Size						
cmx, Capacity						282.65
V / C						0.65
Q95, 95% Queue Length						5.13
d, Delay						40.92
LOS						E
dA, Approach Delay	0.00		1.68			40.92
Approach LOS						E

Node 556: Fowler & Fairview	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	0.84
Worst Case Delay	13
Worst Case LOS	B

Volume and Adjustments						
Approach	N (Major)		S		W (Major)	
Movement	T	R1	L1	T	L1	R1
Base Volume	20.00	185.00	3.00	24.00	333.00	10.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	21.74	201.09	3.26	26.09	361.96	10.87

Pedestrians						
Approach	N (Major)		S		W (Major)	
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		W (Major)	
Movement	T	R1	L1	T	L1	R1
Rank	2	1	3	2	1	1
vx, Volume	21.74		3.26	26.09		
Conflicting Volume (Veh)	367.39		590.22	367.39		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	367.39		590.22	367.39		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	1202.28		473.37	564.66		
Capacity	1202.28		471.65	564.66		

Critical Headway and Follow Up Headway						
Approach	N (Major)		S		W (Major)	
Movement	T	R1	L1	T	L1	R1
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	0.00		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)		S		W (Major)	
Movement	T	R1	L1	T	L1	R1
vx, Volume	21.74	201.09	3.26	26.09	361.96	10.87
cmx, Capacity	1202.28		471.65	564.66		
V / C	0.02		0.01	0.05		
d, Delay	8.05		13.00	11.74		
LOS	A		B	B		
dA, Approach Delay	0.79		11.88		0.00	
Approach LOS			B			
dRank1, Rank 1 Delay	0.00				0.00	

Delay and Level of Service by Lane			
Approach	N (Major)	S	W (Major)
Lane	Lane 1	Lane 1	Lane 1
Movements	T, R1	L1, T	L1, R1
vx, Volume	222.83	29.35	372.83
Flared Storage Size			
cmx, Capacity	1202.28	552.55	
V / C	0.19	0.05	
Q95, 95% Queue Length	0.68	0.17	
d, Delay	8.05	11.88	
LOS		B	
dA, Approach Delay	0.79	11.88	0.00
Approach LOS		B	

Node 562: Storke & Phelps

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.385
Loss Time	0
Cycle Length	100
Adj V/C	0.485

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	56	537	162	5	5	48	70	572	11	139	6	61
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	134	41	1	1	12	18	143	3	35	2	15
Adjusted Volume	56	537	162	5	5	48	70	572	11	139	6	61

Volume and Adjustments by Lane Group

Approach	N		E	S		W	
Lane Group	L	C	C	L	C	L	C
ID	1200	1201	1199	1205	1206	1203	1204
Lanes	L	T, RT	LTR	L	T, RT	L	RT
Volume	56	699	58	70	583	139	67

Saturation Flow Rate

Approach	N		E	S		W	
Lane Group	1200	1201	1199	1205	1206	1203	1204
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	56	537	162	5	5	48	70	572	11	139	6	61
Volume / Saturation Flow Rate	0.035	0.218	0.218	0.003	0.036	0.036	0.044	0.182	0.182	0.087	0.042	0.042
Overlap adjusted Volume / Saturation Flow Rate	0.035	0.218	0.218	0.003	0.036	0.036	0.044	0.182	0.182	0.087	0.042	0.042
Critical Movement			Y		Y		Y			Y		

Node 564: Mesa & Los Carneros	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.176
Loss Time	0
Cycle Length	100
Adj V/C	0.276

Volume and Adjustments by Movement							
Approach	N	E		S		W	
Movement		L1	T	L1	R1	T	R1
Base Volume		139	35	19	107	17	15
PHF		1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume		35	9	5	27	4	4
Adjusted Volume		139	35	19	107	17	15

Volume and Adjustments by Lane Group						
Approach	N	E	S		W	
Lane Group		C	L	R	C	R
ID		1208	1211	1212	1209	1210
Lanes		LT	L	R	T	R
Volume		174	19	107	17	15

Saturation Flow Rate						
Approach	N	E	S		W	
Lane Group		1208	1211	1212	1209	1210
Base Saturation Flow Rate		1600	1600	1600	1600	1600
Number of Lanes		1	1	1	1	1
Saturation Flow Rate		1600	1600	1600	1600	1600

Capacity Analysis							
Approach	N	E		S		W	
Movement		L1	T	L1	R1	T	R1
Volume		139	35	19	107	17	15
Volume / Saturation Flow Rate		0.087	0.109	0.012	0.067	0.011	0.009
Overlap adjusted Volume / Saturation Flow Rate		0.087	0.109	0.012	0.067	0.011	0.009
Critical Movement			Y		Y		

Node 617: Los Caneros & Castilian

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.371
Loss Time	0
Cycle Length	100
Adj V/C	0.471

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	4	580	42	8	1	35	31	673	4	207	0	45
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	145	11	2	0	9	8	168	1	52	0	11
Adjusted Volume	4	580	42	8	1	35	31	673	4	207	0	45

Volume and Adjustments by Lane Group

Approach	N		E	S		W	
Lane Group	L	C	C	L	C	L	R
ID	1259	1260	1258	1264	1265	1262	1263
Lanes	L	T, RT	LTR	L	T, RT	L	R
Volume	4	622	44	31	677	207	45

Saturation Flow Rate

Approach	N		E	S		W	
Lane Group	1259	1260	1258	1264	1265	1262	1263
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	4	580	42	8	1	35	31	673	4	207	0	45
Volume / Saturation Flow Rate	0.003	0.194	0.194	0.005	0.027	0.028	0.019	0.212	0.212	0.129	0.000	0.028
Overlap adjusted Volume / Saturation Flow Rate	0.003	0.194	0.194	0.005	0.027	0.028	0.019	0.212	0.212	0.129	0.000	0.028
Critical Movement	Y					Y		Y		Y		

Node 624: Cathedral Oaks & Calle Real	
Control Type	AWSC
Method	HCM 7th Edition
Average Delay	13.8
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	4.00	112.00	30.00	300.00	93.00	0.00	132.00	119.00	78.00	6.00	6.00	40.00
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	4.35	121.74	32.61	326.09	101.09	0.00	143.48	129.35	84.78	6.52	6.52	43.48
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	4.35	154.35	326.09	101.09	143.48	214.13	56.52
Left Turn Flow Rate	4.35	0.00	326.09	0.00	143.48	0.00	6.52
Right Turn Flow Rate	0.00	32.61	0.00	0.00	0.00	84.78	43.48
PLT, Proportion LT	1.00	0.00	1.00	0.00	1.00	0.00	0.12
PRT, Proportion RT	0.00	0.21	0.00	0.00	0.00	0.40	0.77
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	-0.15	0.50	0.00	0.50	-0.28	-0.44

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	4.35	154.35	326.09	101.09	143.48	214.13	56.52
hd initial	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x initial	0.00	0.14	0.29	0.09	0.13	0.19	0.05
hd, iteration 1	6.03	5.38	5.83	5.33	5.90	5.11	5.20
Difference, iteration 1	2.83	2.18	2.63	2.13	2.70	1.91	2.00
hd, iteration 2	6.82	6.17	6.36	5.86	6.57	5.78	6.01
Difference, iteration 2	0.79	0.79	0.52	0.52	0.67	0.67	0.81
hd, iteration 3	7.01	6.36	6.52	6.02	6.73	5.94	6.24
Difference, iteration 3	0.19	0.19	0.16	0.16	0.16	0.16	0.23
hd, iteration 4	7.07	6.41	6.56	6.06	6.78	5.99	6.30
Difference, iteration 4	0.05	0.05	0.04	0.04	0.05	0.05	0.06
Convergence	Y	Y	Y	Y	Y	Y	Y
hd final, Departure Headway	7.07	6.41	6.56	6.06	6.78	5.99	6.30
x final, Degree of Utilization	0.01	0.27	0.59	0.17	0.27	0.36	0.10

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	4.35	154.35	326.09	101.09	143.48	214.13	56.52
hd, Departure Headway	7.07	6.41	6.56	6.06	6.78	5.99	6.30
x, Degree of Utilization	0.01	0.27	0.59	0.17	0.27	0.36	0.10
m, Move Up Time	2.30	2.30	2.30	2.30	2.30	2.30	2.00
ts, Service Time	4.77	4.11	4.26	3.76	4.48	3.69	4.30
Capacity	509.07	561.32	548.36	593.79	531.04	600.57	571.51
Delay	9.83	11.54	18.74	10.00	11.98	12.00	9.99
LOS	A	B	C	B	B	B	A
Q95, 95% Queue Length	0.03	1.13	4.23	0.61	1.10	1.65	0.33
Approach Delay	11.49		16.67		11.99		9.99
Approach LOS	B		C		B		A
Intersection Delay	13.8						
Intersection LOS	B						

Node 630: Hollister & Marketplace/Village Way

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.581
Loss Time	0
Cycle Length	100
Adj V/C	0.681

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	140	35	43	326	800	171	78	30	312	58	571	57
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	35	9	11	82	200	43	20	8	78	15	143	14
Adjusted Volume	140	35	43	326	800	171	78	30	312	58	571	57

Volume and Adjustments by Lane Group

Approach	N	E			S		W	
Lane Group	C	L	C	R	C	R	L	C
ID	1274	1269	1271	1273	1267	1268	1275	1276
Lanes	LTR	L, L	T, T	R	LT	R	L	T, RT
Volume	218	326	800	171	108	312	58	628

Saturation Flow Rate

Approach	N	E			S		W	
Lane Group	1274	1269	1271	1273	1267	1268	1275	1276
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	140	35	43	326	800	171	78	30	312	58	571	57
Volume / Saturation Flow Rate	0.088	0.136	0.136	0.102	0.250	0.107	0.049	0.068	0.195	0.036	0.196	0.196
Overlap adjusted Volume / Saturation Flow Rate	0.088	0.136	0.136	0.102	0.250	0.107	0.049	0.068	0.195	0.036	0.196	0.196
Critical Movement	Y			Y					Y		Y	

Node 636: Hollister & Cathedral Oaks	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	2.59
Worst Case Delay	20.15
Worst Case LOS	C

Volume and Adjustments						
Approach	N (Major)		E (Major)		W	
Movement	L1	R1	T	R1	L1	T
Base Volume	327.00	60.00	34.00	394.00	86.00	34.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	355.43	65.22	36.96	428.26	93.48	36.96

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			36.96		93.48	36.96
Conflicting Volume (Veh)			388.04		853.26	388.04
Conflicting Volume (Ped)			0.00		0.00	0.00
Conflicting Volume			388.04		853.26	388.04
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity			1181.48		332.05	549.83
Capacity			1181.48		330.87	549.83

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			0.00		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	355.43	65.22	36.96	428.26	93.48	36.96
cmx, Capacity			1181.48		330.87	549.83
V / C			0.03		0.28	0.07
d, Delay			8.15		20.15	12.02
LOS			A		C	B
dA, Approach Delay	0.00		0.65		17.85	
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	355.43	65.22	36.96	428.26	93.48	36.96
Flared Storage Size						
cmx, Capacity						
V / C						
Q95, 95% Queue Length						
d, Delay						
LOS						
dA, Approach Delay	0.00		0.65		17.85	
Approach LOS					C	

Node 717: Hollister & Entrance

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.294
Loss Time	0
Cycle Length	100
Adj V/C	0.394

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	1	9	186	533	8	44	1	88	2	293	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	8	0	2	47	133	2	11	0	22	1	73	9
Adjusted Volume	33	1	9	186	533	8	44	1	88	2	293	34

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	1283	1284	1280	1281	1278	1279	1285	1286
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	34	9	186	541	45	88	2	327

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	1283	1284	1280	1281	1278	1279	1285	1286
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	1	9	186	533	8	44	1	88	2	293	34
Volume / Saturation Flow Rate	0.021	0.021	0.006	0.116	0.169	0.169	0.028	0.028	0.055	0.001	0.102	0.102
Overlap adjusted Volume / Saturation Flow Rate	0.021	0.021	0.006	0.116	0.169	0.169	0.028	0.028	0.055	0.001	0.102	0.102
Critical Movement	Y			Y					Y		Y	

Node 856: Hollister & Cortona	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	2.22
Worst Case Delay	69.71
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	6.00	0.00	147.00	0.00	898.00	49.00	0.00	0.00	0.00	86.00	619.00	0.00
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	6.52	0.00	159.78	0.00	976.09	53.26	0.00	0.00	0.00	93.48	672.83	0.00

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	6.52	0.00	159.78	0.00			0.00	0.00	0.00	93.48		
Conflicting Volume (Veh)	1526.09	1862.50	514.67	672.83			1347.83	1889.13	336.41	1029.35		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1526.09	1862.50	514.67	672.83			1347.83	1889.13	336.41	1029.35		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	82.13	73.83	510.27	927.52			111.34	71.07	665.28	682.67		
Capacity	68.30	61.40	510.27	927.52			63.60	59.10	665.28	682.67		

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,l, Base Critical Headway (Stage I)												
tc,base,ll, 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	0.00			0.20	0.20	0.10	0.00		
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,l, Critical Headway (Stage I)												
tc,ll, 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	6.52	0.00	159.78	0.00	976.09	53.26	0.00	0.00	0.00	93.48	672.83	0.00
cmx, Capacity	68.30	61.40	510.27	927.52			63.60	59.10	665.28	682.67		
V / C	0.10	0.00	0.31	0.00			0.00	0.00	0.00	0.14		
d, Delay	63.79	69.71	18.13	8.88			61.61	65.91	10.41	11.11		
LOS	F	F	C	A			F	F	B	B		
dA, Approach Delay		19.92			0.00			45.98			1.36	
Approach LOS		C						E				
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	Lane 3
Movements	L1, T, R1	L1, T	T, R1	L1, T, R1			T, R1
vx, Volume	166.30	514.67	514.67	0.00	93.48	336.41	336.41
Flared Storage Size							
cmx, Capacity	406.99	0.00		87.86			
V / C	0.41	0.00		0.00			
Q95, 95% Queue Length	2.04	0.00		0.00			
d, Delay	19.92	4.44		45.98			
LOS	C			E			
dA, Approach Delay	19.92	0.00		45.98	1.36		
Approach LOS	C			E			

Node 864: Deckers Outdoor Access & Hollister Ave	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	0.21
Worst Case Delay	11.64
Worst Case LOS	B

Volume and Adjustments				
Approach	E (Major)	S	W (Major)	
Movement	T	R1	T	R1
Base Volume	1031.00	33.00	793.00	0.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920
V, Adjusted Volume	1120.65	35.87	861.96	0.00

Pedestrians				
Approach	E (Major)	S	W (Major)	
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	E (Major)	S	W (Major)	
Movement	T	R1	T	R1
Rank	1	2	1	1
vx, Volume		35.87		
Conflicting Volume (Veh)		430.98		
Conflicting Volume (Ped)		0.00		
Conflicting Volume		430.98		
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median Refuge Area				
cpx, Potential Capacity		578.11		
Capacity		578.11		

Critical Headway and Follow Up Headway				
Approach	E (Major)	S	W (Major)	
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	E (Major)	S	W (Major)	
Movement	T	R1	T	R1
vx, Volume	1120.65	35.87	861.96	0.00
cmx, Capacity		578.11		
V / C		0.06		
d, Delay		11.64		
LOS		B		
dA, Approach Delay	0.00	11.64	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 1	Lane 1	Lane 2
Movements					T, R1
vx, Volume	560.33	560.33	35.87	430.98	430.98
Flared Storage Size					
cmx, Capacity					
V / C					
Q95, 95% Queue Length					
d, Delay					
LOS					
dA, Approach Delay	0.00		11.64	0.00	
Approach LOS			B		

Node 877: Hollister & Sumida Gardens

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.269
Loss Time	0
Cycle Length	100
Adj V/C	0.369

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	25	0	51	5	565	36	41	3	12	38	626	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	6	0	13	1	141	9	10	1	3	10	157	2
Adjusted Volume	25	0	51	5	565	36	41	3	12	38	626	8

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	L	C	L	C	L	C	L	C
ID	1291	1292	1288	1289	1296	1297	1293	1294
Lanes	L	RT	L	T, RT	L	RT	L	T, RT
Volume	25	51	5	601	41	15	38	634

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	1291	1292	1288	1289	1296	1297	1293	1294
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	25	0	51	5	565	36	41	3	12	38	626	8
Volume / Saturation Flow Rate	0.016	0.000	0.032	0.003	0.188	0.188	0.026	0.009	0.009	0.024	0.198	0.198
Overlap adjusted Volume / Saturation Flow Rate	0.016	0.000	0.032	0.003	0.188	0.188	0.026	0.009	0.009	0.024	0.198	0.198
Critical Movement			Y		Y		Y			Y		

Node 1042: Hollister & Santa Babara Shores	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	0.58
Worst Case Delay	14.89
Worst Case LOS	B

Volume and Adjustments						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	24.00	532.00	11.00	18.00	304.00	20.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	26.09	578.26	11.96	19.57	330.43	21.74

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	26.09		11.96	19.57		
Conflicting Volume (Veh)	352.17		682.61	176.09		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	352.17		682.61	176.09		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	1217.83		387.65	842.93		
Capacity	1217.83		377.75	842.93		

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	0.00		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	26.09	578.26	11.96	19.57	330.43	21.74
cmx, Capacity	1217.83		377.75	842.93		
V / C	0.02		0.03	0.02		
d, Delay	8.02		14.89	9.63		
LOS	A		B	A		
dA, Approach Delay	0.35		11.63		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	26.09	289.13	289.13	31.52	176.09	176.09
Flared Storage Size						
cmx, Capacity				574.56		
V / C				0.05		
Q95, 95% Queue Length				0.17		
d, Delay				11.63		
LOS				B		
dA, Approach Delay	0.35			11.63	0.00	
Approach LOS				B		

Node 1141: Sperling Preserve/Ellwood Dwy & Hollister Ave

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	1.65
Worst Case Delay	22.71
Worst Case LOS	C

Volume and Adjustments

Approach	N		E (Major)			S			W (Major)		
Movement	L1	T	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	15.00	15.00	38.00	399.00	89.00	7.00	1.00	13.00	33.00	318.00	8.00
PHF, Peak-hour factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
V, Adjusted Volume	15.00	15.00	38.00	399.00	89.00	7.00	1.00	13.00	33.00	318.00	8.00

Pedestrians

Approach	N		E (Major)			S			W (Major)		
Movement	L1	T	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		
w, Lane Width (ft)	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		
fpb, Percent Blockage	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	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	1	1	4	3	2	2	1	1
vx, Volume	15.00	15.00	38.00			7.00	1.00	13.00	33.00		
Conflicting Volume (Veh)	914.50	911.50	326.00			915.00	952.00	322.00	488.00		
Conflicting Volume (Ped)	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	914.50	911.50	326.00			915.00	952.00	322.00	488.00		
Two-Stage Gap Acceptance	No	No				No	No				
Number of Storage Spaces in Median Refuge Area											
cpx, Potential Capacity	255.74	276.07	1245.03			255.54	261.44	723.55	1085.57		
Capacity	230.66	254.52	1245.03			222.74	241.04	723.55	1085.57		

Critical Headway and Follow Up Headway

Approach	N		E (Major)			S			W (Major)		
Movement	L1	T	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Headway	7.10	6.50	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		
Phv, % Heavy Vehicles	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Factor	0.20	0.20	0.00			0.20	0.20	0.10	0.00		
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		
tc, Critical Headway	7.10	6.50	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	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		
tf, Follow-Up Headway	3.50	4.00	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	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	15.00	15.00	38.00	399.00	89.00	7.00	1.00	13.00	33.00	318.00	8.00
cmx, Capacity	230.66	254.52	1245.03			222.74	241.04	723.55	1085.57		
V / C	0.07	0.06	0.03			0.03	0.00	0.02	0.03		
d, Delay	22.71	21.25	7.94			21.68	20.45	10.49	8.35		
LOS	C	C	A			C	C	B	A		
dA, Approach Delay	21.98		0.57			14.70			0.77		
Approach LOS	C					B					
dRank1, Rank 1 Delay			0.34						0.31		

Delay and Level of Service by Lane

Approach	N	E (Major)	S	W (Major)
Lane	Lane 1	Lane 1	Lane 1	Lane 1
Movements	L1, T	L1, T, R1	L1, T, R1	L1, T, R1
vx, Volume	30.00	526.00	21.00	359.00
Flared Storage Size				
cmx, Capacity	242.00	1736.65	392.21	1791.21
V / C	0.12	0.30	0.05	0.20
Q95, 95% Queue Length	0.42	0.07	0.17	0.06
d, Delay	21.98	7.94	14.70	8.35
LOS	C		B	
dA, Approach Delay	21.98	0.57	14.70	0.77
Approach LOS	C		B	

Node 1182: Ward & Ekwill	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	2.72
Worst Case Delay	10.57
Worst Case LOS	B

Volume and Adjustments						
Approach	N (Major)		E		S (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	37.00	88.00	1.00	56.00	109.00	2.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	40.22	95.65	1.09	60.87	118.48	2.17

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	40.22		1.09	60.87		
Conflicting Volume (Veh)	120.65		295.65	119.57		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	120.65		295.65	119.57		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	1479.50		699.67	937.44		
Capacity	1479.50		679.58	937.44		

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	0.00		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	40.22	95.65	1.09	60.87	118.48	2.17
cmx, Capacity	1479.50		679.58	937.44		
V / C	0.03		0.00	0.06		
d, Delay	7.48		10.57	9.12		
LOS	A		B	A		
dA, Approach Delay	2.21		9.14		0.00	
Approach LOS			A			
dRank1, Rank 1 Delay	0.21				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	135.87	61.96	120.65
Flared Storage Size			
cmx, Capacity	1800.00	931.24	
V / C	0.08	0.07	
Q95, 95% Queue Length	0.07	0.21	
d, Delay	7.48	9.14	
LOS		A	
dA, Approach Delay	2.21	9.14	0.00
Approach LOS		A	

Node 151: Cathedral Oaks & Kellogg

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.349
Loss Time	0
Cycle Length	100
Adj V/C	0.449

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	21	65	424	66	15	13	53	30	771	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	12	3	5	16	106	17	4	3	13	8	193	4
Adjusted Volume	46	10	21	65	424	66	15	13	53	30	771	17

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	1971	1972	1968	1969	1976	1977	1973	1974
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	56	21	65	490	28	53	30	788

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	1971	1972	1968	1969	1976	1977	1973	1974
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	21	65	424	66	15	13	53	30	771	17
Volume / Saturation Flow Rate	0.029	0.035	0.013	0.041	0.153	0.153	0.009	0.017	0.033	0.019	0.246	0.246
Overlap adjusted Volume / Saturation Flow Rate	0.029	0.035	0.013	0.041	0.153	0.153	0.009	0.017	0.033	0.019	0.246	0.246
Critical Movement	Y			Y					Y		Y	

Node 164: Cathedral Oaks & La Patera

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	1.15
Worst Case Delay	37.07
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	12.00	2.00	4.00	27.00	406.00	5.00	4.00	0.00	27.00	3.00	700.00	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	13.04	2.17	4.35	29.35	441.30	5.43	4.35	0.00	29.35	3.26	760.87	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	13.04	2.17	4.35	29.35			4.35	0.00	29.35	3.26		
Conflicting Volume (Veh)	1289.13	1278.80	444.02	769.57			1277.72	1277.17	765.22	446.74		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1289.13	1278.80	444.02	769.57			1277.72	1277.17	765.22	446.74		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	141.96	167.53	618.12	853.83			144.55	167.90	406.34	1124.22		
Capacity	125.04	159.05	618.12	853.83			134.50	159.41	406.34	1124.22		

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	0.00			0.20	0.20	0.10	0.00		
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	13.04	2.17	4.35	29.35	441.30	5.43	4.35	0.00	29.35	3.26	760.87	8.70
cmx, Capacity	125.04	159.05	618.12	853.83			134.50	159.41	406.34	1124.22		
V / C	0.10	0.01	0.01	0.03			0.03	0.00	0.07	0.00		
d, Delay	37.07	30.91	14.10	9.37			33.07	28.89	15.16	8.21		
LOS	E	D	B	A			D	D	C	A		
dA, Approach Delay		31.28			0.58			17.47			0.03	
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 1	Lane 1	Lane 2
Movements	L1, T, R1		T, R1	L1, T, R1		T, R1
vx, Volume	19.57	29.35	446.74	33.70	3.26	769.57
Flared Storage Size						
cmx, Capacity	156.50			322.29		
V / C	0.13			0.10		
Q95, 95% Queue Length	0.43			0.35		
d, Delay	31.28			17.47		
LOS	D			C		
dA, Approach Delay	31.28	0.58		17.47	0.03	
Approach LOS	D			C		

Node 169: Carlo Dr & Cathedral Oaks Rd

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	1.74
Worst Case Delay	36.9
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	13.00	3.00	5.00	14.00	410.00	7.00	23.00	2.00	21.00	6.00	697.00	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	14.13	3.26	5.43	15.22	445.65	7.61	25.00	2.17	22.83	6.52	757.61	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	14.13	3.26	5.43	15.22			25.00	2.17	22.83	6.52		
Conflicting Volume (Veh)	1264.13	1275.54	449.46	782.61			1267.39	1266.85	770.11	453.26		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1264.13	1275.54	449.46	782.61			1267.39	1266.85	770.11	453.26		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	147.69	168.28	613.78	844.33			146.93	170.31	403.73	1118.03		
Capacity	133.68	163.53	613.78	844.33			138.78	165.50	403.73	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	7.10	6.50	6.20	4.10			7.10	6.50	6.20	4.10		
tc,base,l, Base Critical Headway (Stage I)												
tc,base,ll, 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	0.00			0.20	0.20	0.10	0.00		
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,l, Critical Headway (Stage I)												
tc,ll, 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	14.13	3.26	5.43	15.22	445.65	7.61	25.00	2.17	22.83	6.52	757.61	25.00
cmx, Capacity	133.68	163.53	613.78	844.33			138.78	165.50	403.73	1118.03		
V / C	0.11	0.02	0.01	0.02			0.18	0.01	0.06	0.01		
d, Delay	35.22	30.30	14.15	9.34			36.90	32.72	19.88	8.23		
LOS	E	D	B	A			E	D	C	A		
dA, Approach Delay		29.50			0.30			28.95			0.07	
Approach LOS		D						D				
dRank1, Rank 1 Delay					0.00						0.09	

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
Movements	L1, T, R1		T, R1	L1, T, R1	L1, T, R1
vx, Volume	22.83	15.22	453.26	50.00	789.13
Flared Storage Size					
cmx, Capacity	169.71			200.15	1788.57
V / C	0.13			0.25	0.44
Q95, 95% Queue Length	0.46			0.99	0.01
d, Delay	29.50			28.95	8.23
LOS	D			D	
dA, Approach Delay	29.50	0.30		28.95	0.07
Approach LOS	D			D	

Node 171: Cathedral Oaks & Fairview

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.478
Loss Time	0
Cycle Length	100
Adj V/C	0.578

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	40	59	21	152	297	52	116	60	262	18	561	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	10	15	5	38	74	13	29	15	66	5	140	15
Adjusted Volume	40	59	21	152	297	52	116	60	262	18	561	59

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	L	C	L	C	L	C	L	C
ID	1984	1985	1981	1982	1990	1991	1987	1988
Lanes	L	T, RT	L	T, RT	L	T, RT	L	T, RT
Volume	40	80	152	349	116	322	18	620

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	1984	1985	1981	1982	1990	1991	1987	1988
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	40	59	21	152	297	52	116	60	262	18	561	59
Volume / Saturation Flow Rate	0.025	0.025	0.025	0.095	0.109	0.109	0.073	0.101	0.101	0.011	0.194	0.194
Overlap adjusted Volume / Saturation Flow Rate	0.025	0.025	0.025	0.095	0.109	0.109	0.073	0.101	0.101	0.011	0.194	0.194
Critical Movement	Y			Y					Y		Y	

Node 173: Cathedral Oaks & Cambridge

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.309
Loss Time	0
Cycle Length	100
Adj V/C	0.409

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	24	9	53	23	460	15	17	21	31	61	774	28
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	2	13	6	115	4	4	5	8	15	194	7
Adjusted Volume	24	9	53	23	460	15	17	21	31	61	774	28

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	1996	1997	1993	1994	2001	2002	1998	1999
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	33	53	23	475	38	31	61	802

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	1996	1997	1993	1994	2001	2002	1998	1999
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	24	9	53	23	460	15	17	21	31	61	774	28
Volume / Saturation Flow Rate	0.015	0.021	0.033	0.014	0.148	0.148	0.011	0.024	0.019	0.038	0.251	0.251
Overlap adjusted Volume / Saturation Flow Rate	0.015	0.021	0.033	0.014	0.148	0.148	0.011	0.024	0.019	0.038	0.251	0.251
Critical Movement			Y	Y			Y				Y	

Node 195: Cathedral Oaks & Los Carneros	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	24.56
Worst Case Delay	93.56
Worst Case LOS	F

Volume and Adjustments						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	87.00	311.00	87.00	268.00	471.00	57.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	94.57	338.04	94.57	291.30	511.96	61.96

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	94.57		94.57	291.30		
Conflicting Volume (Veh)	573.91		1039.13	511.96		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	573.91		1039.13	511.96		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	1009.14		257.64	565.98		
Capacity	1009.14		227.91	565.98		

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	0.00		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	94.57	338.04	94.57	291.30	511.96	61.96
cmx, Capacity	1009.14		227.91	565.98		
V / C	0.09		0.41	0.51		
d, Delay	8.94		93.56	84.12		
LOS	A		F	F		
dA, Approach Delay	1.95		86.44		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	94.57	338.04	385.87	511.96	61.96
Flared Storage Size					
cmx, Capacity			415.08		
V / C			0.93		
Q95, 95% Queue Length			17.84		
d, Delay			86.44		
LOS			F		
dA, Approach Delay	1.95		86.44	0.00	
Approach LOS			F		

Node 203: Stow Canyon & Fairview

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	3.08
Worst Case Delay	24.82
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	6.00	326.00	20.00	12.00	1.00	7.00	100.00	382.00	13.00	29.00	1.00	94.00
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	6.52	354.35	21.74	13.04	1.09	7.61	108.70	415.22	14.13	31.52	1.09	102.17

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	6.52			13.04	1.09	7.61	108.70			31.52	1.09	102.17
Conflicting Volume (Veh)	429.35			830.43	1028.80	214.67	376.09			803.80	1025.00	188.04
Conflicting Volume (Ped)	0.00			0.00	0.00	0.00	0.00			0.00	0.00	0.00
Conflicting Volume	429.35			830.43	1028.80	214.67	376.09			803.80	1025.00	188.04
Two-Stage Gap Acceptance				No	No					No	No	
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	1140.90			265.74	235.69	796.39	1193.48			277.76	236.91	828.24
Capacity	1140.90			202.78	206.11	796.39	1193.48			239.46	207.17	828.24

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 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	0.00			0.20	0.20	0.10	0.00			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	6.52	354.35	21.74	13.04	1.09	7.61	108.70	415.22	14.13	31.52	1.09	102.17
cmx, Capacity	1140.90			202.78	206.11	796.39	1193.48			239.46	207.17	828.24
V / C	0.01			0.06	0.01	0.01	0.09			0.13	0.01	0.12
d, Delay	8.17			23.88	23.59	10.65	8.32			22.47	24.82	11.79
LOS	A			C	C	B	A			C	C	B
dA, Approach Delay	0.14			19.23			1.68			14.39		
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	6.52	188.04	188.04	21.74	108.70	429.35	134.78
Flared Storage Size							
cmx, Capacity				274.66			517.91
V / C				0.08			0.26
Q95, 95% Queue Length				0.26			1.05
d, Delay				19.23			14.39
LOS				C			B
dA, Approach Delay	0.14			19.23	1.68		14.39
Approach LOS				C			B

Node 204: Fairview & Berkeley

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.245
Loss Time	0
Cycle Length	100
Adj V/C	0.345

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	447	6	57	1	18	19	460	52	8	2	11
PHF	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
Peak 15 Volume	5	121	2	15	0	5	5	125	14	2	1	3
Adjusted Volume	22	486	7	62	1	20	21	500	57	9	2	12

Volume and Adjustments by Lane Group

Approach	N		E	S		W
Lane Group	L	C	C	L	C	C
ID	2027	2028	2026	2031	2032	2030
Lanes	L	T, RT	LTR	L	T, RT	LTR
Volume	22	492	83	21	557	23

Saturation Flow Rate

Approach	N		E	S		W
Lane Group	2027	2028	2026	2031	2032	2030
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	22	486	7	62	1	20	21	500	57	9	2	12
Volume / Saturation Flow Rate	0.014	0.154	0.154	0.039	0.052	0.052	0.013	0.174	0.174	0.005	0.014	0.014
Overlap adjusted Volume / Saturation Flow Rate	0.014	0.154	0.154	0.039	0.052	0.052	0.013	0.174	0.174	0.005	0.014	0.014
Critical Movement	Y				Y			Y		Y		

Node 240: Fairview & Shirrell Way	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	3.85
Worst Case Delay	28.8
Worst Case LOS	D

Volume and Adjustments						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
Base Volume	457.00	67.00	67.00	413.00	94.00	58.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	496.74	72.83	72.83	448.91	102.17	63.04

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			72.83		102.17	63.04
Conflicting Volume (Veh)			569.57		903.26	284.78
Conflicting Volume (Ped)			0.00		0.00	0.00
Conflicting Volume			569.57		903.26	284.78
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity			1012.88		280.60	718.11
Capacity			1012.88		257.55	718.11

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			0.00		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	496.74	72.83	72.83	448.91	102.17	63.04
cmx, Capacity			1012.88		257.55	718.11
V / C			0.07		0.40	0.09
d, Delay			8.83		28.80	19.83
LOS			A		D	C
dA, Approach Delay	0.00		1.23		25.38	
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	284.78	284.78	72.83	224.46	224.46	165.22
Flared Storage Size						
cmx, Capacity						341.00
V / C						0.48
Q95, 95% Queue Length						2.73
d, Delay						25.38
LOS						D
dA, Approach Delay	0.00		1.23			25.38
Approach LOS						D

Node 241: Encina & Fairview	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.308
Loss Time	0
Cycle Length	100
Adj V/C	0.408

Volume and Adjustments by Movement						
Approach	N		E		S	
Movement	L1	T	L1	R1	T	R1
Base Volume	130	403	72	112	400	100
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	33	101	18	28	100	25
Adjusted Volume	130	403	72	112	400	100

Volume and Adjustments by Lane Group					
Approach	N		E		S
Lane Group	L	C	L	R	C
ID	2036	2037	2034	2035	2039
Lanes	L	T, T	L	R	T, RT
Volume	130	403	72	112	500

Saturation Flow Rate					
Approach	N		E		S
Lane Group	2036	2037	2034	2035	2039
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	130	403	72	112	400	100
Volume / Saturation Flow Rate	0.081	0.126	0.045	0.070	0.156	0.156
Overlap adjusted Volume / Saturation Flow Rate	0.081	0.126	0.045	0.070	0.156	0.156
Critical Movement	Y			Y	Y	

Node 273: Cathedral Oaks & Brandon

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	2.96
Worst Case Delay	13.7
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	12.00	2.00	5.00	45.00	144.00	15.00	18.00	2.00	55.00	12.00	156.00	32.00
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	2.17	5.43	48.91	156.52	16.30	19.57	2.17	59.78	13.04	169.57	34.78

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	13.04	2.17	5.43	48.91			19.57	2.17	59.78	13.04		
Conflicting Volume (Veh)	498.37	484.78	156.52	204.35			461.96	466.30	169.57	172.83		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	498.37	484.78	156.52	204.35			461.96	466.30	169.57	172.83		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	485.67	485.10	894.34	1379.25			513.38	496.88	879.58	1416.22		
Capacity	428.77	461.52	894.34	1379.25			483.28	472.73	879.58	1416.22		

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,l, Base Critical Headway (Stage I)												
tc,base,ll, 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	0.00			0.20	0.20	0.10	0.00		
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,l, Critical Headway (Stage I)												
tc,ll, 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	13.04	2.17	5.43	48.91	156.52	16.30	19.57	2.17	59.78	13.04	169.57	34.78
cmx, Capacity	428.77	461.52	894.34	1379.25			483.28	472.73	879.58	1416.22		
V / C	0.03	0.00	0.01	0.04			0.04	0.00	0.07	0.01		
d, Delay	13.70	13.11	9.33	7.71			13.09	13.25	9.73	7.57		
LOS	B	B	A	A			B	B	A	A		
dA, Approach Delay		12.49			1.70			10.63			0.45	
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	48.91	156.52	16.30	81.52	13.04	169.57	34.78
Flared Storage Size								
cmx, Capacity	501.17				721.11			
V / C	0.04				0.11			
Q95, 95% Queue Length	0.13				0.38			
d, Delay	12.49				10.63			
LOS	B				B			
dA, Approach Delay	12.49	1.70			10.63	0.45		
Approach LOS	B				B			

Node 276: Cathedral Oaks & Alameda	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.236
Loss Time	0
Cycle Length	100
Adj V/C	0.336

Volume and Adjustments by Movement							
Approach	N	E		S		W	
Movement		L1	T	L1	R1	T	R1
Base Volume		67	295	83	65	213	37
PHF		1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume		17	74	21	16	53	9
Adjusted Volume		67	295	83	65	213	37

Volume and Adjustments by Lane Group							
Approach	N	E		S		W	
Lane Group		L	C	L	R	C	R
ID		2079	2080	2083	2084	2081	2082
Lanes		L	T	L	R	T	R
Volume		67	295	83	65	213	37

Saturation Flow Rate							
Approach	N	E		S		W	
Lane Group		2079	2080	2083	2084	2081	2082
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	N	E		S		W	
Movement		L1	T	L1	R1	T	R1
Volume		67	295	83	65	213	37
Volume / Saturation Flow Rate		0.042	0.184	0.052	0.041	0.133	0.023
Overlap adjusted Volume / Saturation Flow Rate		0.042	0.184	0.052	0.041	0.133	0.023
Critical Movement			Y	Y			

Node 277: Cathedral Oaks & Glen Anne

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.462
Loss Time	0
Cycle Length	100
Adj V/C	0.562

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	90	34	109	271	33	224	176	160	31	282	236
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	23	9	27	68	8	56	44	40	8	71	59
Adjusted Volume	46	90	34	109	271	33	224	176	160	31	282	236

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	2091	2092	2088	2089	2090	2085	2086	2087	2093	2094	2095
Lanes	L	RT	L	T	R	L	T	R	L	T	R
Volume	46	124	109	271	33	224	176	160	31	282	236

Saturation Flow Rate

Approach	N		E			S			W		
Lane Group	2091	2092	2088	2089	2090	2085	2086	2087	2093	2094	2095
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	46	90	34	109	271	33	224	176	160	31	282	236
Volume / Saturation Flow Rate	0.029	0.078	0.078	0.068	0.169	0.021	0.140	0.110	0.100	0.019	0.176	0.148
Overlap adjusted Volume / Saturation Flow Rate	0.029	0.078	0.078	0.068	0.169	0.021	0.140	0.110	0.100	0.019	0.176	0.148
Critical Movement		Y		Y			Y				Y	

Node 279:Calle Real & Los Caneros	
Control Type	Roundabout
Method	HCM 7th Edition
Average Delay	13.65
Average LOS	B
Worst Case Delay	15.99
Worst Case LOS	C

Volume by Movement						
Approach	N		E		S	
Movement	L1	T	L1	R1	T	R1
Base Volume (veh/h)	45.00	133.00	388.00	51.00	408.00	531.00
PHF	0.92	0.92	0.92	0.92	0.92	0.92
Volume, Lane Flow Rate (veh/h)	48.91	144.57	421.74	55.43	443.48	577.17

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)	193.478	477.174	1020.652
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)	193.478	477.174	1020.652
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)	193.478	477.174	1020.652

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)	193.48	477.17	1020.65
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)	421.74	443.48	48.91
v_ex,pce, Conflicting Volume for Bypass Lane (pc/h)			
c_pce, Capacity (pc/h)	897.55	877.86	1312.84
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
Proportion of CAVs	0.000	0.000	0.000
c, Capacity (veh/h)	897.55	877.86	1312.84

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)	193.48	477.17	1020.65
c, Capacity (veh/h)	897.55	877.86	1312.84
x, Volume-to-Capacity Ratio	0.22	0.54	0.78
Q_95, 95% Queue Length (veh)	0.82	3.51	9.82
d, Delay (s/veh)	6.19	11.67	15.99
LOS	A	B	C
Approach Delay (s/veh)	6.19	11.67	15.99
Approach LOS	A	B	C

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)	48.91	144.57	421.74	55.43	443.48	577.17
c, Capacity (veh/h)	897.55	897.55	877.86	877.86	1312.84	1312.84
x, Volume-to-Capacity Ratio	0.05	0.16	0.48	0.06	0.34	0.44
d, Delay (s/veh)	6.19	6.19	11.67	11.67	15.99	15.99
LOS	A	A	B	B	C	C
Approach Delay (s/veh)	6.19		11.67		15.99	
Approach LOS	A		B		C	

Node 280: Calle Real & La Patera	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	1.55
Worst Case Delay	24.22
Worst Case LOS	C

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	39.00	31.00	338.00	66.00	34.00	563.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	42.39	33.70	367.39	71.74	36.96	611.96

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	42.39	33.70			36.96	
Conflicting Volume (Veh)	1089.13	403.26			439.13	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	1089.13	403.26			439.13	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	240.53	651.58			1131.49	
Capacity	228.63	651.58			1131.49	

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			0.00	
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	42.39	33.70	367.39	71.74	36.96	611.96
cmx, Capacity	228.63	651.58			1131.49	
V / C	0.19	0.05			0.03	
d, Delay	24.22	14.00			8.22	
LOS	C	B			A	
dA, Approach Delay	19.70		0.00		0.47	
Approach LOS	C					
dRank1, Rank 1 Delay			0.00		0.41	

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	76.09	439.13	648.91
Flared Storage Size			
cmx, Capacity	320.87		1800.00
V / C	0.24		0.36
Q95, 95% Queue Length	0.93		0.06
d, Delay	19.70		8.22
LOS	C		
dA, Approach Delay	19.70	0.00	0.47
Approach LOS	C		

Node 282: Calle Real & Carlo Dr	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	1.51
Worst Case Delay	24.9
Worst Case LOS	C

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	33.00	54.00	515.00	48.00	51.00	619.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	35.87	58.70	559.78	52.17	55.43	672.83

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	35.87	58.70			55.43	
Conflicting Volume (Veh)	1033.15	305.98			611.96	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	1033.15	305.98			611.96	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	231.59	695.95			976.96	
Capacity	215.43	695.95			976.96	

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			0.00	
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	35.87	58.70	559.78	52.17	55.43	672.83
cmx, Capacity	215.43	695.95			976.96	
V / C	0.17	0.08			0.06	
d, Delay	24.90	13.36			8.91	
LOS	C	B			A	
dA, Approach Delay	17.74		0.00		0.68	
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	94.57	611.96	55.43	336.41	336.41
Flared Storage Size					
cmx, Capacity	376.99				
V / C	0.25				
Q95, 95% Queue Length	1.00				
d, Delay	17.74				
LOS	C				
dA, Approach Delay	17.74	0.00	0.68		
Approach LOS	C				

Node 288: Calle Real & Fairview	
Control Type	Signalized
Method	ICU Method 1
LOS	C
Critical V/C	0.704
Loss Time	0
Cycle Length	100
Adj V/C	0.804

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	135	315	55	326	288	85	341	390	352	71	438	226
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	79	14	82	72	21	85	98	88	18	110	57
Adjusted Volume	135	315	55	326	288	85	341	390	352	71	438	226

Volume and Adjustments by Lane Group									
Approach	N		E		S		W		
Lane Group	L	C	L	C	C	R	L	C	R
ID	2102	2103	2099	2101	2096	2098	2105	2106	2107
Lanes	L	T, RT	L, L	RT	LT, T	R	L	T	R
Volume	135	370	326	373	731	352	71	438	226

Saturation Flow Rate									
Approach	N		E		S		W		
Lane Group	2102	2103	2099	2101	2096	2098	2105	2106	2107
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	135	315	55	326	288	85	341	390	352	71	438	226
Volume / Saturation Flow Rate	0.084	0.116	0.116	0.102	0.233	0.233	0.213	0.228	0.220	0.044	0.274	0.141
Overlap adjusted Volume / Saturation Flow Rate	0.084	0.116	0.116	0.102	0.233	0.233	0.213	0.228	0.220	0.044	0.274	0.141
Critical Movement		Y		Y			Y				Y	

Node 289: Fairview & US 101 NB Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.664
Loss Time	0
Cycle Length	100
Adj V/C	0.764

Volume and Adjustments by Movement						
Approach	N	E		S	W	
Movement	T	T	R1		L1	R1
Base Volume	264	464	503		590	293
PHF	1.000	1.000	1.000		1.000	1.000
Peak 15 Volume	66	116	126		148	73
Adjusted Volume	264	464	503		590	293

Volume and Adjustments by Lane Group						
Approach	N	E		S	W	
Lane Group	C	C	R		L	R
ID	2110	2108	2109		2111	2113
Lanes	T	T	R		L, L	R
Volume	264	464	503		590	293

Saturation Flow Rate						
Approach	N	E		S	W	
Lane Group	2110	2108	2109		2111	2113
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	264	464	503		590	293
Volume / Saturation Flow Rate	0.165	0.290	0.314		0.184	0.183
Overlap adjusted Volume / Saturation Flow Rate	0.165	0.290	0.314		0.184	0.183
Critical Movement	Y		Y		Y	

Node 296: Calle Real & Kellogg	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.368
Loss Time	0
Cycle Length	100
Adj V/C	0.468

Volume and Adjustments by Movement						
Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Base Volume	106	63	724	112	65	764
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	27	16	181	28	16	191
Adjusted Volume	106	63	724	112	65	764

Volume and Adjustments by Lane Group					
Approach	N		E	W	
Lane Group	L	R	C	L	C
ID	2116	2117	2114	2118	2119
Lanes	L	R	T, RT	L	T, T
Volume	106	63	836	65	764

Saturation Flow Rate					
Approach	N		E	W	
Lane Group	2116	2117	2114	2118	2119
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	106	63	724	112	65	764
Volume / Saturation Flow Rate	0.066	0.039	0.261	0.261	0.041	0.239
Overlap adjusted Volume / Saturation Flow Rate	0.066	0.039	0.261	0.261	0.041	0.239
Critical Movement	Y		Y		Y	

Node 305: Patterson & Overpass

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.522
Loss Time	0
Cycle Length	100
Adj V/C	0.622

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	1006	107	17	3	94	34	1013	49	151	4	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	10	252	27	4	1	24	9	253	12	38	1	15
Adjusted Volume	39	1006	107	17	3	94	34	1013	49	151	4	59

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	L	C	C	R	L	C	C	R
ID	2123	2124	2121	2122	2128	2129	2126	2127
Lanes	L	T, RT	LT	R	L	T, RT	LT	R
Volume	39	1113	20	94	34	1062	155	59

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	2123	2124	2121	2122	2128	2129	2126	2127
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	39	1006	107	17	3	94	34	1013	49	151	4	59
Volume / Saturation Flow Rate	0.024	0.348	0.348	0.011	0.013	0.059	0.021	0.332	0.332	0.094	0.097	0.037
Overlap adjusted Volume / Saturation Flow Rate	0.024	0.348	0.348	0.011	0.013	0.059	0.021	0.332	0.332	0.094	0.097	0.037
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	0.963
Loss Time	0
Cycle Length	100
Adj V/C	1.063

Volume and Adjustments by Movement								
Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	495	550		800	477	416	2	567
PHF	1.000	1.000		1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	124	138		200	119	104	1	142
Adjusted Volume	495	550		800	477	416	2	567

Volume and Adjustments by Lane Group						
Approach	N		E	S		W
Lane Group	L	C		C	R	C
ID	2131	2132		2135	2137	2133
Lanes	L	T		T, T	R	L, LTR
Volume	495	550		800	477	985

Saturation Flow Rate						
Approach	N		E	S		W
Lane Group	2131	2132		2135	2137	2133
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	S		W		
Movement	L1	T		T	R1	L1	T	R1
Volume	495	550		800	477	416	2	567
Volume / Saturation Flow Rate	0.309	0.344		0.250	0.298	0.130	0.308	0.308
Overlap adjusted Volume / Saturation Flow Rate	0.309	0.344		0.250	0.298	0.130	0.308	0.308
Critical Movement	Y				Y			Y

Node 307: Patterson & US 101 NB Ramp	
Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.622
Loss Time	0
Cycle Length	100
Adj V/C	0.722

Volume and Adjustments by Movement								
Approach	N		E			S		W
Movement	T	R1	L1	T	R1	L1	T	
Base Volume	760	341	255	16	599	346	887	
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Peak 15 Volume	190	85	64	4	150	87	222	
Adjusted Volume	760	341	255	16	599	346	887	

Volume and Adjustments by Lane Group						
Approach	N		E	S		W
Lane Group	C	R	C	L	C	
ID	2151	2154	2148	2155	2156	
Lanes	T, T, T	R	L, LTR, R	L	T, T	
Volume	760	341	870	346	887	

Saturation Flow Rate						
Approach	N		E	S		W
Lane Group	2151	2154	2148	2155	2156	
Base Saturation Flow Rate	1600	1600	1600	1600	1600	
Number of Lanes	3	1	3	1	2	
Saturation Flow Rate	4800	1600	4800	1600	3200	

Capacity Analysis								
Approach	N		E			S		W
Movement	T	R1	L1	T	R1	L1	T	
Volume	760	341	255	16	599	346	887	
Volume / Saturation Flow Rate	0.158	0.213	0.080	0.181	0.181	0.216	0.277	
Overlap adjusted Volume / Saturation Flow Rate	0.158	0.213	0.080	0.181	0.181	0.216	0.277	
Critical Movement		Y			Y	Y		

Node 359: Cathedral Oaks & Winchester Canyon	
Control Type	AWSC
Method	HCM 7th Edition
Average Delay	9.56
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	10.00	6.00	30.00	27.00	148.00	14.00	40.00	30.00	39.00	20.00	169.00	47.00
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	10.87	6.52	32.61	29.35	160.87	15.22	43.48	32.61	42.39	21.74	183.70	51.09
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	50.00	29.35	176.09	76.09	42.39	21.74	234.78
Left Turn Flow Rate	10.87	29.35	0.00	43.48	0.00	21.74	0.00
Right Turn Flow Rate	32.61	0.00	15.22	0.00	42.39	0.00	51.09
PLT, Proportion LT	0.22	1.00	0.00	0.57	0.00	1.00	0.00
PRT, Proportion RT	0.65	0.00	0.09	0.00	1.00	0.00	0.22
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	-0.35	0.50	-0.06	0.29	-0.70	0.50	-0.15

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	50.00	29.35	176.09	76.09	42.39	21.74	234.78
hd initial	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x initial	0.04	0.03	0.16	0.07	0.04	0.02	0.21
hd, iteration 1	4.97	5.42	4.86	5.54	4.55	5.39	4.74
Difference, iteration 1	1.77	2.22	1.66	2.34	1.35	2.19	1.54
hd, iteration 2	5.39	5.67	5.11	5.91	4.92	5.63	4.98
Difference, iteration 2	0.42	0.25	0.25	0.37	0.37	0.24	0.24
hd, iteration 3	5.45	5.72	5.16	5.97	4.98	5.68	5.03
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 Headway	5.45	5.72	5.16	5.97	4.98	5.68	5.03
x final, Degree of Utilization	0.08	0.05	0.25	0.13	0.06	0.03	0.33

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	50.00	29.35	176.09	76.09	42.39	21.74	234.78
hd, Departure Headway	5.45	5.72	5.16	5.97	4.98	5.68	5.03
x, Degree of Utilization	0.08	0.05	0.25	0.13	0.06	0.03	0.33
m, Move Up Time	2.00	2.30	2.30	2.30	2.30	2.30	2.30
ts, Service Time	3.45	3.42	2.86	3.67	2.68	3.38	2.73
Capacity	660.11	628.17	697.13	602.45	722.56	633.13	716.27
Delay	8.90	8.70	9.60	9.53	7.99	8.58	10.17
LOS	A	A	A	A	A	A	B
Q95, 95% Queue Length	0.25	0.15	1.01	0.43	0.19	0.11	1.45
Approach Delay	8.90	9.47		8.98		10.04	
Approach LOS	A	A		A		B	
Intersection Delay	9.56						
Intersection LOS	A						

Node 372: Glen Annie & Del Norte	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	0.82
Worst Case Delay	10.37
Worst Case LOS	B

Volume and Adjustments				
Approach	N (Major)		S (Major)	W
Movement	T	R1	T	R1
Base Volume	410.00	34.00	575.00	88.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920
V, Adjusted Volume	445.65	36.96	625.00	95.65

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				95.65
Conflicting Volume (Veh)				241.30
Conflicting Volume (Ped)				0.00
Conflicting Volume				241.30
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median Refuge Area				
cpx, Potential Capacity				765.73
Capacity				765.73

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	445.65	36.96	625.00	95.65
cmx, Capacity				765.73
V / C				0.12
d, Delay				10.37
LOS				B
dA, Approach Delay	0.00		0.00	10.37
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	241.30	241.30	312.50	312.50	95.65
Flared Storage Size					
cmx, Capacity					
V / C					
Q95, 95% Queue Length					
d, Delay					
LOS					
dA, Approach Delay	0.00		0.00		10.37
Approach LOS					B

Node 375: Los Caneros & US101 SB Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.654
Loss Time	0
Cycle Length	100
Adj V/C	0.754

Volume and Adjustments by Movement								
Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	28	734		981	741	158	0	77
PHF	1.000	1.000		1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	7	184		245	185	40	0	19
Adjusted Volume	28	734		981	741	158	0	77

Volume and Adjustments by Lane Group						
Approach	N		E	S	W	
Lane Group	L	C		C	L	R
ID	2233	2234		2238	2236	2237
Lanes	L	T, T		T, RT	L	R
Volume	28	734		1722	158	77

Saturation Flow Rate						
Approach	N		E	S	W	
Lane Group	2233	2234		2238	2236	2237
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	28	734		981	741	158	0	77
Volume / Saturation Flow Rate	0.018	0.229		0.538	0.538	0.099	0.000	0.048
Overlap adjusted Volume / Saturation Flow Rate	0.018	0.229		0.538	0.538	0.099	0.000	0.048
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	0.462
Loss Time	0
Cycle Length	100
Adj V/C	0.562

Volume and Adjustments by Movement								
Approach	N		E			S		W
Movement	T	R1	L1	T	R1	L1	T	
Base Volume	348	177	499	3	67	192	895	
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Peak 15 Volume	87	44	125	1	17	48	224	
Adjusted Volume	348	177	499	3	67	192	895	

Volume and Adjustments by Lane Group					
Approach	N	E	S		W
Lane Group	C	C	L	C	
ID	2242	2240	2244	2245	
Lanes	T, RT	L, LTR	L	T, T	
Volume	525	569	192	895	

Saturation Flow Rate					
Approach	N	E	S		W
Lane Group	2242	2240	2244	2245	
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	348	177	499	3	67	192	895	
Volume / Saturation Flow Rate	0.164	0.164	0.156	0.178	0.178	0.120	0.280	
Overlap adjusted Volume / Saturation Flow Rate	0.164	0.164	0.156	0.178	0.178	0.120	0.280	
Critical Movement	Y			Y	Y	Y		

Node 383: Fairview & US 101 SB Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	E
Critical V/C	0.949
Loss Time	0
Cycle Length	100
Adj V/C	1.049

Volume and Adjustments by Movement								
Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	288	766		791	1128	209	16	246
PHF	1.000	1.000		1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	72	192		198	282	52	4	62
Adjusted Volume	288	766		791	1128	209	16	246

Volume and Adjustments by Lane Group							
Approach	N		E	S		W	
Lane Group	L	C		C	R	C	R
ID	2250	2252		2247	2249	2254	2255
Lanes	L, L	T, T		T, T	R	LT	R
Volume	288	766		791	1128	225	246

Saturation Flow Rate							
Approach	N		E	S		W	
Lane Group	2250	2252		2247	2249	2254	2255
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	288	766		791	1128	209	16	246
Volume / Saturation Flow Rate	0.090	0.239		0.247	0.705	0.131	0.141	0.154
Overlap adjusted Volume / Saturation Flow Rate	0.090	0.239		0.247	0.705	0.131	0.141	0.154
Critical Movement	Y				Y			Y

Node 385: Hollister & Fairview	
Control Type	Signalized
Method	ICU Method 1
LOS	D
Critical V/C	0.837
Loss Time	0
Cycle Length	100
Adj V/C	0.937

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	418	198	224	78	517	593	159	577	103	393	714	141
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	105	50	56	20	129	148	40	144	26	98	179	35
Adjusted Volume	418	198	224	78	517	593	159	577	103	393	714	141

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	2263	2265	2267	2259	2260	2262	2256	2257	2268	2270	2272
Lanes	L, L	T, T	R	L	T, T	R	L	T, RT	L, L	T, T	R
Volume	418	198	224	78	517	593	159	680	393	714	141

Saturation Flow Rate											
Approach	N			E			S		W		
Lane Group	2263	2265	2267	2259	2260	2262	2256	2257	2268	2270	2272
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	418	198	224	78	517	593	159	577	103	393	714	141
Volume / Saturation Flow Rate	0.131	0.062	0.140	0.049	0.162	0.371	0.099	0.213	0.213	0.123	0.223	0.088
Overlap adjusted Volume / Saturation Flow Rate	0.131	0.062	0.140	0.049	0.162	0.371	0.099	0.213	0.213	0.123	0.223	0.088
Critical Movement	Y					Y		Y		Y		

Node 386: Fairview & Mandarin	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	166.81
Worst Case Delay	10000
Worst Case LOS	F

Volume and Adjustments						
Approach	N (Major)		E		S (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	179.00	855.00	47.00	260.00	1631.00	98.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	194.57	929.35	51.09	282.61	1772.83	106.52

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	194.57		51.09	282.61		
Conflicting Volume (Veh)	1879.35		2626.63	886.41		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	1879.35		2626.63	886.41		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	323.68		19.95	291.41		
Capacity	323.68		3.78	291.41		

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		7.50	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	0.00		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)		E		S (Major)	
Movement	L1	T	L1	R1	T	R1
vx, Volume	194.57	929.35	51.09	282.61	1772.83	106.52
cmx, Capacity	323.68		3.78	291.41		
V / C	0.60		13.50	0.97		
d, Delay	32.51		10000.00	139.53		
LOS	D		F	F		
dA, Approach Delay	5.63		1649.11		0.00	
Approach LOS			F			
dRank1, Rank 1 Delay	0.00				0.00	

Delay and Level of Service by Lane								
Approach	N (Major)			E		S (Major)		
Lane	Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 1	Lane 2	Lane 3
Movements								
vx, Volume	194.57	464.67	464.67	51.09	282.61	886.41	886.41	106.52
Flared Storage Size								
cmx, Capacity								
V / C								
Q95, 95% Queue Length								
d, Delay								
LOS								
dA, Approach Delay	5.63			1649.11		0.00		
Approach LOS				F				

Node 387: Hollister & Orange

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	741.87
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	13.00	3.00	40.00	80.00	1253.00	31.00	93.00	3.00	100.00	47.00	951.00	167.00
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	14.13	3.26	43.48	86.96	1361.96	33.70	101.09	3.26	108.70	51.09	1033.70	181.52

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	14.13	3.26	43.48	86.96			101.09	3.26	108.70	51.09		
Conflicting Volume (Veh)	2173.37	2870.11	697.83	1215.22			2083.15	2796.20	607.61	1395.65		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	2173.37	2870.11	697.83	1215.22			2083.15	2796.20	607.61	1395.65		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	26.71	16.81	387.65	580.96			31.29	18.79	443.98	496.24		
Capacity	10.07	10.42	387.65	580.96			13.42	11.64	443.98	496.24		

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,l, Base Critical Headway (Stage I)												
tc,base,ll, 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	0.00			0.20	0.20	0.10	0.00		
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,l, Critical Headway (Stage I)												
tc,ll, 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	14.13	3.26	43.48	86.96	1361.96	33.70	101.09	3.26	108.70	51.09	1033.70	181.52
cmx, Capacity	10.07	10.42	387.65	580.96			13.42	11.64	443.98	496.24		
V / C	1.40	0.31	0.11	0.15			7.53	0.28	0.24	0.10		
d, Delay	2062.47	2050.57	1714.31	12.29			10000.00	10000.00	10000.00	13.09		
LOS	F	F	F	B			F	F	F	B		
dA, Approach Delay		1813.14			0.72			10000.00			0.53	
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	60.87	86.96	697.83	697.83	213.04	51.09	607.61	607.61
Flared Storage Size								
cmx, Capacity	33.30				26.45			
V / C	1.83				8.05			
Q95, 95% Queue Length	18.68				96.61			
d, Delay	1813.14				12993.23			
LOS	F				F			
dA, Approach Delay	1813.14	0.72			10000.00	0.53		
Approach LOS	F				F			

Node 390: Hollister & Pine/Nectarine

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.619
Loss Time	0
Cycle Length	100
Adj V/C	0.719

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	25	60	66	853	48	159	24	166	39	908	102
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	6	15	17	213	12	40	6	42	10	227	26
Adjusted Volume	70	25	60	66	853	48	159	24	166	39	908	102

Volume and Adjustments by Lane Group

Approach	N	E		S	W	
Lane Group	C	L	C	C	L	C
ID	2276	2273	2274	2280	2277	2278
Lanes	LTR	L	T, RT	LTR	L	T, RT
Volume	155	66	901	349	39	1010

Saturation Flow Rate

Approach	N	E		S	W	
Lane Group	2276	2273	2274	2280	2277	2278
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	25	60	66	853	48	159	24	166	39	908	102
Volume / Saturation Flow Rate	0.044	0.097	0.097	0.041	0.282	0.282	0.099	0.218	0.218	0.024	0.316	0.316
Overlap adjusted Volume / Saturation Flow Rate	0.044	0.097	0.097	0.041	0.282	0.282	0.099	0.218	0.218	0.024	0.316	0.316
Critical Movement	Y			Y				Y			Y	

Node 394: Hollister & Rutherford	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.515
Loss Time	0
Cycle Length	100
Adj V/C	0.615

Volume and Adjustments by Movement						
Approach	E		S		W	
Movement	L1	T	L1	R1	T	R1
Base Volume	78	884	69	142	1011	58
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	20	221	17	36	253	15
Adjusted Volume	78	884	69	142	1011	58

Volume and Adjustments by Lane Group				
Approach	E		S	W
Lane Group	L	C	C	C
ID	2281	2282	2286	2284
Lanes	L	T, T	LTR	T, RT
Volume	78	884	211	1069

Saturation Flow Rate				
Approach	E		S	W
Lane Group	2281	2282	2286	2284
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	78	884	69	142	1011	58
Volume / Saturation Flow Rate	0.049	0.276	0.043	0.132	0.334	0.334
Overlap adjusted Volume / Saturation Flow Rate	0.049	0.276	0.043	0.132	0.334	0.334
Critical Movement	Y			Y	Y	

Node 396: Hollister & Community Center West Driveway	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	0.43
Worst Case Delay	12.38
Worst Case LOS	B

Volume and Adjustments					
Approach	E (Major)		S	W (Major)	
Movement	L1	T		T	R1
Base Volume	72.00	872.00		1087.00	58.00
PHF, Peak-hour factor	0.920	0.920		0.920	0.920
V, Adjusted Volume	78.26	947.83		1181.52	63.04

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	78.26				
Conflicting Volume (Veh)	1244.57				
Conflicting Volume (Ped)	0.00				
Conflicting Volume	1244.57				
Two-Stage Gap Acceptance					
Number of Storage Spaces in Median Refuge Area					
cpx, Potential Capacity	566.29				
Capacity	566.29				

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	0.00				
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	78.26	947.83		1181.52	63.04
cmx, Capacity	566.29				
V / C	0.14				
d, Delay	12.38				
LOS	B				
dA, Approach Delay	0.94		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	78.26	473.91	473.91		622.28	622.28
Flared Storage Size						
cmx, Capacity						
V / C						
Q95, 95% Queue Length						
d, Delay						
LOS						
dA, Approach Delay	0.94			0.00	0.00	
Approach LOS				A		

Node 399: Hollister & Kellogg	
Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.623
Loss Time	0
Cycle Length	100
Adj V/C	0.723

Volume and Adjustments by Movement										
Approach	N			E			S	W		
Movement	L1	T	R1	L1	T	R1	R1	L1	T	R1
Base Volume	177	34	72	256	780	138	345	76	939	121
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	44	9	18	64	195	35	86	19	235	30
Adjusted Volume	177	34	72	256	780	138	345	76	939	121

Volume and Adjustments by Lane Group							
Approach	N		E		S	W	
Lane Group	C	R	L	C	R	L	C
ID	2299	2300	2296	2297	2295	2301	2302
Lanes	LT	R	L	T, RT	R	L	T, RT
Volume	211	72	256	918	345	76	1060

Saturation Flow Rate							
Approach	N		E		S	W	
Lane Group	2299	2300	2296	2297	2295	2301	2302
Base Saturation Flow Rate	1600	1600	1600	1600	1600	1600	1600
Number of Lanes	1	1	1	2	1	1	2
Saturation Flow Rate	1600	1600	1600	3200	1600	1600	3200

Capacity Analysis										
Approach	N			E			S	W		
Movement	L1	T	R1	L1	T	R1	R1	L1	T	R1
Volume	177	34	72	256	780	138	345	76	939	121
Volume / Saturation Flow Rate	0.111	0.132	0.045	0.160	0.287	0.287	0.216	0.048	0.331	0.331
Overlap adjusted Volume / Saturation Flow Rate	0.111	0.132	0.045	0.160	0.287	0.287	0.216	0.048	0.331	0.331
Critical Movement		Y		Y					Y	

Node 402: Hollister & SR-217 SB Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	C
Critical V/C	0.783
Loss Time	0
Cycle Length	100
Adj V/C	0.883

Volume and Adjustments by Movement								
Approach	N			E		S	W	
Movement	L1	T	R1	L1	T		T	R1
Base Volume	162	1	558	128	662		1473	56
PHF	1.000	1.000	1.000	1.000	1.000		1.000	1.000
Peak 15 Volume	41	0	140	32	166		368	14
Adjusted Volume	162	1	558	128	662		1473	56

Volume and Adjustments by Lane Group						
Approach	N	E			S	W
Lane Group	C	L	C	C		C
ID	2309	2304	2305	2306		2311
Lanes	LTR, R	L	T, T	T, T		T, RT
Volume	721	128	421	241		1529

Saturation Flow Rate						
Approach	N	E			S	W
Lane Group	2309	2304	2305	2306		2311
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	162	1	558	128	662		1473	56
Volume / Saturation Flow Rate	0.101	0.225	0.225	0.080	0.132		0.478	0.478
Overlap adjusted Volume / Saturation Flow Rate	0.101	0.225	0.225	0.080	0.132		0.478	0.478
Critical Movement		Y	Y	Y				Y

Node 405: Hollister & SR-217 NB Ramps	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.595
Loss Time	0
Cycle Length	100
Adj V/C	0.695

Volume and Adjustments by Movement										
Approach	N	E			S			W		
Movement		L1	T	R1	L1	T	R1	L1	T	R1
Base Volume		82	623	85	162	131	286	491	966	188
PHF		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume		21	156	21	41	33	72	123	242	47
Adjusted Volume		82	623	85	162	131	286	491	966	188

Volume and Adjustments by Lane Group								
Approach	N	E			S		W	
Lane Group		L	C	R	C	R	L	C
ID		2315	2316	2318	2313	2314	2319	2321
Lanes		L	T, T	R	LT	R	L, L	T, RT
Volume		82	623	85	293	286	491	1154

Saturation Flow Rate								
Approach	N	E			S		W	
Lane Group		2315	2316	2318	2313	2314	2319	2321
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		82	623	85	162	131	286	491	966	188
Volume / Saturation Flow Rate		0.051	0.195	0.053	0.101	0.183	0.179	0.153	0.361	0.361
Overlap adjusted Volume / Saturation Flow Rate		0.051	0.195	0.053	0.101	0.183	0.179	0.153	0.361	0.361
Critical Movement		Y				Y			Y	

Node 441: Calle Real & NB 101 OnRamp	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	2.38
Worst Case Delay	11.01
Worst Case LOS	B

Volume and Adjustments					
Approach	E (Major)		S (Major)	W	
Movement	L1	T		T	R1
Base Volume	185.00	58.00		66.00	1.00
PHF, Peak-hour factor	0.920	0.920		0.920	0.920
V, Adjusted Volume	201.09	63.04		71.74	1.09

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		2	2
vx, Volume				71.74	1.09
Conflicting Volume (Veh)				232.61	232.61
Conflicting Volume (Ped)				0.00	0.00
Conflicting Volume				232.61	232.61
Two-Stage Gap Acceptance					
Number of Storage Spaces in Median Refuge Area					
cpx, Potential Capacity				671.06	811.50
Capacity				671.06	811.50

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	201.09	63.04		71.74	1.09
cmx, Capacity				671.06	811.50
V / C				0.11	0.00
d, Delay				11.01	10.09
LOS				B	B
dA, Approach Delay	0.00		0.00	11.00	
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	264.13		72.83
Flared Storage Size			
cmx, Capacity			672.79
V / C			0.11
Q95, 95% Queue Length			0.36
d, Delay			11.00
LOS			B
dA, Approach Delay	0.00	0.00	11.00
Approach LOS			B

Node 445: Calle Real & Winchester Canyon	
Control Type	AWSC
Method	HCM 7th Edition
Average Delay	10.46
Average LOS	B

Volume and Adjustments				
Approach	N	E		W
Movement	R1	T	R1	L1
Base Volume	142.00	263.00	189.00	85.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920
Flow Rate	154.35	285.87	205.43	92.39
Geometry Group	1	1		1

Saturation Headway			
Approach	N	E	W
Lanes	Lane 1	Lane 1	Lane 1
Total Lane Flow Rate	154.35	491.30	92.39
Left Turn Flow Rate	0.00	0.00	92.39
Right Turn Flow Rate	154.35	205.43	0.00
PLT, Proportion LT	0.00	0.00	1.00
PRT, Proportion RT	1.00	0.42	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	-0.25	0.20

Departure Headway			
Approach	N	E	W
Lanes	Lane 1	Lane 1	Lane 1
Total Lane Flow Rate	154.35	491.30	92.39
hd initial	3.20	3.20	3.20
x initial	0.14	0.44	0.08
hd, iteration 1	3.46	3.99	4.37
Difference, iteration 1	0.26	0.79	1.17
hd, iteration 2	3.52	4.04	4.39
Difference, iteration 2	0.06	0.05	0.02
Convergence	Y	Y	Y
hd final, Departure Headway	3.52	4.04	4.39
x final, Degree of Utilization	0.15	0.55	0.11

Capacity and Level of Service			
Approach	N	E	W
Lanes	Lane 1	Lane 1	Lane 1
Total Lane Flow Rate	154.35	491.30	92.39
hd, Departure Headway	3.52	4.04	4.39
x, Degree of Utilization	0.15	0.55	0.11
m, Move Up Time	2.00	2.00	2.00
ts, Service Time	1.52	2.04	2.39
Capacity	1022.71	890.49	819.84
Delay	7.14	11.97	7.95
LOS	A	B	A
Q95, 95% Queue Length	0.53	3.62	0.38
Approach Delay	7.14	11.97	7.95
Approach LOS	A	B	A
Intersection Delay	10.46		
Intersection LOS	B		

Node 450: Calle Real & Brandon Dr.	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	1.73
Worst Case Delay	10.51
Worst Case LOS	B

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	53.00	6.00	109.00	114.00	3.00	83.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	57.61	6.52	118.48	123.91	3.26	90.22

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	57.61	6.52			3.26	
Conflicting Volume (Veh)	277.17	180.43			242.39	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	277.17	180.43			242.39	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	716.86	867.47			1335.85	
Capacity	715.02	867.47			1335.85	

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			0.00	
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	6.52	118.48	123.91	3.26	90.22
cmx, Capacity	715.02	867.47			1335.85	
V / C	0.08	0.01			0.00	
d, Delay	10.51	9.63			7.70	
LOS	B	A			A	
dA, Approach Delay	10.42		0.00		0.27	
Approach LOS	B					
dRank1, Rank 1 Delay			0.00		0.02	

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	64.13	242.39	93.48
Flared Storage Size			
cmx, Capacity	728.03		1800.00
V / C	0.09		0.05
Q95, 95% Queue Length	0.29		0.01
d, Delay	10.42		7.70
LOS	B		
dA, Approach Delay	10.42	0.00	0.27
Approach LOS	B		

Node 451: San Rossano Dr & Calle Real	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	1.06
Worst Case Delay	11.37
Worst Case LOS	B

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	31.00	4.00	201.00	58.00	8.00	127.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	33.70	4.35	218.48	63.04	8.70	138.04

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	33.70	4.35			8.70	
Conflicting Volume (Veh)	405.43	250.00			281.52	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	405.43	250.00			281.52	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	605.33	793.62			1292.58	
Capacity	600.92	793.62			1292.58	

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			0.00	
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	33.70	4.35	218.48	63.04	8.70	138.04
cmx, Capacity	600.92	793.62			1292.58	
V / C	0.06	0.01			0.01	
d, Delay	11.37	9.92			7.79	
LOS	B	A			A	
dA, Approach Delay	11.21		0.00		0.46	
Approach LOS	B					
dRank1, Rank 1 Delay			0.00		0.06	

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	38.04	281.52	146.74
Flared Storage Size			
cmx, Capacity	618.07		1800.00
V / C	0.06		0.08
Q95, 95% Queue Length	0.20		0.01
d, Delay	11.21		7.79
LOS	B		
dA, Approach Delay	11.21	0.00	0.46
Approach LOS	B		

Node 461: Storke & US 101 NB Ramps

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.676
Loss Time	0
Cycle Length	100
Adj V/C	0.776

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	496	9	1069	446	167	232	442	158	21	14	343
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	124	2	267	112	42	58	111	40	5	4	86
Adjusted Volume	5	496	9	1069	446	167	232	442	158	21	14	343

Volume and Adjustments by Lane Group

Approach	N		E	S		W	
Lane Group	L	C	C	L	C	L	C
ID	2359	2360	2356	2352	2354	2362	2363
Lanes	L	T, RT	L, LT, RT	L, L	T, RT	L	RT, R
Volume	5	505	1682	232	600	21	357

Saturation Flow Rate

Approach	N		E	S		W	
Lane Group	2359	2360	2356	2352	2354	2362	2363
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	496	9	1069	446	167	232	442	158	21	14	343
Volume / Saturation Flow Rate	0.003	0.158	0.158	0.334	0.350	0.350	0.073	0.188	0.188	0.013	0.112	0.112
Overlap adjusted Volume / Saturation Flow Rate	0.003	0.158	0.158	0.334	0.350	0.350	0.073	0.188	0.188	0.013	0.112	0.112
Critical Movement			Y	Y			Y				Y	

Node 462: Storke & US 101 SB Ramp	
Control Type	Signalized
Method	ICU Method 1
LOS	C
Critical V/C	0.799
Loss Time	0
Cycle Length	100
Adj V/C	0.899

Volume and Adjustments by Movement								
Approach	N		E	S		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	322	1554		826	1059	11	5	59
PHF	1.000	1.000		1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	81	389		207	265	3	1	15
Adjusted Volume	322	1554		826	1059	11	5	59

Volume and Adjustments by Lane Group							
Approach	N		E	S		W	
Lane Group	L	C		C	R	C	R
ID	2368	2370		2365	2367	2372	2373
Lanes	L, L	T, T		T, T	R	LT	R
Volume	322	1554		826	1059	16	59

Saturation Flow Rate							
Approach	N		E	S		W	
Lane Group	2368	2370		2365	2367	2372	2373
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	322	1554		826	1059	11	5	59
Volume / Saturation Flow Rate	0.101	0.486		0.258	0.662	0.007	0.010	0.037
Overlap adjusted Volume / Saturation Flow Rate	0.101	0.486		0.258	0.662	0.007	0.010	0.037
Critical Movement	Y				Y			Y

Node 465: Los Carneros Rd & Calle Koral (west/south)	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	0.15
Worst Case Delay	10.76
Worst Case LOS	B

Volume and Adjustments				
Approach	N (Major)		S (Major)	W
Movement	T	R1	T	R1
Base Volume	607.00	32.00	1208.00	27.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920
V, Adjusted Volume	659.78	34.78	1313.04	29.35

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				29.35
Conflicting Volume (Veh)				347.28
Conflicting Volume (Ped)				0.00
Conflicting Volume				347.28
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median Refuge Area				
cpx, Potential Capacity				654.65
Capacity				654.65

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	659.78	34.78	1313.04	29.35
cmx, Capacity				654.65
V / C				0.04
d, Delay				10.76
LOS				B
dA, Approach Delay	0.00		0.00	10.76
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	347.28	347.28	656.52	656.52	29.35
Flared Storage Size					
cmx, Capacity					
V / C					
Q95, 95% Queue Length					
d, Delay					
LOS					
dA, Approach Delay	0.00		0.00		10.76
Approach LOS					B

Node 466: Los Carneros & Cremona	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.571
Loss Time	0
Cycle Length	100
Adj V/C	0.671

Volume and Adjustments by Movement										
Approach	N	E			S			W		
Movement	R1	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	8	36	614	20	23	15	250	31	1178	1
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	9	154	5	6	4	63	8	295	0
Adjusted Volume	8	36	614	20	23	15	250	31	1178	1

Volume and Adjustments by Lane Group						
Approach	N	E		S	W	
Lane Group	R	L	C	C	L	C
ID	2378	2375	2376	2374	2380	2381
Lanes	R, R	L	T, RT	LTR	L	T, RT
Volume	8	36	634	288	31	1179

Saturation Flow Rate						
Approach	N	E		S	W	
Lane Group	2378	2375	2376	2374	2380	2381
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	8	36	614	20	23	15	250	31	1178	1
Volume / Saturation Flow Rate	0.003	0.023	0.198	0.198	0.014	0.180	0.180	0.019	0.368	0.368
Overlap adjusted Volume / Saturation Flow Rate	0.003	0.023	0.198	0.198	0.014	0.180	0.180	0.019	0.368	0.368
Critical Movement		Y				Y			Y	

Node 467: Los Carneros & Calle Koral

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.655
Loss Time	0
Cycle Length	100
Adj V/C	0.755

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	173	554	74	24	27	340	58	1345	52	69	30	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	43	139	19	6	7	85	15	336	13	17	8	3
Adjusted Volume	173	554	74	24	27	340	58	1345	52	69	30	12

Volume and Adjustments by Lane Group

Approach	N			E			S		W	
Lane Group	L	C	R	L	C	R	L	C	L	C
ID	2386	2387	2389	2383	2384	2385	2392	2393	2390	2391
Lanes	L	T, T	R	L	T	R	L	T, T, RT	L	RT
Volume	173	554	74	24	27	340	58	1397	69	42

Saturation Flow Rate

Approach	N			E			S		W	
Lane Group	2386	2387	2389	2383	2384	2385	2392	2393	2390	2391
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	173	554	74	24	27	340	58	1345	52	69	30	12
Volume / Saturation Flow Rate	0.108	0.173	0.046	0.015	0.017	0.213	0.036	0.291	0.291	0.043	0.026	0.026
Overlap adjusted Volume / Saturation Flow Rate	0.108	0.173	0.046	0.015	0.017	0.213	0.036	0.291	0.291	0.043	0.026	0.026
Critical Movement	Y					Y		Y		Y		

Node 489: Hollister & Patterson

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.636
Loss Time	0
Cycle Length	100
Adj V/C	0.736

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	597	244	199	48	396	366	116	300	142	233	760	102
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	149	61	50	12	99	92	29	75	36	58	190	26
Adjusted Volume	597	244	199	48	396	366	116	300	142	233	760	102

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	L	C	L	C	L	C	L	C
ID	2406	2408	2403	2404	2414	2415	2410	2412
Lanes	L, L	T, RT	L	T, RT	L	T, RT	L, L	T, RT
Volume	597	443	48	762	116	442	233	862

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	2406	2408	2403	2404	2414	2415	2410	2412
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	597	244	199	48	396	366	116	300	142	233	760	102
Volume / Saturation Flow Rate	0.187	0.138	0.138	0.030	0.238	0.238	0.073	0.138	0.138	0.073	0.269	0.269
Overlap adjusted Volume / Saturation Flow Rate	0.187	0.138	0.138	0.030	0.238	0.238	0.073	0.138	0.138	0.073	0.269	0.269
Critical Movement	Y				Y			Y		Y		

Node 506: Cathedral Oaks 101 SB-Ramp	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	3.12
Worst Case Delay	67.48
Worst Case LOS	F

Volume and Adjustments								
Approach	N (Major)		E	S (Major)		W		
Movement	L1	T		T	R1	L1	T	R1
Base Volume	128.00	426.00		419.00	294.00	36.00	1.00	43.00
PHF, Peak-hour factor	0.920	0.920		0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	139.13	463.04		455.43	319.57	39.13	1.09	46.74

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	3	3	2
vx, Volume	139.13					39.13	1.09	46.74
Conflicting Volume (Veh)	775.00					1356.52	1516.30	463.04
Conflicting Volume (Ped)	0.00					0.00	0.00	0.00
Conflicting Volume	775.00					1356.52	1516.30	463.04
Two-Stage Gap Acceptance						No	No	
Number of Storage Spaces in Median Refuge Area								
cpx, Potential Capacity	849.86					127.55	120.47	603.07
Capacity	849.86					99.44	93.92	603.07

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	0.00					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	139.13	463.04		455.43	319.57	39.13	1.09	46.74
cmx, Capacity	849.86					99.44	93.92	603.07
V / C	0.16					0.39	0.01	0.08
d, Delay	10.06					65.35	67.48	11.47
LOS	B					F	F	B
dA, Approach Delay	2.33		0.00	0.00		36.42		
Approach LOS			A			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 1	Lane 1	Lane 2
Movements				T, R1	L1, T	
vx, Volume	139.13	463.04		775.00	40.22	46.74
Flared Storage Size						
cmx, Capacity					99.28	
V / C					0.41	
Q95, 95% Queue Length					1.92	
d, Delay					65.41	
LOS					F	
dA, Approach Delay	2.33		0.00	0.00	36.42	
Approach LOS			A		E	

Node 511: Hollister & Pebble Beach Rd

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	1.39
Worst Case Delay	33.5
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	17.00	1.00	43.00	14.00	714.00	45.00	5.00	0.00	9.00	34.00	418.00	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	18.48	1.09	46.74	15.22	776.09	48.91	5.43	0.00	9.78	36.96	454.35	15.22

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	18.48	1.09	46.74	15.22			5.43	0.00	9.78	36.96		
Conflicting Volume (Veh)	1107.61	1350.00	388.04	469.57			978.26	1391.30	234.78	825.00		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1107.61	1350.00	388.04	469.57			978.26	1391.30	234.78	825.00		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	167.16	151.84	616.22	1102.68			207.68	143.39	773.13	814.17		
Capacity	152.58	140.37	616.22	1102.68			176.16	132.56	773.13	814.17		

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,l, Base Critical Headway (Stage I)												
tc,base,ll, 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	0.00			0.20	0.20	0.10	0.00		
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,l, Critical Headway (Stage I)												
tc,ll, 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	18.48	1.09	46.74	15.22	776.09	48.91	5.43	0.00	9.78	36.96	454.35	15.22
cmx, Capacity	152.58	140.37	616.22	1102.68			176.16	132.56	773.13	814.17		
V / C	0.12	0.01	0.08	0.01			0.03	0.00	0.01	0.05		
d, Delay	31.45	33.50	13.70	8.31			25.90	32.63	10.12	9.63		
LOS	D	D	B	A			D	D	B	A		
dA, Approach Delay		18.97			0.15			15.76			0.70	
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	66.30	15.22	776.09	48.91	15.22	36.96	234.78	234.78
Flared Storage Size								
cmx, Capacity	323.91				349.79			
V / C	0.20				0.04			
Q95, 95% Queue Length	0.77				0.14			
d, Delay	18.97				15.76			
LOS	C				C			
dA, Approach Delay	18.97	0.15			15.76	0.70		
Approach LOS	C				C			

Node 512: Hollister & Palo Alto Dr

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	1.84
Worst Case Delay	31.13
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	15.00	1.00	60.00	26.00	700.00	4.00	23.00	0.00	14.00	13.00	400.00	27.00
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	16.30	1.09	65.22	28.26	760.87	4.35	25.00	0.00	15.22	14.13	434.78	29.35

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	16.30	1.09	65.22	28.26			25.00	0.00	15.22	14.13		
Conflicting Volume (Veh)	1065.22	1311.96	382.61	464.13			915.22	1299.46	232.07	765.22		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1065.22	1311.96	382.61	464.13			915.22	1299.46	232.07	765.22		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	179.51	160.04	621.21	1107.77			230.75	162.82	776.23	857.02		
Capacity	167.01	151.87	621.21	1107.77			194.66	154.52	776.23	857.02		

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	0.00			0.20	0.20	0.10	0.00		
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	16.30	1.09	65.22	28.26	760.87	4.35	25.00	0.00	15.22	14.13	434.78	29.35
cmx, Capacity	167.01	151.87	621.21	1107.77			194.66	154.52	776.23	857.02		
V / C	0.10	0.01	0.10	0.03			0.13	0.00	0.02	0.02		
d, Delay	28.98	31.13	13.22	8.33			25.79	30.60	11.94	9.27		
LOS	D	D	B	A			D	D	B	A		
dA, Approach Delay		16.56			0.30			20.55			0.27	
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	82.61	28.26	382.61	382.61	40.22	14.13	232.07	232.07
Flared Storage Size								
cmx, Capacity	393.82				271.68			
V / C	0.21				0.15			
Q95, 95% Queue Length	0.79				0.52			
d, Delay	16.56				20.55			
LOS	C				C			
dA, Approach Delay	16.56	0.30			20.55	0.27		
Approach LOS	C				C			

Node 513: Hollister & Coronado	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	1.43
Worst Case Delay	21.64
Worst Case LOS	C

Volume and Adjustments						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	56.00	691.00	38.00	39.00	365.00	46.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	60.87	751.09	41.30	42.39	396.74	50.00

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	60.87		41.30	42.39		
Conflicting Volume (Veh)	446.74		919.02	223.37		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	446.74		919.02	223.37		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	1124.22		274.16	786.25		
Capacity	1124.22		255.40	786.25		

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	0.00		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	60.87	751.09	41.30	42.39	396.74	50.00
cmx, Capacity	1124.22		255.40	786.25		
V / C	0.05		0.16	0.05		
d, Delay	8.39		21.64	12.12		
LOS	A		C	B		
dA, Approach Delay	0.63		16.82		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	60.87	375.54	375.54	83.70	223.37	223.37
Flared Storage Size						
cmx, Capacity				388.13		
V / C				0.22		
Q95, 95% Queue Length				0.82		
d, Delay				16.82		
LOS				C		
dA, Approach Delay	0.63			16.82	0.00	
Approach LOS				C		

Node 515: Hollister & Cannon Green	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	3.48
Worst Case Delay	48.59
Worst Case LOS	E

Volume and Adjustments						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	119.00	864.00	54.00	77.00	432.00	120.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	129.35	939.13	58.70	83.70	469.57	130.43

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	129.35		58.70	83.70		
Conflicting Volume (Veh)	600.00		1263.04	300.00		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	600.00		1263.04	300.00		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	986.97		164.37	702.13		
Capacity	986.97		135.22	702.13		

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		7.50	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	0.00		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	129.35	939.13	58.70	83.70	469.57	130.43
cmx, Capacity	986.97		135.22	702.13		
V / C	0.13		0.43	0.12		
d, Delay	9.20		48.59	27.09		
LOS	A		E	D		
dA, Approach Delay	1.11		35.95		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	129.35	469.57	469.57	142.39	300.00	300.00
Flared Storage Size						
cmx, Capacity				257.36		
V / C				0.55		
Q95, 95% Queue Length				3.50		
d, Delay				35.95		
LOS				E		
dA, Approach Delay	1.11			35.95	0.00	
Approach LOS				E		

Node 517: Hollister & Pacific Oaks	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.519
Loss Time	0
Cycle Length	100
Adj V/C	0.619

Volume and Adjustments by Movement										
Approach	N			E		S		W		
Movement	L1	T	R1	L1	T	L1	R1	L1	T	R1
Base Volume	60	15	34	176	816	216	94	72	570	90
PHF	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	15	4	9	44	204	54	24	18	143	23
Adjusted Volume	60	15	34	176	816	216	94	72	570	90

Volume and Adjustments by Lane Group							
Approach	N	E		S		W	
Lane Group	C	L	C	L	R	L	C
ID	2440	2437	2438	2444	2445	2441	2442
Lanes	LTR	L	T, T	L	R	L	T, RT
Volume	109	176	816	216	94	72	660

Saturation Flow Rate							
Approach	N	E		S		W	
Lane Group	2440	2437	2438	2444	2445	2441	2442
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	60	15	34	176	816	216	94	72	570	90
Volume / Saturation Flow Rate	0.038	0.068	0.068	0.110	0.255	0.135	0.059	0.045	0.206	0.206
Overlap adjusted Volume / Saturation Flow Rate	0.038	0.068	0.068	0.110	0.255	0.135	0.059	0.045	0.206	0.206
Critical Movement		Y		Y		Y			Y	

Node 518: Hollister & Santa Felicia

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	559.82
Worst Case Delay	5469.17
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	44.00	9.00	41.00	232.00	907.00	50.00	42.00	6.00	171.00	15.00	598.00	82.00
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	47.83	9.78	44.57	252.17	985.87	54.35	45.65	6.52	185.87	16.30	650.00	89.13

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	47.83	9.78	44.57	252.17			45.65	6.52	185.87	16.30		
Conflicting Volume (Veh)	1878.26	2289.13	520.11	739.13			1729.35	2271.74	369.57	1040.22		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1878.26	2289.13	520.11	739.13			1729.35	2271.74	369.57	1040.22		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	44.73	39.83	506.14	876.38			57.90	40.86	633.36	676.28		
Capacity	14.59	22.48	506.14	876.38			20.77	23.06	633.36	676.28		

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 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	0.00			0.20	0.20	0.10	0.00		
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	47.83	9.78	44.57	252.17	985.87	54.35	45.65	6.52	185.87	16.30	650.00	89.13
cmx, Capacity	14.59	22.48	506.14	876.38			20.77	23.06	633.36	676.28		
V / C	3.28	0.44	0.09	0.29			2.20	0.28	0.29	0.02		
d, Delay	5469.17	5382.57	5229.56	10.77			3436.25	3419.03	3268.61	10.45		
LOS	F	F	F	B			F	F	F	B		
dA, Approach Delay		5356.37			2.10			3304.88			0.23	
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	102.17	252.17	520.11	520.11	238.04	16.30	369.57	369.57
Flared Storage Size								
cmx, Capacity	26.88				85.81			
V / C	3.80				2.77			
Q95, 95% Queue Length	41.35				80.55			
d, Delay	5356.37				3304.88			
LOS	F				F			
dA, Approach Delay	5356.37	2.10			3304.88	0.23		
Approach LOS	F				F			

Node 521: Storke & Marketplace	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.499
Loss Time	0
Cycle Length	100
Adj V/C	0.599

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	64	501	340	66	53	96	149	787	112	269	46	124
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	125	85	17	13	24	37	197	28	67	12	31
Adjusted Volume	64	501	340	66	53	96	149	787	112	269	46	124

Volume and Adjustments by Lane Group								
Approach	N			E		S		W
Lane Group	L	C	R	C	R	L	C	C
ID	2448	2449	2451	2446	2447	2454	2455	2452
Lanes	L	T, T	R	LT	R	L	T, RT	L, LTR
Volume	64	501	340	119	96	149	899	439

Saturation Flow Rate									
Approach	N			E		S			W
Lane Group	2448		2449	2451	2446	2447	2454	2455	2452
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	273	3200	1600	1600	1600	1520	628	3200	3200

Capacity Analysis												
Approach	N			E			S			W		
Movement	L1	T	R1	L1	T	R1	L1	T	R1	L1	T	R1
Volume	64	501	340	66	53	96	149	787	112	269	46	124
Volume / Saturation Flow Rate	0.040	0.157	0.213	0.041	0.074	0.060	0.093	0.281	0.281	0.084	0.137	0.137
Overlap adjusted Volume / Saturation Flow Rate	0.040	0.157	0.213	0.041	0.074	0.060	0.093	0.281	0.281	0.084	0.137	0.137
Critical Movement	Y			Y				Y				Y

Node 522: Hollister & Storke

Control Type	Signalized
Method	ICU Method 1
LOS	E
Critical V/C	0.92
Loss Time	0
Cycle Length	100
Adj V/C	1.02

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	171	488	401	328	643	638	142	855	194	642	440	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	43	122	100	82	161	160	36	214	49	161	110	21
Adjusted Volume	171	488	401	328	643	638	142	855	194	642	440	84

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	2462	2464	2466	2457	2459	2461	2472	2474	2476	2467	2469	2471
Lanes	L, L	T, T	R	L, L	T, T	R	L, L	T, T	R	L, L	T, T	R
Volume	171	488	401	328	643	638	142	855	194	642	440	84

Saturation Flow Rate

Approach	N			E			S			W		
Lane Group	2462	2464	2466	2457	2459	2461	2472	2474	2476	2467	2469	2471
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	171	488	401	328	643	638	142	855	194	642	440	84
Volume / Saturation Flow Rate	0.053	0.153	0.251	0.103	0.201	0.399	0.044	0.267	0.121	0.201	0.138	0.053
Overlap adjusted Volume / Saturation Flow Rate	0.053	0.153	0.251	0.103	0.201	0.399	0.044	0.267	0.121	0.201	0.138	0.053
Critical Movement	Y					Y		Y		Y		

Node 524: Hollister & Coromar Project Access

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.63
Loss Time	0
Cycle Length	100
Adj V/C	0.73

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	19	10	250	50	1039	26	167	5	116	30	851	28
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	3	63	13	260	7	42	1	29	8	213	7
Adjusted Volume	19	10	250	50	1039	26	167	5	116	30	851	28

Volume and Adjustments by Lane Group

Approach	N	E		S		W		
Lane Group	C	L	C	C	R	L	C	R
ID	2482	2479	2480	2477	2478	2483	2484	2486
Lanes	LTR	L	T, RT	LT	R	L	T, T	R
Volume	279	50	1065	172	116	30	851	28

Saturation Flow Rate

Approach	N	E		S		W		
Lane Group	2482	2479	2480	2477	2478	2483	2484	2486
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	19	10	250	50	1039	26	167	5	116	30	851	28
Volume / Saturation Flow Rate	0.012	0.174	0.174	0.031	0.333	0.333	0.104	0.108	0.073	0.019	0.266	0.018
Overlap adjusted Volume / Saturation Flow Rate	0.012	0.174	0.174	0.031	0.333	0.333	0.104	0.108	0.073	0.019	0.266	0.018
Critical Movement		Y			Y		Y			Y		

Node 525: Hollister & Los Carneros

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.614
Loss Time	0
Cycle Length	100
Adj V/C	0.714

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	97	437	206	182	662	57	257	745	246	232	422	240
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	24	109	52	46	166	14	64	186	62	58	106	60
Adjusted Volume	97	437	206	182	662	57	257	745	246	232	422	240

Volume and Adjustments by Lane Group

Approach	N			E		S			W	
Lane Group	L	C	R	L	C	L	C	R	L	C
ID	2490	2491	2493	2487	2488	2498	2500	2502	2494	2496
Lanes	L	T, T	R	L	T, RT	L, L	T, T	R	L, L	T, RT
Volume	97	437	206	182	719	257	745	246	232	662

Saturation Flow Rate

Approach	N			E		S			W	
Lane Group	2490	2491	2493	2487	2488	2498	2500	2502	2494	2496
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	97	437	206	182	662	57	257	745	246	232	422	240
Volume / Saturation Flow Rate	0.061	0.137	0.129	0.114	0.225	0.225	0.080	0.233	0.154	0.073	0.207	0.207
Overlap adjusted Volume / Saturation Flow Rate	0.061	0.137	0.129	0.114	0.225	0.225	0.080	0.233	0.154	0.073	0.207	0.207
Critical Movement	Y			Y				Y			Y	

Node 526: Cremona Dr & Hollister Ave	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	2.34
Worst Case Delay	66.13
Worst Case LOS	F

Volume and Adjustments						
Approach	N		E (Major)		W (Major)	
Movement	L1	R1	T	R1	L1	T
Base Volume	39.00	35.00	860.00	138.00	52.00	758.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	42.39	38.04	934.78	150.00	56.52	823.91

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	42.39	38.04			56.52	
Conflicting Volume (Veh)	1534.78	542.39			1084.78	
Conflicting Volume (Ped)	0.00	0.00			0.00	
Conflicting Volume	1534.78	542.39			1084.78	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	109.06	489.56			650.67	
Capacity	96.77	489.56			650.67	

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			0.00	
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	42.39	38.04	934.78	150.00	56.52	823.91
cmx, Capacity	96.77	489.56			650.67	
V / C	0.44	0.08			0.09	
d, Delay	66.13	36.28			10.60	
LOS	F	E			B	
dA, Approach Delay	52.01		0.00		0.68	
Approach LOS	F					
dRank1, Rank 1 Delay			0.00		1.05	

Delay and Level of Service by Lane					
Approach	N	E (Major)		W (Major)	
Lane	Lane 1	Lane 1	Lane 2	Lane 1	Lane 2
Movements	L1, R1		T, R1	L1, T	
vx, Volume	80.43	542.39	542.39	440.22	440.22
Flared Storage Size					
cmx, Capacity	155.95			1800.00	
V / C	0.52			0.24	
Q95, 95% Queue Length	2.96			0.10	
d, Delay	52.01			10.60	
LOS	F				
dA, Approach Delay	52.01	0.00		0.68	
Approach LOS	F				

Node 528: Hollister & Los Carneros Way	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.427
Loss Time	0
Cycle Length	100
Adj V/C	0.527

Volume and Adjustments by Movement						
Approach	N		E		W	
Movement	L1	R1	T	R1	L1	T
Base Volume	52	82	909	149	110	688
PHF	1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume	13	21	227	37	28	172
Adjusted Volume	52	82	909	149	110	688

Volume and Adjustments by Lane Group				
Approach	N	E	W	
Lane Group	C	C	L	C
ID	2505	2503	2508	2509
Lanes	L, LTR, R	T, RT	L	T, T
Volume	134	1058	110	688

Saturation Flow Rate				
Approach	N	E	W	
Lane Group	2505	2503	2508	2509
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	52	82	909	149	110	688
Volume / Saturation Flow Rate	0.016	0.028	0.331	0.331	0.069	0.215
Overlap adjusted Volume / Saturation Flow Rate	0.016	0.028	0.331	0.331	0.069	0.215
Critical Movement		Y	Y		Y	

Node 530: Hollister & Aero Camino

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.394
Loss Time	0
Cycle Length	100
Adj V/C	0.494

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	3	32	8	979	70	40	6	19	16	681	28
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	1	8	2	245	18	10	2	5	4	170	7
Adjusted Volume	44	3	32	8	979	70	40	6	19	16	681	28

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	2516	2517	2513	2514	2511	2512	2518	2519
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	47	32	8	1049	46	19	16	709

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	2516	2517	2513	2514	2511	2512	2518	2519
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	44	3	32	8	979	70	40	6	19	16	681	28
Volume / Saturation Flow Rate	0.028	0.029	0.020	0.005	0.328	0.328	0.025	0.029	0.012	0.010	0.222	0.222
Overlap adjusted Volume / Saturation Flow Rate	0.028	0.029	0.020	0.005	0.328	0.328	0.025	0.029	0.012	0.010	0.222	0.222
Critical Movement	Y				Y			Y		Y		

Node 553: Storke & Santa Felicia	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	49.71
Worst Case Delay	546.93
Worst Case LOS	F

Volume and Adjustments						
Approach	N (Major)		S (Major)		W	
Movement	T	R1	L1	T	L1	R1
Base Volume	755.00	102.00	142.00	909.00	53.00	150.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	820.65	110.87	154.35	988.04	57.61	163.04

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			154.35		57.61	163.04
Conflicting Volume (Veh)			931.52		1678.80	465.76
Conflicting Volume (Ped)			0.00		0.00	0.00
Conflicting Volume			931.52		1678.80	465.76
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity			742.85		87.56	548.92
Capacity			742.85		62.48	548.92

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			0.00		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	820.65	110.87	154.35	988.04	57.61	163.04
cmx, Capacity			742.85		62.48	548.92
V / C			0.21		0.92	0.30
d, Delay			11.12		546.93	495.88
LOS			B		F	F
dA, Approach Delay	0.00		1.50		509.21	
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	465.76	465.76	154.35	494.02	494.02	220.65
Flared Storage Size						
cmx, Capacity						181.01
V / C						1.22
Q95, 95% Queue Length						30.63
d, Delay						509.21
LOS						F
dA, Approach Delay	0.00		1.50			509.21
Approach LOS						F

Node 556: Fowler & Fairview	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	0.83
Worst Case Delay	14.97
Worst Case LOS	B

Volume and Adjustments						
Approach	N (Major)		S		W (Major)	
Movement	T	R1	L1	T	L1	R1
Base Volume	21.00	259.00	4.00	29.00	399.00	12.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	22.83	281.52	4.35	31.52	433.70	13.04

Pedestrians						
Approach	N (Major)		S		W (Major)	
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		W (Major)	
Movement	T	R1	L1	T	L1	R1
Rank	2	1	3	2	1	1
vx, Volume	22.83		4.35	31.52		
Conflicting Volume (Veh)	440.22		744.57	440.22		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	440.22		744.57	440.22		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	1130.45		384.70	513.97		
Capacity	1130.45		383.01	513.97		

Critical Headway and Follow Up Headway						
Approach	N (Major)		S		W (Major)	
Movement	T	R1	L1	T	L1	R1
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	0.00		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)		S		W (Major)	
Movement	T	R1	L1	T	L1	R1
vx, Volume	22.83	281.52	4.35	31.52	433.70	13.04
cmx, Capacity	1130.45		383.01	513.97		
V / C	0.02		0.01	0.06		
d, Delay	8.25		14.97	12.58		
LOS	A		B	B		
dA, Approach Delay	0.62		12.87		0.00	
Approach LOS			B			
dRank1, Rank 1 Delay	0.00				0.00	

Delay and Level of Service by Lane			
Approach	N (Major)	S	W (Major)
Lane	Lane 1	Lane 1	Lane 1
Movements	T, R1	L1, T	L1, R1
vx, Volume	304.35	35.87	446.74
Flared Storage Size			
cmx, Capacity	1130.45	493.52	
V / C	0.27	0.07	
Q95, 95% Queue Length	1.10	0.23	
d, Delay	8.25	12.87	
LOS		B	
dA, Approach Delay	0.62	12.87	0.00
Approach LOS		B	

Node 562: Storke & Phelps

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.461
Loss Time	0
Cycle Length	100
Adj V/C	0.561

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	56	640	162	5	7	48	116	730	13	160	10	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	14	160	41	1	2	12	29	183	3	40	3	29
Adjusted Volume	56	640	162	5	7	48	116	730	13	160	10	116

Volume and Adjustments by Lane Group

Approach	N		E	S		W	
Lane Group	L	C	C	L	C	L	C
ID	2522	2523	2521	2527	2528	2525	2526
Lanes	L	T, RT	LTR	L	T, RT	L	RT
Volume	56	802	60	116	743	160	126

Saturation Flow Rate

Approach	N		E	S		W	
Lane Group	2522	2523	2521	2527	2528	2525	2526
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	56	640	162	5	7	48	116	730	13	160	10	116
Volume / Saturation Flow Rate	0.035	0.251	0.251	0.003	0.038	0.038	0.073	0.232	0.232	0.100	0.079	0.079
Overlap adjusted Volume / Saturation Flow Rate	0.035	0.251	0.251	0.003	0.038	0.038	0.073	0.232	0.232	0.100	0.079	0.079
Critical Movement		Y			Y		Y			Y		

Node 564: Mesa & Los Carneros	
Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.182
Loss Time	0
Cycle Length	100
Adj V/C	0.282

Volume and Adjustments by Movement							
Approach	N	E		S		W	
Movement		L1	T	L1	R1	T	R1
Base Volume		148	36	22	107	18	21
PHF		1.000	1.000	1.000	1.000	1.000	1.000
Peak 15 Volume		37	9	6	27	5	5
Adjusted Volume		148	36	22	107	18	21

Volume and Adjustments by Lane Group						
Approach	N	E	S		W	
Lane Group		C	L	R	C	R
ID		2530	2533	2534	2531	2532
Lanes		LT	L	R	T	R
Volume		184	22	107	18	21

Saturation Flow Rate						
Approach	N	E	S		W	
Lane Group		2530	2533	2534	2531	2532
Base Saturation Flow Rate		1600	1600	1600	1600	1600
Number of Lanes		1	1	1	1	1
Saturation Flow Rate		1600	1600	1600	1600	1600

Capacity Analysis							
Approach	N	E		S		W	
Movement		L1	T	L1	R1	T	R1
Volume		148	36	22	107	18	21
Volume / Saturation Flow Rate		0.093	0.115	0.014	0.067	0.011	0.013
Overlap adjusted Volume / Saturation Flow Rate		0.093	0.115	0.014	0.067	0.011	0.013
Critical Movement			Y		Y		

Node 617: Los Caneros & Castilian

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.479
Loss Time	0
Cycle Length	100
Adj V/C	0.579

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	580	87	14	2	47	89	923	9	230	2	134
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	145	22	4	1	12	22	231	2	58	1	34
Adjusted Volume	8	580	87	14	2	47	89	923	9	230	2	134

Volume and Adjustments by Lane Group

Approach	N		E	S		W	
Lane Group	L	C	C	L	C	C	R
ID	2581	2582	2580	2586	2587	2584	2585
Lanes	L	T, RT	LTR	L	T, RT	LT	R
Volume	8	667	63	89	932	232	134

Saturation Flow Rate

Approach	N		E	S		W	
Lane Group	2581	2582	2580	2586	2587	2584	2585
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	8	580	87	14	2	47	89	923	9	230	2	134
Volume / Saturation Flow Rate	0.005	0.208	0.208	0.009	0.039	0.039	0.056	0.291	0.291	0.144	0.145	0.084
Overlap adjusted Volume / Saturation Flow Rate	0.005	0.208	0.208	0.009	0.039	0.039	0.056	0.291	0.291	0.144	0.145	0.084
Critical Movement	Y					Y		Y		Y		

Node 624: Cathedral Oaks & Calle Real	
Control Type	AWSC
Method	HCM 7th Edition
Average Delay	19.76
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	4.00	172.00	30.00	336.00	93.00	0.00	133.00	223.00	92.00	7.00	6.00	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	4.35	186.96	32.61	365.22	101.09	0.00	144.57	242.39	100.00	7.61	6.52	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	4.35	219.57	365.22	101.09	144.57	342.39	60.87
Left Turn Flow Rate	4.35	0.00	365.22	0.00	144.57	0.00	7.61
Right Turn Flow Rate	0.00	32.61	0.00	0.00	0.00	100.00	46.74
PLT, Proportion LT	1.00	0.00	1.00	0.00	1.00	0.00	0.13
PRT, Proportion RT	0.00	0.15	0.00	0.00	0.00	0.29	0.77
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	-0.10	0.50	0.00	0.50	-0.20	-0.44

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	4.35	219.57	365.22	101.09	144.57	342.39	60.87
hd initial	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x initial	0.00	0.20	0.32	0.09	0.13	0.30	0.05
hd, iteration 1	6.20	5.59	6.13	5.62	6.02	5.31	5.55
Difference, iteration 1	3.00	2.39	2.93	2.42	2.82	2.11	2.35
hd, iteration 2	7.22	6.61	6.85	6.35	6.89	6.18	6.69
Difference, iteration 2	1.02	1.02	0.72	0.72	0.87	0.87	1.14
hd, iteration 3	7.53	6.91	7.12	6.62	7.15	6.44	7.10
Difference, iteration 3	0.30	0.30	0.27	0.27	0.26	0.26	0.41
hd, iteration 4	7.63	7.01	7.20	6.70	7.25	6.53	7.23
Difference, iteration 4	0.10	0.10	0.08	0.08	0.09	0.09	0.13
hd, iteration 5	7.66	7.05	7.23	6.73	7.27	6.56	7.27
Difference, iteration 5	0.03	0.03	0.03	0.03	0.03	0.03	0.04
Convergence	Y	Y	Y	Y	Y	Y	Y
hd final, Departure Headway	7.66	7.05	7.23	6.73	7.27	6.56	7.27
x final, Degree of Utilization	0.01	0.43	0.73	0.19	0.29	0.62	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	4.35	219.57	365.22	101.09	144.57	342.39	60.87
hd, Departure Headway	7.66	7.05	7.23	6.73	7.27	6.56	7.27
x, Degree of Utilization	0.01	0.43	0.73	0.19	0.29	0.62	0.12
m, Move Up Time	2.30	2.30	2.30	2.30	2.30	2.30	2.00
ts, Service Time	5.36	4.75	4.93	4.43	4.97	4.26	5.27
Capacity	469.17	510.32	497.89	535.05	494.40	549.03	495.10
Delay	10.43	15.03	29.05	10.99	12.97	19.95	11.29
LOS	B	C	D	B	B	C	B
Q95, 95% Queue Length	0.03	2.23	7.42	0.70	1.23	4.75	0.42
Approach Delay	14.94		25.14		17.88		11.29
Approach LOS	B		D		C		B
Intersection Delay	19.76						
Intersection LOS	C						

Node 630: Hollister & Marketplace/Village Way

Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.647
Loss Time	0
Cycle Length	100
Adj V/C	0.747

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	152	35	58	340	965	194	86	30	328	65	704	65
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	38	9	15	85	241	49	22	8	82	16	176	16
Adjusted Volume	152	35	58	340	965	194	86	30	328	65	704	65

Volume and Adjustments by Lane Group

Approach	N	E			S		W	
Lane Group	C	L	C	R	C	R	L	C
ID	2596	2591	2593	2595	2589	2590	2597	2598
Lanes	LTR	L, L	T, T	R	LT	R	L	T, RT
Volume	245	340	965	194	116	328	65	769

Saturation Flow Rate

Approach	N	E			S		W	
Lane Group	2596	2591	2593	2595	2589	2590	2597	2598
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	152	35	58	340	965	194	86	30	328	65	704	65
Volume / Saturation Flow Rate	0.095	0.153	0.153	0.106	0.302	0.121	0.054	0.073	0.205	0.041	0.240	0.240
Overlap adjusted Volume / Saturation Flow Rate	0.095	0.153	0.153	0.106	0.302	0.121	0.054	0.073	0.205	0.041	0.240	0.240
Critical Movement	Y			Y					Y			Y

Node 636: Hollister & Cathedral Oaks	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	3.57
Worst Case Delay	38.59
Worst Case LOS	E

Volume and Adjustments						
Approach	N (Major)		E (Major)		W	
Movement	L1	R1	T	R1	L1	T
Base Volume	395.00	69.00	57.00	629.00	88.00	56.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	429.35	75.00	61.96	683.70	95.65	60.87

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			61.96		95.65	60.87
Conflicting Volume (Veh)			466.85		1212.50	466.85
Conflicting Volume (Ped)			0.00		0.00	0.00
Conflicting Volume			466.85		1212.50	466.85
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity			1105.22		202.86	496.53
Capacity			1105.22		201.99	496.53

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			0.00		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	429.35	75.00	61.96	683.70	95.65	60.87
cmx, Capacity			1105.22		201.99	496.53
V / C			0.06		0.47	0.12
d, Delay			8.45		38.59	13.26
LOS			A		E	B
dA, Approach Delay	0.00		0.70		28.74	
Approach LOS					D	
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	429.35	75.00	61.96	683.70	95.65	60.87
Flared Storage Size						
cmx, Capacity						
V / C						
Q95, 95% Queue Length						
d, Delay						
LOS						
dA, Approach Delay	0.00		0.70		28.74	
Approach LOS					D	

Node 717: Hollister & Entrance

Control Type	Signalized
Method	ICU Method 1
LOS	A
Critical V/C	0.325
Loss Time	0
Cycle Length	100
Adj V/C	0.425

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	1	22	186	676	19	50	1	88	4	352	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	13	0	6	47	169	5	13	0	22	1	88	10
Adjusted Volume	50	1	22	186	676	19	50	1	88	4	352	40

Volume and Adjustments by Lane Group

Approach	N		E		S		W	
Lane Group	C	R	L	C	C	R	L	C
ID	2605	2606	2602	2603	2600	2601	2607	2608
Lanes	LT	R	L	T, RT	LT	R	L	T, RT
Volume	51	22	186	695	51	88	4	392

Saturation Flow Rate

Approach	N		E		S		W	
Lane Group	2605	2606	2602	2603	2600	2601	2607	2608
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	50	1	22	186	676	19	50	1	88	4	352	40
Volume / Saturation Flow Rate	0.031	0.032	0.014	0.116	0.217	0.217	0.031	0.032	0.055	0.003	0.123	0.123
Overlap adjusted Volume / Saturation Flow Rate	0.031	0.032	0.014	0.116	0.217	0.217	0.031	0.032	0.055	0.003	0.123	0.123
Critical Movement	Y			Y					Y		Y	

Node 856: Hollister & Cortona	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	1155.46
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	20.00	6.00	320.00	28.00	1301.00	49.00	115.00	5.00	16.00	134.00	738.00	106.00
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	21.74	6.52	347.83	30.43	1414.13	53.26	125.00	5.43	17.39	145.65	802.17	115.22

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	21.74	6.52	347.83	30.43			125.00	5.43	17.39	145.65		
Conflicting Volume (Veh)	2196.74	2710.33	733.70	917.39			1922.28	2679.35	458.70	1467.39		
Conflicting Volume (Ped)	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	2196.74	2710.33	733.70	917.39			1922.28	2679.35	458.70	1467.39		
Two-Stage Gap Acceptance	No	No					No	No				
Number of Storage Spaces in Median Refuge Area												
cpx, Potential Capacity	25.63	21.36	367.24	751.96			41.43	22.37	554.73	465.97		
Capacity	8.75	10.99	367.24	751.96			0.64	11.51	554.73	465.97		

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	0.00			0.20	0.20	0.10	0.00		
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	21.74	6.52	347.83	30.43	1414.13	53.26	125.00	5.43	17.39	145.65	802.17	115.22
cmx, Capacity	8.75	10.99	367.24	751.96			0.64	11.51	554.73	465.97		
V / C	2.48	0.59	0.95	0.04			194.19	0.47	0.03	0.31		
d, Delay	5912.66	5828.74	5511.00	9.82			10000.00	10000.00	10000.00	16.23		
LOS	F	F	F	A			F	F	F	C		
dA, Approach Delay	5539.73			0.20			10000.00			2.22		
Approach LOS	F						F					
dRank1, Rank 1 Delay				0.67						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	376.09	748.91	748.91	147.83	145.65	458.70	458.70
Flared Storage Size							
cmx, Capacity	93.43	1800.00		0.76			
V / C	4.03	0.42		194.70			
Q95, 95% Queue Length	145.21	0.05		76.43			
d, Delay	5539.73	9.82		358101.00			
LOS	F			F			
dA, Approach Delay	5539.73	0.20		10000.00	2.22		
Approach LOS	F			F			

Node 864: Deckers Outdoor Access & Hollister Ave	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	0.35
Worst Case Delay	13.37
Worst Case LOS	B

Volume and Adjustments				
Approach	E (Major)	S	W (Major)	
Movement	T	R1	T	R1
Base Volume	1106.00	56.00	987.00	8.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920
V, Adjusted Volume	1202.17	60.87	1072.83	8.70

Pedestrians				
Approach	E (Major)	S	W (Major)	
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	E (Major)	S	W (Major)	
Movement	T	R1	T	R1
Rank	1	2	1	1
vx, Volume		60.87		
Conflicting Volume (Veh)		540.76		
Conflicting Volume (Ped)		0.00		
Conflicting Volume		540.76		
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median Refuge Area				
cpx, Potential Capacity		490.75		
Capacity		490.75		

Critical Headway and Follow Up Headway				
Approach	E (Major)	S	W (Major)	
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	E (Major)	S	W (Major)	
Movement	T	R1	T	R1
vx, Volume	1202.17	60.87	1072.83	8.70
cmx, Capacity		490.75		
V / C		0.12		
d, Delay		13.37		
LOS		B		
dA, Approach Delay	0.00	13.37	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					T, R1
vx, Volume	601.09	601.09	60.87	540.76	540.76
Flared Storage Size					
cmx, Capacity					
V / C					
Q95, 95% Queue Length					
d, Delay					
LOS					
dA, Approach Delay	0.00		13.37	0.00	
Approach LOS			B		

Node 877: Hollister & Sumida Gardens	
Control Type	Signalized
Method	ICU Method 1
LOS	B
Critical V/C	0.647
Loss Time	0
Cycle Length	100
Adj V/C	0.747

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	31	24	51	183	565	38	182	18	131	38	803	387
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	6	13	46	141	10	46	5	33	10	201	97
Adjusted Volume	31	24	51	183	565	38	182	18	131	38	803	387

Volume and Adjustments by Lane Group								
Approach	N		E		S		W	
Lane Group	L	C	L	C	L	C	L	C
ID	2613	2614	2610	2611	2618	2619	2615	2616
Lanes	L	RT	L	T, RT	L	RT	L	T, RT
Volume	31	75	183	603	182	149	38	1190

Saturation Flow Rate								
Approach	N		E		S		W	
Lane Group	2613	2614	2610	2611	2618	2619	2615	2616
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	31	24	51	183	565	38	182	18	131	38	803	387
Volume / Saturation Flow Rate	0.019	0.047	0.047	0.114	0.188	0.188	0.114	0.093	0.093	0.024	0.372	0.372
Overlap adjusted Volume / Saturation Flow Rate	0.019	0.047	0.047	0.114	0.188	0.188	0.114	0.093	0.093	0.024	0.372	0.372
Critical Movement			Y	Y			Y					Y

Node 1042: Hollister & Santa Babara Shores	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	0.5
Worst Case Delay	19.47
Worst Case LOS	C

Volume and Adjustments						
Approach	E (Major)		S		W (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	25.00	757.00	11.00	20.00	419.00	20.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	27.17	822.83	11.96	21.74	455.43	21.74

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	27.17		11.96	21.74		
Conflicting Volume (Veh)	477.17		932.07	238.59		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	477.17		932.07	238.59		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	1095.59		268.93	768.80		
Capacity	1095.59		260.29	768.80		

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		7.50	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	0.00		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	27.17	822.83	11.96	21.74	455.43	21.74
cmx, Capacity	1095.59		260.29	768.80		
V / C	0.02		0.05	0.03		
d, Delay	8.37		19.47	10.32		
LOS	A		C	B		
dA, Approach Delay	0.27		13.56		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	27.17	411.41	411.41	33.70	238.59	238.59
Flared Storage Size						
cmx, Capacity				454.04		
V / C				0.07		
Q95, 95% Queue Length				0.24		
d, Delay				13.56		
LOS				B		
dA, Approach Delay	0.27			13.56	0.00	
Approach LOS				B		

Node 1141: Sperling Preserve/Ellwood Dwy & Hollister Ave

Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	1.89
Worst Case Delay	41.53
Worst Case LOS	E

Volume and Adjustments

Approach	N		E (Major)			S			W (Major)		
Movement	L1	T	L1	T	R1	L1	T	R1	L1	T	R1
Base Volume	18.00	15.00	39.00	638.00	89.00	7.00	1.00	15.00	38.00	417.00	8.00
PHF, Peak-hour factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
V, Adjusted Volume	18.00	15.00	39.00	638.00	89.00	7.00	1.00	15.00	38.00	417.00	8.00

Pedestrians

Approach	N		E (Major)			S			W (Major)		
Movement	L1	T	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		
w, Lane Width (ft)	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		
fpb, Percent Blockage	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	L1	T	R1	L1	T	R1	L1	T	R1
Rank	4	3	2	1	1	4	3	2	2	1	1
vx, Volume	18.00	15.00	39.00			7.00	1.00	15.00	38.00		
Conflicting Volume (Veh)	1265.50	1261.50	425.00			1265.00	1302.00	421.00	727.00		
Conflicting Volume (Ped)	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
Conflicting Volume	1265.50	1261.50	425.00			1265.00	1302.00	421.00	727.00		
Two-Stage Gap Acceptance	No	No				No	No				
Number of Storage Spaces in Median Refuge Area											
cpx, Potential Capacity	147.37	171.56	1145.11			147.49	162.25	636.81	885.53		
Capacity	127.13	152.51	1145.11			119.52	144.23	636.81	885.53		

Critical Headway and Follow Up Headway

Approach	N		E (Major)			S			W (Major)		
Movement	L1	T	L1	T	R1	L1	T	R1	L1	T	R1
tc,base, Base Critical Headway	7.10	6.50	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		
Phv, % Heavy Vehicles	0.00	0.00	0.00			0.00	0.00	0.00	0.00		
tc,G, Grade Adjustment Factor	0.20	0.20	0.00			0.20	0.20	0.10	0.00		
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		
tc, Critical Headway	7.10	6.50	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	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		
tf, Follow-Up Headway	3.50	4.00	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	L1	T	R1	L1	T	R1	L1	T	R1
vx, Volume	18.00	15.00	39.00	638.00	89.00	7.00	1.00	15.00	38.00	417.00	8.00
cmx, Capacity	127.13	152.51	1145.11			119.52	144.23	636.81	885.53		
V / C	0.14	0.10	0.03			0.06	0.01	0.02	0.04		
d, Delay	41.53	36.82	8.19			36.48	31.32	12.01	9.11		
LOS	E	E	A			E	D	B	A		
dA, Approach Delay	39.39		0.42			20.30			0.75		
Approach LOS	E					C					
dRank1, Rank 1 Delay			0.48						0.51		

Delay and Level of Service by Lane

Approach	N	E (Major)	S	W (Major)
Lane	Lane 1	Lane 1	Lane 1	Lane 1
Movements	L1, T	L1, T, R1	L1, T, R1	L1, T, R1
vx, Volume	33.00	766.00	23.00	463.00
Flared Storage Size				
cmx, Capacity	137.53	1756.98	258.26	1793.25
V / C	0.24	0.44	0.09	0.26
Q95, 95% Queue Length	0.93	0.07	0.29	0.06
d, Delay	39.39	8.19	20.30	9.11
LOS	E		C	
dA, Approach Delay	39.39	0.42	20.30	0.75
Approach LOS	E		C	

Node 1182: Ward & Ekwill	
Control Type	TWSC
Method	HCM 7th Edition
dI, Average Delay	2.89
Worst Case Delay	10.84
Worst Case LOS	B

Volume and Adjustments						
Approach	N (Major)		E		S (Major)	
Movement	L1	T	L1	R1	T	R1
Base Volume	49.00	88.00	1.00	56.00	112.00	2.00
PHF, Peak-hour factor	0.920	0.920	0.920	0.920	0.920	0.920
V, Adjusted Volume	53.26	95.65	1.09	60.87	121.74	2.17

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	53.26		1.09	60.87		
Conflicting Volume (Veh)	123.91		325.00	122.83		
Conflicting Volume (Ped)	0.00		0.00	0.00		
Conflicting Volume	123.91		325.00	122.83		
Two-Stage Gap Acceptance			No			
Number of Storage Spaces in Median Refuge Area						
cpx, Potential Capacity	1475.47		673.16	933.56		
Capacity	1475.47		647.49	933.56		

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	0.00		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	53.26	95.65	1.09	60.87	121.74	2.17
cmx, Capacity	1475.47		647.49	933.56		
V / C	0.04		0.00	0.07		
d, Delay	7.50		10.84	9.13		
LOS	A		B	A		
dA, Approach Delay	2.68		9.16		0.00	
Approach LOS			A			
dRank1, Rank 1 Delay	0.29				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	148.91	61.96	123.91
Flared Storage Size			
cmx, Capacity	1800.00	926.37	
V / C	0.08	0.07	
Q95, 95% Queue Length	0.09	0.21	
d, Delay	7.50	9.16	
LOS		A	
dA, Approach Delay	2.68	9.16	0.00
Approach LOS		A	

ATTACHMENT A.4

US 101 MERGE-DIVERGE HCS WORKSHEETS

HCS Freeway Facilities Report

Project Information

Analyst	Christine Lazaro	Date	9/17/2025
Agency	DKS Associates	Analysis Year	2025
Jurisdiction	Goleta	Time Analyzed	Baseline AM
Facility Name	SB US 101	Units	U.S. Customary
Project Description	SB US 101 Aux Lane between Los Carneros and Fairview		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.33		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	SB US 101 upstream of N Los Carneros Rd On-Ramp	2490	2
2	Merge	Merge	N Los Carneros Rd On-Ramp to SB US 101	30	2
3	Overlap	Overlap	SB US 101 between N Los Carneros Rd On-Ramp and Storke Rd Off-Ramp	1470	2
4	Diverge	Diverge	Storke Rd Off-Ramp from SB US 101	30	2
5	Basic	Basic	SB US 101 downstream of Storke Rd Off-Ramp	3015	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	3080	4700	0.66	64.7	23.8	C

Segment 2: Merge

AP	PHF		fHV		Volume Served (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R Infl.	F	R Infl.	
1	0.92	0.92	0.943	0.952	3171	91	4700	2100	0.67	0.04	55.5	55.5	28.6	30.1	D

Segment 3: Overlap

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	3172	4700	0.67	55.4	28.6	D

Segment 4: Diverge

AP	PHF		fHV		Volume Served (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R Infl.	F	R Infl.	
1	0.92	0.92	0.943	0.952	3172	1342	4700	2100	0.67	0.64	55.4	55.4	28.6	31.3	D

Segment 5: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS

1	0.92	0.943	1818	4700	0.39	64.2	14.0	B

Facility Analysis Results

AP	VMT veh-mi/AP	VMT-Demand veh-mi/AP	VHD veh-h/AP	Total Delay Cost $/AP	Speed mi/h	Density pc/mi/ln	Density veh/mi/ln	TT min	LOS
1	740	740	0.65	16.24	56.8	20.6	19.5	1.40	C

Facility Overall Results

Space Mean Speed, mi/h	56.8	Average Density, veh/mi/ln	19.5
Average Travel Time, min	1.40	Average Density, pc/mi/ln	20.6
Total VMT, veh-mi/AP	740	Total VHD, veh-h	0.65
Vehicle Value of Time (VOT), $/h	25.00	Total Delay Cost, $	16.24

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HCS Freeway Facilities Report

Project Information

Analyst	Christine Lazaro	Date	9/17/2025
Agency	DKS Associates	Analysis Year	2025
Jurisdiction	Goleta	Time Analyzed	Baseline PM
Facility Name	SB US 101	Units	U.S. Customary
Project Description	SB US 101 Aux Lane between Los Carneros and Fairview		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.33		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	SB US 101 upstream of N Los Carneros Rd On-Ramp	2490	2
2	Merge	Merge	N Los Carneros Rd On-Ramp to SB US 101	30	2
3	Overlap	Overlap	SB US 101 between N Los Carneros Rd On-Ramp and Storke Rd Off-Ramp	1470	2
4	Diverge	Diverge	Storke Rd Off-Ramp from SB US 101	30	2
5	Basic	Basic	SB US 101 downstream of Storke Rd Off-Ramp	3015	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	3610	4700	0.77	62.7	28.8	D

Segment 2: Merge

AP	PHF		fHV		Volume Served (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R Infl.	F	R Infl.	
1	0.92	0.92	0.943	0.952	3777	167	4700	2100	0.80	0.08	53.8	53.8	35.1	34.7	D

Segment 3: Overlap

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	3778	4700	0.80	53.8	35.1	E

Segment 4: Diverge

AP	PHF		fHV		Volume Served (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R Infl.	F	R Infl.	
1	0.92	0.92	0.943	0.952	3778	1146	4700	2100	0.80	0.55	55.8	55.8	33.9	36.5	E

Segment 5: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS

1	0.92	0.943	2621	4700	0.56	64.2	20.2	C

Facility Analysis Results

AP	VMT veh-mi/AP	VMT-Demand veh-mi/AP	VHD veh-h/AP	Total Delay Cost $/AP	Speed mi/h	Density pc/mi/ln	Density veh/mi/ln	TT min	LOS
1	931	931	1.12	27.90	55.8	26.5	25.0	1.40	D

Facility Overall Results

Space Mean Speed, mi/h	55.8	Average Density, veh/mi/ln	25.0
Average Travel Time, min	1.40	Average Density, pc/mi/ln	26.5
Total VMT, veh-mi/AP	931	Total VHD, veh-h	1.12
Vehicle Value of Time (VOT), $/h	25.00	Total Delay Cost, $	27.90

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R10. SB US 101 Aux Lane bw Los Carneros and Storke Baseline PM.xuf

HCS Freeway Facilities Report

Project Information

Analyst	Christine Lazaro	Date	9/17/2025
Agency	DKS Associates	Analysis Year	2025
Jurisdiction	Goleta	Time Analyzed	Future No Project AM
Facility Name	SB US 101	Units	U.S. Customary
Project Description	SB US 101 Aux Lane between Los Carneros and Fairview		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.33		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	SB US 101 upstream of N Los Carneros Rd On-Ramp	2490	2
2	Merge	Merge	N Los Carneros Rd On-Ramp to SB US 101	30	2
3	Overlap	Overlap	SB US 101 between N Los Carneros Rd On-Ramp and Storke Rd Off-Ramp	1470	2
4	Diverge	Diverge	Storke Rd Off-Ramp from SB US 101	30	2
5	Basic	Basic	SB US 101 downstream of Storke Rd Off-Ramp	3015	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	3519	4700	0.75	63.2	27.8	D

Segment 2: Merge

AP	PHF		fHV		Volume Served (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R Infl.	F	R Infl.	
1	0.92	0.92	0.943	0.952	3602	83	4700	2100	0.77	0.04	54.4	54.4	33.1	33.4	D

Segment 3: Overlap

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	3603	4700	0.77	54.4	33.1	D

Segment 4: Diverge

AP	PHF		fHV		Volume Served (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R Infl.	F	R Infl.	
1	0.92	0.92	0.943	0.952	3603	1660	4700	2100	0.77	0.79	54.7	54.7	32.9	35.0	D

Segment 5: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS

1	0.92	0.943	1927	4700	0.41	64.1	14.8	B

Facility Analysis Results

AP	VMT veh-mi/AP	VMT-Demand veh-mi/AP	VHD veh-h/AP	Total Delay Cost $/AP	Speed mi/h	Density pc/mi/ln	Density veh/mi/ln	TT min	LOS
1	825	825	0.96	24.08	55.9	23.4	22.1	1.40	C

Facility Overall Results

Space Mean Speed, mi/h	55.9	Average Density, veh/mi/ln	22.1
Average Travel Time, min	1.40	Average Density, pc/mi/ln	23.4
Total VMT, veh-mi/AP	825	Total VHD, veh-h	0.96
Vehicle Value of Time (VOT), $/h	25.00	Total Delay Cost, $	24.08

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HCS Freeway Facilities Report

Project Information

Analyst	Christine Lazaro	Date	9/17/2025
Agency	DKS Associates	Analysis Year	2025
Jurisdiction	Goleta	Time Analyzed	Future No Project PM
Facility Name	SB US 101	Units	U.S. Customary
Project Description	SB US 101 Aux Lane between Los Carneros and Fairview		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.33		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	SB US 101 upstream of N Los Carneros Rd On-Ramp	2490	2
2	Merge	Merge	N Los Carneros Rd On-Ramp to SB US 101	30	2
3	Overlap	Overlap	SB US 101 between N Los Carneros Rd On-Ramp and Storke Rd Off-Ramp	1470	2
4	Diverge	Diverge	Storke Rd Off-Ramp from SB US 101	30	2
5	Basic	Basic	SB US 101 downstream of Storke Rd Off-Ramp	3015	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	3766	4700	0.80	61.7	30.5	D

Segment 2: Merge

AP	PHF		fHV		Volume Served (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R Infl.	F	R Infl.	
1	0.92	0.92	0.943	0.952	3988	222	4700	2100	0.85	0.11	52.8	52.8	37.8	36.4	E

Segment 3: Overlap

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	3989	4700	0.85	52.8	37.8	E

Segment 4: Diverge

AP	PHF		fHV		Volume Served (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R Infl.	F	R Infl.	
1	0.92	0.92	0.943	0.952	3989	1239	4700	2100	0.85	0.59	55.6	55.6	35.9	38.3	E

Segment 5: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS

1	0.92	0.943	2739	4700	0.58	64.2	21.1	C

Facility Analysis Results

AP	VMT veh-mi/AP	VMT-Demand veh-mi/AP	VHD veh-h/AP	Total Delay Cost $/AP	Speed mi/h	Density pc/mi/ln	Density veh/mi/ln	TT min	LOS
1	975	975	1.38	34.47	55.1	28.1	26.5	1.40	D

Facility Overall Results

Space Mean Speed, mi/h	55.1	Average Density, veh/mi/ln	26.5
Average Travel Time, min	1.40	Average Density, pc/mi/ln	28.1
Total VMT, veh-mi/AP	975	Total VHD, veh-h	1.38
Vehicle Value of Time (VOT), $/h	25.00	Total Delay Cost, $	34.47

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HCS Freeway Facilities Report

Project Information

Analyst	Christine Lazaro	Date	9/17/2025
Agency	DKS Associates	Analysis Year	2025
Jurisdiction	Goleta	Time Analyzed	Future Plus Project AM
Facility Name	SB US 101	Units	U.S. Customary
Project Description	SB US 101 Aux Lane between Los Carneros and Fairview		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.33		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	SB US 101 upstream of N Los Carneros Rd On-Ramp	1990	2
2	Weaving	Weaving	N Los Carneros Rd On-Ramp to Storke Rd Off-Ramp	2530	3
3	Basic	Basic	SB US 101 downstream of Storke Rd Off-Ramp	2515	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	3519	4700	0.75	63.2	27.8	D

Segment 2: Weaving

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	3586	4938	0.73	49.2	24.3	C

Segment 3: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	1927	4700	0.41	64.7	14.8	B

Facility Analysis Results

AP	VMT veh-mi/AP	VMT-Demand veh-mi/AP	VHD veh-h/AP	Total Delay Cost $/AP	Speed mi/h	Density pc/mi/ln	Density veh/mi/ln	TT min	LOS
1	861	861	2.16	54.04	52.0	22.3	20.2	1.50	C

Facility Overall Results

Space Mean Speed, mi/h	52.0	Average Density, veh/mi/ln	20.2
Average Travel Time, min	1.50	Average Density, pc/mi/ln	22.3
Total VMT, veh-mi/AP	861	Total VHD, veh-h	2.16
Vehicle Value of Time (VOT), $/h	25.00	Total Delay Cost, $	54.04

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HCS Freeway Facilities Report

Project Information

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Jurisdiction	Goleta	Time Analyzed	Future Plus Project PM
Facility Name	SB US 101	Units	U.S. Customary
Project Description	SB US 101 Aux Lane between Los Carneros and Fairview		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.33		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	SB US 101 upstream of N Los Carneros Rd On-Ramp	1990	2
2	Weaving	Weaving	N Los Carneros Rd On-Ramp to Storke Rd Off-Ramp	2530	3
3	Basic	Basic	SB US 101 downstream of Storke Rd Off-Ramp	2515	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	3766	4700	0.80	61.7	30.5	D

Segment 2: Weaving

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	3976	5952	0.67	49.6	26.7	C

Segment 3: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	2739	4700	0.58	64.7	21.1	C

Facility Analysis Results

AP	VMT veh-mi/AP	VMT-Demand veh-mi/AP	VHD veh-h/AP	Total Delay Cost $/AP	Speed mi/h	Density pc/mi/ln	Density veh/mi/ln	TT min	LOS
1	1005	1005	2.45	61.17	52.2	25.9	23.5	1.50	C

Facility Overall Results

Space Mean Speed, mi/h	52.2	Average Density, veh/mi/ln	23.5
Average Travel Time, min	1.50	Average Density, pc/mi/ln	25.9
Total VMT, veh-mi/AP	1005	Total VHD, veh-h	2.45
Vehicle Value of Time (VOT), $/h	25.00	Total Delay Cost, $	61.17

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HCS Freeway Facilities Report

Project Information

Analyst	Christine Lazaro	Date	9/17/2025
Agency	DKS Associates	Analysis Year	2024
Jurisdiction	Goleta	Time Analyzed	Baseline AM
Facility Name	NB US 101	Units	U.S. Customary
Project Description	NB US 101 Aux Lane between Los Carneros and Fairview		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.75		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	NB US 101 upstream of N Los Carneros Rd On-Ramp	3645	2
2	Merge	Merge	N Los Carneros Rd On-Ramp to NB US 101	1500	2
3	Basic	Basic	NB US 101 between N Los Carneros Rd On-Ramp and N Fairview Ave Off-Ramp	170	2
4	Diverge	Diverge	N Fairview Ave Off-Ramp from NB US 101	1500	2
5	Basic	Basic	NB US 101 downstream of N Fairview Ave Off-Ramp	2400	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	2801	4700	0.60	65.0	21.5	C

Segment 2: Merge

AP	PHF		fHV		Volume Served (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R Infl.	F	R Infl.	
1	0.92	0.92	0.943	0.952	3380	579	4700	2100	0.72	0.28	56.5	56.5	29.9	27.1	C

Segment 3: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	3385	4700	0.72	62.8	26.5	D

Segment 4: Diverge

AP	PHF		fHV		Volume Served (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R Infl.	F	R Infl.	
1	0.92	0.92	0.943	0.952	3385	343	4700	2100	0.72	0.16	57.4	57.4	29.5	31.4	D

Segment 5: Basic

HCS Freeway Facilities Report

Project Information

Analyst	Christine Lazaro	Date	9/17/2025
Agency	DKS Associates	Analysis Year	2024
Jurisdiction	Goleta	Time Analyzed	Baseline PM
Facility Name	NB US 101	Units	U.S. Customary
Project Description	NB US 101 Aux Lane between Los Carneros and Fairview		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.75		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	NB US 101 upstream of N Los Carneros Rd On-Ramp	3650	2
2	Merge	Merge	N Los Carneros Rd On-Ramp to NB US 101	1500	2
3	Basic	Basic	NB US 101 between N Los Carneros Rd On-Ramp and N Fairview Ave Off-Ramp	170	2
4	Diverge	Diverge	N Fairview Ave Off-Ramp from NB US 101	1500	2
5	Basic	Basic	NB US 101 downstream of N Fairview Ave Off-Ramp	2400	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	2362	4700	0.50	65.0	18.2	C

Segment 2: Merge

AP	PHF		fHV		Volume Served (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R Infl.	F	R Infl.	
1	0.92	0.92	0.943	0.952	3363	1001	4700	2100	0.72	0.48	56.5	56.5	29.8	26.7	C

Segment 3: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	3373	4700	0.72	62.8	26.4	D

Segment 4: Diverge

AP	PHF		fHV		Volume Served (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R Infl.	F	R Infl.	
1	0.92	0.92	0.943	0.952	3373	228	4700	2100	0.72	0.11	57.7	57.7	29.2	31.3	D

Segment 5: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	3142	4700	0.67	64.6	24.3	C

Facility Analysis Results

AP	VMT veh-mi/AP	VMT-Demand veh-mi/AP	VHD veh-h/AP	Total Delay Cost $/AP	Speed mi/h	Density pc/mi/ln	Density veh/mi/ln	TT min	LOS
1	1103	1103	1.01	25.17	56.7	23.6	22.3	1.80	C

Facility Overall Results

Space Mean Speed, mi/h	56.7	Average Density, veh/mi/ln	22.3
Average Travel Time, min	1.80	Average Density, pc/mi/ln	23.6
Total VMT, veh-mi/AP	1103	Total VHD, veh-h	1.01
Vehicle Value of Time (VOT), $/h	25.00	Total Delay Cost, $	25.17

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AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	3040	4700	0.65	64.7	23.5	C

Facility Analysis Results

AP	VMT veh-mi/AP	VMT-Demand veh-mi/AP	VHD veh-h/AP	Total Delay Cost $/AP	Speed mi/h	Density pc/mi/ln	Density veh/mi/ln	TT min	LOS
1	1160	1160	1.02	25.61	56.8	24.8	23.4	1.80	C

Facility Overall Results

Space Mean Speed, mi/h	56.8	Average Density, veh/mi/ln	23.4
Average Travel Time, min	1.80	Average Density, pc/mi/ln	24.8
Total VMT, veh-mi/AP	1160	Total VHD, veh-h	1.02
Vehicle Value of Time (VOT), $/h	25.00	Total Delay Cost, $	25.61

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HCS Freeway Facilities Report

Project Information

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Agency	DKS Associates	Analysis Year	2024
Jurisdiction	Goleta	Time Analyzed	Future No Project AM
Facility Name	NB US 101	Units	U.S. Customary
Project Description	NB US 101 Aux Lane between Los Carneros and Fairview		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.75		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	NB US 101 upstream of N Los Carneros Rd On-Ramp	3650	2
2	Merge	Merge	N Los Carneros Rd On-Ramp to NB US 101	1500	2
3	Basic	Basic	NB US 101 between N Los Carneros Rd On-Ramp and N Fairview Ave Off-Ramp	170	2
4	Diverge	Diverge	N Fairview Ave Off-Ramp from NB US 101	1500	2
5	Basic	Basic	NB US 101 downstream of N Fairview Ave Off-Ramp	2400	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	2895	4700	0.62	65.0	22.3	C

Segment 2: Merge

AP	PHF		fHV		Volume Served (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R Infl.	F	R Infl.	
1	0.92	0.92	0.943	0.952	3478	583	4700	2100	0.74	0.28	56.2	56.2	30.9	27.8	C

Segment 3: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	3484	4700	0.74	62.7	27.5	D

Segment 4: Diverge

AP	PHF		fHV		Volume Served (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R Infl.	F	R Infl.	
1	0.92	0.92	0.943	0.952	3484	409	4700	2100	0.74	0.19	57.3	57.3	30.4	32.2	D

Segment 5: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	3072	4700	0.65	64.7	23.7	C

Facility Analysis Results

AP	VMT veh-mi/AP	VMT-Demand veh-mi/AP	VHD veh-h/AP	Total Delay Cost $/AP	Speed mi/h	Density pc/mi/ln	Density veh/mi/ln	TT min	LOS
1	1191	1191	1.08	27.10	56.7	25.5	24.0	1.80	C

Facility Overall Results

Space Mean Speed, mi/h	56.7	Average Density, veh/mi/ln	24.0
Average Travel Time, min	1.80	Average Density, pc/mi/ln	25.5
Total VMT, veh-mi/AP	1191	Total VHD, veh-h	1.08
Vehicle Value of Time (VOT), $/h	25.00	Total Delay Cost, $	27.10

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Facility Name	NB US 101	Units	U.S. Customary
Project Description	NB US 101 Aux Lane between Los Carneros and Fairview		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.75		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	NB US 101 upstream of N Los Carneros Rd On-Ramp	3650	2
2	Merge	Merge	N Los Carneros Rd On-Ramp to NB US 101	1500	2
3	Basic	Basic	NB US 101 between N Los Carneros Rd On-Ramp and N Fairview Ave Off-Ramp	170	2
4	Diverge	Diverge	N Fairview Ave Off-Ramp from NB US 101	1500	2
5	Basic	Basic	NB US 101 downstream of N Fairview Ave Off-Ramp	2400	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	2883	4700	0.61	65.0	22.2	C

Segment 2: Merge

AP	PHF		fHV		Volume Served (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R Infl.	F	R Infl.	
1	0.92	0.92	0.943	0.952	4006	1123	4700	2100	0.85	0.53	54.2	54.2	37.0	31.7	D

Segment 3: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	4017	4700	0.85	59.8	33.6	D

Segment 4: Diverge

AP	PHF		fHV		Volume Served (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R Infl.	F	R Infl.	
1	0.92	0.92	0.943	0.952	4017	295	4700	2100	0.85	0.14	57.5	57.5	34.9	36.8	E

Segment 5: Basic

HCS Freeway Facilities Report

Project Information

Analyst	Christine Lazaro	Date	9/17/2025
Agency	DKS Associates	Analysis Year	2024
Jurisdiction	Goleta	Time Analyzed	Future Plus Project AM
Facility Name	NB US 101	Units	U.S. Customary
Project Description	NB US 101 Aux Lane between Los Carneros and Fairview		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.56		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	NB US 101 upstream of N Los Carneros Rd On-Ramp	3150	2
2	Weaving	Weaving	N Los Carneros Rd On-Ramp to N Fairview Ave Off-Ramp	3170	3
3	Basic	Basic	NB US 101 downstream of N Fairview Ave Off-Ramp	1900	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	2895	4700	0.62	65.0	22.3	C

Segment 2: Weaving

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	3475	6534	0.53	53.2	21.8	C

Segment 3: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	3072	4700	0.65	64.7	23.7	C

Facility Analysis Results

AP	VMT veh-mi/AP	VMT-Demand veh-mi/AP	VHD veh-h/AP	Total Delay Cost $/AP	Speed mi/h	Density pc/mi/ln	Density veh/mi/ln	TT min	LOS
1	1068	1068	1.70	42.54	54.6	22.3	20.2	1.70	C

Facility Overall Results

Space Mean Speed, mi/h	54.6	Average Density, veh/mi/ln	20.2
Average Travel Time, min	1.70	Average Density, pc/mi/ln	22.3
Total VMT, veh-mi/AP	1068	Total VHD, veh-h	1.70
Vehicle Value of Time (VOT), $/h	25.00	Total Delay Cost, $	42.54

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AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	3720	4700	0.79	62.0	30.0	D

Facility Analysis Results

AP	VMT veh-mi/AP	VMT-Demand veh-mi/AP	VHD veh-h/AP	Total Delay Cost $/AP	Speed mi/h	Density pc/mi/ln	Density veh/mi/ln	TT min	LOS
1	1322	1322	1.70	42.50	55.6	28.9	27.3	1.90	D

Facility Overall Results

Space Mean Speed, mi/h	55.6	Average Density, veh/mi/ln	27.3
Average Travel Time, min	1.90	Average Density, pc/mi/ln	28.9
Total VMT, veh-mi/AP	1322	Total VHD, veh-h	1.70
Vehicle Value of Time (VOT), $/h	25.00	Total Delay Cost, $	42.50

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HCS Freeway Facilities Report

Project Information

Analyst	Christine Lazaro	Date	9/17/2025
Agency	DKS Associates	Analysis Year	2024
Jurisdiction	Goleta	Time Analyzed	Future Plus Project PM
Facility Name	NB US 101	Units	U.S. Customary
Project Description	NB US 101 Aux Lane between Los Carneros and Fairview		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.56		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	NB US 101 upstream of N Los Carneros Rd On-Ramp	3150	2
2	Weaving	Weaving	N Los Carneros Rd On-Ramp to N Fairview Ave Off-Ramp	3170	3
3	Basic	Basic	NB US 101 downstream of N Fairview Ave Off-Ramp	1900	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	2883	4700	0.61	65.0	22.2	C

Segment 2: Weaving

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	4003	6360	0.63	50.5	26.4	C

Segment 3: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	3720	4700	0.79	62.0	30.0	D

Facility Analysis Results

AP	VMT veh-mi/AP	VMT-Demand veh-mi/AP	VHD veh-h/AP	Total Delay Cost $/AP	Speed mi/h	Density pc/mi/ln	Density veh/mi/ln	TT min	LOS
1	1186	1186	2.75	68.66	52.5	25.8	23.3	1.80	C

Facility Overall Results

Space Mean Speed, mi/h	52.5	Average Density, veh/mi/ln	23.3
Average Travel Time, min	1.80	Average Density, pc/mi/ln	25.8
Total VMT, veh-mi/AP	1186	Total VHD, veh-h	2.75
Vehicle Value of Time (VOT), $/h	25.00	Total Delay Cost, $	68.66

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HCS Freeway Facilities Report

Project Information

Analyst	Christine Lazaro	Date	9/17/2025
Agency	DKS Associates	Analysis Year	2024
Jurisdiction	Goleta	Time Analyzed	Baseline AM
Facility Name	SB US 101	Units	U.S. Customary
Project Description	SB US 101 Aux Lane between Fairview and Los Carneros		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.72		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	SB US 101 upstream of N Fairview Ave On-Ramp	1420	3
2	Merge	Merge	N Fairview Ave On-Ramp to SB US 101	1500	2
3	Basic	Basic	SB US 101 between N Fairview Ave On-Ramp and N Los Carneros Rd Off-Ramp	2170	2
4	Diverge	Diverge	N Los Carneros Rd Off-Ramp from SB US 101	1500	2
5	Basic	Basic	SB US 101 downstream of N Los Carneros Rd Off-Ramp	2500	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	2804	7050	0.40	65.0	14.4	B

Segment 2: Merge

AP	PHF		fHV		Volume Served (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R Infl.	F	R Infl.	
1	0.92	0.92	0.943	0.952	3077	273	4700	2100	0.65	0.13	57.0	57.0	27.0	25.3	C

Segment 3: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	3080	4700	0.66	64.6	23.8	C

Segment 4: Diverge

AP	PHF		fHV		Volume Served (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R Infl.	F	R Infl.	
1	0.92	0.92	0.943	0.952	3080	796	4700	2100	0.66	0.38	56.5	56.5	27.3	29.0	D

Segment 5: Basic

AP	PHF	fHV	Volume Served	Capacity	d/c	Speed	Density	LOS

			(pc/h)	(pc/h)	Ratio	(mi/h)	(pc/mi/ln)	
1	0.92	0.943	2276	4700	0.48	64.7	17.5	B

Facility Analysis Results

AP	VMT veh-mi/AP	VMT-Demand veh-mi/AP	VHD veh-h/AP	Total Delay Cost $/AP	Speed mi/h	Density pc/mi/ln	Density veh/mi/ln	TT min	LOS
1	1051	1051	0.97	24.29	56.7	21.2	20.0	1.80	C

Facility Overall Results

Space Mean Speed, mi/h	56.7	Average Density, veh/mi/ln	20.0
Average Travel Time, min	1.80	Average Density, pc/mi/ln	21.2
Total VMT, veh-mi/AP	1051	Total VHD, veh-h	0.97
Vehicle Value of Time (VOT), $/h	25.00	Total Delay Cost, $	24.29

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R11. SB US 101 Aux Lane bw Fairview and Los Carneros Baseline AM.xuf

HCS Freeway Facilities Report

Project Information

Analyst	Christine Lazaro	Date	9/17/2025
Agency	DKS Associates	Analysis Year	2024
Jurisdiction	Goleta	Time Analyzed	Baseline PM
Facility Name	SB US 101	Units	U.S. Customary
Project Description	SB US 101 Aux Lane between Fairview and Los Carneros		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.72		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	SB US 101 upstream of N Fairview Ave On-Ramp	1420	3
2	Merge	Merge	N Fairview Ave On-Ramp to SB US 101	1500	2
3	Basic	Basic	SB US 101 between N Fairview Ave On-Ramp and N Los Carneros Rd Off-Ramp	2170	2
4	Diverge	Diverge	N Los Carneros Rd Off-Ramp from SB US 101	1500	2
5	Basic	Basic	SB US 101 downstream of N Los Carneros Rd Off-Ramp	2500	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	3156	7050	0.45	65.0	16.2	B

Segment 2: Merge

AP	PHF		fHV		Volume Served (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R Infl.	F	R Infl.	
1	0.92	0.92	0.943	0.952	3606	450	4700	2100	0.77	0.21	55.7	55.7	32.4	29.4	D

Segment 3: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	3610	4700	0.77	62.7	28.8	D

Segment 4: Diverge

AP	PHF		fHV		Volume Served (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R Infl.	F	R Infl.	
1	0.92	0.92	0.943	0.952	3610	531	4700	2100	0.77	0.25	57.0	57.0	31.7	33.6	D

Segment 5: Basic

AP	PHF	fHV	Volume Served	Capacity	d/c	Speed	Density	LOS

HCS Freeway Facilities Report

Project Information

Analyst	Christine Lazaro	Date	9/17/2025
Agency	DKS Associates	Analysis Year	2024
Jurisdiction	Goleta	Time Analyzed	Future No Project AM
Facility Name	SB US 101	Units	U.S. Customary
Project Description	SB US 101 Aux Lane between Fairview and Los Carneros		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.72		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	SB US 101 upstream of N Fairview Ave On-Ramp	1420	3
2	Merge	Merge	N Fairview Ave On-Ramp to SB US 101	1500	2
3	Basic	Basic	SB US 101 between N Fairview Ave On-Ramp and N Los Carneros Rd Off-Ramp	2170	2
4	Diverge	Diverge	N Los Carneros Rd Off-Ramp from SB US 101	1500	2
5	Basic	Basic	SB US 101 downstream of N Los Carneros Rd Off-Ramp	2500	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	3259	7050	0.46	65.0	16.7	B

Segment 2: Merge

AP	PHF		fHV		Volume Served (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R Infl.	F	R Infl.	
1	0.92	0.92	0.943	0.952	3517	258	4700	2100	0.75	0.12	55.9	55.9	31.5	28.9	D

Segment 3: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	3519	4700	0.75	63.2	27.8	D

Segment 4: Diverge

AP	PHF		fHV		Volume Served (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R Infl.	F	R Infl.	
1	0.92	0.92	0.943	0.952	3519	1069	4700	2100	0.75	0.51	55.9	55.9	31.5	32.8	D

Segment 5: Basic

AP	PHF	fHV	Volume Served	Capacity	d/c	Speed	Density	LOS

			(pc/h)	(pc/h)	Ratio	(mi/h)	(pc/mi/ln)	
1	0.92	0.943	2440	4700	0.52	64.6	18.8	C

Facility Analysis Results

AP	VMT veh-mi/AP	VMT-Demand veh-mi/AP	VHD veh-h/AP	Total Delay Cost $/AP	Speed mi/h	Density pc/mi/ln	Density veh/mi/ln	TT min	LOS
1	1188	1188	1.35	33.82	56.0	24.2	22.8	1.80	C

Facility Overall Results

Space Mean Speed, mi/h	56.0	Average Density, veh/mi/ln	22.8
Average Travel Time, min	1.80	Average Density, pc/mi/ln	24.2
Total VMT, veh-mi/AP	1188	Total VHD, veh-h	1.35
Vehicle Value of Time (VOT), $/h	25.00	Total Delay Cost, $	33.82

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			(pc/h)	(pc/h)	Ratio	(mi/h)	(pc/mi/ln)	
1	0.92	0.943	3074	4700	0.65	64.7	23.8	C

Facility Analysis Results

AP	VMT veh-mi/AP	VMT-Demand veh-mi/AP	VHD veh-h/AP	Total Delay Cost $/AP	Speed mi/h	Density pc/mi/ln	Density veh/mi/ln	TT min	LOS
1	1266	1266	1.37	34.13	56.2	25.8	24.3	1.80	C

Facility Overall Results

Space Mean Speed, mi/h	56.2	Average Density, veh/mi/ln	24.3
Average Travel Time, min	1.80	Average Density, pc/mi/ln	25.8
Total VMT, veh-mi/AP	1266	Total VHD, veh-h	1.37
Vehicle Value of Time (VOT), $/h	25.00	Total Delay Cost, $	34.13

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HCS Freeway Facilities Report

Project Information

Analyst	Christine Lazaro	Date	9/17/2025
Agency	DKS Associates	Analysis Year	2024
Jurisdiction	Goleta	Time Analyzed	Future No Project PM
Facility Name	SB US 101	Units	U.S. Customary
Project Description	SB US 101 Aux Lane between Fairview and Los Carneros		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.72		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	SB US 101 upstream of N Fairview Ave On-Ramp	1420	3
2	Merge	Merge	N Fairview Ave On-Ramp to SB US 101	1500	2
3	Basic	Basic	SB US 101 between N Fairview Ave On-Ramp and N Los Carneros Rd Off-Ramp	2170	2
4	Diverge	Diverge	N Los Carneros Rd Off-Ramp from SB US 101	1500	2
5	Basic	Basic	SB US 101 downstream of N Los Carneros Rd Off-Ramp	2500	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	3209	7050	0.46	65.0	16.5	B

Segment 2: Merge

AP	PHF		fHV		Volume Served (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R Infl.	F	R Infl.	
1	0.92	0.92	0.943	0.952	3759	550	4700	2100	0.80	0.26	55.1	55.1	34.1	30.7	D

Segment 3: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	3765	4700	0.80	61.7	30.5	D

Segment 4: Diverge

AP	PHF		fHV		Volume Served (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R Infl.	F	R Infl.	
1	0.92	0.92	0.943	0.952	3765	563	4700	2100	0.80	0.27	57.0	57.0	33.0	33.0	D

Segment 5: Basic

AP	PHF	fHV	Volume Served	Capacity	d/c	Speed	Density	LOS

			(pc/h)	(pc/h)	Ratio	(mi/h)	(pc/mi/ln)	
1	0.92	0.943	3196	4700	0.68	64.4	24.8	C

Facility Analysis Results

AP	VMT veh-mi/AP	VMT-Demand veh-mi/AP	VHD veh-h/AP	Total Delay Cost $/AP	Speed mi/h	Density pc/mi/ln	Density veh/mi/ln	TT min	LOS
1	1315	1315	1.59	39.79	55.8	26.9	25.4	1.90	D

Facility Overall Results

Space Mean Speed, mi/h	55.8	Average Density, veh/mi/ln	25.4
Average Travel Time, min	1.90	Average Density, pc/mi/ln	26.9
Total VMT, veh-mi/AP	1315	Total VHD, veh-h	1.59
Vehicle Value of Time (VOT), $/h	25.00	Total Delay Cost, $	39.79

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HCS Freeway Facilities Report

Project Information

Analyst	Christine Lazaro	Date	9/17/2025
Agency	DKS Associates	Analysis Year	2024
Jurisdiction	Goleta	Time Analyzed	Future Plus Project AM
Facility Name	SB US 101	Units	U.S. Customary
Project Description	SB US 101 Aux Lane between Fairview and Los Carneros		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.53		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	SB US 101 upstream of N Fairview Ave On-Ramp	920	3
2	Weaving	Weaving	N Fairview Ave On-Ramp to N Los Carneros Rd Off-Ramp	5170	3
3	Basic	Basic	SB US 101 downstream of N Los Carneros Rd Off-Ramp	2000	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	3259	7050	0.46	65.0	16.7	B

Segment 2: Weaving

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	3507	6349	0.55	51.1	22.9	C

Segment 3: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	2440	4700	0.52	65.0	18.8	C

Facility Analysis Results

AP	VMT veh-mi/AP	VMT-Demand veh-mi/AP	VHD veh-h/AP	Total Delay Cost $/AP	Speed mi/h	Density pc/mi/ln	Density veh/mi/ln	TT min	LOS
1	1071	1071	3.15	78.67	50.3	21.4	19.0	1.80	C

Facility Overall Results

Space Mean Speed, mi/h	50.3	Average Density, veh/mi/ln	19.0
Average Travel Time, min	1.80	Average Density, pc/mi/ln	21.4
Total VMT, veh-mi/AP	1071	Total VHD, veh-h	3.15
Vehicle Value of Time (VOT), $/h	25.00	Total Delay Cost, $	78.67

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HCS Freeway Facilities Report

Project Information

Analyst	Christine Lazaro	Date	9/17/2025
Agency	DKS Associates	Analysis Year	2024
Jurisdiction	Goleta	Time Analyzed	Future Plus Project PM
Facility Name	SB US 101	Units	U.S. Customary
Project Description	SB US 101 Aux Lane between Fairview and Los Carneros		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Analysis Periods	1	Analysis Period Duration, min	15
Facility Length, mi	1.53		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	SB US 101 upstream of N Fairview Ave On-Ramp	920	3
2	Weaving	Weaving	N Fairview Ave On-Ramp to N Los Carneros Rd Off-Ramp	5170	3
3	Basic	Basic	SB US 101 downstream of N Los Carneros Rd Off-Ramp	2000	2

Facility Segment Data

Segment 1: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	3209	7050	0.46	65.0	16.5	B

Segment 2: Weaving

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	3754	6139	0.61	51.7	24.2	C

Segment 3: Basic

AP	PHF	fHV	Volume Served (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.92	0.943	3196	4700	0.68	64.4	24.8	C

Facility Analysis Results

AP	VMT veh-mi/AP	VMT-Demand veh-mi/AP	VHD veh-h/AP	Total Delay Cost $/AP	Speed mi/h	Density pc/mi/ln	Density veh/mi/ln	TT min	LOS
1	1183	1183	3.48	87.01	50.9	23.4	20.8	1.80	C

Facility Overall Results

Space Mean Speed, mi/h	50.9	Average Density, veh/mi/ln	20.8
Average Travel Time, min	1.80	Average Density, pc/mi/ln	23.4
Total VMT, veh-mi/AP	1183	Total VHD, veh-h	3.48
Vehicle Value of Time (VOT), $/h	25.00	Total Delay Cost, $	87.01

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ATTACHMENT A.5

TECHNICAL MEMORANDUM: PEAK HOUR SIGNAL WARRANT AND ROUNDABOUT

DKS 428 J STREET, SUITE 340 • SACRAMENTO, CA 95814 • 916.368.2000 • DKSASSOCIATES.COM

SIGNAL WARRANT AND ROUNDABOUT ANALYSIS

DATE: March 20, 2026

TO: Nina Buelna | City of Goleta, Public Works Director

FROM: Jim Damkowitch | DKS
Joel Rabinovitz | DKS
Christine Lazaro | DKS

SUBJECT: Goleta Development Impact Fee Update Project #24675-002

INTRODUCTION

The purpose of this memo is to summarize the feasibility of converting selected intersections in the City of Goleta to signalized and/or roundabout control, as part of updating the Development Impact Free (DIF) projects currently under development in the City. Each location was evaluated under Baseline (Year 2024) and Future (2050) traffic conditions to determine whether operational improvements are warranted for each horizon. A total of 24 intersections were assessed as part of the analysis and are listed in **Table 1**.

TABLE 1: LIST OF STUDY INTERSECTIONS

INTERSECTION	WARRANT / ANALYSIS PERFORMED?	
	SIGNAL WARRANT	ROUNDABOUT ANALYSIS
1. Cathedral Oaks Road & La Patera	X	
2. Carlo Drive & Cathedral Oaks Road	X	X
3. Cathedral Oaks Road & San Marcos West	X	
4. Cathedral Oaks Road & SR 154 SB Ramps	X	
5. Cathedral Oaks Road & SR 154 NB Ramps	X	
6. Cathedral Oaks Road & Los Carneros	X	
7. Stow Canyon Road & N Fairview Avenue	X	
8. N Fairview Avenue & Shirrell Way	X	
9. S Fairview Avenue & Mandarin Drive	X	
10. Hollister Avenue & Orange Avenue	X	
11. Cathedral Oaks Road & US 101 SB Ramps	X	X
12. Hollister Avenue & Pebble Beach Road	X	
13. Hollister Avenue & Palo Alto Drive	X	X
14. Hollister Avenue & Cannon Green Drive	X	

INTERSECTION	WARRANT / ANALYSIS PERFORMED?	
	SIGNAL WARRANT	ROUNDABOUT ANALYSIS
15. Hollister Avenue & Santa Felicia Drive	X	X
16. Hollister Avenue & Cremona Drive	X	X
17. Storke Road & Santa Felicia Drive	X	X
18. Hollister Avenue & St Joseph Street	X	
19. Cathedral Oaks Road & Calle Real	X	
20. Hollister Avenue & Cathedral Oaks Road	X	X
21. Hollister Avenue & Cortona Drive	X	X
22. Hollister Avenue & Sperling Preserve/Ellwood Driveway	X	X
23. Hollister Avenue & David Love Place	X	X
24. Calle Real & Carlo Drive		X
25. Calle Real & La Patera	X	

Source: DKS Associates, 2026

METHODOLOGY

SIGNAL WARRANT ANALYSIS

Signal warrant analyses were performed for 23 study intersections under both Baseline and Future conditions. Warrant 3 (Peak Hour) was applied to identify a deficiency at a study intersection. However, meeting Warrant 3 only identifies a potential deficiency and not necessarily that a signal is warranted. Therefore, the full set of nine warrants should be performed at those locations identified as showing a deficiency. The analysis was conducted in accordance with the California Manual on Uniform Traffic Control Devices (CA MUTCD).

WARRANT 3 PEAK HOUR

The Peak Hour signal warrant is intended for use at a location where traffic conditions are such that for a minimum of one hour of an average day, the minor-street traffic suffers undue delay when entering or crossing the major street.

The need for a traffic control signal should be considered if an engineering study finds that the criteria in either of the following two categories are met:

- If all three of the following conditions exist for the same 1 hour (any four consecutive 15-minute periods) of an average day:
  - The total stopped-time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach, and

- The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes, and
- The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.

- The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the more critical minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in Figure 4C-3 (of the CA MUTCD) for the existing combination of approach lanes.

ROUNDABOUT ANALYSIS

In addition to the signal warrants, eleven of the study intersections were analyzed to determine if a roundabout would meet the City of Goleta mobility target (LOS C). The levels of service (LOS) were determined based on the methodologies, definitions, and equations presented in the *Highway Capacity Manual*, 7th Edition (HCM 7), as implemented in the SIDRA software. It should be noted that average delay can sometimes mask operations of a roundabout since it is an average user experience that may underrepresent localized congestion or circulating flow constraints. Therefore, the volume-to-capacity (v/c) ratio is more indicative of operational limits of a roundabout approach.

The roundabout analysis was only conducted under Future (Year 2050) traffic conditions. All intersections were initially evaluated assuming a single-lane roundabout configuration with a peak hour factor (PHF) of 0.92 and a heavy vehicle percentage of 2 percent. Intersections operating at LOS D or worse with a single lane were subsequently evaluated as two-lane roundabouts, with two lanes along the major approaches.

OPERATIONAL ANALYSIS

SIGNAL WARRANT ANALYSIS

Warrant 3 (Peak Hour) evaluates traffic volumes on the major- and minor-street approaches to determine whether the minimum threshold values specified in Figures 4C-3 and 4C-4 of the California Manual on Uniform Traffic Control Devices (CA MUTCD) are satisfied. Because the City of Goleta is not classified as a built-up isolated community with a population of less than 10,000, the criteria presented in Figure 4C-3 were applied.

This warrant was selected based on the availability of peak-hour traffic volumes. The PM peak hour was identified as the critical (worst-case) condition; therefore, most of the signal warrant analyses were conducted using PM peak hour traffic volumes. In instances where higher unsignalized intersection delay was observed during the AM peak hour, AM peak hour traffic volumes were used for the analysis.

As shown in **Table 2**, Warrant 3 is satisfied for six intersections under Baseline (2024) and an additional seven intersections (for a total of thirteen) under Future (2050) traffic conditions. Detailed

signal warrant analysis documentation for the Baseline and Future conditions is provided in **Attachment A** and **Attachment B**.

TABLE 2: PEAK HOUR SIGNAL WARRANT RESULTS SUMMARY

INTERSECTION	MEETS WARRANT 3 [A]	
	BASELINE (2024)	FUTURE (2050)
1. Cathedral Oaks Road & La Patera	No	No
2. Carlo Drive & Cathedral Oaks Road	No	No
3. Cathedral Oaks Road & San Marcos West	No	No
4. Cathedral Oaks Road & SR 154 SB Ramps	Yes	Yes
5. Cathedral Oaks Road & SR 154 NB Ramps	Yes	Yes
6. Cathedral Oaks Road & Los Carneros	No	Yes
7. Stow Canyon Road & N Fairview Avenue	Yes	Yes
8. N Fairview Avenue & Shirrell Way	No	No
9. S Fairview Avenue & Mandarin Drive	Yes	Yes
10. Hollister Avenue & Orange Avenue	No	Yes
11. Cathedral Oaks Road & US 101 SB Ramps	No	Yes
12. Hollister Avenue & Pebble Beach Road	No	No
13. Hollister Avenue & Palo Alto Drive	No	No
14. Hollister Avenue & Cannon Green Drive	No	Yes
15. Hollister Avenue & Santa Felicia Drive	Yes	Yes
16. Hollister Avenue & Cremona Drive	No	Yes
17. Storke Road & Santa Felicia Drive	Yes	Yes
18. Hollister Avenue & St Joseph Street	No	Yes
19. Cathedral Oaks Road & Calle Real	No	Yes
20. Hollister Avenue & Cathedral Oaks Road	No	Yes
21. Hollister Avenue & Cortona Drive	Yes	Yes
22. Hollister Avenue & Sperling Preserve/Ellwood Driveway	No	No
23. Hollister Avenue & David Love Place	No	Yes
24. Calle Real & La Patera	No	No

Note:

A. Cells highlighted in yellow meet the peak hour signal warrant (Warrant 3).

Source: DKS Associates, 2026

ROUNDABOUT ANALYSIS

The operational analysis results for the eleven study intersections evaluated as single-lane roundabouts are summarized in **Table 3**. As shown, most of the study intersections are projected to operate at LOS C or better during both the AM and PM peak hours, with average control delay of less than 20 seconds on all approaches.

Two intersections (Hollister Avenue/Santa Felicia Drive and Hollister Avenue/Cortona Drive) during the PM peak hour are projected to operate at an overall intersection LOS D or worse. Additionally, although the Hollister Avenue / Cortona Drive intersection is expected to operate at an overall LOS B during the AM peak hour, the eastbound approach is projected to have a volume-to-capacity (v/c) ratio exceeding 0.90. This indicates that, under a single-lane roundabout configuration, the west leg of Hollister Avenue operates near or at its maximum capacity. Mitigation to improve operations at these two intersections is provided below.

Even though most intersections along Hollister Avenue and Storke Road operate at LOC C or better as a single lane roundabout, Hollister Avenue and Storke Road are classified as at least a four-lane cross section for most study intersections. Since these locations are not anticipated to be reduced to a single approach lane at the roundabouts, it is assumed that intersections along Hollister Avenue and Storke Road that operate at acceptable LOS under a single-lane roundabout configuration would also operate at acceptable LOS under a two-lane roundabout configuration.

The delay, LOS, and queue results for SIDRA can be found in **Attachment C**.

TABLE 3: SIDRA ANALYSIS RESULTS (SINGLE-LANE ROUNDABOUT)

INTERSECTION	DELAY [LOS]	
	AM PEAK HOUR	PM PEAK HOUR
2. Carlo Drive & Cathedral Oaks Road	7.2 [A]	7.5 [A]
11. Cathedral Oaks Road & US 101 SB Ramps	7.5 [A]	9.1 [A]
13. Hollister Avenue & Palo Alto Drive	5.8 [A]	7.6 [A]
15. Hollister Avenue & Santa Felicia Drive	11.4 [B]	**28.1 [D]**
16. Hollister Avenue & Cremona Drive	7.5 [A]	13.3 [B]
17. Storke Road & Santa Felicia Drive	8.8 [A]	18.2 [C]
20. Hollister Avenue & Cathedral Oaks Road	5.6 [A]	8.2 [A]
21. Hollister Avenue & Cortona Drive	14.3 [B]	**121.6 [F]**
22. Hollister Avenue & Sperling Preserve/Ellwood Driveway	6.7 [A]	8.5 [A]
23. Hollister Avenue & David Love Place	14.8 [B]	15.2 [C]
24. Calle Real & Carlo Drive	6.3 [A]	8.4 [A]

Note:

A. **Red** indicates 95th percentile queue exceeds storage.

Source: DKS Associates, 2026

MITIGATION

The analysis results for the two study intersections (Hollister Avenue/Santa Felicia Drive and Hollister Avenue/Cortona Drive) as a two-lane roundabout are provided in **Table 4**. As shown, the Hollister Avenue/Santa Felicia Drive is projected to operate at LOS A during both AM and PM peak hours.

The Hollister Avenue/Cortona Drive intersection was initially analyzed as a two-lane roundabout, with two-lanes in each direction along Hollister Avenue. Based on preliminary results, the southbound approach had a LOS F with a v/c ratio of 1.136. This is mostly driven by the over 300 vehicles making

southbound right turn. With the addition of a bypass lane for the southbound right turn movement to a two-lane roundabout, Hollister Avenue/Cortona Drive is projected to operate at LOS A during both AM and PM peak hours. It should be noted, however, that the Hollister Avenue/Cortona Drive intersection is only 300 feet east of the Hollister Avenue/Storke Road intersection, and is not recommended to be a roundabout due to the westbound queue at Storke Road likely extending back through the intersection.

TABLE 4: SIDRA ANALYSIS RESULTS (TWO-LANE ROUNDABOUT)

INTERSECTION	DELAY [LOS]	
	AM PEAK HOUR	PM PEAK HOUR
15. Hollister Avenue & Santa Felicia Drive	5.9 [A]	8.0 [A]
21. Hollister Avenue & Cortona Drive [A]	6.5 [A]	9.9 [A]

Note:

A. Analyzed as a two-lane roundabout with a southbound right-turn bypass lane

Source: DKS Associates, 2026

SUMMARY

This study evaluated the Peak Hour (Warrant 3) signal warrant for 23 intersections and the operational feasibility of implementing a roundabout at eleven intersections within the City of Goleta. Based on Baseline (2024) and Future (2050) traffic volumes, thirteen intersections would satisfy the Peak Hour warrant.

Based on the Future (2050) SIDRA roundabout analysis, nine of the eleven intersections evaluated as a single-lane roundabout would meet the City of Goleta mobility target (LOS C). Two intersections, Hollister Avenue/Santa Felicia Drive and Hollister Avenue/Cortona Drive, which exceed the LOS C target, would operate acceptably as two-lane roundabouts (with the addition of a southbound right bypass lane at Hollister Avenue/Cortona Drive). It should be noted that Hollister Avenue and Storke Road are classified as at least a four-lane cross section for most study intersections. While an analysis was not performed for two-lane roundabouts along Hollister Avenue and Storke Road, it is assumed that if the intersection operates at acceptable LOS under a single-lane roundabout configuration it would also operate at acceptable LOS under a two-lane roundabout configuration. Additionally, the Hollister Avenue/Cortona Drive intersection is only 300 feet east of the Hollister Avenue/Storke Road intersection, and is not recommended to be a roundabout due to the westbound queue at Storke Road likely extending back through the intersection.

A summary of the signal warrant and roundabout analysis is provided in **Table 5**.

TABLE 5: SIGNAL WARRANT AND ROUNDABOUT SUMMARY

INTERSECTION	SIGNAL WARRANT			ROUNDABOUT ANALYSIS	
	PERFORMED?	MEETS WARRANT		PERFORMED?	RECOMMENDED NO. OF LANES
		BASELINE SCENARIO	FUTURE SCENARIO		
1. Cathedral Oaks Road & La Patera	Yes	No	No	No	
2. Carlo Drive & Cathedral Oaks Road	Yes	No	No	Yes	Single-Lane
3. Cathedral Oaks Road & San Marcos West	Yes	No	No	No	
4. Cathedral Oaks Road & SR 154 SB Ramps	Yes	Yes	Yes	No	
5. Cathedral Oaks Road & SR 154 NB Ramps	Yes	Yes	Yes	No	
6. Cathedral Oaks Road & Los Carneros	Yes	No	Yes	No	
7. Stow Canyon Road & N Fairview Avenue	Yes	Yes	Yes	No	
8. N Fairview Avenue & Shirrell Way	Yes	No	No	No	
9. S Fairview Avenue & Mandarin Drive	Yes	Yes	Yes	No	
10. Hollister Avenue & Orange Avenue	Yes	No	Yes	No	
11. Cathedral Oaks Road & US 101 SB Ramps	Yes	No	Yes	Yes	Single-Lane
12. Hollister Avenue & Pebble Beach Road	Yes	No	No	No	
13. Hollister Avenue & Palo Alto Drive	Yes	No	No	Yes	Single- or Two-Lane
14. Hollister Avenue & Cannon Green Drive	Yes	No	Yes	No	
15. Hollister Avenue & Santa Felicia Drive	Yes	Yes	Yes	Yes	Two-Lane
16. Hollister Avenue & Cremona Drive	Yes	No	Yes	Yes	Single- or Two-Lane
17. Storke Road & Santa Felicia Drive	Yes	Yes	Yes	Yes	Single- or Two-Lane
18. Hollister Avenue & St Joseph Street	Yes	No	Yes	No	
19. Cathedral Oaks Road & Calle Real	Yes	No	Yes	No	
20. Hollister Avenue & Cathedral Oaks Road	Yes	No	Yes	Yes	Single-or Two-Lane
21. Hollister Avenue & Cortona Drive	Yes	Yes	Yes	Yes	Two-Lane with SBR By-Pass Lane
22. Hollister Avenue & Sperling Preserve/Ellwood	Yes	No	No	Yes	Single- or Two-Lane
23. Hollister Avenue & David Love Place	Yes	No	Yes	Yes	Single- or Two-Lane
24. Calle Real & Carlo Drive	No			Yes	Single-Lane
25. Calle Real & La Patera	Yes	No	No	No	

ATTACHMENTS

CONTENTS

ATTACHMENT A: SIGNAL WARRANT WORKSHEETS

ATTACHMENT B: SIGNAL WARRANT WORKSHEETS

ATTACHMENT C: SIDRA REPORTS

ATTACHMENT A: SIGNAL WARRANT WORKSHEETS

BASELINE SCENARIO

MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

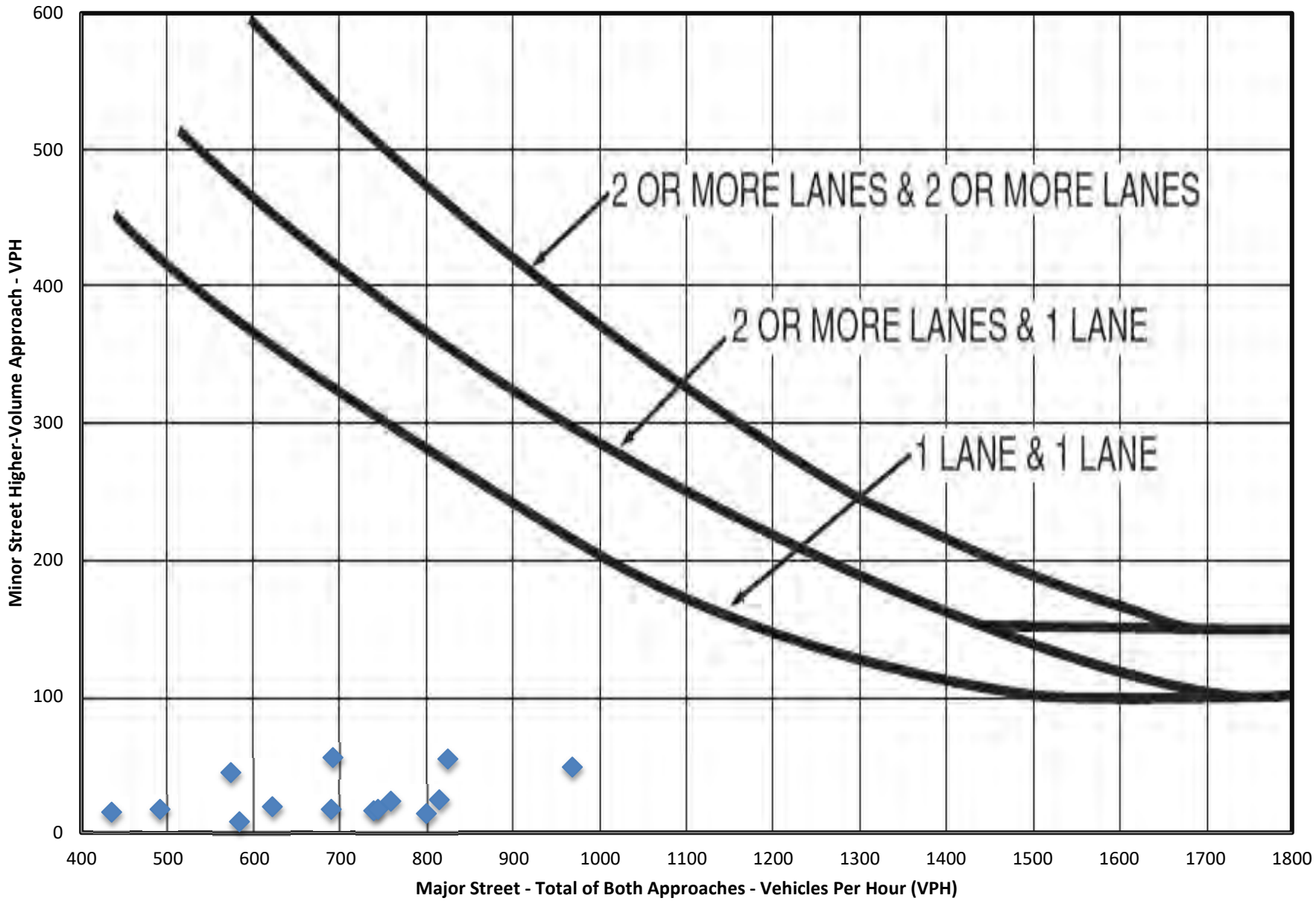
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	No
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	No
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
0

Hourly Vehicular Volume			
Hour Interval Beginning At	**Major Street Combined Vehicles Per Hour (VPH)**	**Highest Minor Street Approach Vehicles Per Hour (VPH)**	**Hour Met?**
6:45 AM	204	12	
7:00 AM	398	21	
7:15 AM	573	44	
7:30 AM	691	55	
7:45 AM	824	54	
8:00 AM	968	48	
8:15 AM	758	23	
8:30 AM	583	8	
8:45 AM	338	3	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	213	10	
3:30 PM	435	15	
3:45 PM	621	19	
4:00 PM	814	24	
4:15 PM	799	14	
4:30 PM	738	16	
4:45 PM	743	17	
5:00 PM	689	17	
5:15 PM	491	17	
5:30 PM	330	13	
5:45 PM	139	5	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

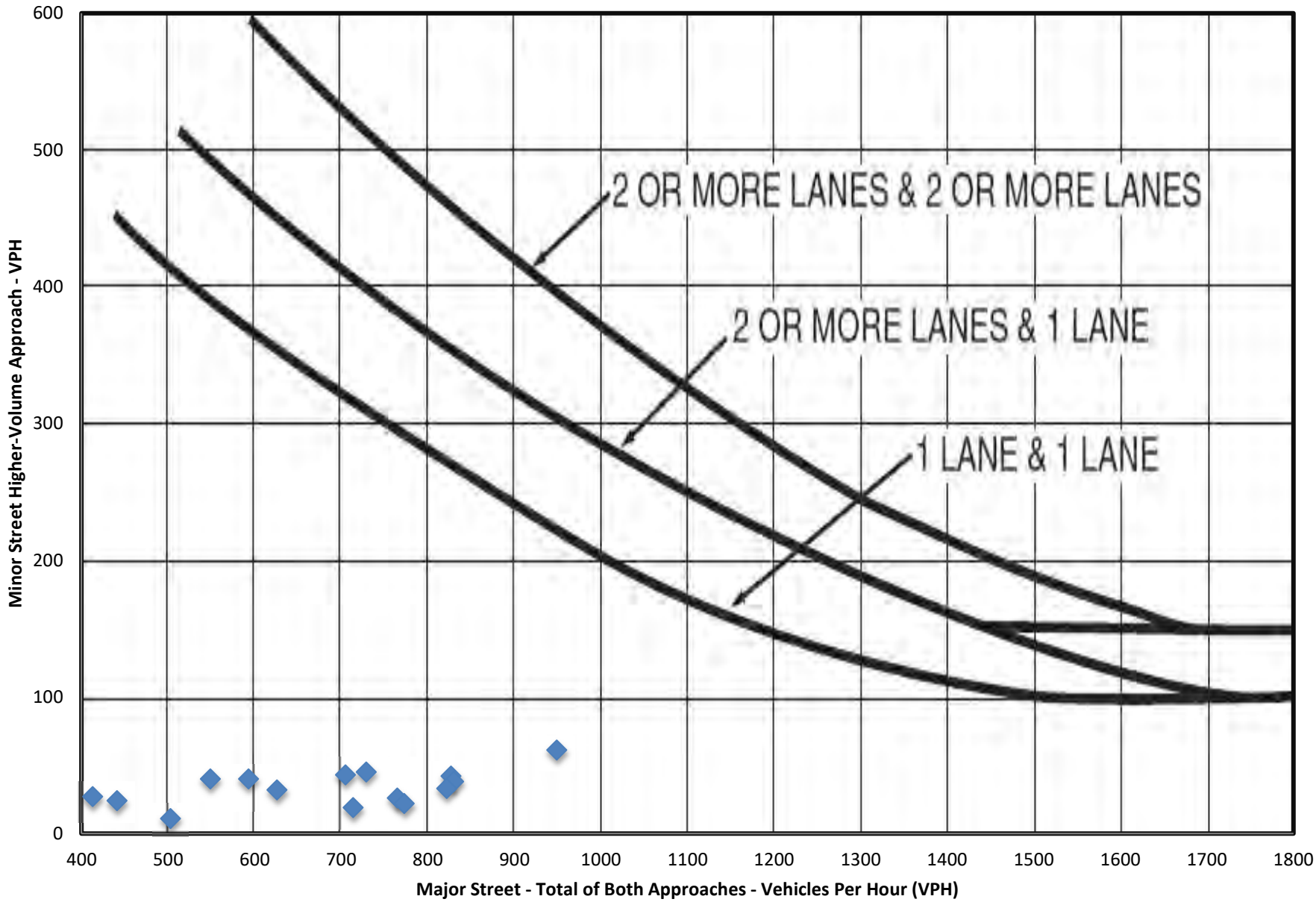
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	No
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	No
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
0

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	218	15	
7:00 AM	413	27	
7:15 AM	593	40	
7:30 AM	705	43	
7:45 AM	827	42	
8:00 AM	949	61	
8:15 AM	729	45	
8:30 AM	549	40	
8:45 AM	317	31	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	219	13	
3:30 PM	441	24	
3:45 PM	626	32	
4:00 PM	830	38	
4:15 PM	822	33	
4:30 PM	765	26	
4:45 PM	773	22	
5:00 PM	714	19	
5:15 PM	503	11	
5:30 PM	338	7	
5:45 PM	145	3	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

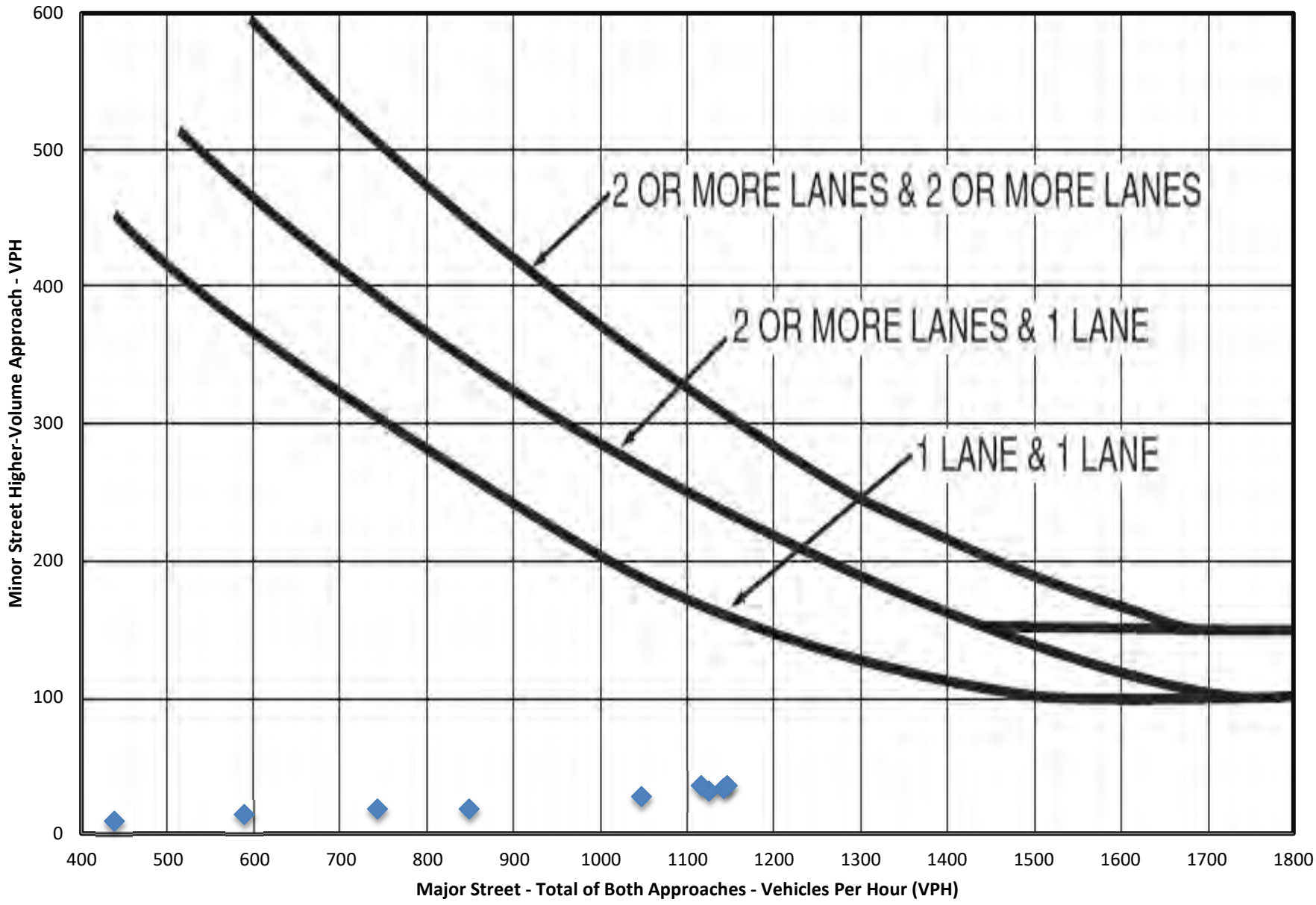
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	No
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	No
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
0

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	0	0	
7:00 AM	0	0	
7:15 AM	0	0	
7:30 AM	0	0	
7:45 AM	0	0	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	288	7	
3:30 PM	588	14	
3:45 PM	848	18	
4:00 PM	1125	31	
4:15 PM	1142	33	
4:30 PM	1146	35	
4:45 PM	1116	35	
5:00 PM	1047	27	
5:15 PM	742	18	
5:30 PM	438	9	
5:45 PM	208	5	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

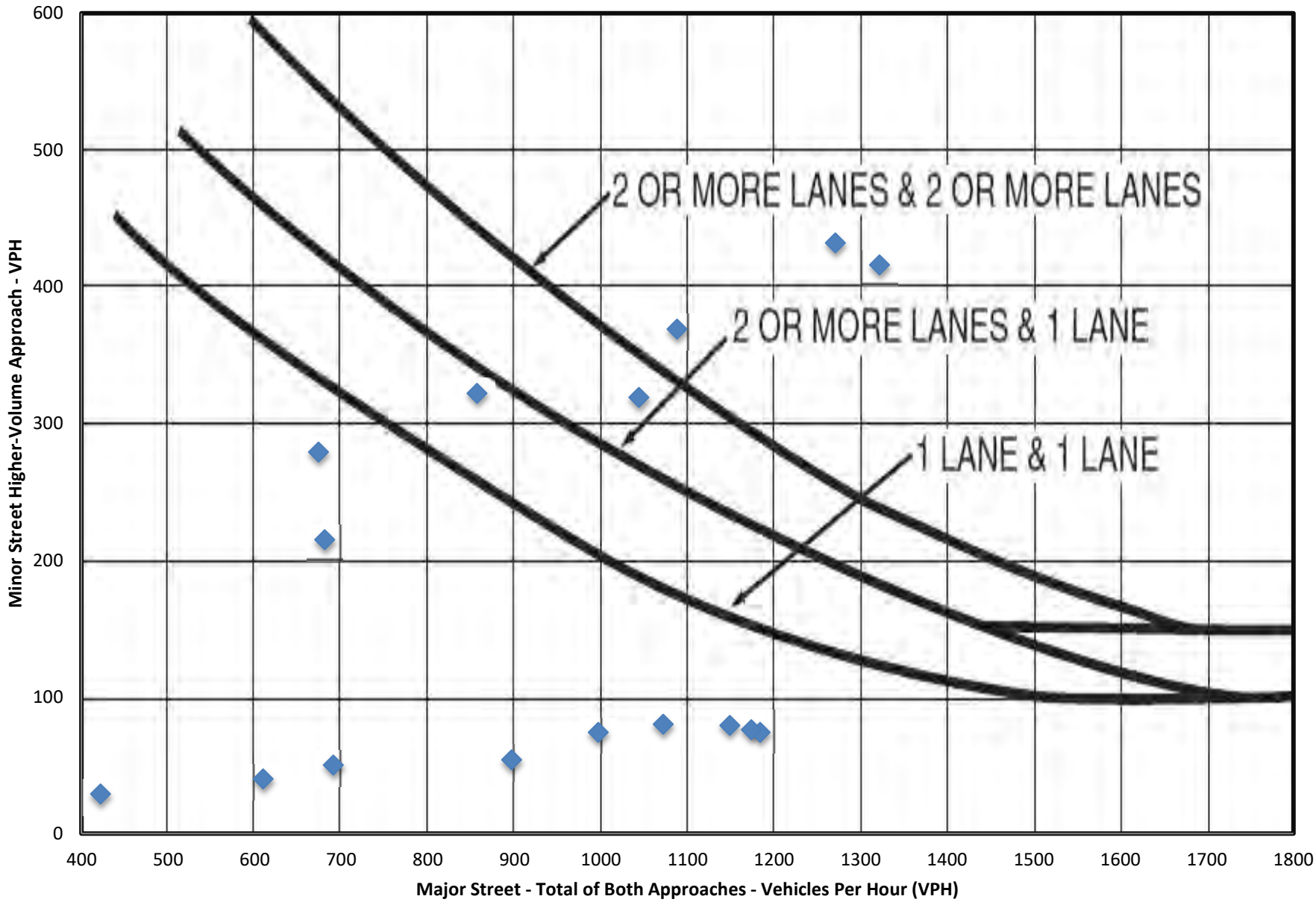
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	Yes
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	Yes
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-4
2

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	393	184	
7:00 AM	674	279	Met
7:15 AM	857	322	Met
7:30 AM	1088	369	Met
7:45 AM	1271	432	Met
8:00 AM	1322	416	Met
8:15 AM	1044	319	Met
8:30 AM	681	215	Met
8:45 AM	332	79	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	316	22	
3:30 PM	610	40	
3:45 PM	897	54	
4:00 PM	1184	74	
4:15 PM	1174	76	
4:30 PM	1149	79	
4:45 PM	1072	80	
5:00 PM	997	74	
5:15 PM	691	50	
5:30 PM	422	29	
5:45 PM	212	14	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	2 or More Lanes

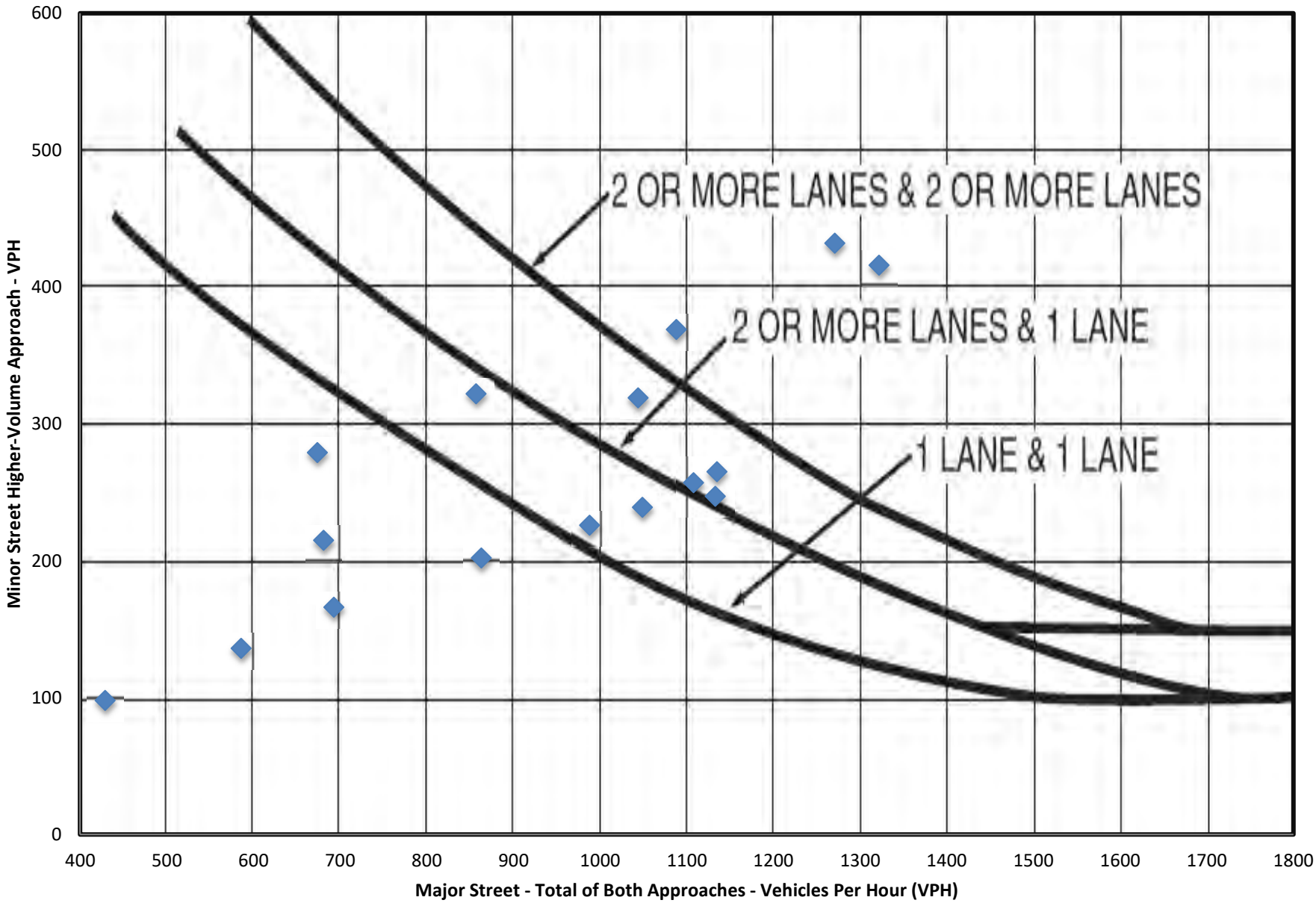
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	Yes
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	Yes
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-4
4

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	393	184	
7:00 AM	674	279	Met
7:15 AM	857	322	Met
7:30 AM	1088	369	Met
7:45 AM	1271	432	Met
8:00 AM	1322	416	Met
8:15 AM	1044	319	Met
8:30 AM	681	215	
8:45 AM	332	79	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	297	78	
3:30 PM	586	136	
3:45 PM	863	202	Met
4:00 PM	1135	265	Met
4:15 PM	1133	247	Met
4:30 PM	1108	257	Met
4:45 PM	1049	239	Met
5:00 PM	988	226	Met
5:15 PM	693	166	
5:30 PM	429	98	
5:45 PM	211	50	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

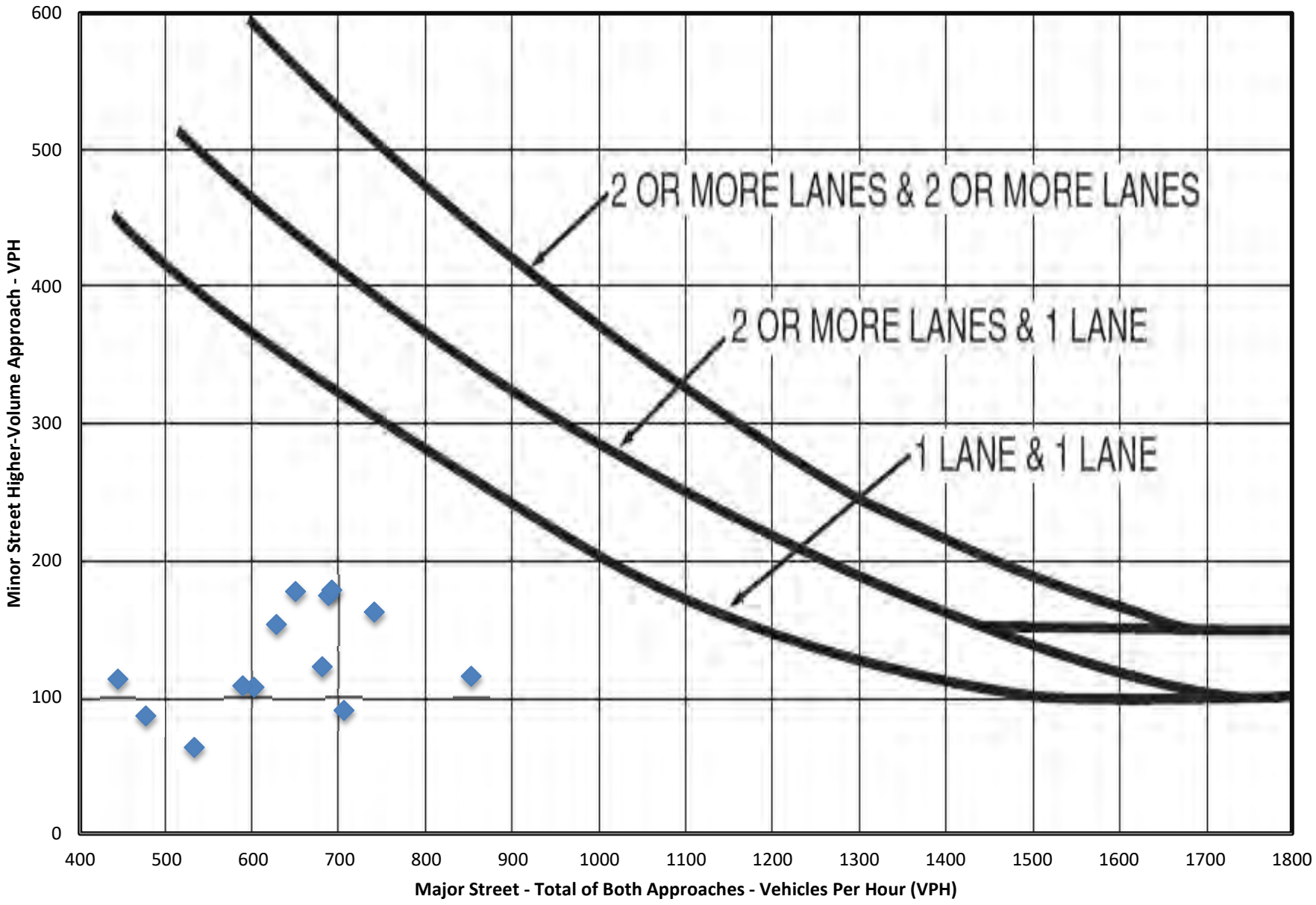
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	Yes
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	No
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-4
0

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	188	24	
7:00 AM	364	67	
7:15 AM	476	86	
7:30 AM	601	107	
7:45 AM	680	122	
8:00 AM	852	115	
8:15 AM	705	90	
8:30 AM	532	63	
8:45 AM	348	36	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	236	28	
3:30 PM	397	74	
3:45 PM	588	108	
4:00 PM	740	162	
4:15 PM	687	174	
4:30 PM	691	178	
4:45 PM	649	177	
5:00 PM	627	153	
5:15 PM	444	113	
5:30 PM	279	63	
5:45 PM	130	30	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

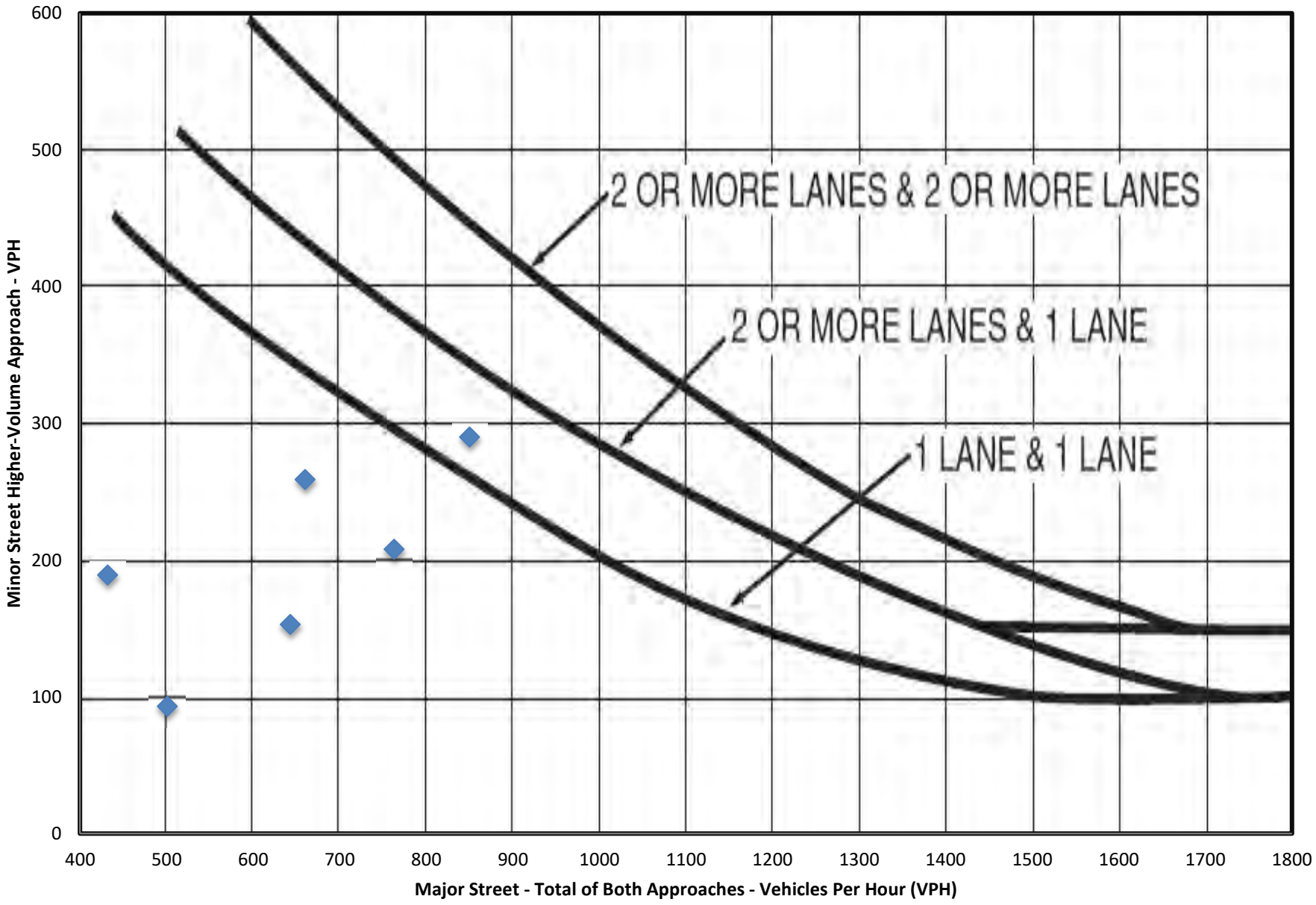
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	Yes
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
0

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	235	38	
7:00 AM	371	71	
7:15 AM	501	93	
7:30 AM	643	153	
7:45 AM	763	208	
8:00 AM	850	290	
8:15 AM	660	259	
8:30 AM	432	189	
8:45 AM	223	115	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	0	0	
3:30 PM	0	0	
3:45 PM	0	0	
4:00 PM	0	0	
4:15 PM	0	0	
4:30 PM	0	0	
4:45 PM	0	0	
5:00 PM	0	0	
5:15 PM	0	0	
5:30 PM	0	0	
5:45 PM	0	0	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, 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?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
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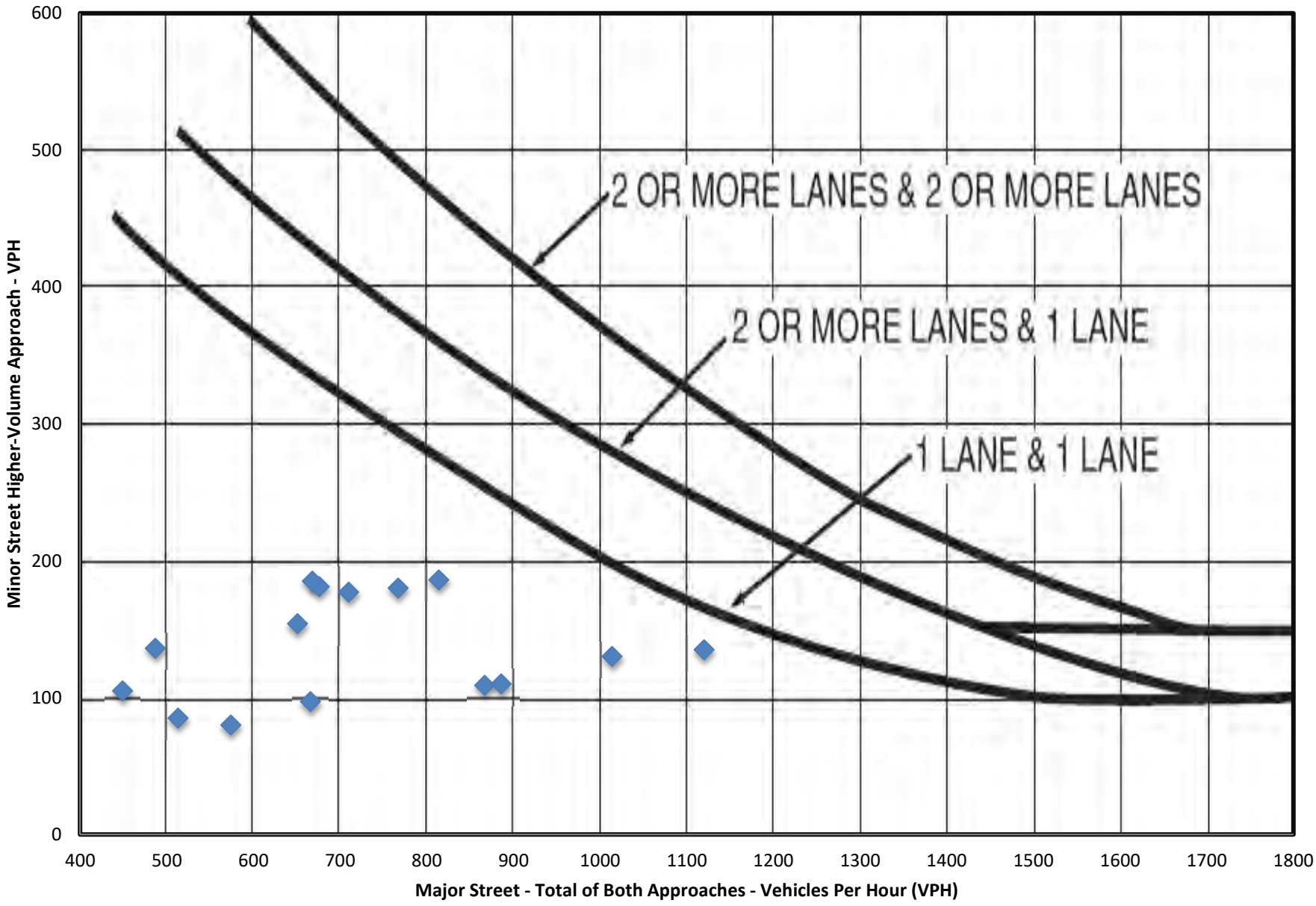
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
0

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	322	51	
7:00 AM	513	85	
7:15 AM	666	97	
7:30 AM	867	109	
7:45 AM	1014	130	
8:00 AM	1120	135	
8:15 AM	886	110	
8:30 AM	574	80	
8:45 AM	297	39	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	228	55	
3:30 PM	449	105	
3:45 PM	651	154	
4:00 PM	814	186	
4:15 PM	767	180	
4:30 PM	710	177	
4:45 PM	676	181	
5:00 PM	668	185	
5:15 PM	487	136	
5:30 PM	323	89	
5:45 PM	155	36	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	2 or More Lanes

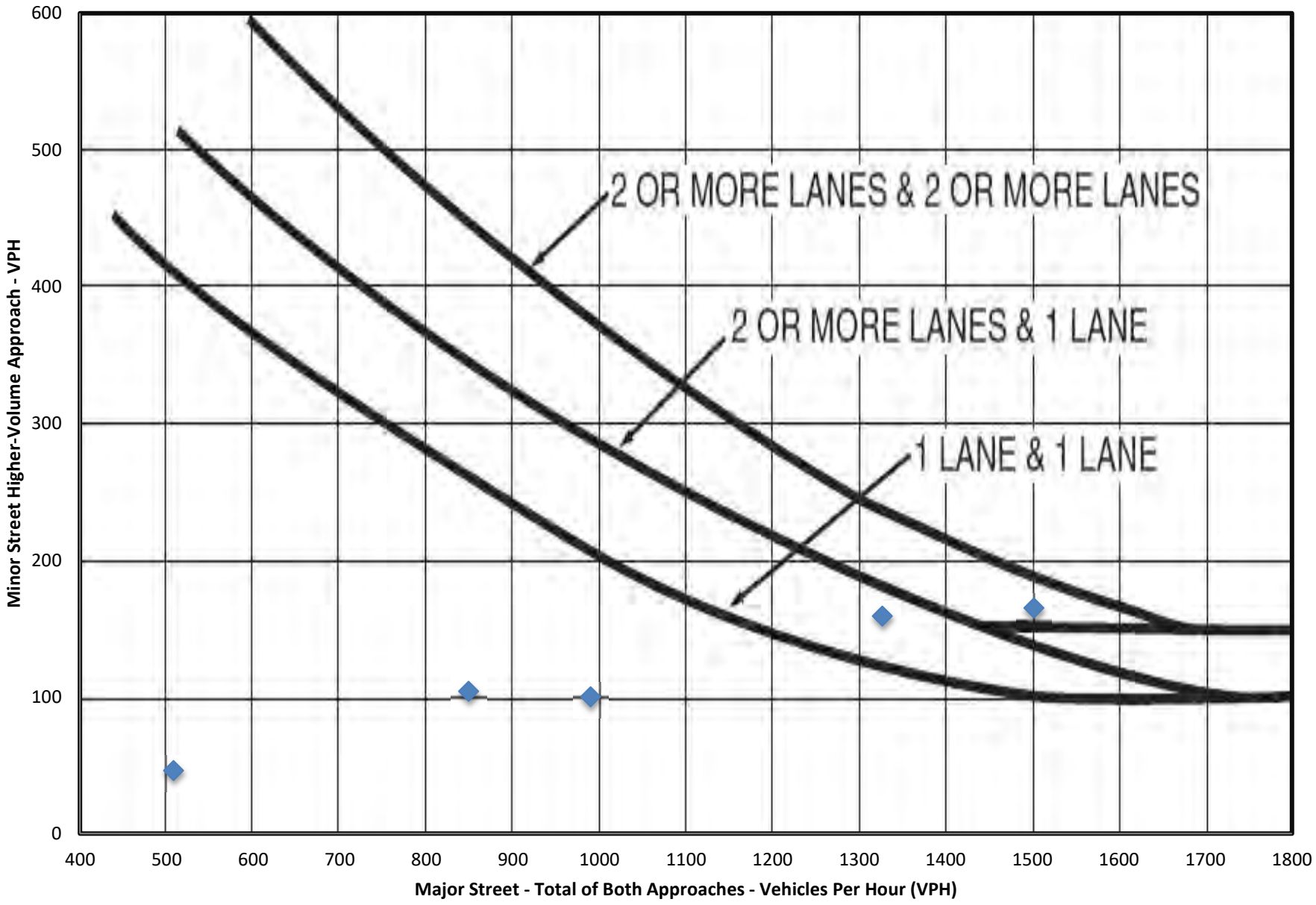
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	Yes
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
2

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	0	0	
7:00 AM	0	0	
7:15 AM	0	0	
7:30 AM	0	0	
7:45 AM	0	0	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	508	46	
3:30 PM	990	100	
3:45 PM	1502	165	
4:00 PM	2002	243	Met
4:15 PM	2012	262	Met
4:30 PM	2008	263	Met
4:45 PM	1950	258	Met
5:00 PM	1845	224	Met
5:15 PM	1327	159	
5:30 PM	849	104	
5:45 PM	395	44	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

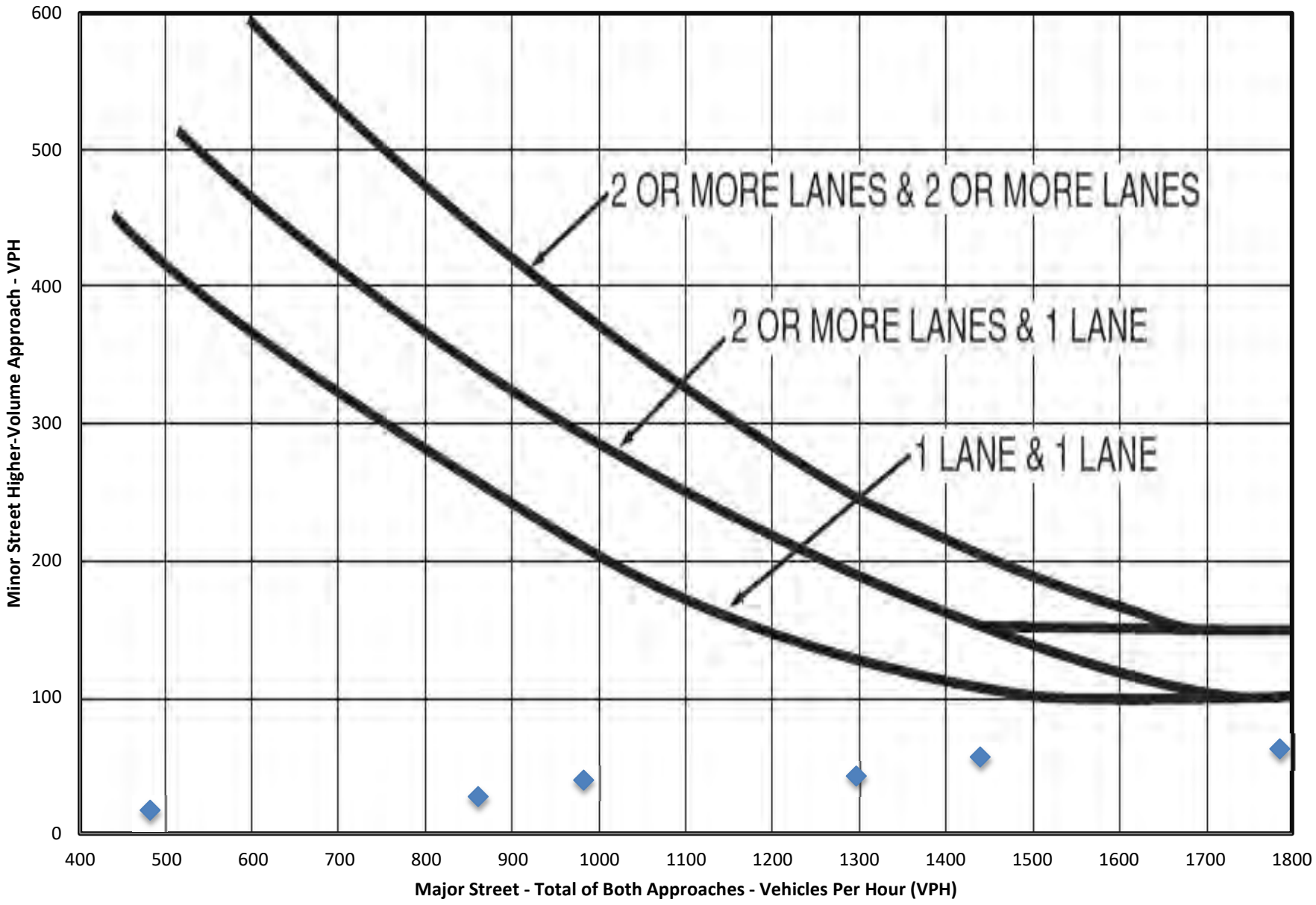
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	Yes
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	No
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	No
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
0

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	0	0	
7:00 AM	0	0	
7:15 AM	0	0	
7:30 AM	0	0	
7:45 AM	0	0	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	481	17	
3:30 PM	982	39	
3:45 PM	1440	56	
4:00 PM	1903	67	
4:15 PM	1911	70	
4:30 PM	1847	63	
4:45 PM	1879	61	
5:00 PM	1786	62	
5:15 PM	1297	42	
5:30 PM	860	27	
5:45 PM	370	12	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	2 or More Lanes

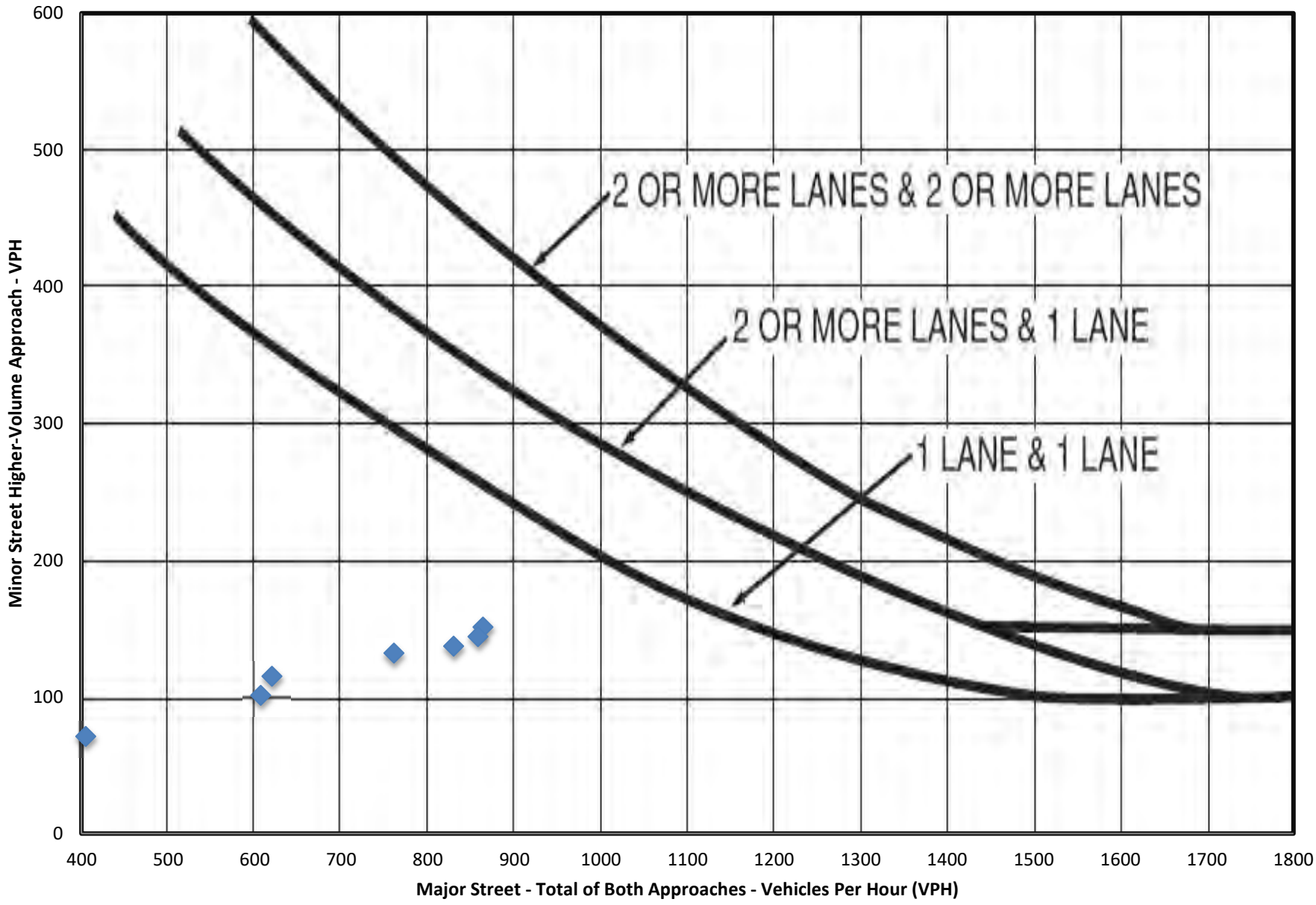
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	No
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
0

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	405	71	
7:00 AM	620	115	
7:15 AM	761	132	
7:30 AM	864	151	
7:45 AM	858	144	
8:00 AM	830	137	
8:15 AM	607	101	
8:30 AM	374	60	
8:45 AM	187	37	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	0	0	
3:30 PM	0	0	
3:45 PM	0	0	
4:00 PM	0	0	
4:15 PM	0	0	
4:30 PM	0	0	
4:45 PM	0	0	
5:00 PM	0	0	
5:15 PM	0	0	
5:30 PM	0	0	
5:45 PM	0	0	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

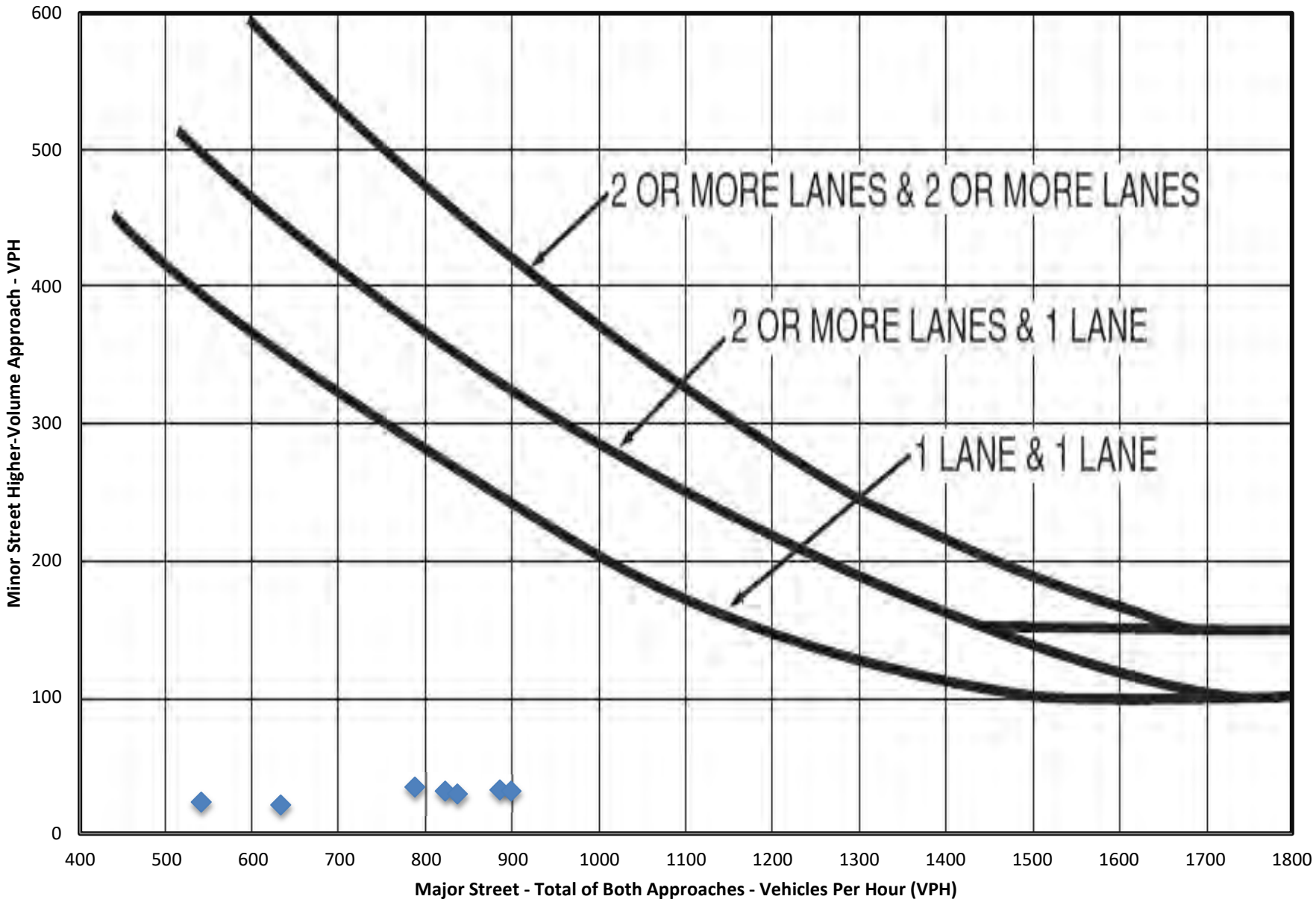
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	No
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	No
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
0

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	0	0	
7:00 AM	0	0	
7:15 AM	0	0	
7:30 AM	0	0	
7:45 AM	0	0	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	169	11	
3:30 PM	343	16	
3:45 PM	540	23	
4:00 PM	787	34	
4:15 PM	822	31	
4:30 PM	885	32	
4:45 PM	898	31	
5:00 PM	836	29	
5:15 PM	632	21	
5:30 PM	395	15	
5:45 PM	185	9	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, 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?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	No
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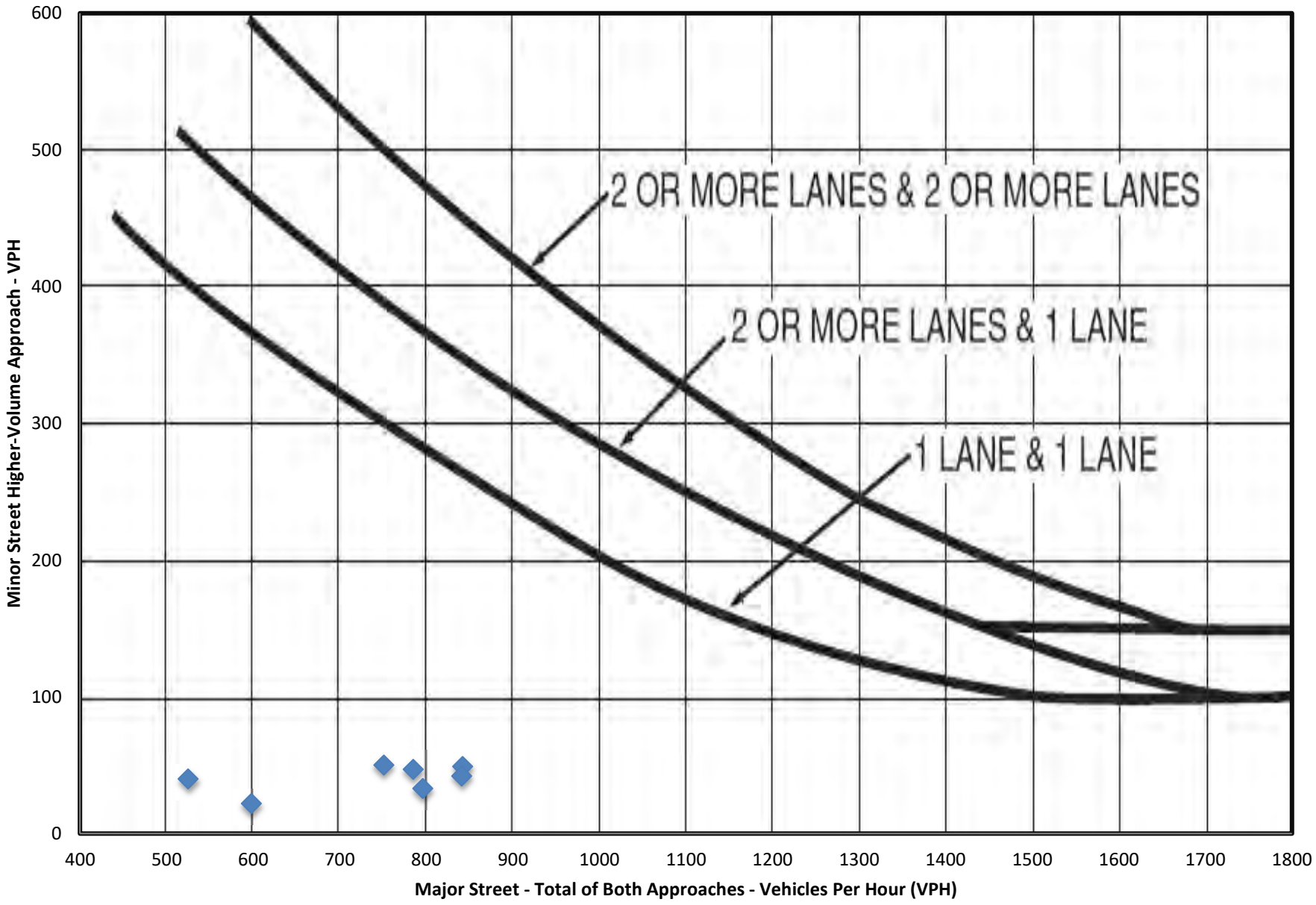
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
0

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	0	0	
7:00 AM	0	0	
7:15 AM	0	0	
7:30 AM	0	0	
7:45 AM	0	0	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	164	14	
3:30 PM	334	28	
3:45 PM	525	40	
4:00 PM	751	50	
4:15 PM	785	47	
4:30 PM	842	49	
4:45 PM	841	42	
5:00 PM	796	33	
5:15 PM	598	22	
5:30 PM	371	8	
5:45 PM	181	1	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, 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?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
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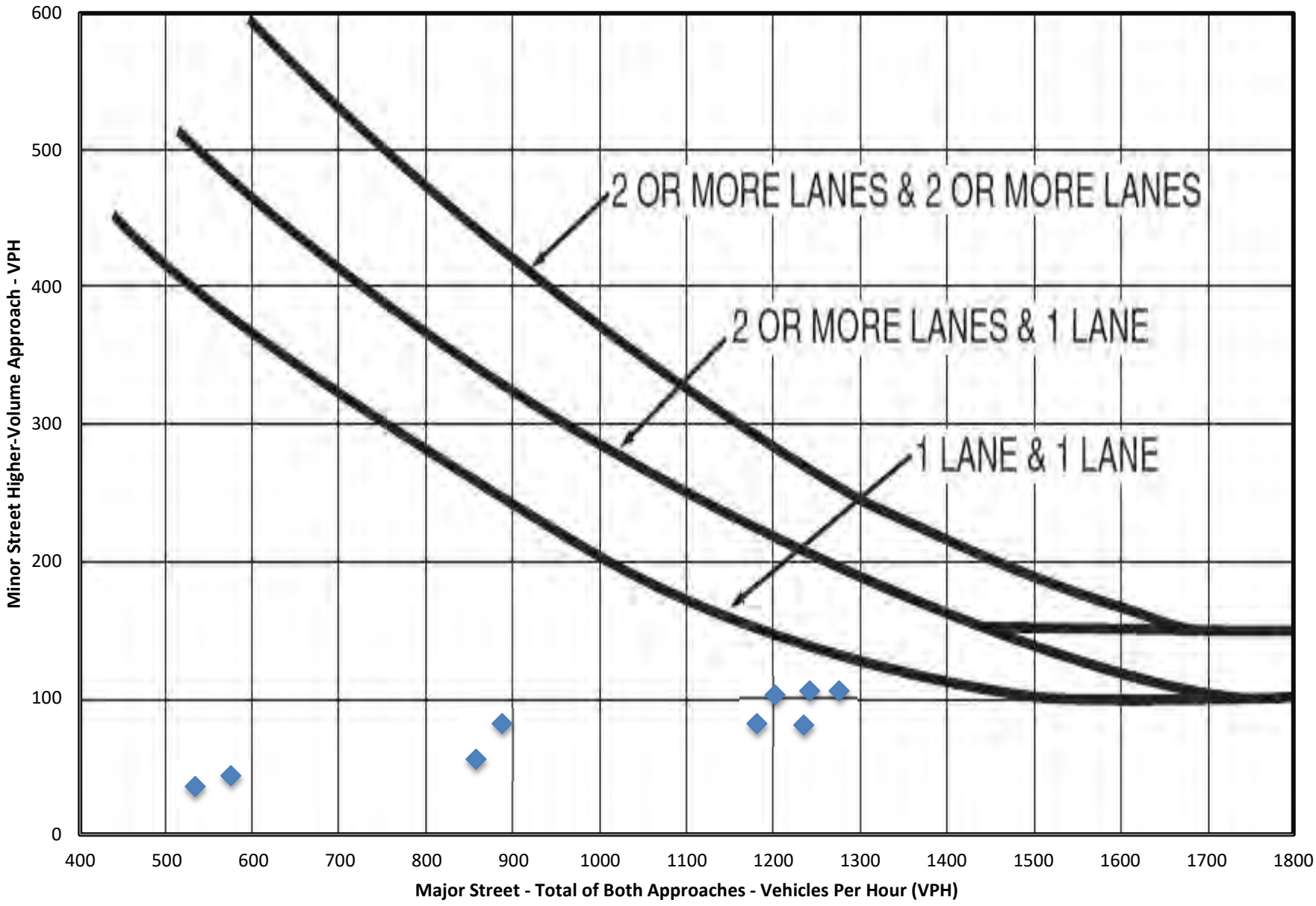
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
0

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	0	0	
7:00 AM	0	0	
7:15 AM	0	0	
7:30 AM	0	0	
7:45 AM	0	0	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	261	22	
3:30 PM	533	35	
3:45 PM	857	55	
4:00 PM	1181	81	
4:15 PM	1235	80	
4:30 PM	1276	105	
4:45 PM	1242	105	
5:00 PM	1202	102	
5:15 PM	887	81	
5:30 PM	574	43	
5:45 PM	284	23	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	2 or More Lanes

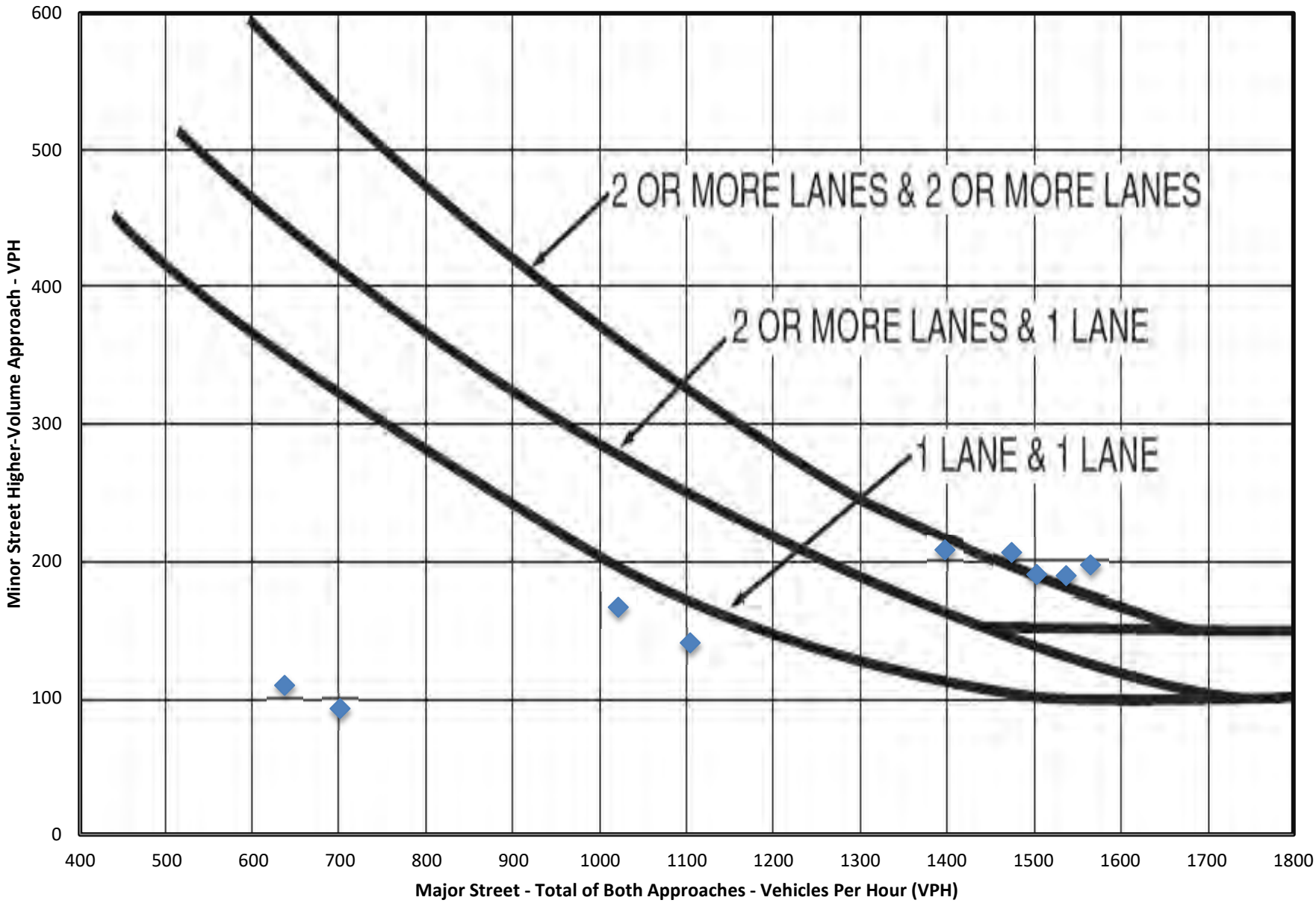
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	Yes
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
1

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	0	0	
7:00 AM	0	0	
7:15 AM	0	0	
7:30 AM	0	0	
7:45 AM	0	0	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	323	52	
3:30 PM	636	109	
3:45 PM	1021	166	
4:00 PM	1398	208	
4:15 PM	1475	206	Met
4:30 PM	1566	197	Met
4:45 PM	1538	189	Met
5:00 PM	1504	190	Met
5:15 PM	1104	140	
5:30 PM	700	92	
5:45 PM	343	43	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	Yes

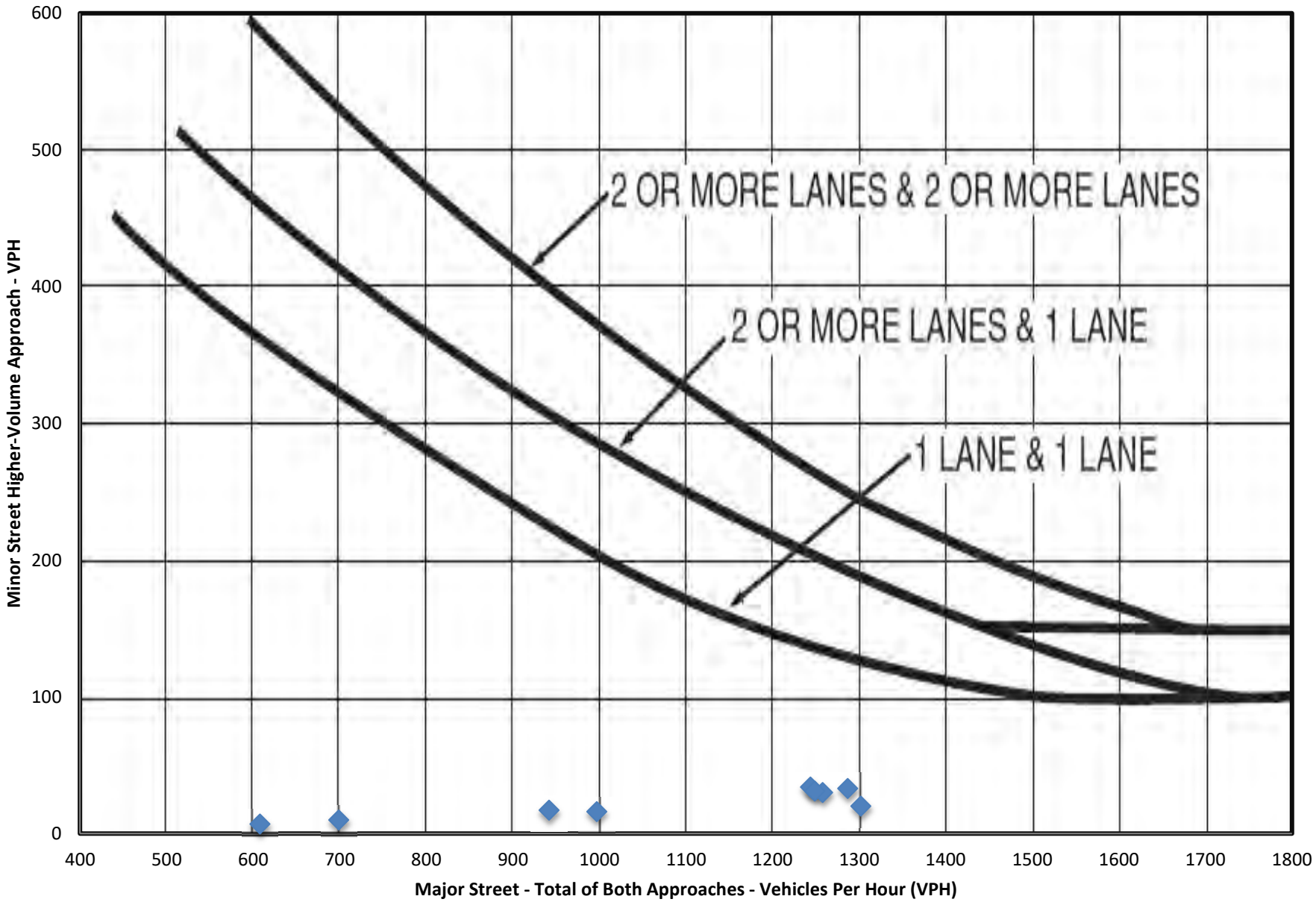
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	No
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	No
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	No
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-4
0

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	0	0	
7:00 AM	0	0	
7:15 AM	0	0	
7:30 AM	0	0	
7:45 AM	0	0	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	351	4	
3:30 PM	699	10	
3:45 PM	997	16	
4:00 PM	1302	20	
4:15 PM	1258	30	
4:30 PM	1244	34	
4:45 PM	1287	33	
5:00 PM	1249	31	
5:15 PM	942	17	
5:30 PM	608	7	
5:45 PM	267	2	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

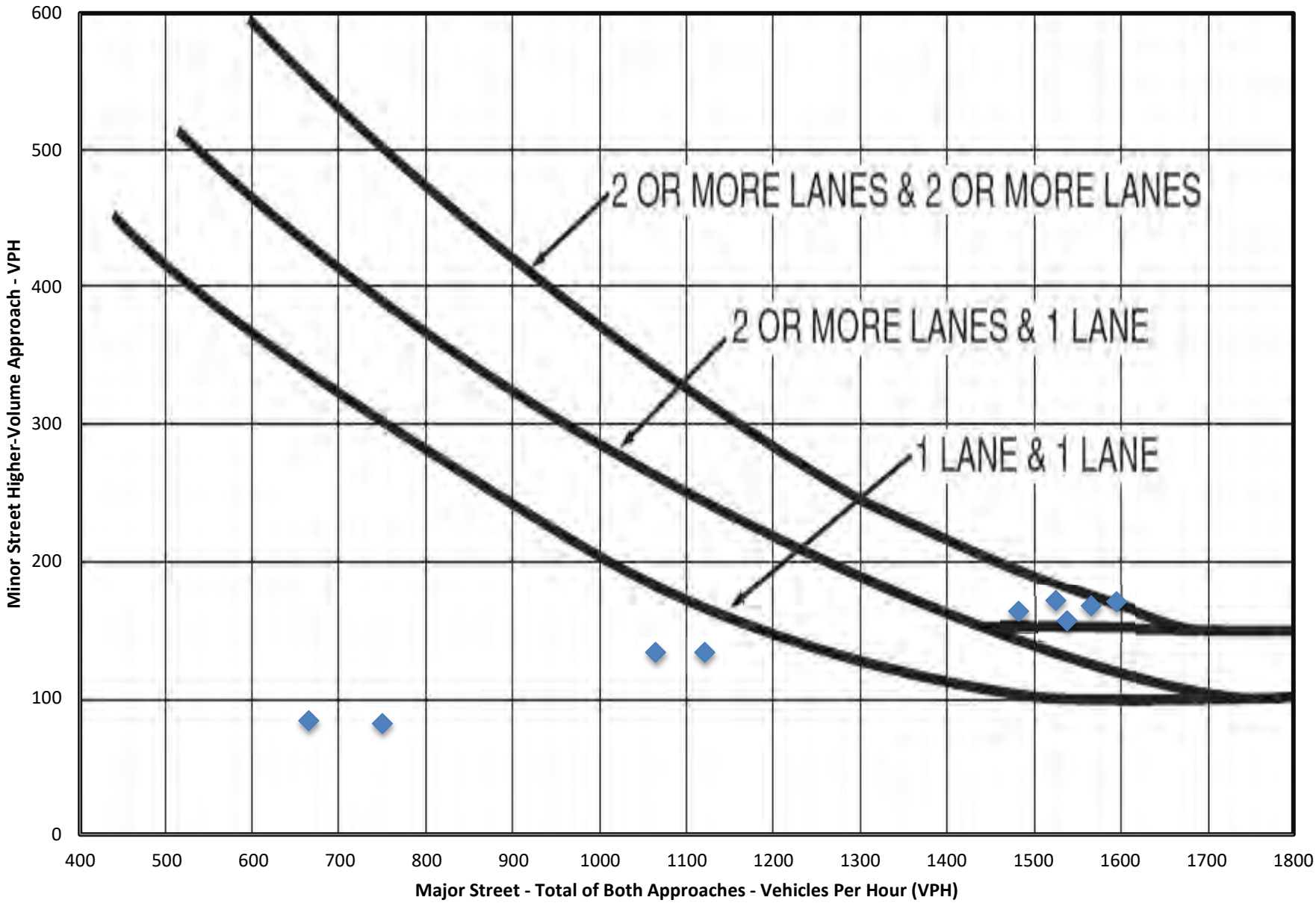
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	No
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
2

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	0	0	
7:00 AM	0	0	
7:15 AM	0	0	
7:30 AM	0	0	
7:45 AM	0	0	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	349	45	
3:30 PM	664	83	
3:45 PM	1064	133	
4:00 PM	1483	163	Met
4:15 PM	1539	156	Met
4:30 PM	1596	170	Met
4:45 PM	1567	167	Met
5:00 PM	1526	171	Met
5:15 PM	1121	133	
5:30 PM	749	81	
5:45 PM	378	34	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

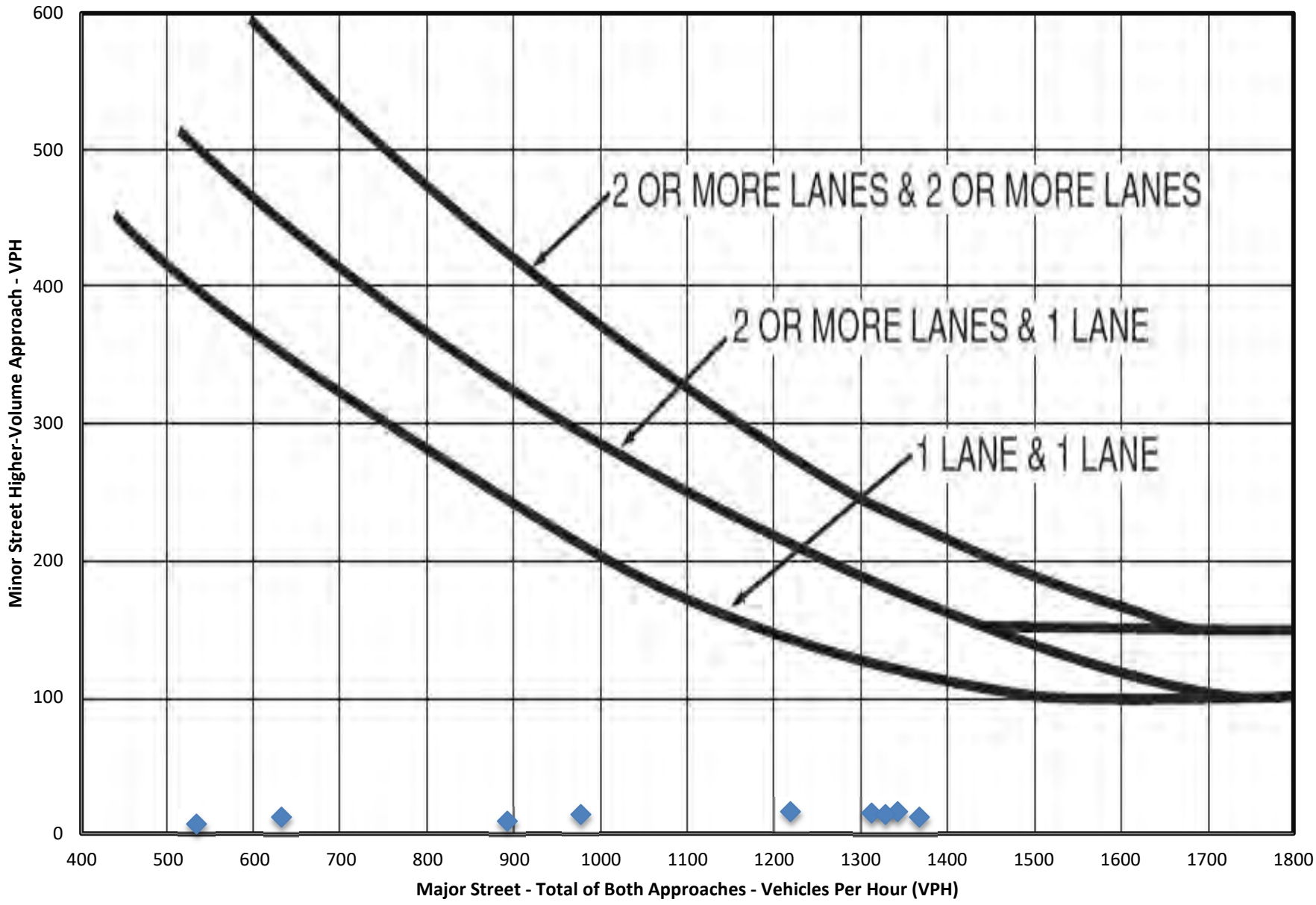
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	No
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	No
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	No
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
0

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	0	0	
7:00 AM	0	0	
7:15 AM	0	0	
7:30 AM	0	0	
7:45 AM	0	0	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	297	6	
3:30 PM	631	12	
3:45 PM	977	14	
4:00 PM	1313	15	
4:15 PM	1343	16	
4:30 PM	1368	12	
4:45 PM	1329	14	
5:00 PM	1219	16	
5:15 PM	892	9	
5:30 PM	533	7	
5:45 PM	226	3	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	2 or More Lanes

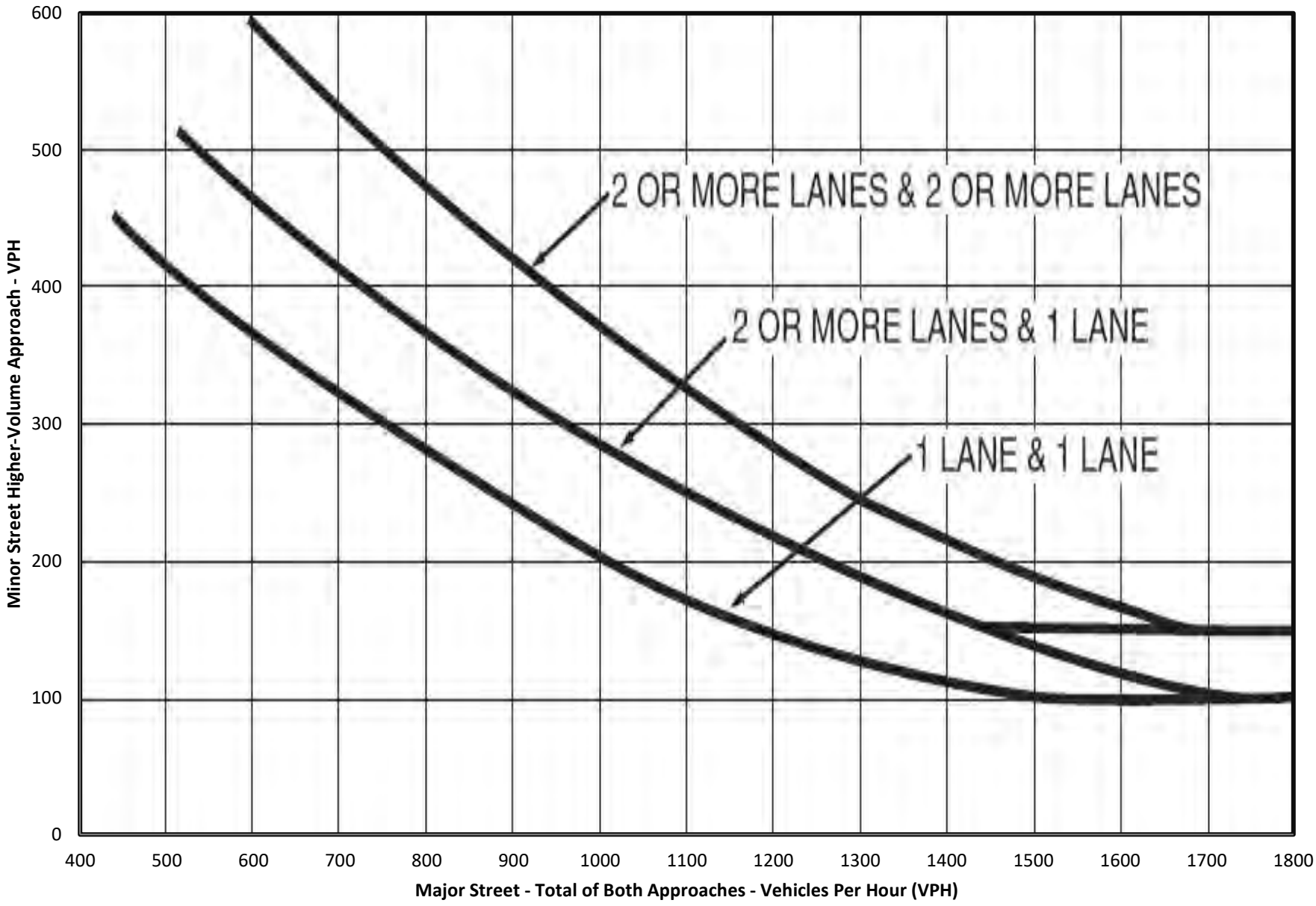
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	No
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	No
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
0

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	61	293	
7:00 AM	89	427	
7:15 AM	119	499	
7:30 AM	126	532	
7:45 AM	130	500	
8:00 AM	135	490	
8:15 AM	98	355	
8:30 AM	64	229	
8:45 AM	33	133	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	0	0	
3:30 PM	0	0	
3:45 PM	0	0	
4:00 PM	0	0	
4:15 PM	0	0	
4:30 PM	0	0	
4:45 PM	0	0	
5:00 PM	0	0	
5:15 PM	0	0	
5:30 PM	0	0	
5:45 PM	0	0	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	2 or More Lanes

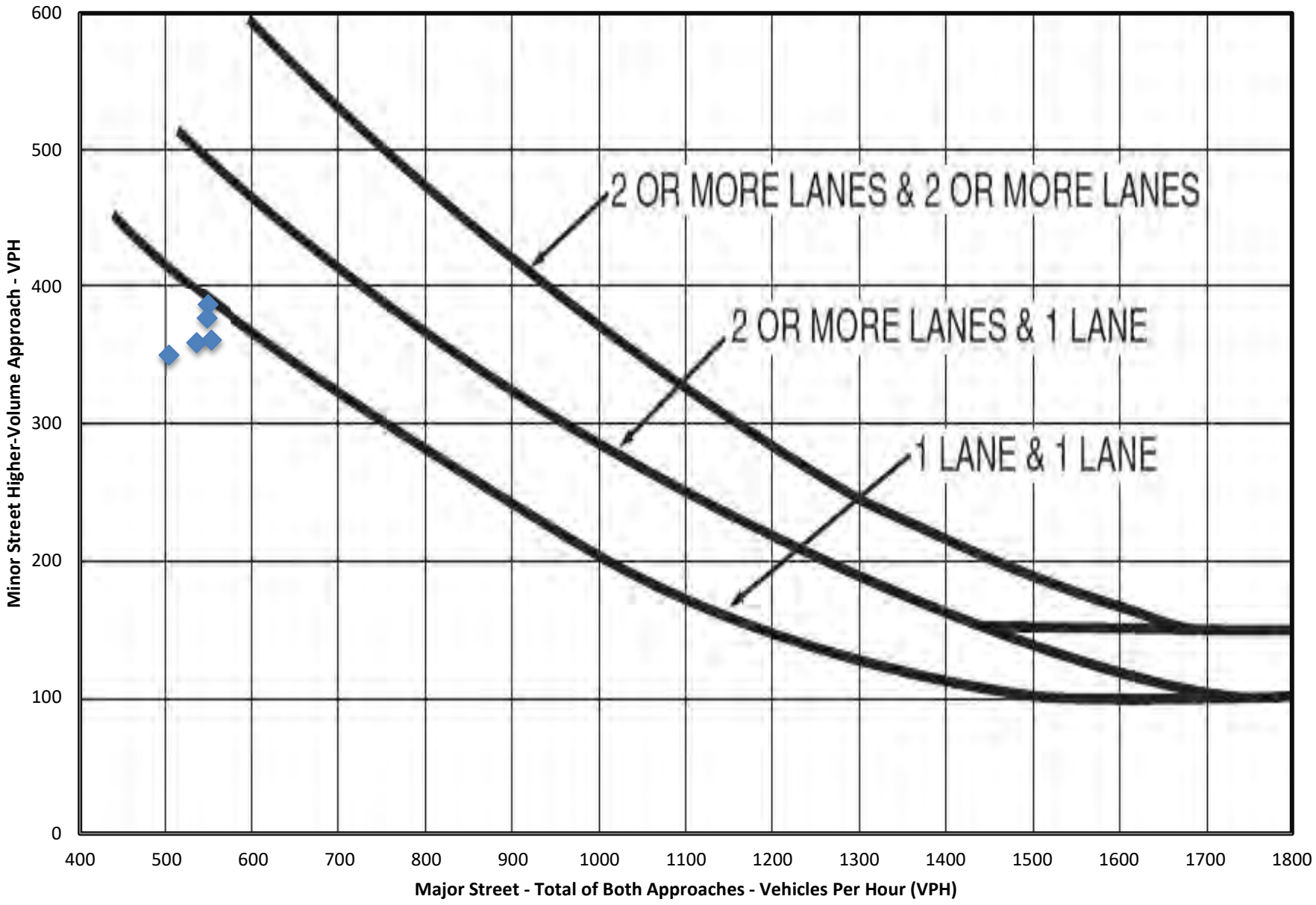
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	No
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
0

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	0	0	
7:00 AM	0	0	
7:15 AM	0	0	
7:30 AM	0	0	
7:45 AM	0	0	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	125	88	
3:30 PM	242	170	
3:45 PM	387	253	
4:00 PM	535	359	
4:15 PM	552	361	
4:30 PM	548	387	
4:45 PM	547	377	
5:00 PM	503	350	
5:15 PM	361	260	
5:30 PM	248	152	
5:45 PM	104	79	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	2 or More Lanes

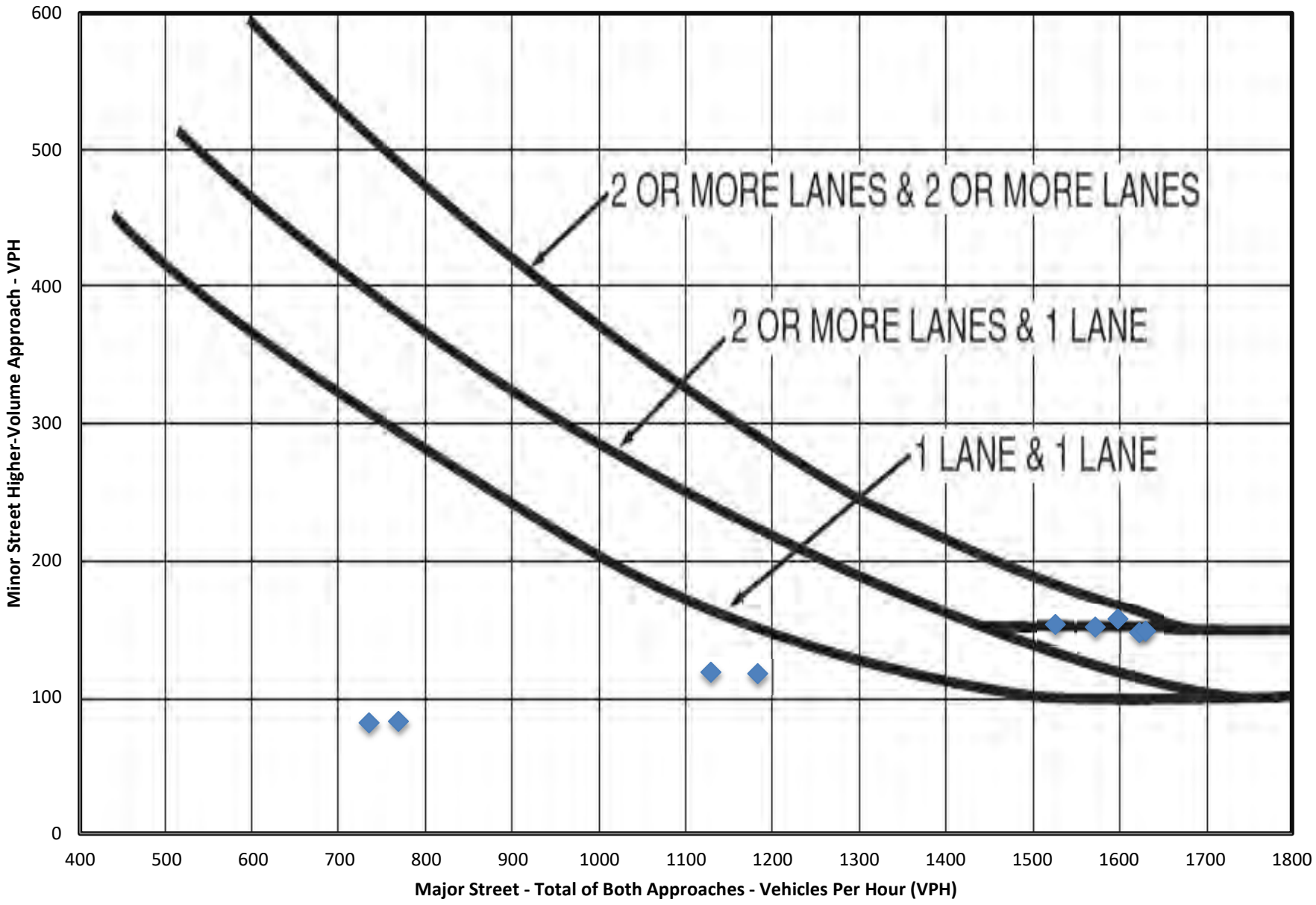
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	Yes
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
0

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	0	0	
7:00 AM	0	0	
7:15 AM	0	0	
7:30 AM	0	0	
7:45 AM	0	0	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	370	42	
3:30 PM	734	81	
3:45 PM	1129	118	
4:00 PM	1527	153	
4:15 PM	1573	151	
4:30 PM	1624	147	
4:45 PM	1631	148	
5:00 PM	1599	157	
5:15 PM	1183	117	
5:30 PM	768	82	
5:45 PM	366	44	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

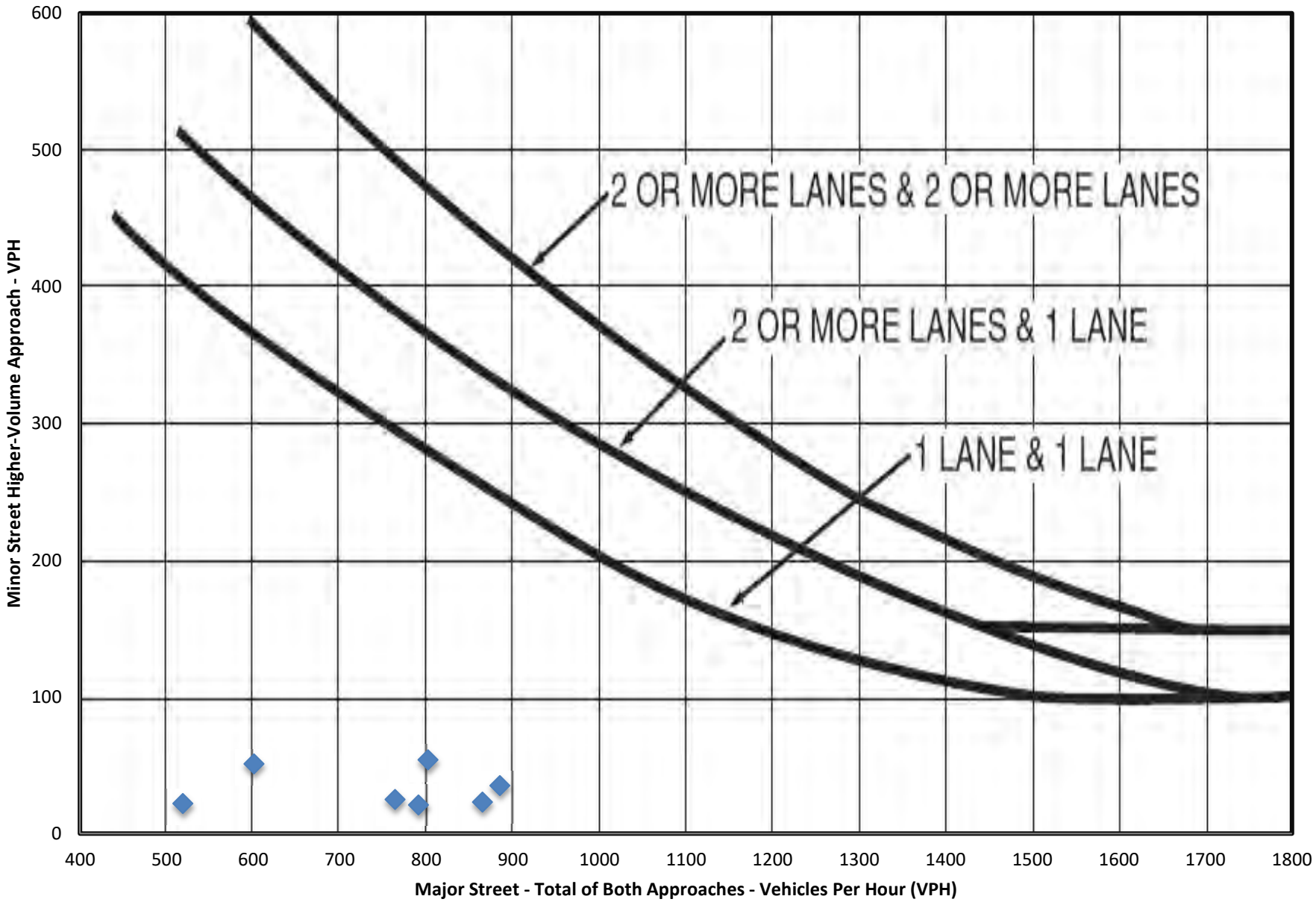
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	No
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	No
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
0

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	0	0	
7:00 AM	0	0	
7:15 AM	0	0	
7:30 AM	0	0	
7:45 AM	0	0	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	174	7	
3:30 PM	336	15	
3:45 PM	519	22	
4:00 PM	764	25	
4:15 PM	791	21	
4:30 PM	865	23	
4:45 PM	885	35	
5:00 PM	802	54	
5:15 PM	601	51	
5:30 PM	365	41	
5:45 PM	162	22	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

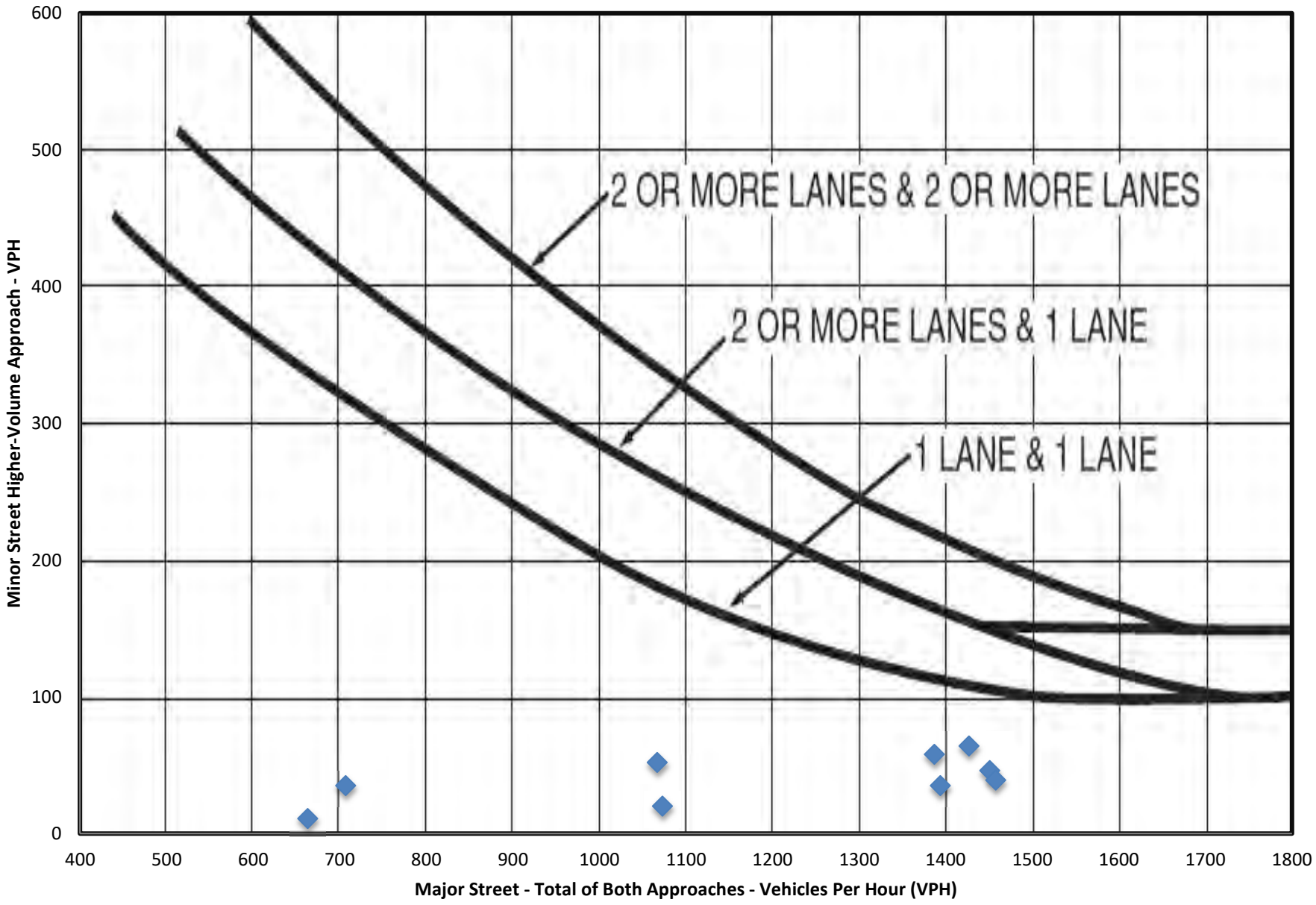
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	Yes
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	Yes
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	No
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-4
0

Hourly Vehicular Volume			
Hour Interval Beginning At	**Major Street Combined Vehicles Per Hour (VPH)**	**Highest Minor Street Approach Vehicles Per Hour (VPH)**	**Hour Met?**
6:45 AM	0	0	
7:00 AM	0	0	
7:15 AM	0	0	
7:30 AM	0	0	
7:45 AM	0	0	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	361	16	
3:30 PM	707	35	
3:45 PM	1067	52	
4:00 PM	1427	64	
4:15 PM	1387	58	
4:30 PM	1451	46	
4:45 PM	1458	39	
5:00 PM	1394	35	
5:15 PM	1073	20	
5:30 PM	663	11	
5:45 PM	296	4	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



ATTACHMENT B: SIGNAL WARRANT WORKSHEETS

FUTURE SCENARIO

MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

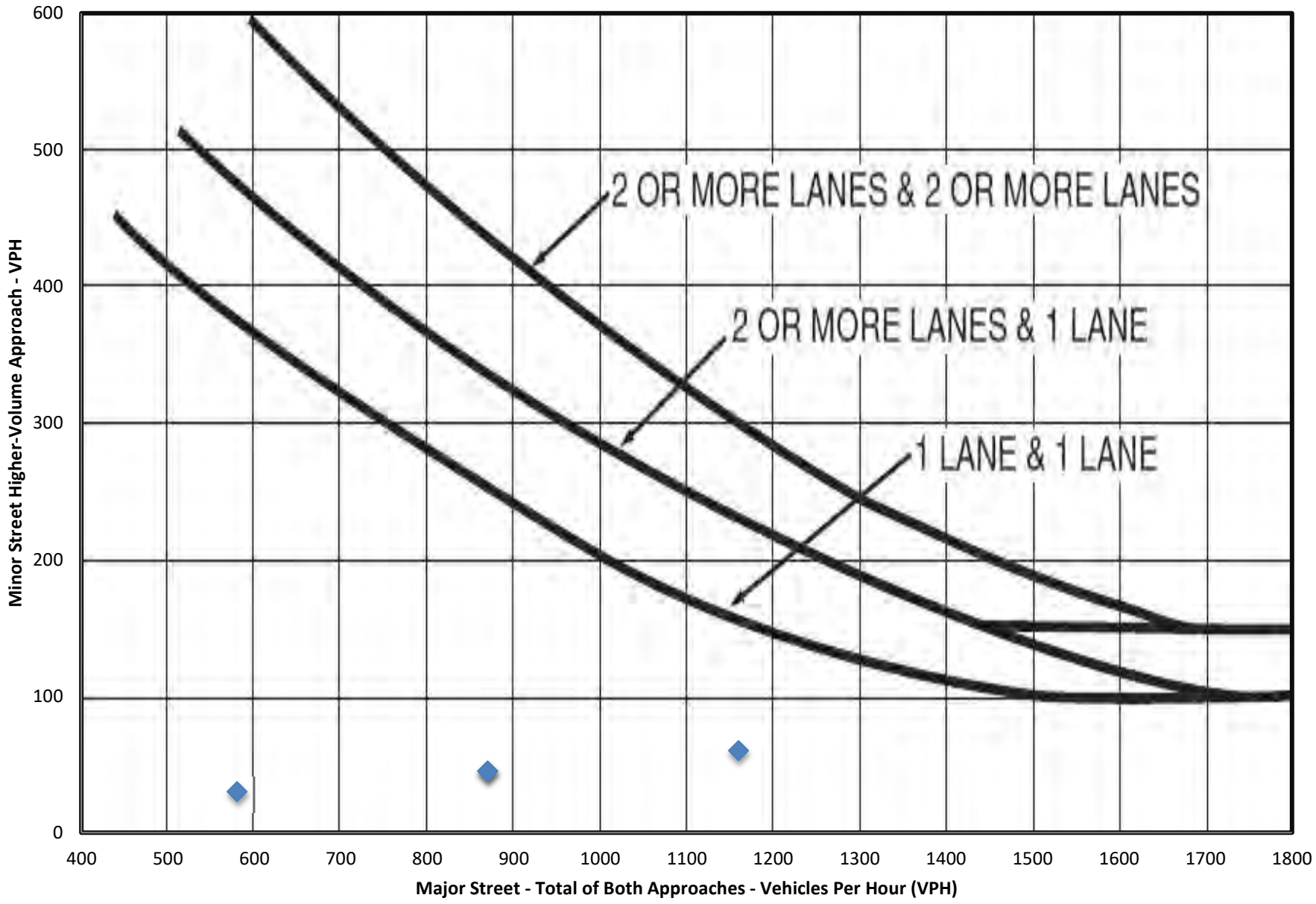
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	No
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	No
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
0

Hourly Vehicular Volume			
Hour Interval Beginning At	**Major Street Combined Vehicles Per Hour (VPH)**	**Highest Minor Street Approach Vehicles Per Hour (VPH)**	**Hour Met?**
6:45 AM	870	45	
7:00 AM	1160	60	
7:15 AM	870	45	
7:30 AM	580	30	
7:45 AM	290	15	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	0	0	
3:30 PM	0	0	
3:45 PM	0	0	
4:00 PM	0	0	
4:15 PM	0	0	
4:30 PM	0	0	
4:45 PM	0	0	
5:00 PM	0	0	
5:15 PM	0	0	
5:30 PM	0	0	
5:45 PM	0	0	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, 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?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	No
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	No
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
0

Hourly Vehicular Volume			
Hour Interval Beginning At	**Major Street Combined Vehicles Per Hour (VPH)**	**Highest Minor Street Approach Vehicles Per Hour (VPH)**	**Hour Met?**
6:45 AM	852	57	
7:00 AM	1136	76	
7:15 AM	852	57	
7:30 AM	568	38	
7:45 AM	284	19	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	0	0	
3:30 PM	0	0	
3:45 PM	0	0	
4:00 PM	0	0	
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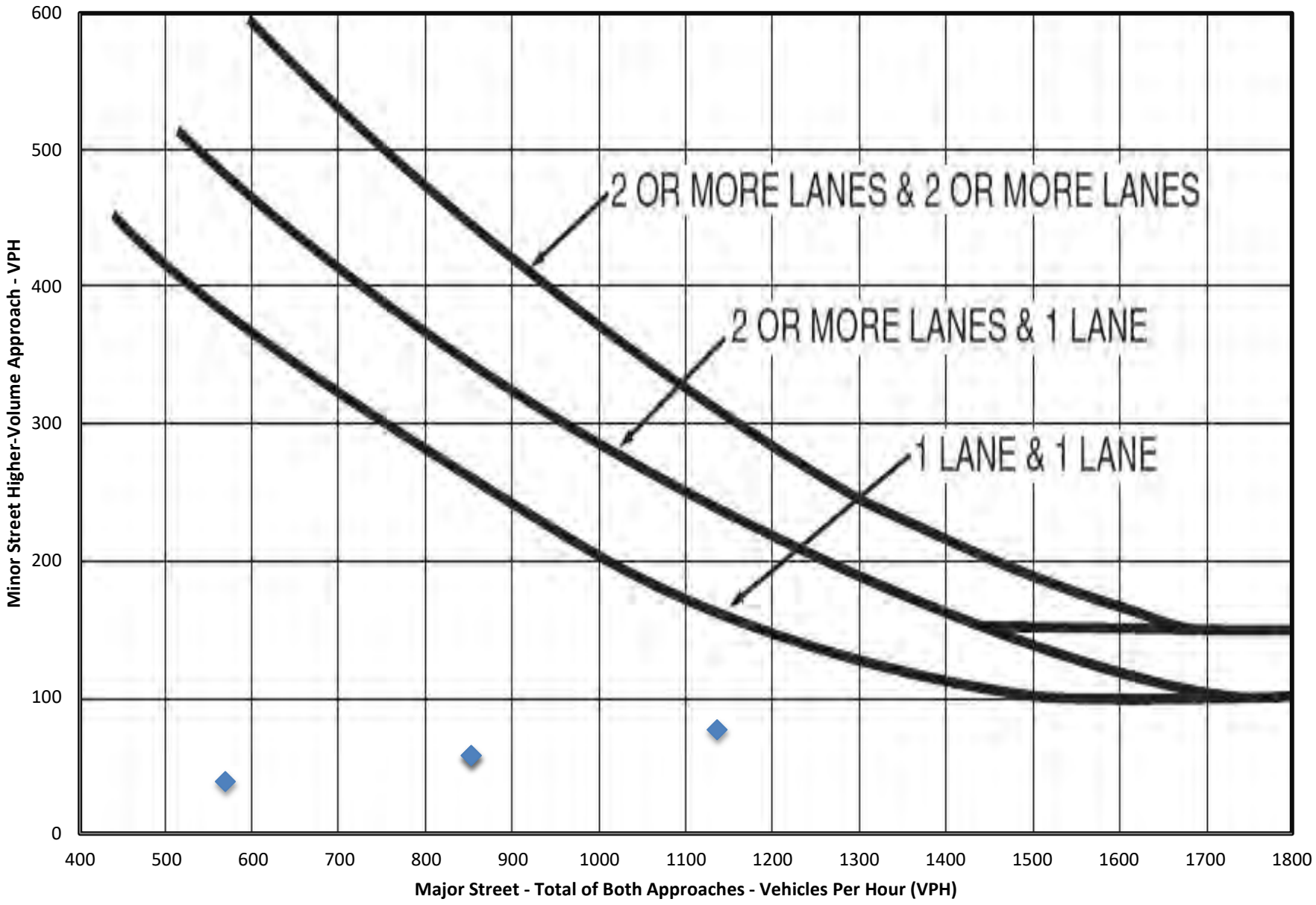
4:30 PM	0	0	
4:45 PM	0	0	
5:00 PM	0	0	
5:15 PM	0	0	
5:30 PM	0	0	
5:45 PM	0	0	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

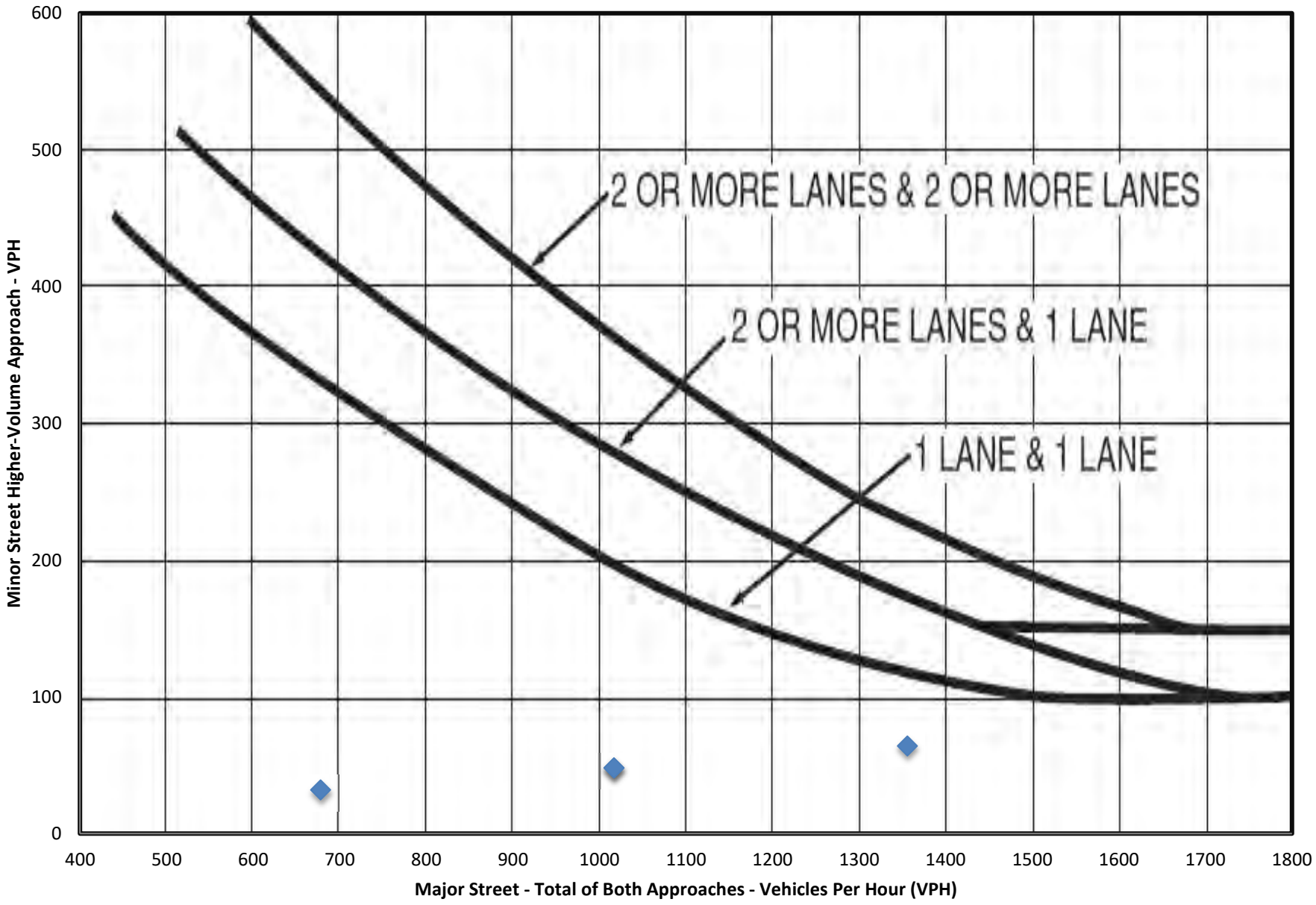
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	No
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	No
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
0

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	1017	48	
7:00 AM	1356	64	
7:15 AM	1017	48	
7:30 AM	678	32	
7:45 AM	339	16	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	0	0	
3:30 PM	0	0	
3:45 PM	0	0	
4:00 PM	0	0	
4:15 PM	0	0	
4:30 PM	0	0	
4:45 PM	0	0	
5:00 PM	0	0	
5:15 PM	0	0	
5:30 PM	0	0	
5:45 PM	0	0	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

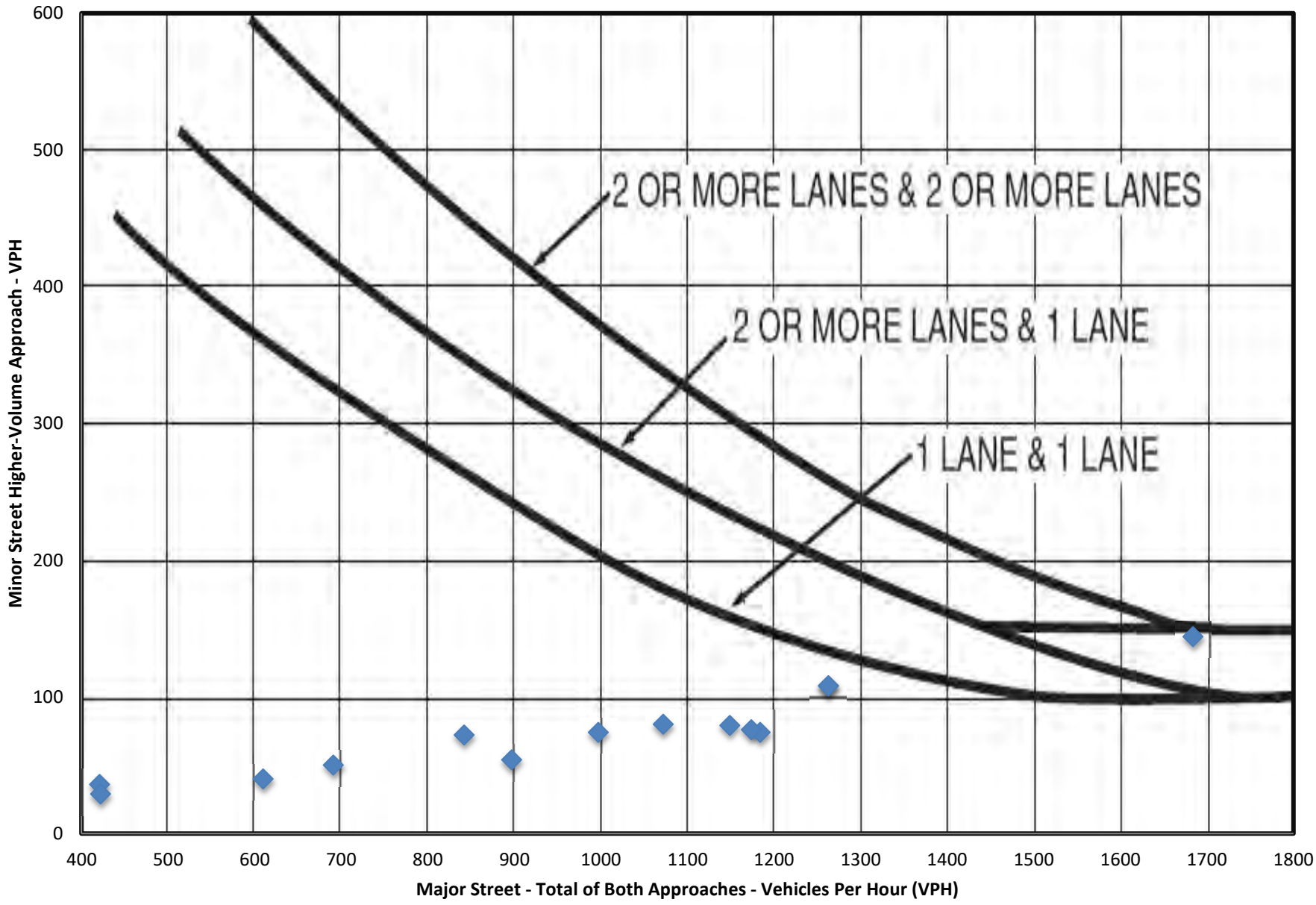
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	Yes
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	Yes
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-4
1

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	1263	108	Met
7:00 AM	1684	144	Met
7:15 AM	1263	108	Met
7:30 AM	842	72	
7:45 AM	421	36	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	316	22	
3:30 PM	610	40	
3:45 PM	897	54	
4:00 PM	1184	74	
4:15 PM	1174	76	
4:30 PM	1149	79	
4:45 PM	1072	80	
5:00 PM	997	74	
5:15 PM	691	50	
5:30 PM	422	29	
5:45 PM	212	14	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	2 or More Lanes

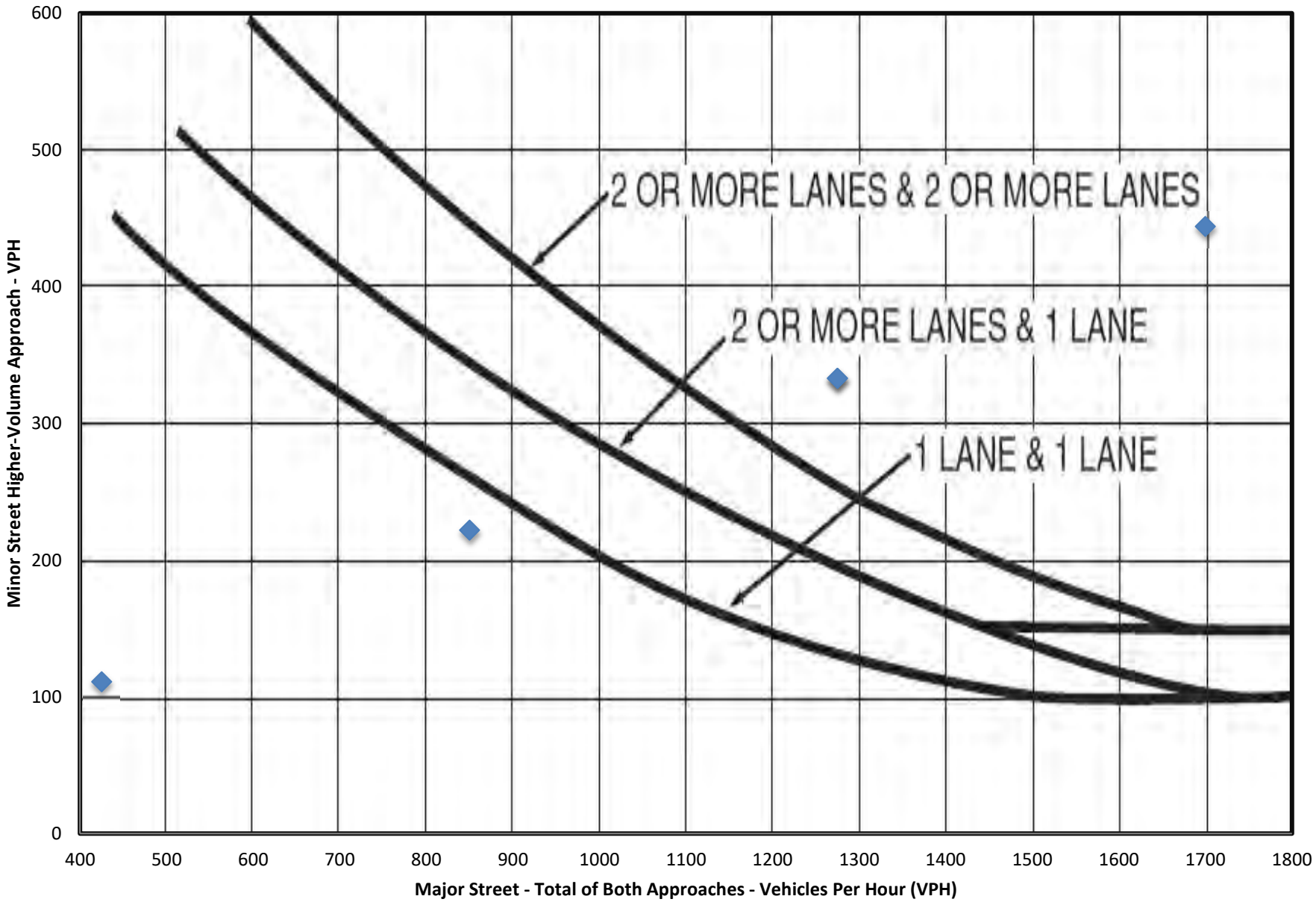
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	Yes
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	Yes
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-4
2

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	1275	333	Met
7:00 AM	1700	444	Met
7:15 AM	1275	333	Met
7:30 AM	850	222	Met
7:45 AM	425	111	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	0	0	
3:30 PM	0	0	
3:45 PM	0	0	
4:00 PM	0	0	
4:15 PM	0	0	
4:30 PM	0	0	
4:45 PM	0	0	
5:00 PM	0	0	
5:15 PM	0	0	
5:30 PM	0	0	
5:45 PM	0	0	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

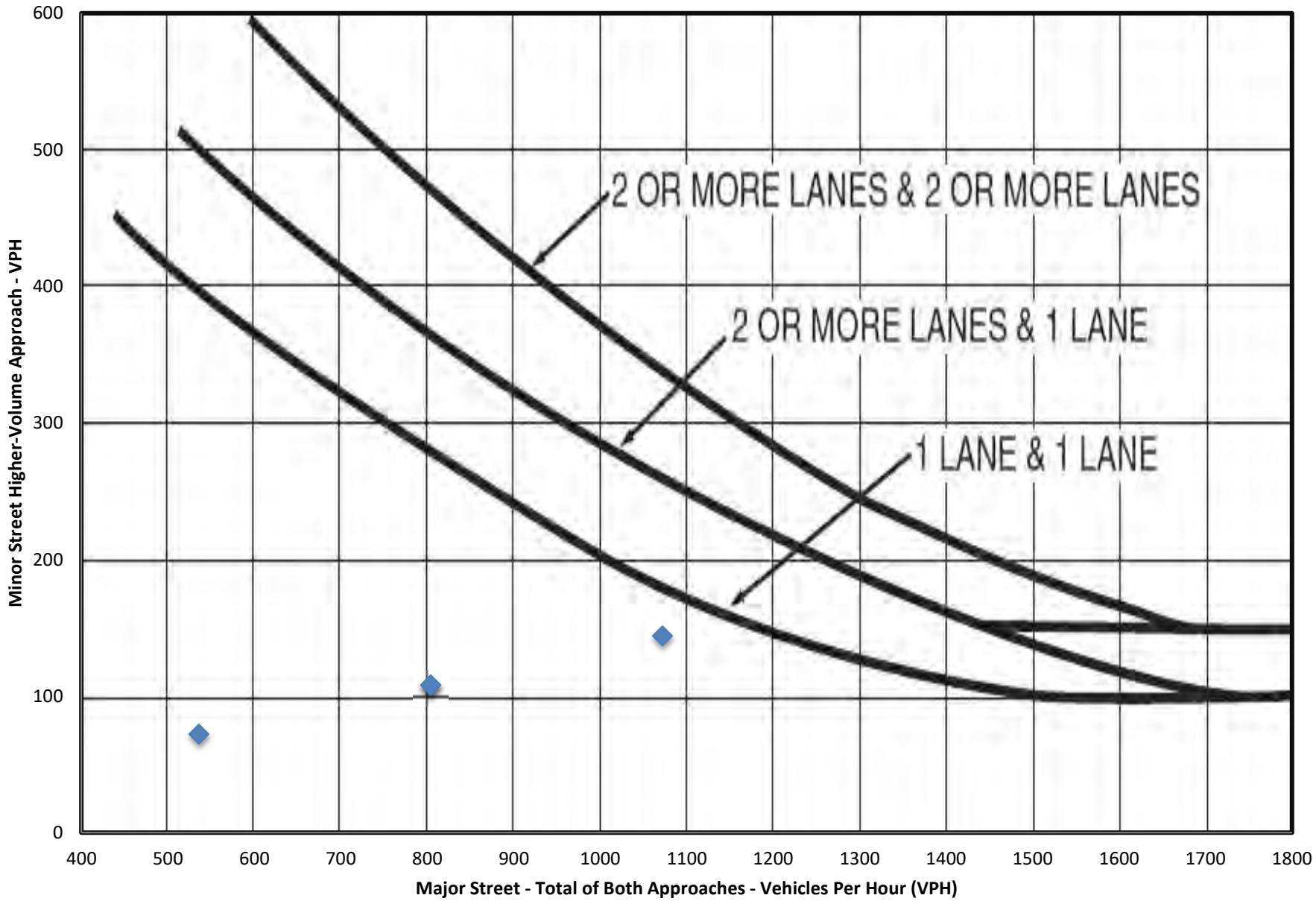
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	Yes
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	No
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-4
1

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	804	108	
7:00 AM	1072	144	Met
7:15 AM	804	108	
7:30 AM	536	72	
7:45 AM	268	36	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	0	0	
3:30 PM	0	0	
3:45 PM	0	0	
4:00 PM	0	0	
4:15 PM	0	0	
4:30 PM	0	0	
4:45 PM	0	0	
5:00 PM	0	0	
5:15 PM	0	0	
5:30 PM	0	0	
5:45 PM	0	0	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, 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?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	Yes
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
1

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	747	264	
7:00 AM	996	352	Met
7:15 AM	747	264	
7:30 AM	498	176	
7:45 AM	249	88	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
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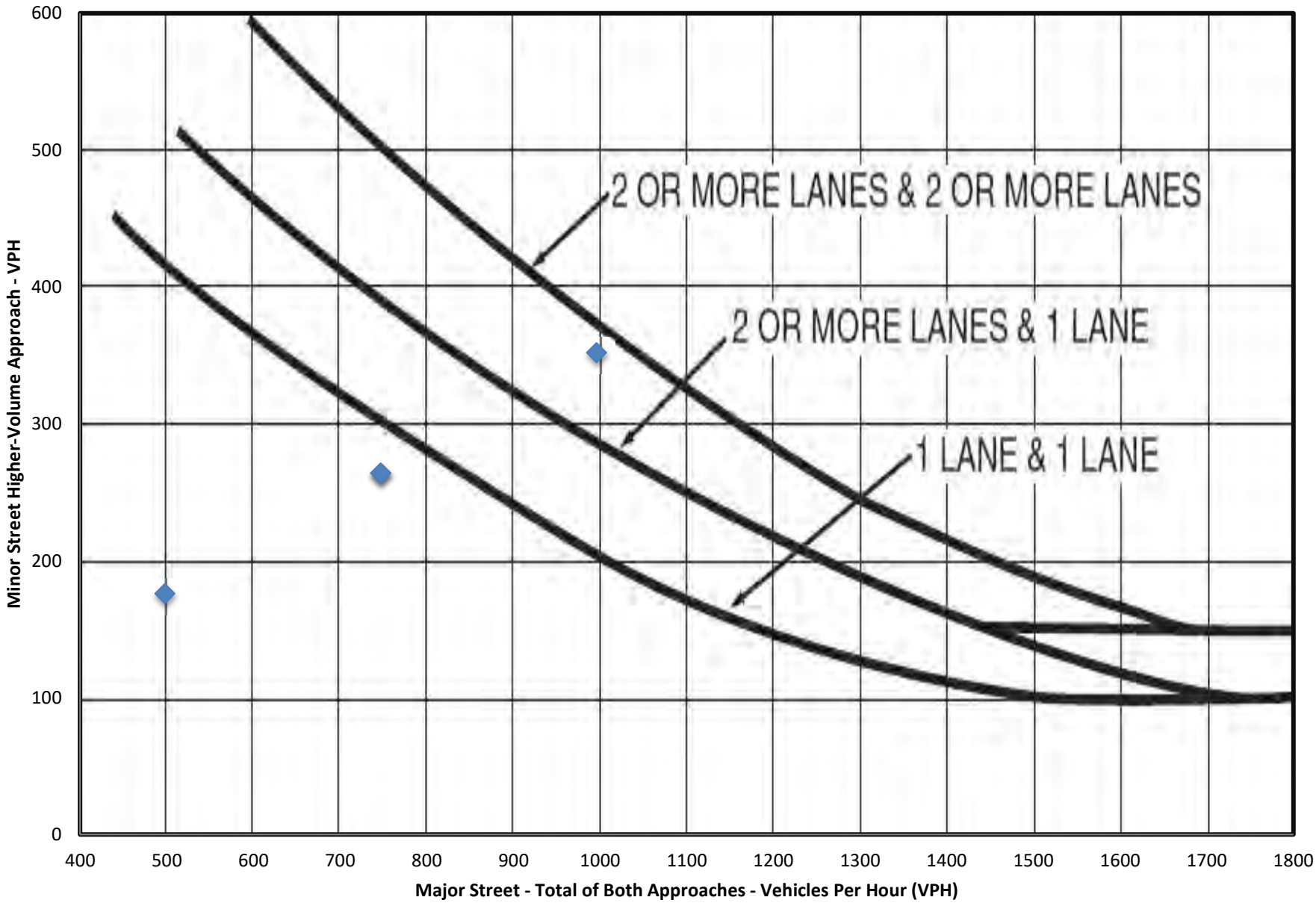
3:30 PM	0	0	
3:45 PM	0	0	
4:00 PM	0	0	
4:15 PM	0	0	
4:30 PM	0	0	
4:45 PM	0	0	
5:00 PM	0	0	
5:15 PM	0	0	
5:30 PM	0	0	
5:45 PM	0	0	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, 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?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	No
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
0

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	969	117	
7:00 AM	1292	156	
7:15 AM	969	117	
7:30 AM	646	78	
7:45 AM	323	39	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
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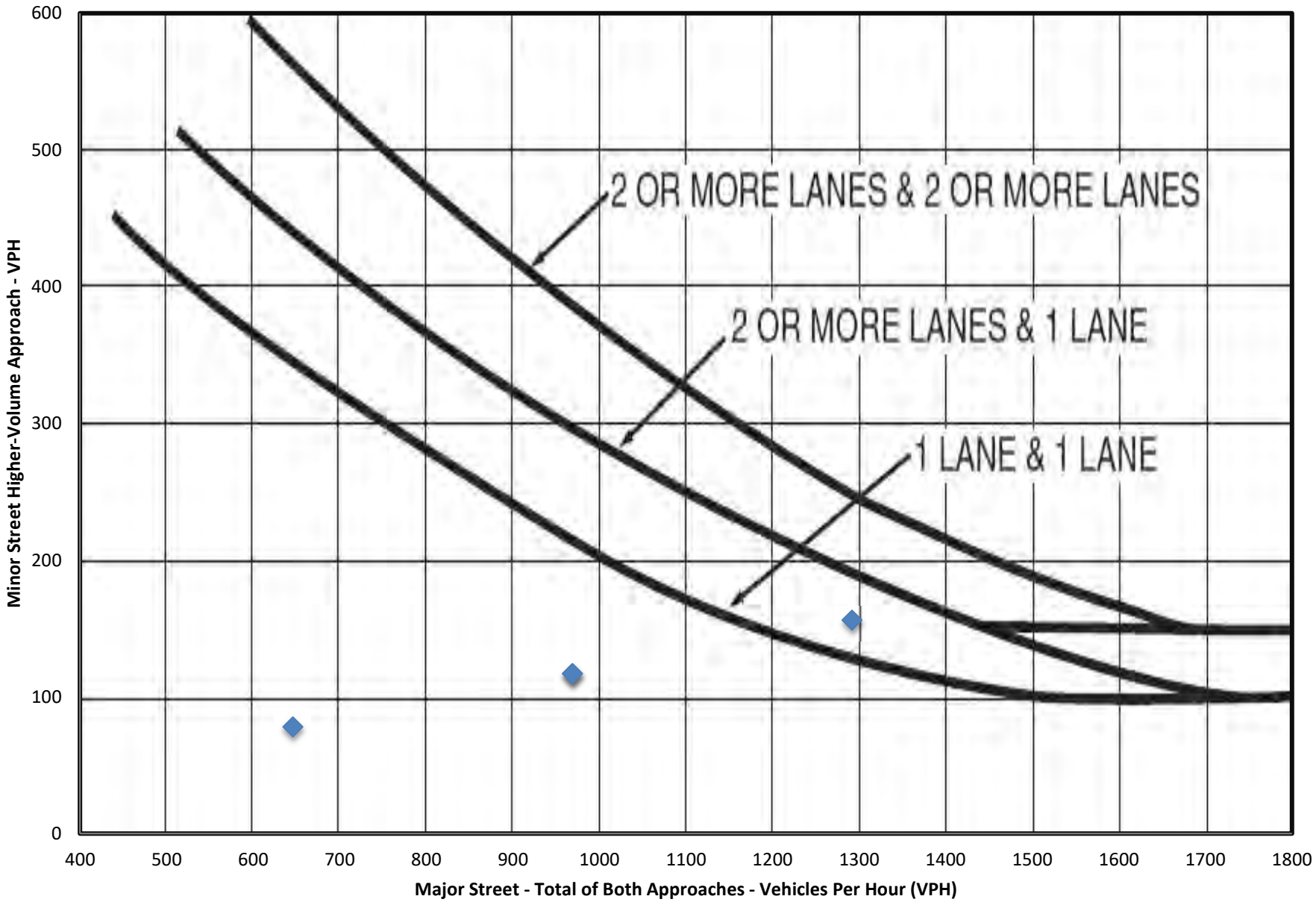
4:30 PM	0	0	
4:45 PM	0	0	
5:00 PM	0	0	
5:15 PM	0	0	
5:30 PM	0	0	
5:45 PM	0	0	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	2 or More Lanes

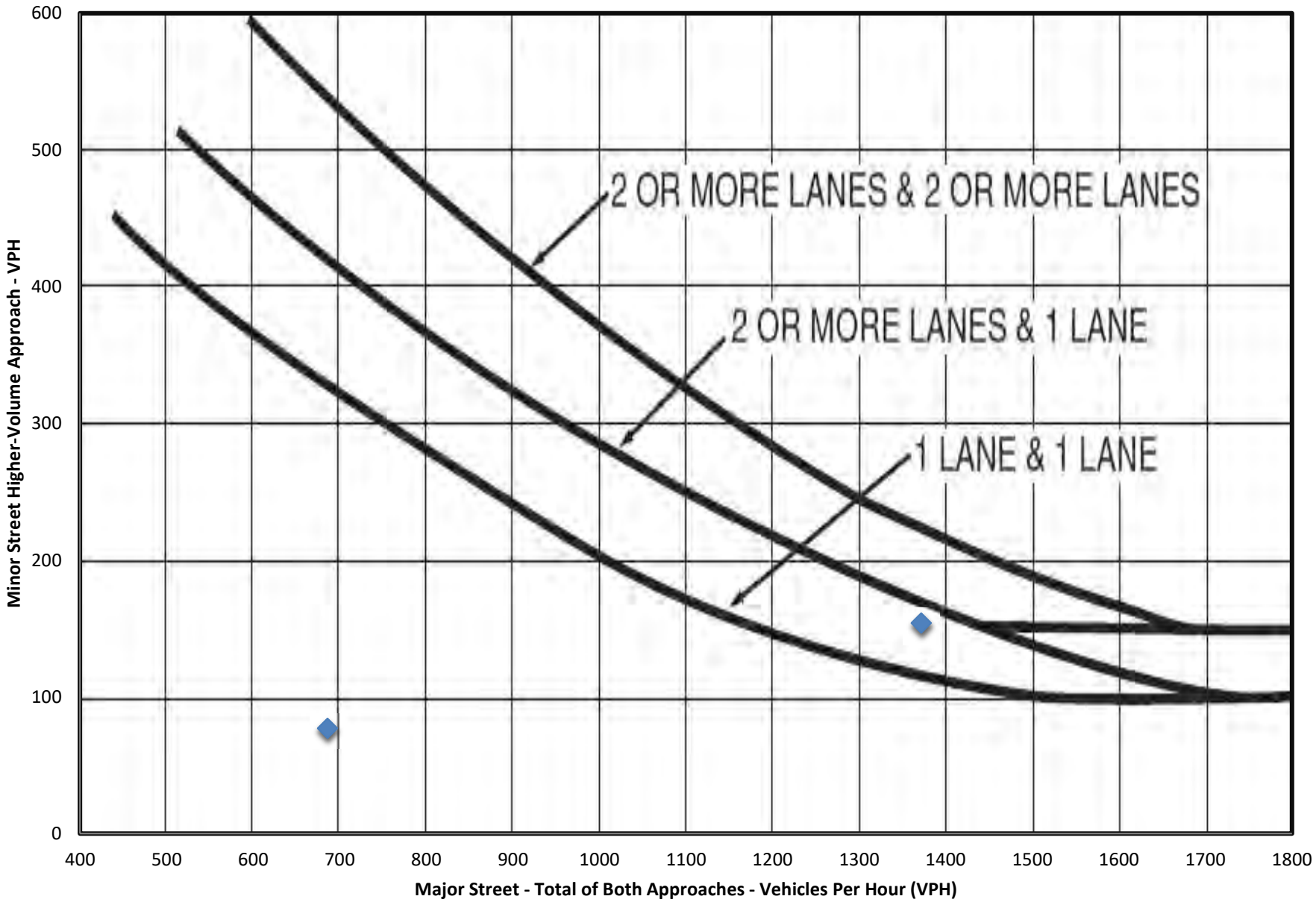
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	Yes
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
1

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	0	0	
7:00 AM	0	0	
7:15 AM	0	0	
7:30 AM	0	0	
7:45 AM	0	0	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	686	77	
3:30 PM	1372	154	
3:45 PM	2058	231	Met
4:00 PM	2744	308	Met
4:15 PM	2058	231	Met
4:30 PM	1372	154	
4:45 PM	686	77	
5:00 PM	0	0	
5:15 PM	0	0	
5:30 PM	0	0	
5:45 PM	0	0	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

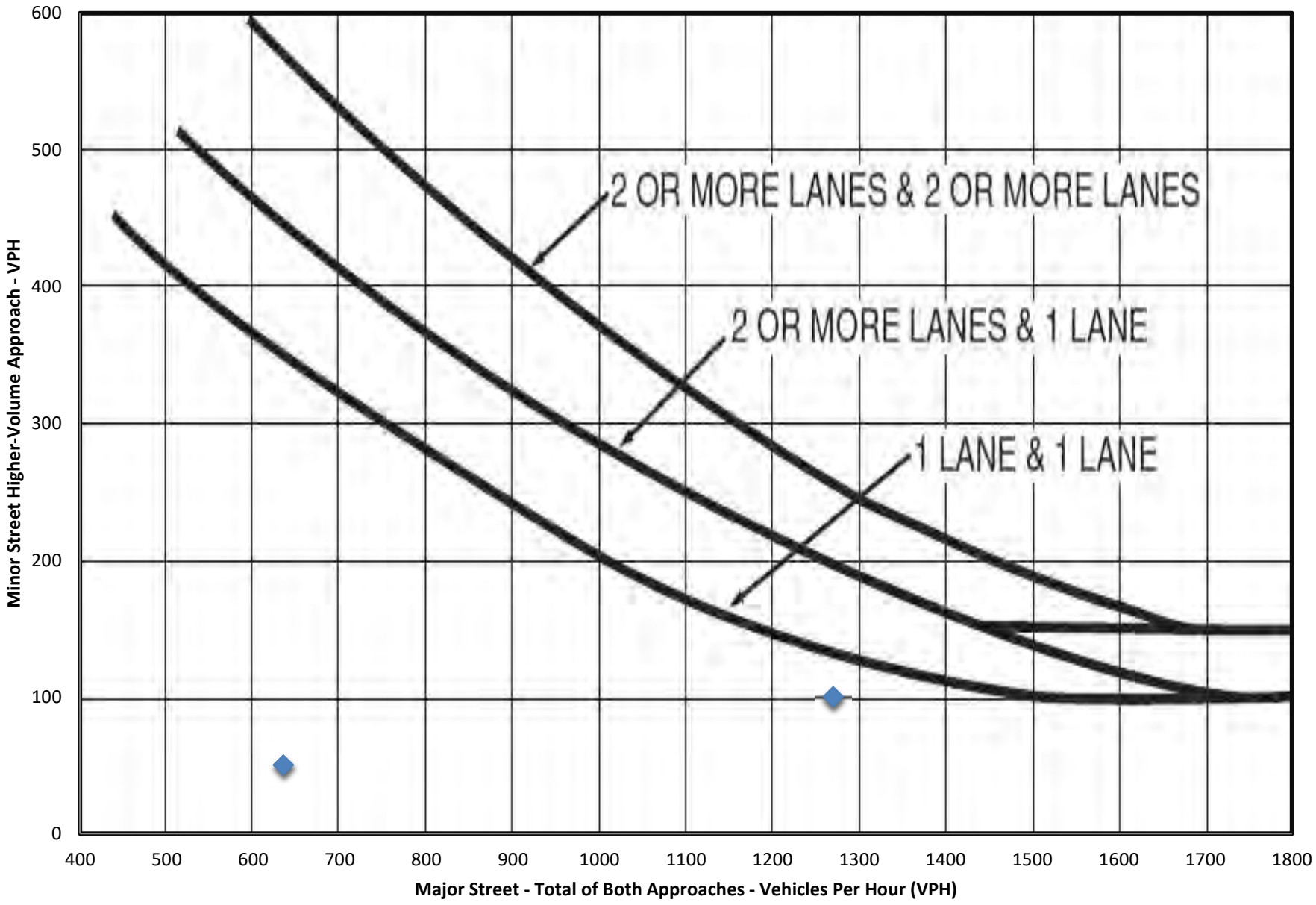
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	Yes
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
1

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	0	0	
7:00 AM	0	0	
7:15 AM	0	0	
7:30 AM	0	0	
7:45 AM	0	0	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	635	50	
3:30 PM	1270	100	
3:45 PM	1905	150	Met
4:00 PM	2540	200	Met
4:15 PM	1905	150	Met
4:30 PM	1270	100	
4:45 PM	635	50	
5:00 PM	0	0	
5:15 PM	0	0	
5:30 PM	0	0	
5:45 PM	0	0	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	2 or More Lanes

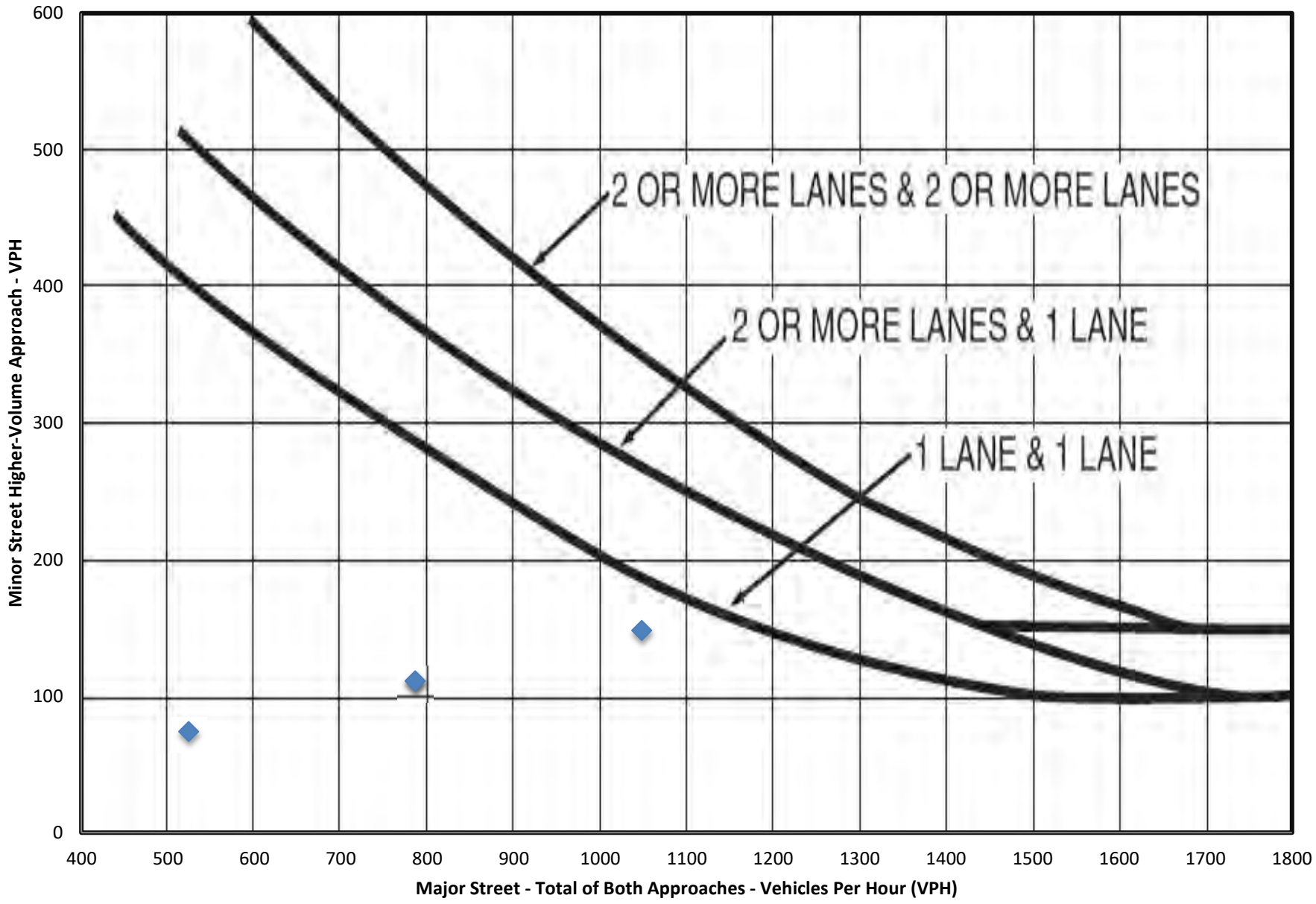
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	Yes
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
0

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	786	111	
7:00 AM	1048	148	
7:15 AM	786	111	
7:30 AM	524	74	
7:45 AM	262	37	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	0	0	
3:30 PM	0	0	
3:45 PM	0	0	
4:00 PM	0	0	
4:15 PM	0	0	
4:30 PM	0	0	
4:45 PM	0	0	
5:00 PM	0	0	
5:15 PM	0	0	
5:30 PM	0	0	
5:45 PM	0	0	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

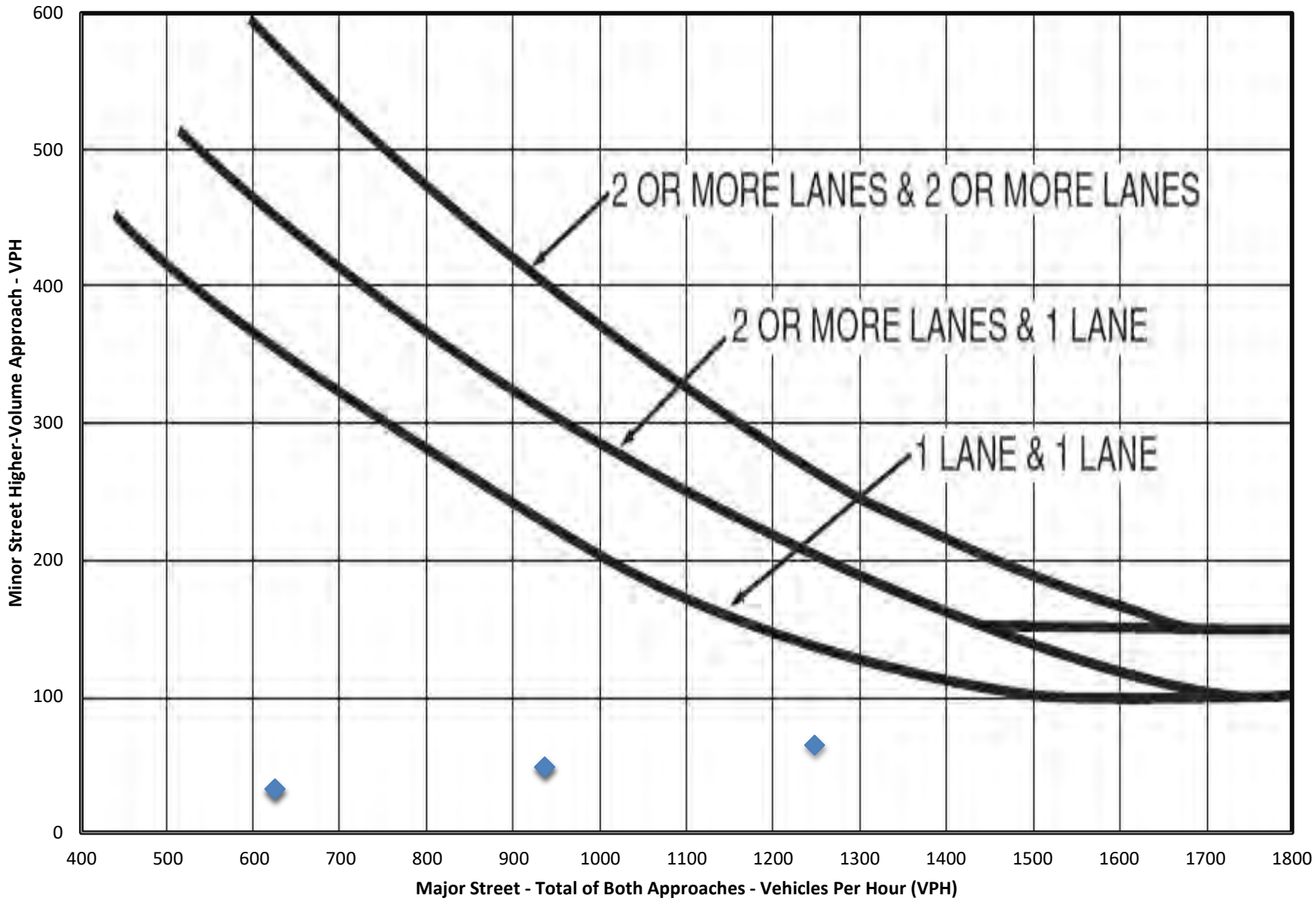
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	No
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	No
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
0

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	0	0	
7:00 AM	0	0	
7:15 AM	0	0	
7:30 AM	0	0	
7:45 AM	0	0	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	312	16	
3:30 PM	624	32	
3:45 PM	936	48	
4:00 PM	1248	64	
4:15 PM	936	48	
4:30 PM	624	32	
4:45 PM	312	16	
5:00 PM	0	0	
5:15 PM	0	0	
5:30 PM	0	0	
5:45 PM	0	0	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

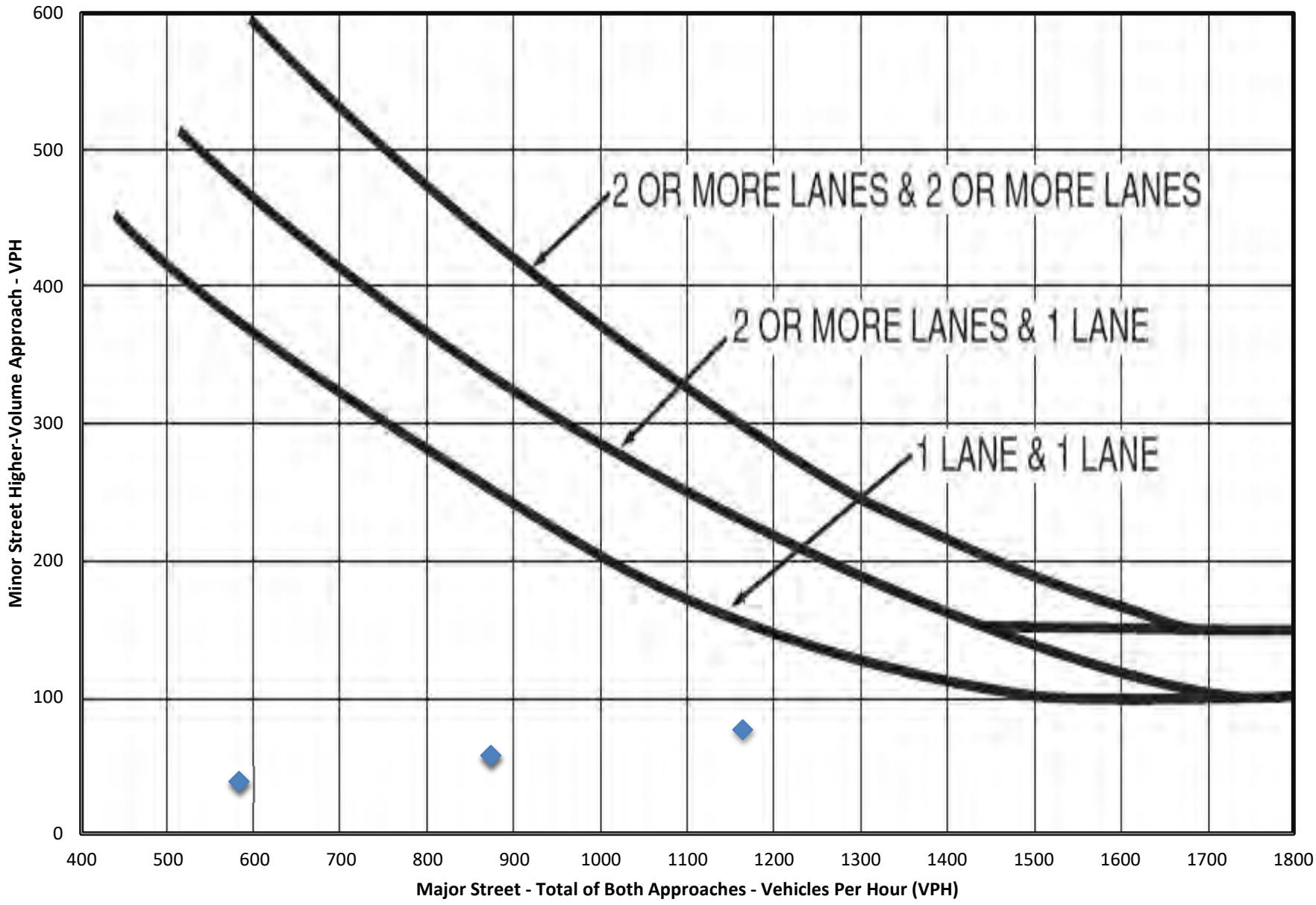
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	No
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	No
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
0

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	0	0	
7:00 AM	0	0	
7:15 AM	0	0	
7:30 AM	0	0	
7:45 AM	0	0	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	291	19	
3:30 PM	582	38	
3:45 PM	873	57	
4:00 PM	1164	76	
4:15 PM	873	57	
4:30 PM	582	38	
4:45 PM	291	19	
5:00 PM	0	0	
5:15 PM	0	0	
5:30 PM	0	0	
5:45 PM	0	0	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

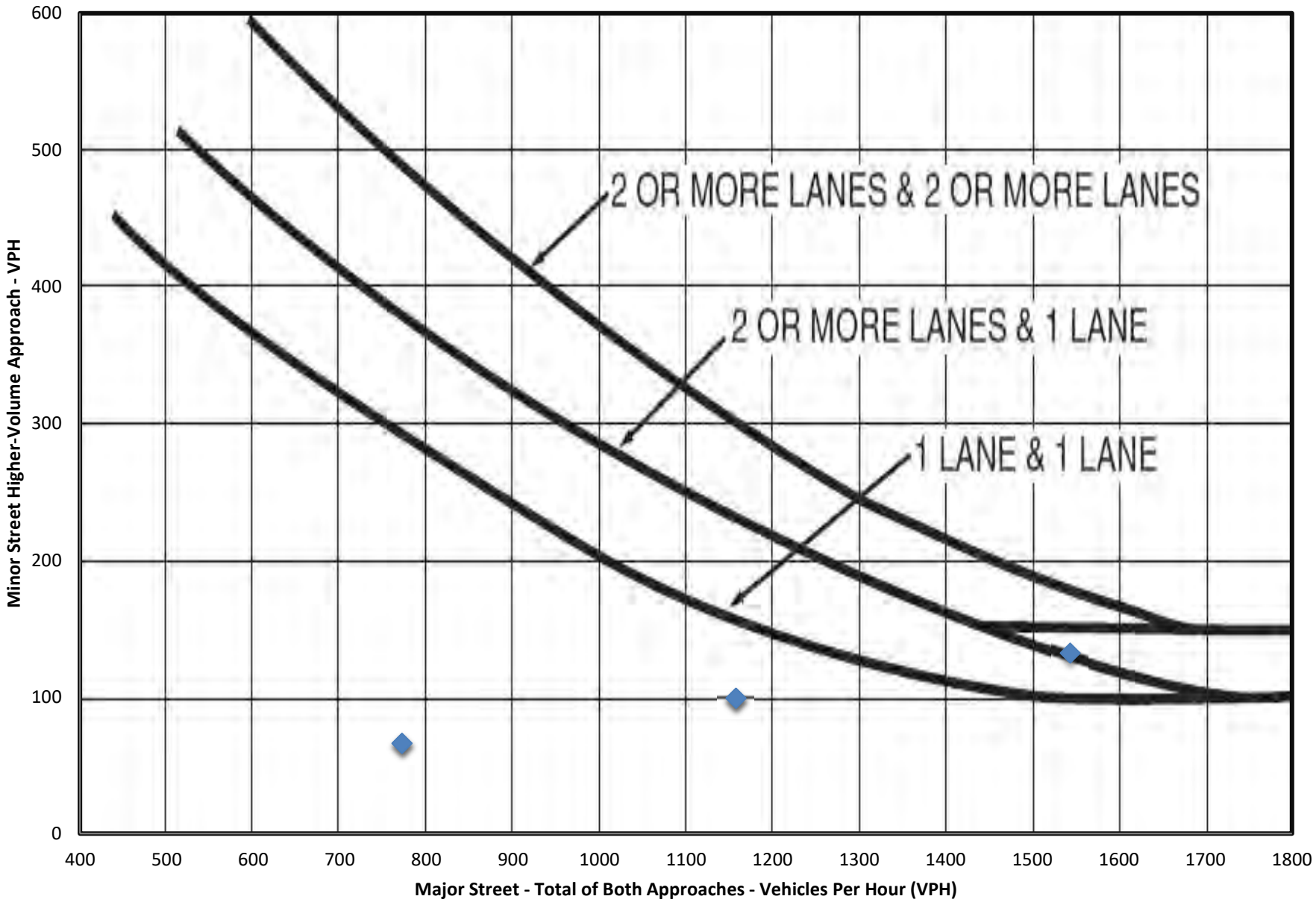
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	No
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
1

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	0	0	
7:00 AM	0	0	
7:15 AM	0	0	
7:30 AM	0	0	
7:45 AM	0	0	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	386	33	
3:30 PM	772	66	
3:45 PM	1158	99	
4:00 PM	1544	132	Met
4:15 PM	1158	99	
4:30 PM	772	66	
4:45 PM	386	33	
5:00 PM	0	0	
5:15 PM	0	0	
5:30 PM	0	0	
5:45 PM	0	0	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	2 or More Lanes

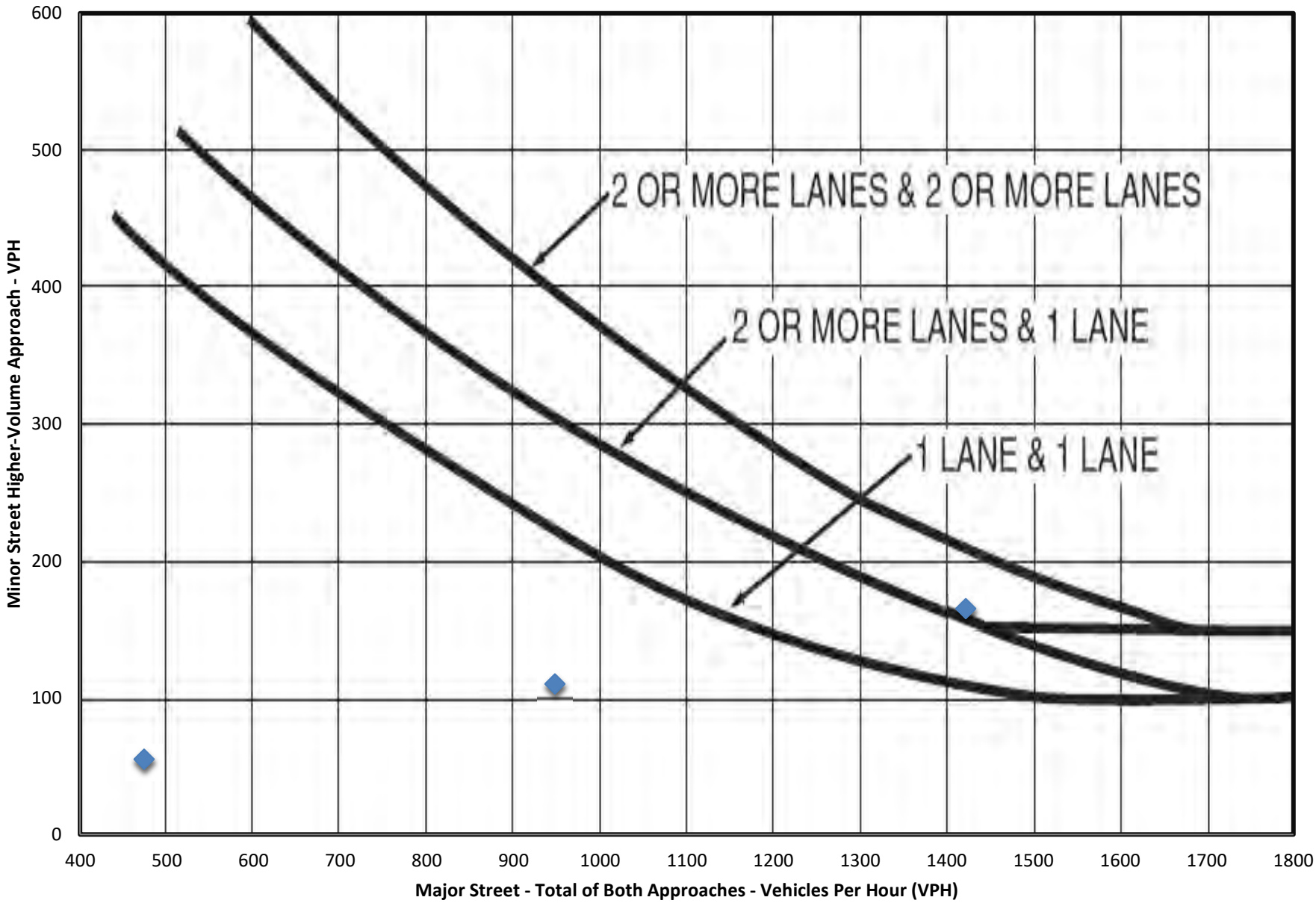
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	Yes
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
1

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	0	0	
7:00 AM	0	0	
7:15 AM	0	0	
7:30 AM	0	0	
7:45 AM	0	0	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	474	55	
3:30 PM	948	110	
3:45 PM	1422	165	
4:00 PM	1896	220	Met
4:15 PM	1422	165	
4:30 PM	948	110	
4:45 PM	474	55	
5:00 PM	0	0	
5:15 PM	0	0	
5:30 PM	0	0	
5:45 PM	0	0	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

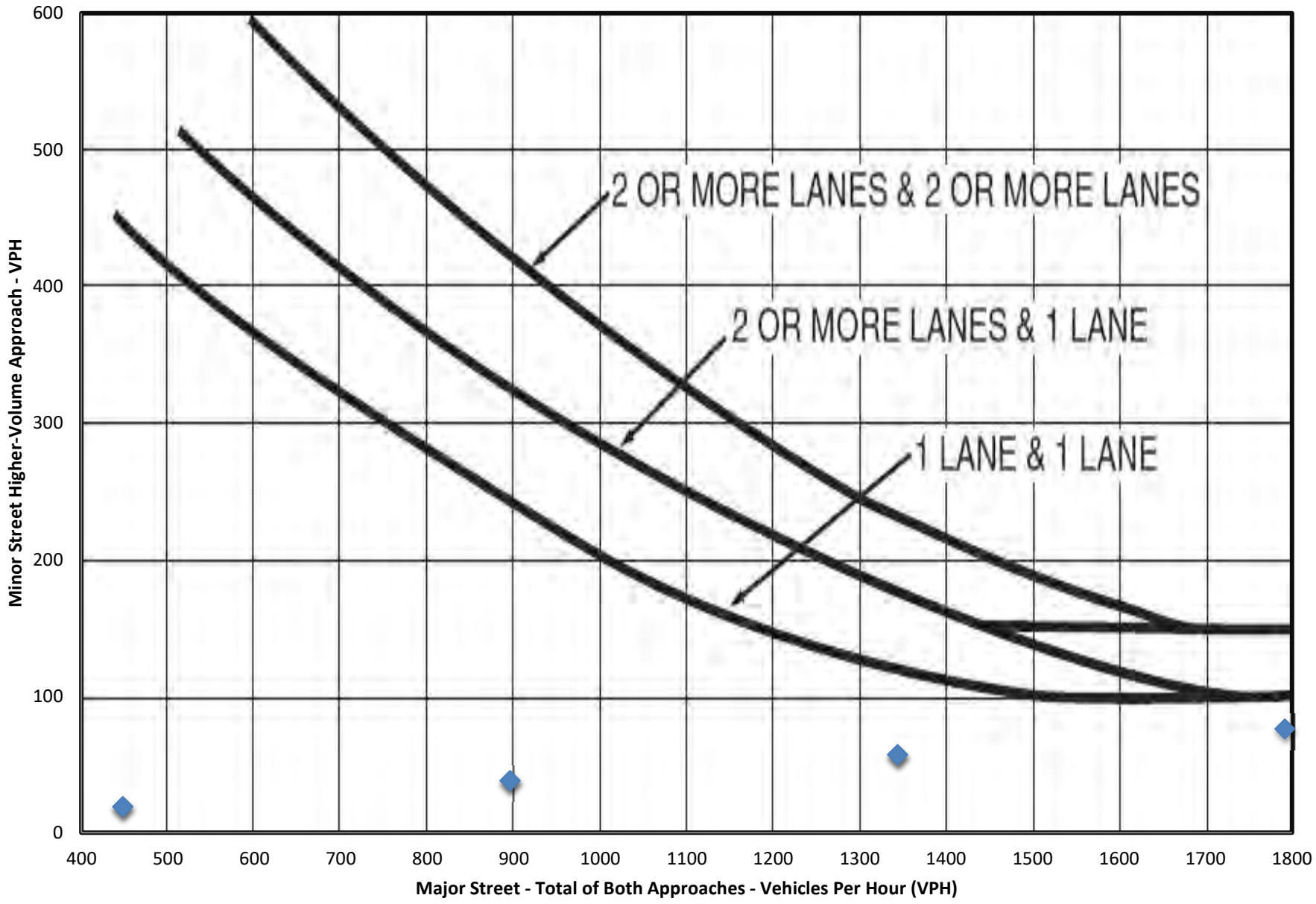
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	Yes
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	No
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	No
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-4
1

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	0	0	
7:00 AM	0	0	
7:15 AM	0	0	
7:30 AM	0	0	
7:45 AM	0	0	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	448	19	
3:30 PM	896	38	
3:45 PM	1344	57	
4:00 PM	1792	76	Met
4:15 PM	1344	57	
4:30 PM	896	38	
4:45 PM	448	19	
5:00 PM	0	0	
5:15 PM	0	0	
5:30 PM	0	0	
5:45 PM	0	0	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

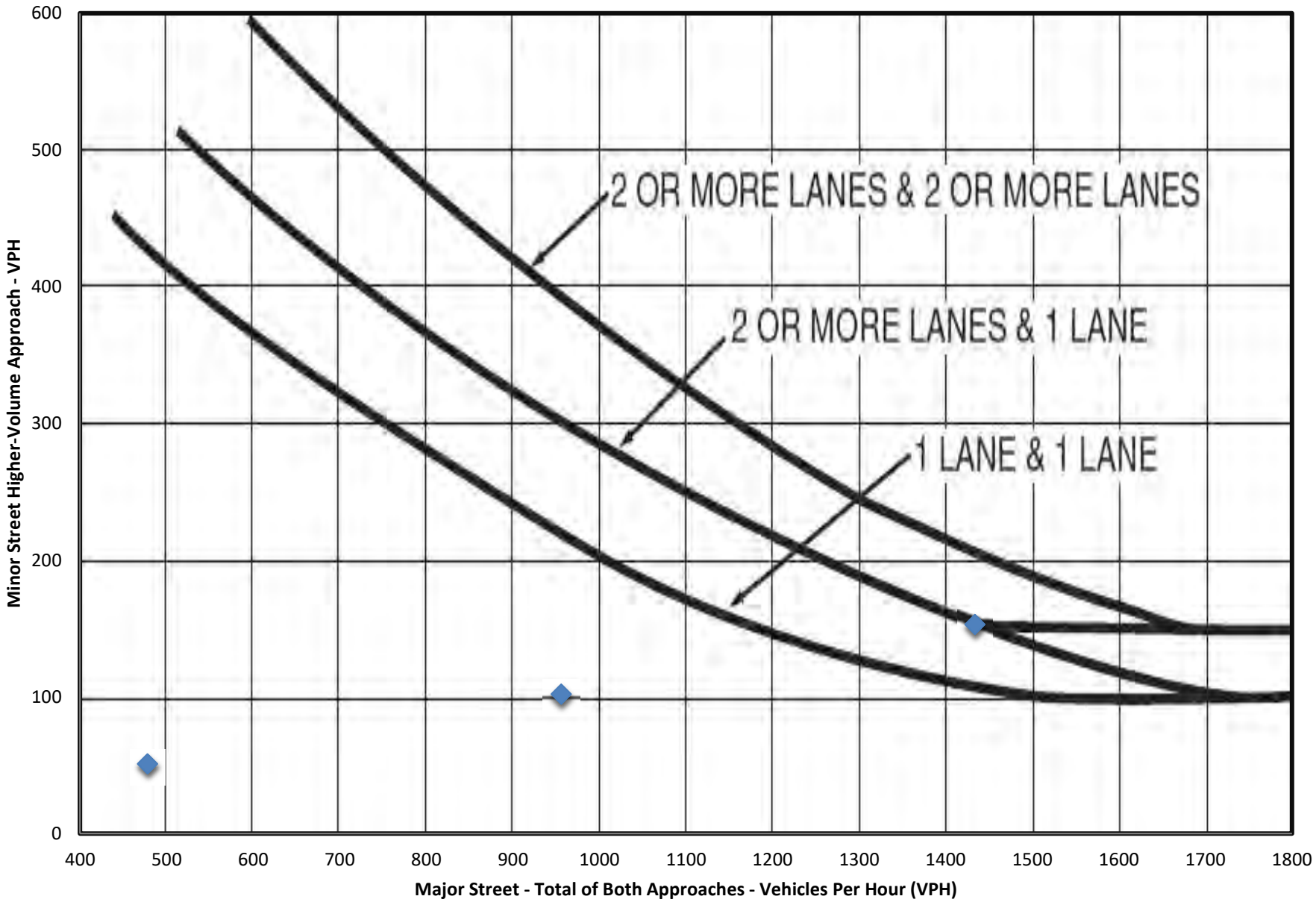
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	Yes
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
1

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	0	0	
7:00 AM	0	0	
7:15 AM	0	0	
7:30 AM	0	0	
7:45 AM	0	0	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	478	51	
3:30 PM	956	102	
3:45 PM	1434	153	
4:00 PM	1912	204	Met
4:15 PM	1434	153	
4:30 PM	956	102	
4:45 PM	478	51	
5:00 PM	0	0	
5:15 PM	0	0	
5:30 PM	0	0	
5:45 PM	0	0	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

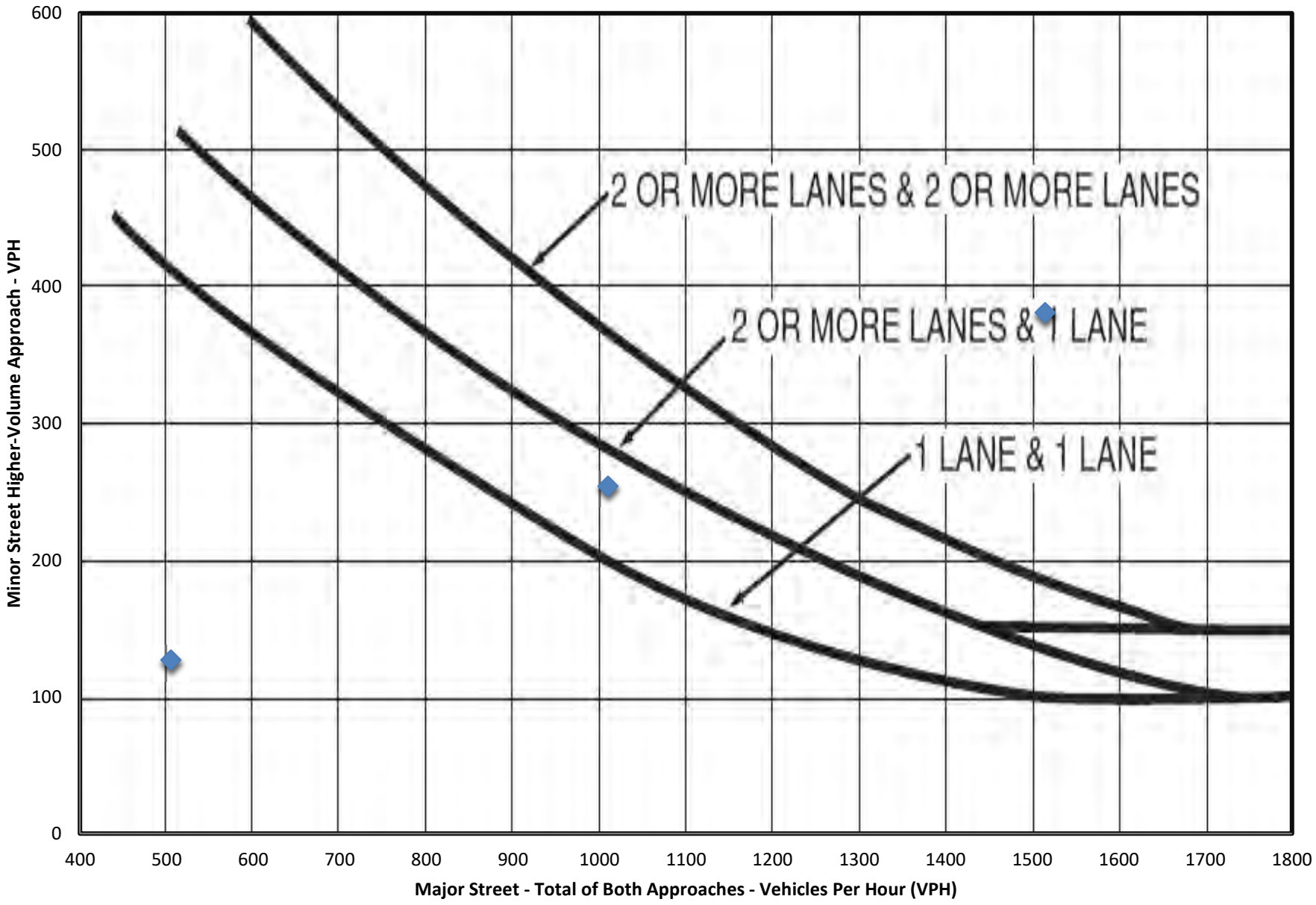
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	Yes
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
1

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	0	0	
7:00 AM	0	0	
7:15 AM	0	0	
7:30 AM	0	0	
7:45 AM	0	0	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	505	127	
3:30 PM	1010	254	
3:45 PM	1515	381	Met
4:00 PM	2020	508	Met
4:15 PM	1515	381	Met
4:30 PM	1010	254	
4:45 PM	505	127	
5:00 PM	0	0	
5:15 PM	0	0	
5:30 PM	0	0	
5:45 PM	0	0	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	2 or More Lanes

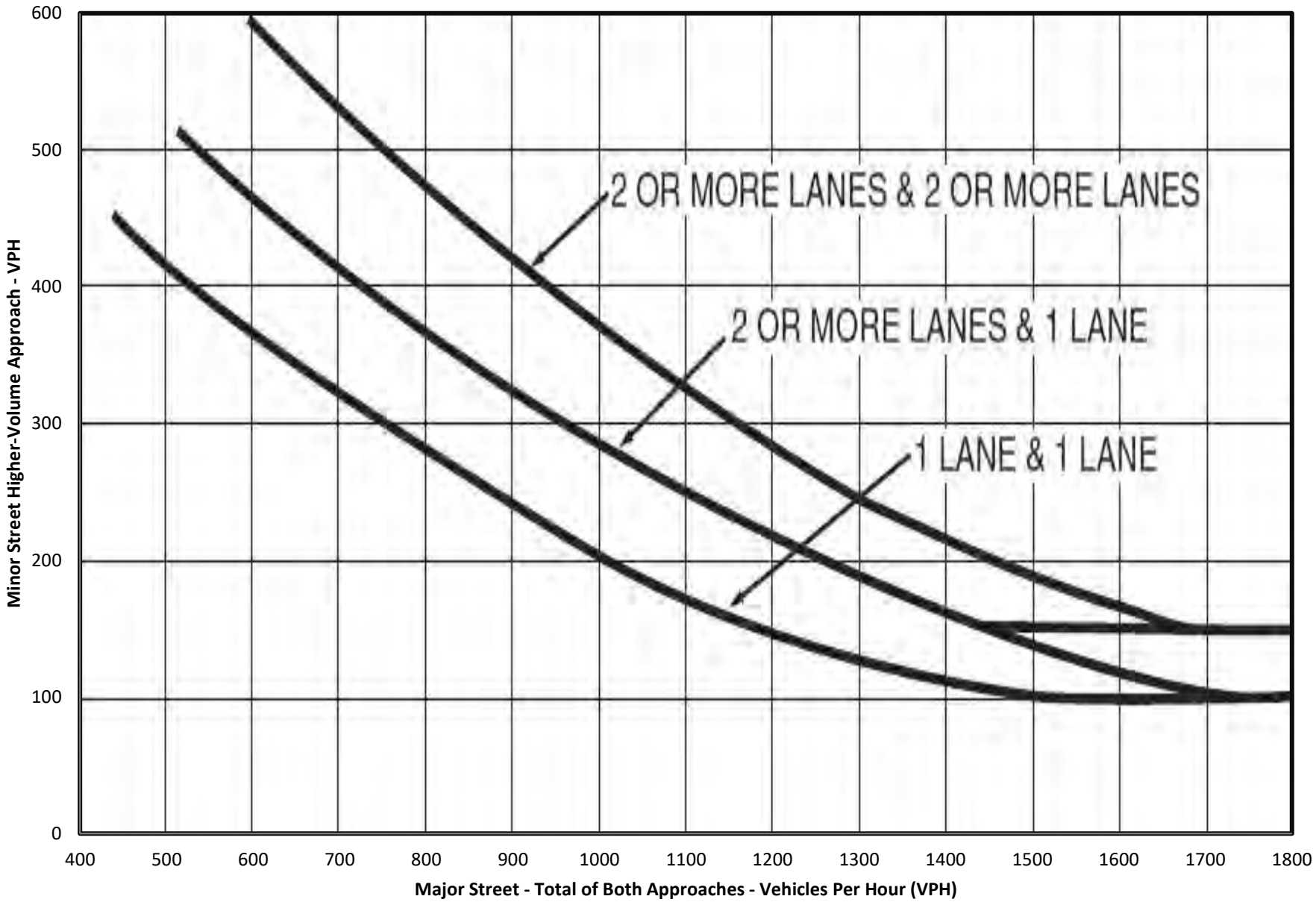
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	Yes
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
0

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	96	483	
7:00 AM	128	644	
7:15 AM	96	483	
7:30 AM	64	322	
7:45 AM	32	161	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	0	0	
3:30 PM	0	0	
3:45 PM	0	0	
4:00 PM	0	0	
4:15 PM	0	0	
4:30 PM	0	0	
4:45 PM	0	0	
5:00 PM	0	0	
5:15 PM	0	0	
5:30 PM	0	0	
5:45 PM	0	0	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	2 or More Lanes

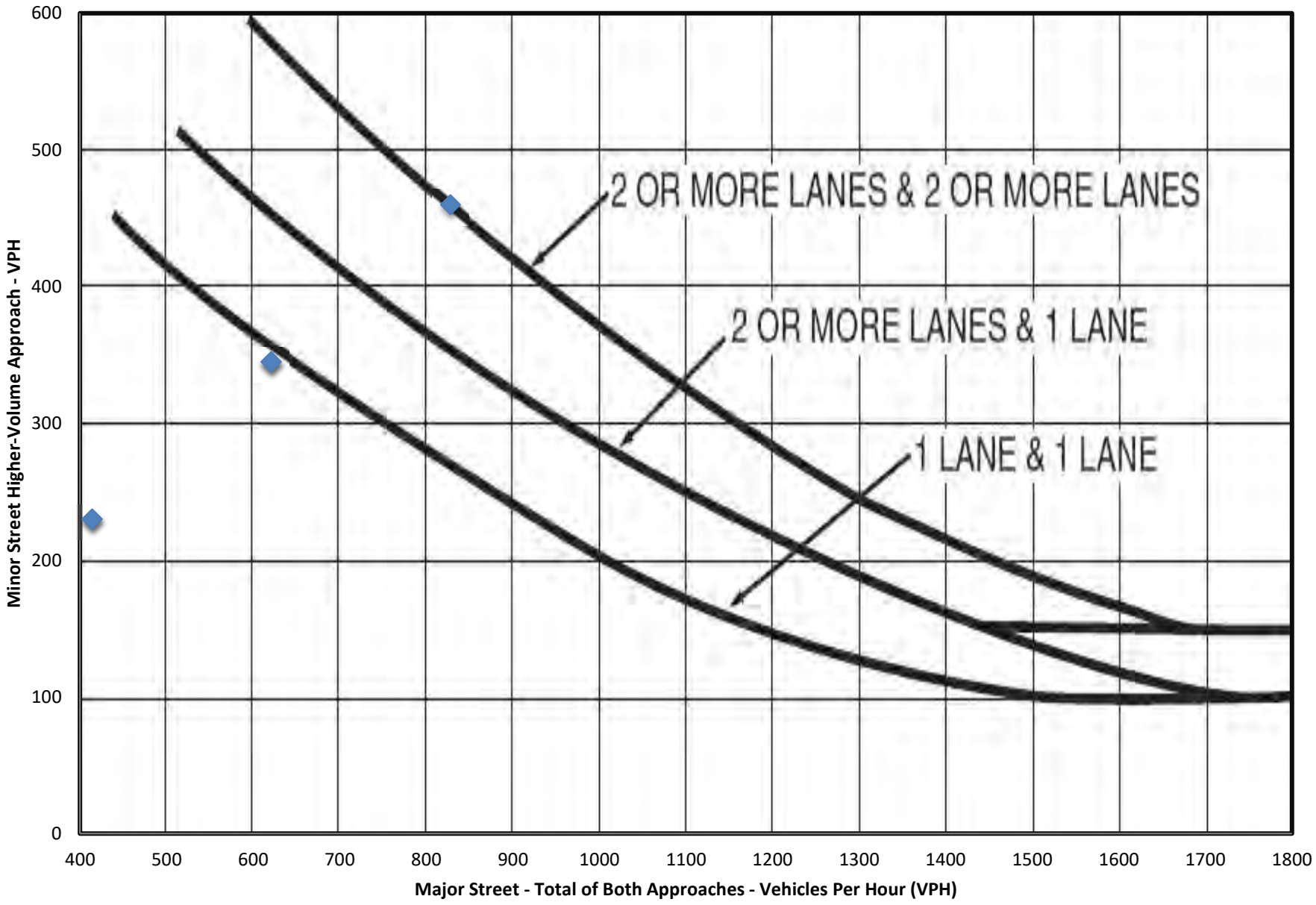
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	Yes
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
1

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	0	0	
7:00 AM	0	0	
7:15 AM	0	0	
7:30 AM	0	0	
7:45 AM	0	0	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	207	115	
3:30 PM	414	230	
3:45 PM	621	345	
4:00 PM	828	460	Met
4:15 PM	621	345	
4:30 PM	414	230	
4:45 PM	207	115	
5:00 PM	0	0	
5:15 PM	0	0	
5:30 PM	0	0	
5:45 PM	0	0	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	2 or More Lanes

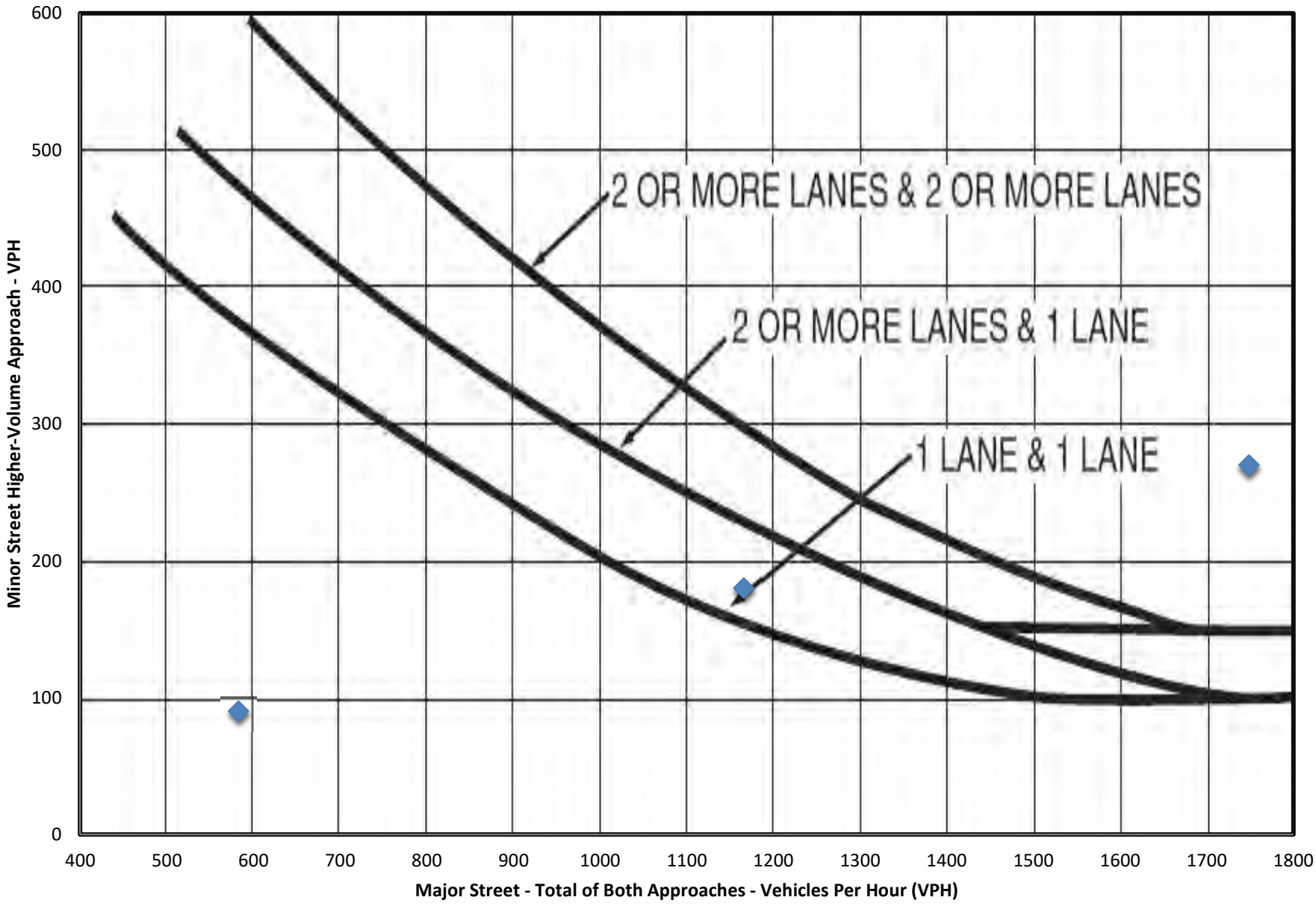
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	Yes
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
1

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	0	0	
7:00 AM	0	0	
7:15 AM	0	0	
7:30 AM	0	0	
7:45 AM	0	0	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	583	90	
3:30 PM	1166	180	
3:45 PM	1749	270	Met
4:00 PM	2332	360	Met
4:15 PM	1749	270	Met
4:30 PM	1166	180	
4:45 PM	583	90	
5:00 PM	0	0	
5:15 PM	0	0	
5:30 PM	0	0	
5:45 PM	0	0	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

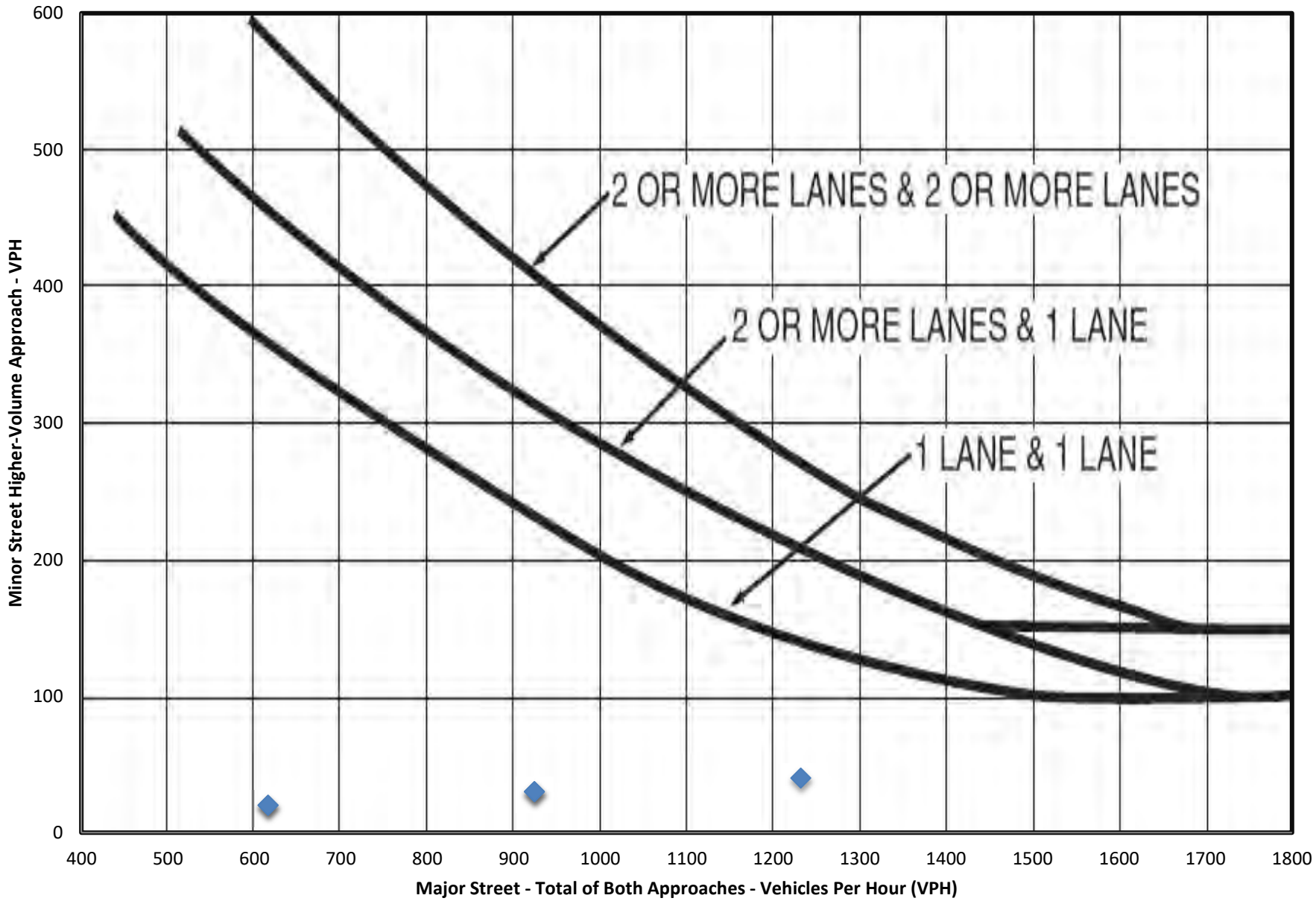
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	No
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	No
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-3
0

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	0	0	
7:00 AM	0	0	
7:15 AM	0	0	
7:30 AM	0	0	
7:45 AM	0	0	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	308	10	
3:30 PM	616	20	
3:45 PM	924	30	
4:00 PM	1232	40	
4:15 PM	924	30	
4:30 PM	616	20	
4:45 PM	308	10	
5:00 PM	0	0	
5:15 PM	0	0	
5:30 PM	0	0	
5:45 PM	0	0	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



MUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

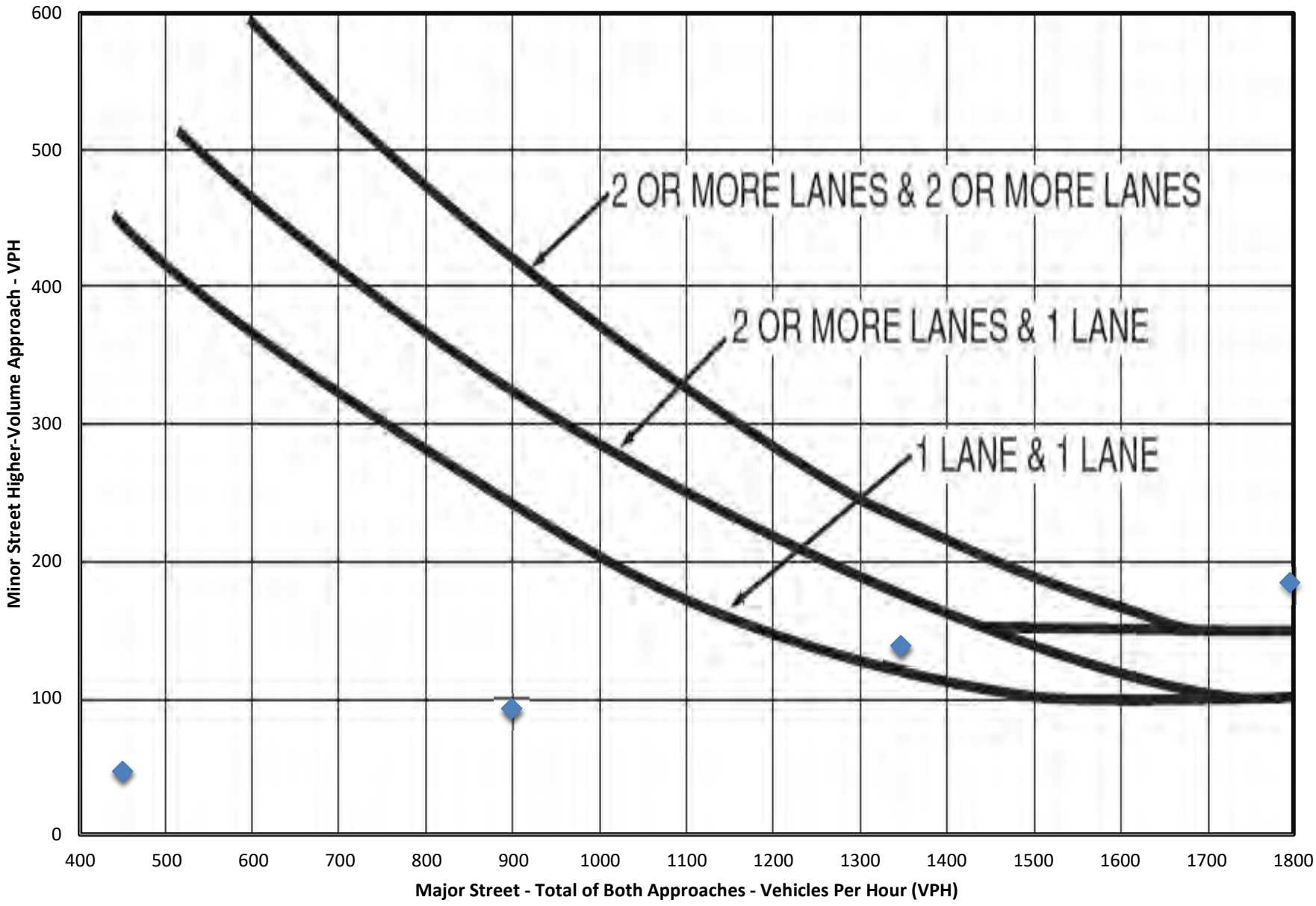
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	Yes
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	Yes
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-4
1

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
6:45 AM	0	0	
7:00 AM	0	0	
7:15 AM	0	0	
7:30 AM	0	0	
7:45 AM	0	0	
8:00 AM	0	0	
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	449	46	
3:30 PM	898	92	
3:45 PM	1347	138	Met
4:00 PM	1796	184	Met
4:15 PM	1347	138	Met
4:30 PM	898	92	
4:45 PM	449	46	
5:00 PM	0	0	
5:15 PM	0	0	
5:30 PM	0	0	
5:45 PM	0	0	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	

MUTCD Figure 4C-3. Warrant 3, Peak Hour



ATTACHMENT C: SIDRA REPORTS

FUTURE SCENARIO

MOVEMENT SUMMARY

Site: 169A [169. Carlo Dr & Cathedral Oaks Rd (Site Folder: 2050 Future AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Future AM Conditions
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Carlo Dr															
3	L2	All MCs	58	2.0	58	2.0	0.105	5.5	LOS A	0.4	10.8	0.53	0.43	0.53	25.2
8	T1	All MCs	4	2.0	4	2.0	0.105	5.5	LOS A	0.4	10.8	0.53	0.43	0.53	22.6
18	R2	All MCs	23	2.0	23	2.0	0.105	5.5	LOS A	0.4	10.8	0.53	0.43	0.53	25.4
Approach			85	2.0	85	2.0	0.105	5.5	LOS A	0.4	10.8	0.53	0.43	0.53	25.1
East: Cathedral Oaks Rd															
1	L2	All MCs	25	2.0	25	2.0	0.515	8.0	LOS A	4.0	102.7	0.33	0.13	0.33	25.2
6	T1	All MCs	614	2.0	614	2.0	0.515	8.0	LOS A	4.0	102.7	0.33	0.13	0.33	29.3
16	R2	All MCs	12	2.0	12	2.0	0.515	8.0	LOS A	4.0	102.7	0.33	0.13	0.33	25.4
Approach			651	2.0	651	2.0	0.515	8.0	LOS A	4.0	102.7	0.33	0.13	0.33	29.0
North: Carlo Dr															
7	L2	All MCs	11	2.0	11	2.0	0.027	5.9	LOS A	0.1	2.5	0.58	0.49	0.58	25.1
4	T1	All MCs	1	2.0	1	2.0	0.027	5.9	LOS A	0.1	2.5	0.58	0.49	0.58	22.5
14	R2	All MCs	5	2.0	5	2.0	0.027	5.9	LOS A	0.1	2.5	0.58	0.49	0.58	22.5
Approach			17	2.0	17	2.0	0.027	5.9	LOS A	0.1	2.5	0.58	0.49	0.58	24.1
West: Cathedral Oaks Rd															
5	L2	All MCs	3	2.0	3	2.0	0.445	6.6	LOS A	3.2	81.1	0.22	0.07	0.22	25.6
2	T1	All MCs	474	2.0	474	2.0	0.445	6.6	LOS A	3.2	81.1	0.22	0.07	0.22	29.8
12	R2	All MCs	103	2.0	103	2.0	0.445	6.6	LOS A	3.2	81.1	0.22	0.07	0.22	25.8
Approach			580	2.0	580	2.0	0.445	6.6	LOS A	3.2	81.1	0.22	0.07	0.22	29.0
All Vehicles			1334	2.0	1334	2.0	0.515	7.2	LOS A	4.0	102.7	0.30	0.12	0.30	28.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 282A [282. Calle Real & Carlo Dr (Site Folder: 2050 Future AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Future AM Conditions
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
East: Calle Real															
6	T1	All MCs	386	2.0	386	2.0	0.345	6.0	LOS A	2.1	52.2	0.29	0.12	0.29	33.0
16	R2	All MCs	43	2.0	43	2.0	0.345	6.0	LOS A	2.1	52.2	0.29	0.12	0.29	32.7
Approach			429	2.0	429	2.0	0.345	6.0	LOS A	2.1	52.2	0.29	0.12	0.29	32.9
North: Carlo Dr															
7	L2	All MCs	82	2.0	82	2.0	0.199	6.0	LOS A	0.9	22.5	0.52	0.38	0.52	31.4
14	R2	All MCs	98	2.0	98	2.0	0.199	6.0	LOS A	0.9	22.5	0.52	0.38	0.52	31.8
Approach			179	2.0	179	2.0	0.199	6.0	LOS A	0.9	22.5	0.52	0.38	0.52	31.6
West: Calle Real															
5	L2	All MCs	82	2.0	82	2.0	0.402	6.6	LOS A	2.6	65.9	0.31	0.13	0.31	31.7
2	T1	All MCs	418	2.0	418	2.0	0.402	6.6	LOS A	2.6	65.9	0.31	0.13	0.31	32.3
Approach			500	2.0	500	2.0	0.402	6.6	LOS A	2.6	65.9	0.31	0.13	0.31	32.2
All Vehicles			1109	2.0	1109	2.0	0.402	6.3	LOS A	2.6	65.9	0.34	0.17	0.34	32.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 506A [506. Cathedral Oaks 101 SB-Ramp (Site Folder: 2050 Future AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Future AM Conditions
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Cathedral Oaks Rd															
8	T1	All MCs	145	2.0	145	2.0	0.504	10.6	LOS B	3.7	94.4	0.69	0.62	0.89	25.4
18	R2	All MCs	299	2.0	299	2.0	0.504	10.6	LOS B	3.7	94.4	0.69	0.62	0.89	27.7
Approach			443	2.0	443	2.0	0.504	10.6	LOS B	3.7	94.4	0.69	0.62	0.89	26.9
North: Cathedral Oaks Rd															
7	L2	All MCs	343	2.0	343	2.0	0.513	5.2	LOS A	0.0	0.0	0.00	0.00	0.00	30.6
4	T1	All MCs	352	2.0	352	2.0	0.513	5.2	LOS A	0.0	0.0	0.00	0.00	0.00	28.1
Approach			696	2.0	696	2.0	0.513	5.2	LOS A	0.0	0.0	0.00	0.00	0.00	29.3
West: Cathedral Oaks Rd															
5	L2	All MCs	57	2.0	57	2.0	0.244	8.5	LOS A	1.0	25.5	0.65	0.58	0.65	27.6
2	T1	All MCs	7	2.0	7	2.0	0.244	8.5	LOS A	1.0	25.5	0.65	0.58	0.65	31.1
12	R2	All MCs	95	2.0	95	2.0	0.244	8.5	LOS A	1.0	25.5	0.65	0.58	0.65	27.8
Approach			158	2.0	158	2.0	0.244	8.5	LOS A	1.0	25.5	0.65	0.58	0.65	27.9
All Vehicles			1297	2.0	1297	2.0	0.513	7.5	LOS A	3.7	94.4	0.31	0.28	0.38	28.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: L:\All-DKS\SAC\P\24000\600s\24675-002 Goleta TO 2 Model and DIF Update\11 DIF Update\03 Analysis\SIDRA Analysis\Goleta RAB Analysis.sip9

MOVEMENT SUMMARY

Site: 512A [512. Hollister & Palo Alto Dr (1-lane RAB) (Site Folder: 2050 Future AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Future AM Conditions
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Palo Alto Dr															
3	L2	All MCs	22	2.0	22	2.0	0.052	4.7	LOS A	0.2	5.2	0.49	0.38	0.49	26.6
8	T1	All MCs	1	2.0	1	2.0	0.052	4.7	LOS A	0.2	5.2	0.49	0.38	0.49	22.9
18	R2	All MCs	22	2.0	22	2.0	0.052	4.7	LOS A	0.2	5.2	0.49	0.38	0.49	26.8
Approach			45	2.0	45	2.0	0.052	4.7	LOS A	0.2	5.2	0.49	0.38	0.49	26.6
East: Hollister Ave															
1	L2	All MCs	9	2.0	9	2.0	0.401	6.6	LOS A	2.6	65.9	0.30	0.12	0.30	26.6
6	T1	All MCs	468	2.0	468	2.0	0.401	6.6	LOS A	2.6	65.9	0.30	0.12	0.30	32.6
16	R2	All MCs	25	2.0	25	2.0	0.401	6.6	LOS A	2.6	65.9	0.30	0.12	0.30	26.8
Approach			502	2.0	502	2.0	0.401	6.6	LOS A	2.6	65.9	0.30	0.12	0.30	32.2
North: Palo Alto Dr															
7	L2	All MCs	8	2.0	8	2.0	0.014	4.6	LOS A	0.1	1.3	0.51	0.36	0.51	26.3
4	T1	All MCs	1	2.0	1	2.0	0.014	4.6	LOS A	0.1	1.3	0.51	0.36	0.51	22.8
14	R2	All MCs	2	2.0	2	2.0	0.014	4.6	LOS A	0.1	1.3	0.51	0.36	0.51	26.6
Approach			11	2.0	11	2.0	0.014	4.6	LOS A	0.1	1.3	0.51	0.36	0.51	26.0
West: Hollister Ave															
5	L2	All MCs	52	2.0	52	2.0	0.333	5.1	LOS A	2.0	51.6	0.12	0.03	0.12	26.9
2	T1	All MCs	378	2.0	378	2.0	0.333	5.1	LOS A	2.0	51.6	0.12	0.03	0.12	33.1
12	R2	All MCs	12	2.0	12	2.0	0.333	5.1	LOS A	2.0	51.6	0.12	0.03	0.12	27.1
Approach			442	2.0	442	2.0	0.333	5.1	LOS A	2.0	51.6	0.12	0.03	0.12	32.1
All Vehicles			1000	2.0	1000	2.0	0.401	5.8	LOS A	2.6	65.9	0.23	0.09	0.23	31.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 512A [512. Hollister & Palo Alto Dr (2-lane RAB) (Site Folder: 2050 Future AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Future AM Conditions
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Palo Alto Dr															
3	L2	All MCs	22	2.0	22	2.0	0.047	4.3	LOS A	0.2	4.2	0.43	0.32	0.43	26.9
8	T1	All MCs	1	2.0	1	2.0	0.047	4.3	LOS A	0.2	4.2	0.43	0.32	0.43	23.1
18	R2	All MCs	22	2.0	22	2.0	0.047	4.3	LOS A	0.2	4.2	0.43	0.32	0.43	27.2
Approach			45	2.0	45	2.0	0.047	4.3	LOS A	0.2	4.2	0.43	0.32	0.43	27.0
East: Hollister Ave															
1	L2	All MCs	9	2.0	9	2.0	0.198	4.5	LOS A	0.9	22.2	0.21	0.08	0.21	27.6
6	T1	All MCs	468	2.0	468	2.0	0.198	4.4	LOS A	0.9	22.2	0.20	0.08	0.20	34.2
16	R2	All MCs	25	2.0	25	2.0	0.198	4.4	LOS A	0.9	21.6	0.20	0.08	0.20	27.8
Approach			502	2.0	502	2.0	0.198	4.4	LOS A	0.9	22.2	0.20	0.08	0.20	33.7
North: Palo Alto Dr															
7	L2	All MCs	8	2.0	8	2.0	0.012	4.2	LOS A	0.0	1.0	0.44	0.31	0.44	26.7
4	T1	All MCs	1	2.0	1	2.0	0.012	4.2	LOS A	0.0	1.0	0.44	0.31	0.44	23.0
14	R2	All MCs	2	2.0	2	2.0	0.012	4.2	LOS A	0.0	1.0	0.44	0.31	0.44	26.9
Approach			11	2.0	11	2.0	0.012	4.2	LOS A	0.0	1.0	0.44	0.31	0.44	26.3
West: Hollister Ave															
5	L2	All MCs	52	2.0	52	2.0	0.165	3.9	LOS A	0.7	18.2	0.09	0.02	0.09	27.4
2	T1	All MCs	378	2.0	378	2.0	0.165	3.8	LOS A	0.7	18.2	0.08	0.02	0.08	34.3
12	R2	All MCs	12	2.0	12	2.0	0.165	3.7	LOS A	0.7	17.7	0.08	0.02	0.08	28.1
Approach			442	2.0	442	2.0	0.165	3.8	LOS A	0.7	18.2	0.08	0.02	0.08	33.1
All Vehicles			1000	2.0	1000	2.0	0.198	4.2	LOS A	0.9	22.2	0.16	0.07	0.16	33.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 518A [518. Hollister & Santa Felicia (1-lane RAB) (Site Folder: 2050 Future AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Future AM Conditions
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Santa Felicia Dr															
3	L2	All MCs	18	2.0	18	2.0	0.207	9.2	LOS A	0.8	20.4	0.67	0.64	0.67	25.6
8	T1	All MCs	3	2.0	3	2.0	0.207	9.2	LOS A	0.8	20.4	0.67	0.64	0.67	22.2
18	R2	All MCs	93	2.0	93	2.0	0.207	9.2	LOS A	0.8	20.4	0.67	0.64	0.67	25.8
Approach			115	2.0	115	2.0	0.207	9.2	LOS A	0.8	20.4	0.67	0.64	0.67	25.7
East: Hollister Ave															
1	L2	All MCs	127	2.0	127	2.0	0.622	8.9	LOS A	6.4	161.6	0.30	0.09	0.30	25.7
6	T1	All MCs	628	2.0	628	2.0	0.622	8.9	LOS A	6.4	161.6	0.30	0.09	0.30	31.3
16	R2	All MCs	57	2.0	57	2.0	0.622	8.9	LOS A	6.4	161.6	0.30	0.09	0.30	25.9
Approach			812	2.0	812	2.0	0.622	8.9	LOS A	6.4	161.6	0.30	0.09	0.30	29.8
North: Santa Felicia Dr															
7	L2	All MCs	20	2.0	20	2.0	0.046	6.6	LOS A	0.2	4.2	0.61	0.56	0.61	25.7
4	T1	All MCs	1	2.0	1	2.0	0.046	6.6	LOS A	0.2	4.2	0.61	0.56	0.61	22.3
14	R2	All MCs	7	2.0	7	2.0	0.046	6.6	LOS A	0.2	4.2	0.61	0.56	0.61	26.0
Approach			27	2.0	27	2.0	0.046	6.6	LOS A	0.2	4.2	0.61	0.56	0.61	25.6
West: Hollister Ave															
5	L2	All MCs	13	2.0	13	2.0	0.736	14.1	LOS B	10.5	267.1	0.75	0.45	0.85	24.4
2	T1	All MCs	805	2.0	805	2.0	0.736	14.1	LOS B	10.5	267.1	0.75	0.45	0.85	29.4
12	R2	All MCs	34	2.0	34	2.0	0.736	14.1	LOS B	10.5	267.1	0.75	0.45	0.85	24.6
Approach			852	2.0	852	2.0	0.736	14.1	LOS B	10.5	267.1	0.75	0.45	0.85	29.1
All Vehicles			1807	2.0	1807	2.0	0.736	11.4	LOS B	10.5	267.1	0.54	0.30	0.59	29.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 518A [518. Hollister & Santa Felicia (2-lane RAB) (Site Folder: 2050 Future AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Future AM Conditions
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Santa Felicia Dr															
3	L2	All MCs	18	2.0	18	2.0	0.176	7.5	LOS A	0.6	15.5	0.60	0.56	0.60	26.4
8	T1	All MCs	3	2.0	3	2.0	0.176	7.5	LOS A	0.6	15.5	0.60	0.56	0.60	22.7
18	R2	All MCs	93	2.0	93	2.0	0.176	7.5	LOS A	0.6	15.5	0.60	0.56	0.60	26.6
Approach			115	2.0	115	2.0	0.176	7.5	LOS A	0.6	15.5	0.60	0.56	0.60	26.5
East: Hollister Ave															
1	L2	All MCs	127	2.0	127	2.0	0.308	5.3	LOS A	1.6	40.5	0.15	0.05	0.15	26.9
6	T1	All MCs	628	2.0	628	2.0	0.308	5.2	LOS A	1.6	40.5	0.15	0.04	0.15	33.5
16	R2	All MCs	57	2.0	57	2.0	0.308	5.1	LOS A	1.5	39.3	0.15	0.04	0.15	27.6
Approach			812	2.0	812	2.0	0.308	5.2	LOS A	1.6	40.5	0.15	0.04	0.15	31.8
North: Santa Felicia Dr															
7	L2	All MCs	20	2.0	20	2.0	0.039	5.6	LOS A	0.1	3.3	0.54	0.48	0.54	26.2
4	T1	All MCs	1	2.0	1	2.0	0.039	5.6	LOS A	0.1	3.3	0.54	0.48	0.54	22.6
14	R2	All MCs	7	2.0	7	2.0	0.039	5.6	LOS A	0.1	3.3	0.54	0.48	0.54	26.4
Approach			27	2.0	27	2.0	0.039	5.6	LOS A	0.1	3.3	0.54	0.48	0.54	26.1
West: Hollister Ave															
5	L2	All MCs	13	2.0	13	2.0	0.359	6.6	LOS A	1.9	47.5	0.36	0.19	0.36	26.9
2	T1	All MCs	805	2.0	805	2.0	0.359	6.4	LOS A	1.9	47.5	0.35	0.18	0.35	33.2
12	R2	All MCs	34	2.0	34	2.0	0.359	6.3	LOS A	1.8	46.4	0.34	0.18	0.34	27.2
Approach			852	2.0	852	2.0	0.359	6.4	LOS A	1.9	47.5	0.35	0.18	0.35	32.8
All Vehicles			1807	2.0	1807	2.0	0.359	5.9	LOS A	1.9	47.5	0.28	0.15	0.28	31.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 526A [526. Cremona Dr & Hollister Ave (1-lane RAB) (Site Folder: 2050 Future AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Future AM Conditions
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
East: Hollister Ave															
6	T1	All MCs	668	2.0	668	2.0	0.570	8.6	LOS A	5.1	128.5	0.34	0.12	0.34	33.8
16	R2	All MCs	62	2.0	62	2.0	0.570	8.6	LOS A	5.1	128.5	0.34	0.12	0.34	26.9
Approach			730	2.0	730	2.0	0.570	8.6	LOS A	5.1	128.5	0.34	0.12	0.34	33.1
North: Cremona Dr															
7	L2	All MCs	21	2.0	21	2.0	0.067	6.1	LOS A	0.3	6.4	0.59	0.52	0.59	26.8
14	R2	All MCs	24	2.0	24	2.0	0.067	6.1	LOS A	0.3	6.4	0.59	0.52	0.59	27.0
Approach			45	2.0	45	2.0	0.067	6.1	LOS A	0.3	6.4	0.59	0.52	0.59	26.9
West: Hollister Ave															
5	L2	All MCs	53	2.0	53	2.0	0.439	6.2	LOS A	3.2	80.2	0.16	0.04	0.16	27.4
2	T1	All MCs	528	2.0	528	2.0	0.439	6.2	LOS A	3.2	80.2	0.16	0.04	0.16	34.9
Approach			582	2.0	582	2.0	0.439	6.2	LOS A	3.2	80.2	0.16	0.04	0.16	34.0
All Vehicles			1357	2.0	1357	2.0	0.570	7.5	LOS A	5.1	128.5	0.27	0.10	0.27	33.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 526A [526. Cremona Dr & Hollister Ave (2-lane RAB) (Site Folder: 2050 Future AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Future AM Conditions
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
East: Hollister Ave															
6	T1	All MCs	668	2.0	668	2.0	0.503	7.5	LOS A	3.4	86.4	0.25	0.09	0.25	35.0
16	R2	All MCs	62	2.0	62	2.0	0.049	3.2	LOS A	0.2	4.7	0.15	0.05	0.15	28.9
Approach			730	2.0	730	2.0	0.503	7.1	LOS A	3.4	86.4	0.24	0.08	0.24	34.4
North: Cremona Dr															
7	L2	All MCs	21	2.0	21	2.0	0.058	5.3	LOS A	0.2	5.0	0.52	0.45	0.52	27.3
14	R2	All MCs	24	2.0	24	2.0	0.058	5.3	LOS A	0.2	5.0	0.52	0.45	0.52	27.6
Approach			45	2.0	45	2.0	0.058	5.3	LOS A	0.2	5.0	0.52	0.45	0.52	27.4
West: Hollister Ave															
5	L2	All MCs	53	2.0	53	2.0	0.218	4.3	LOS A	1.0	25.6	0.10	0.02	0.10	28.2
2	T1	All MCs	528	2.0	528	2.0	0.218	4.2	LOS A	1.0	25.6	0.10	0.02	0.10	36.6
Approach			582	2.0	582	2.0	0.218	4.2	LOS A	1.0	25.6	0.10	0.02	0.10	35.6
All Vehicles			1357	2.0	1357	2.0	0.503	5.8	LOS A	3.4	86.4	0.19	0.07	0.19	34.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 553A [553. Storke & Santa Felicia (1-lane RAB) (Site Folder: 2050 Future AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Future AM Conditions
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Storke Rd															
3	L2	All MCs	54	2.0	54	2.0	0.656	9.9	LOS A	7.2	181.9	0.38	0.12	0.38	25.6
8	T1	All MCs	792	2.0	792	2.0	0.656	9.9	LOS A	7.2	181.9	0.38	0.12	0.38	31.0
Approach			847	2.0	847	2.0	0.656	9.9	LOS A	7.2	181.9	0.38	0.12	0.38	30.6
North: Storke Rd															
4	T1	All MCs	593	2.0	593	2.0	0.497	7.6	LOS A	3.8	97.2	0.29	0.10	0.29	32.2
14	R2	All MCs	42	2.0	42	2.0	0.497	7.6	LOS A	3.8	97.2	0.29	0.10	0.29	26.5
Approach			636	2.0	636	2.0	0.497	7.6	LOS A	3.8	97.2	0.29	0.10	0.29	31.8
West: Santa Felicia Dr															
5	L2	All MCs	46	2.0	46	2.0	0.116	6.2	LOS A	0.5	11.6	0.58	0.49	0.58	26.0
12	R2	All MCs	38	2.0	38	2.0	0.116	6.2	LOS A	0.5	11.6	0.58	0.49	0.58	26.3
Approach			84	2.0	84	2.0	0.116	6.2	LOS A	0.5	11.6	0.58	0.49	0.58	26.1
All Vehicles			1566	2.0	1566	2.0	0.656	8.8	LOS A	7.2	181.9	0.35	0.14	0.35	30.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 553A [553. Storke & Santa Felicia (2-lane RAB) (Site Folder: 2050 Future AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Future AM Conditions
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Storke Rd															
3	L2	All MCs	54	2.0	54	2.0	0.325	5.6	LOS A	1.7	43.4	0.18	0.06	0.18	27.1
8	T1	All MCs	792	2.0	792	2.0	0.325	5.5	LOS A	1.7	43.4	0.18	0.06	0.18	33.6
Approach			847	2.0	847	2.0	0.325	5.5	LOS A	1.7	43.4	0.18	0.06	0.18	33.1
North: Storke Rd															
4	T1	All MCs	593	2.0	593	2.0	0.246	4.8	LOS A	1.2	29.5	0.18	0.06	0.18	34.1
14	R2	All MCs	42	2.0	42	2.0	0.246	4.7	LOS A	1.1	28.7	0.17	0.06	0.17	27.7
Approach			636	2.0	636	2.0	0.246	4.8	LOS A	1.2	29.5	0.18	0.06	0.18	33.6
West: Santa Felicia Dr															
5	L2	All MCs	46	2.0	46	2.0	0.102	5.4	LOS A	0.4	9.1	0.51	0.43	0.51	26.5
12	R2	All MCs	38	2.0	38	2.0	0.102	5.4	LOS A	0.4	9.1	0.51	0.43	0.51	26.7
Approach			84	2.0	84	2.0	0.102	5.4	LOS A	0.4	9.1	0.51	0.43	0.51	26.6
All Vehicles			1566	2.0	1566	2.0	0.325	5.2	LOS A	1.7	43.4	0.20	0.08	0.20	32.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 636A [636. Hollister & Cathedral Oaks (Site Folder: 2050 Future AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Future AM Conditions
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
East: Hollister Ave															
6	T1	All MCs	45	2.0	45	2.0	0.347	5.6	LOS A	2.1	54.2	0.18	0.05	0.18	34.2
16	R2	All MCs	408	2.0	408	2.0	0.347	5.6	LOS A	2.1	54.2	0.18	0.05	0.18	29.5
Approach			452	2.0	452	2.0	0.347	5.6	LOS A	2.1	54.2	0.18	0.05	0.18	29.9
North: Cathedral Oaks Rd															
7	L2	All MCs	352	2.0	352	2.0	0.351	5.7	LOS A	2.2	55.0	0.21	0.07	0.21	28.0
14	R2	All MCs	102	2.0	102	2.0	0.351	5.7	LOS A	2.2	55.0	0.21	0.07	0.21	29.0
Approach			454	2.0	454	2.0	0.351	5.7	LOS A	2.2	55.0	0.21	0.07	0.21	28.2
West: Hollister Ave															
5	L2	All MCs	36	2.0	36	2.0	0.073	4.5	LOS A	0.3	7.6	0.45	0.32	0.45	29.7
2	T1	All MCs	33	2.0	33	2.0	0.073	4.5	LOS A	0.3	7.6	0.45	0.32	0.45	33.7
Approach			68	2.0	68	2.0	0.073	4.5	LOS A	0.3	7.6	0.45	0.32	0.45	31.5
All Vehicles			975	2.0	975	2.0	0.351	5.6	LOS A	2.2	55.0	0.22	0.08	0.22	29.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 856A [856. Hollister & Cortona (1-lane RAB) (Site Folder: 2050 Future AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Future AM Conditions
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Commercial Dwy															
3	L2	All MCs	59	2.0	59	2.0	0.202	11.8	LOS B	0.7	18.3	0.73	0.73	0.73	24.3
8	T1	All MCs	9	2.0	9	2.0	0.202	11.8	LOS B	0.7	18.3	0.73	0.73	0.73	21.2
18	R2	All MCs	16	2.0	16	2.0	0.202	11.8	LOS B	0.7	18.3	0.73	0.73	0.73	24.5
Approach			84	2.0	84	2.0	0.202	11.8	LOS B	0.7	18.3	0.73	0.73	0.73	24.0
East: Hollister Ave															
1	L2	All MCs	15	2.0	15	2.0	0.549	10.8	LOS B	4.7	118.4	0.68	0.54	0.85	25.4
6	T1	All MCs	482	2.0	482	2.0	0.549	10.8	LOS B	4.7	118.4	0.68	0.54	0.85	30.8
16	R2	All MCs	34	2.0	34	2.0	0.549	10.8	LOS B	4.7	118.4	0.68	0.54	0.85	25.5
Approach			530	2.0	530	2.0	0.549	10.8	LOS B	4.7	118.4	0.68	0.54	0.85	30.2
North: Cortona Dr															
7	L2	All MCs	21	2.0	21	2.0	0.169	6.6	LOS A	0.7	17.7	0.58	0.48	0.58	26.4
4	T1	All MCs	1	2.0	1	2.0	0.169	6.6	LOS A	0.7	17.7	0.58	0.48	0.58	22.7
14	R2	All MCs	105	2.0	105	2.0	0.169	6.6	LOS A	0.7	17.7	0.58	0.48	0.58	26.6
Approach			127	2.0	127	2.0	0.169	6.6	LOS A	0.7	17.7	0.58	0.48	0.58	26.6
West: Hollister Ave															
5	L2	All MCs	251	2.0	251	2.0	0.903	17.0	LOS C	28.1	714.1	0.95	0.29	0.95	23.5
2	T1	All MCs	839	2.0	839	2.0	0.903	17.0	LOS C	28.1	714.1	0.95	0.29	0.95	28.1
12	R2	All MCs	86	2.0	86	2.0	0.903	17.0	LOS C	28.1	714.1	0.95	0.29	0.95	23.6
Approach			1176	2.0	1176	2.0	0.903	17.0	LOS C	28.1	714.1	0.95	0.29	0.95	26.6
All Vehicles			1917	2.0	1917	2.0	0.903	14.3	LOS B	28.1	714.1	0.84	0.39	0.89	27.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 856A [856. Hollister & Cortona (2-lane RAB) (Site Folder: 2050 Future AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Future AM Conditions
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Commercial Dwy															
3	L2	All MCs	59	2.0	59	2.0	0.164	9.3	LOS A	0.5	13.5	0.66	0.66	0.66	25.2
8	T1	All MCs	9	2.0	9	2.0	0.164	9.3	LOS A	0.5	13.5	0.66	0.66	0.66	21.9
18	R2	All MCs	16	2.0	16	2.0	0.164	9.3	LOS A	0.5	13.5	0.66	0.66	0.66	25.4
Approach			84	2.0	84	2.0	0.164	9.3	LOS A	0.5	13.5	0.66	0.66	0.66	24.8
East: Hollister Ave															
1	L2	All MCs	15	2.0	15	2.0	0.262	6.3	LOS A	1.1	28.9	0.46	0.32	0.46	27.0
6	T1	All MCs	482	2.0	482	2.0	0.262	6.1	LOS A	1.1	28.9	0.45	0.31	0.45	33.3
16	R2	All MCs	34	2.0	34	2.0	0.262	5.9	LOS A	1.1	28.3	0.44	0.30	0.44	27.3
Approach			530	2.0	530	2.0	0.262	6.1	LOS A	1.1	28.9	0.45	0.31	0.45	32.7
North: Cortona Dr															
7	L2	All MCs	21	2.0	21	2.0	0.150	5.7	LOS A	0.5	13.9	0.51	0.42	0.51	26.9
4	T1	All MCs	1	2.0	1	2.0	0.150	5.7	LOS A	0.5	13.9	0.51	0.42	0.51	23.1
14	R2	All MCs	105	2.0	105	2.0	0.150	5.7	LOS A	0.5	13.9	0.51	0.42	0.51	27.2
Approach			127	2.0	127	2.0	0.150	5.7	LOS A	0.5	13.9	0.51	0.42	0.51	27.1
West: Hollister Ave															
5	L2	All MCs	251	2.0	251	2.0	0.448	6.8	LOS A	2.9	72.6	0.20	0.06	0.20	26.2
2	T1	All MCs	839	2.0	839	2.0	0.448	6.6	LOS A	2.9	72.6	0.19	0.06	0.19	32.7
12	R2	All MCs	86	2.0	86	2.0	0.448	6.5	LOS A	2.8	70.6	0.19	0.06	0.19	27.1
Approach			1176	2.0	1176	2.0	0.448	6.6	LOS A	2.9	72.6	0.19	0.06	0.19	30.6
All Vehicles			1917	2.0	1917	2.0	0.448	6.5	LOS A	2.9	72.6	0.31	0.18	0.31	30.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 1141A [1141. Sperling Preserve/Ellwood Dwy & Hollister Ave (Site Folder: 2050 Future AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Future AM Conditions
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Sperling Preserve Dwy															
3	L2	All MCs	3	2.0	3	2.0	0.025	4.7	LOS A	0.1	2.4	0.51	0.38	0.51	27.0
8	T1	All MCs	1	2.0	1	2.0	0.025	4.7	LOS A	0.1	2.4	0.51	0.38	0.51	23.2
18	R2	All MCs	15	2.0	15	2.0	0.025	4.7	LOS A	0.1	2.4	0.51	0.38	0.51	27.2
Approach			20	2.0	20	2.0	0.025	4.7	LOS A	0.1	2.4	0.51	0.38	0.51	26.9
East: Hollister Ave															
1	L2	All MCs	21	2.0	21	2.0	0.458	7.4	LOS A	3.2	81.1	0.35	0.15	0.35	26.3
6	T1	All MCs	363	2.0	363	2.0	0.458	7.4	LOS A	3.2	81.1	0.35	0.15	0.35	32.2
16	R2	All MCs	182	2.0	182	2.0	0.458	7.4	LOS A	3.2	81.1	0.35	0.15	0.35	26.5
Approach			565	2.0	565	2.0	0.458	7.4	LOS A	3.2	81.1	0.35	0.15	0.35	29.9
North: Ellwood School Dwy															
7	L2	All MCs	102	2.0	102	2.0	0.203	6.0	LOS A	0.9	23.0	0.52	0.38	0.52	26.1
4	T1	All MCs	3	2.0	3	2.0	0.203	6.0	LOS A	0.9	23.0	0.52	0.38	0.52	22.5
14	R2	All MCs	77	2.0	77	2.0	0.203	6.0	LOS A	0.9	23.0	0.52	0.38	0.52	26.3
Approach			183	2.0	183	2.0	0.203	6.0	LOS A	0.9	23.0	0.52	0.38	0.52	26.1
West: Hollister Ave															
5	L2	All MCs	84	2.0	84	2.0	0.337	6.2	LOS A	1.9	49.1	0.36	0.17	0.36	26.5
2	T1	All MCs	312	2.0	312	2.0	0.337	6.2	LOS A	1.9	49.1	0.36	0.17	0.36	32.4
12	R2	All MCs	4	2.0	4	2.0	0.337	6.2	LOS A	1.9	49.1	0.36	0.17	0.36	26.7
Approach			400	2.0	400	2.0	0.337	6.2	LOS A	1.9	49.1	0.36	0.17	0.36	30.9
All Vehicles			1167	2.0	1167	2.0	0.458	6.7	LOS A	3.2	81.1	0.38	0.20	0.38	29.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 1159A [1159. Hollister & David Love Pl (1-lane RAB) (Site Folder: 2050 Future AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Future AM Conditions
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: David Love Pl															
3	L2	All MCs	1	2.0	1	2.0	0.030	5.3	LOS A	0.1	2.9	0.55	0.44	0.55	27.7
8	T1	All MCs	3	2.0	3	2.0	0.030	5.3	LOS A	0.1	2.9	0.55	0.44	0.55	23.2
18	R2	All MCs	17	2.0	17	2.0	0.030	5.3	LOS A	0.1	2.9	0.55	0.44	0.55	27.9
Approach			22	2.0	22	2.0	0.030	5.3	LOS A	0.1	2.9	0.55	0.44	0.55	27.1
East: Hollister Ave															
1	L2	All MCs	27	2.0	27	2.0	0.884	19.3	LOS C	20.5	519.9	1.00	0.38	1.00	23.7
6	T1	All MCs	962	2.0	962	2.0	0.884	19.3	LOS C	20.5	519.9	1.00	0.38	1.00	29.1
16	R2	All MCs	126	2.0	126	2.0	0.884	19.3	LOS C	20.5	519.9	1.00	0.38	1.00	23.8
Approach			1115	2.0	1115	2.0	0.884	19.3	LOS C	20.5	519.9	1.00	0.38	1.00	28.3
North: David Love Pl															
7	L2	All MCs	39	2.0	39	2.0	0.161	9.9	LOS A	0.6	14.9	0.68	0.68	0.68	25.6
4	T1	All MCs	1	2.0	1	2.0	0.161	9.9	LOS A	0.6	14.9	0.68	0.68	0.68	21.7
14	R2	All MCs	36	2.0	36	2.0	0.161	9.9	LOS A	0.6	14.9	0.68	0.68	0.68	25.8
Approach			76	2.0	76	2.0	0.161	9.9	LOS A	0.6	14.9	0.68	0.68	0.68	25.6
West: Hollister Ave															
5	L2	All MCs	63	2.0	63	2.0	0.439	7.0	LOS A	3.0	76.8	0.30	0.11	0.30	27.1
2	T1	All MCs	485	2.0	485	2.0	0.439	7.0	LOS A	3.0	76.8	0.30	0.11	0.30	34.4
12	R2	All MCs	5	2.0	5	2.0	0.439	7.0	LOS A	3.0	76.8	0.30	0.11	0.30	27.3
Approach			553	2.0	553	2.0	0.439	7.0	LOS A	3.0	76.8	0.30	0.11	0.30	33.3
All Vehicles			1766	2.0	1766	2.0	0.884	14.8	LOS B	20.5	519.9	0.76	0.31	0.76	29.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 1159A [1159. Hollister & David Love Pl (2-lane RAB) (Site Folder: 2050 Future AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Future AM Conditions
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: David Love Pl															
3	L2	All MCs	1	2.0	1	2.0	0.026	4.6	LOS A	0.1	2.2	0.48	0.38	0.48	28.2
8	T1	All MCs	3	2.0	3	2.0	0.026	4.6	LOS A	0.1	2.2	0.48	0.38	0.48	23.5
18	R2	All MCs	17	2.0	17	2.0	0.026	4.6	LOS A	0.1	2.2	0.48	0.38	0.48	28.5
Approach			22	2.0	22	2.0	0.026	4.6	LOS A	0.1	2.2	0.48	0.38	0.48	27.6
East: Hollister Ave															
1	L2	All MCs	27	2.0	27	2.0	0.436	7.0	LOS A	2.7	67.8	0.27	0.10	0.27	27.5
6	T1	All MCs	962	2.0	962	2.0	0.436	6.9	LOS A	2.7	67.8	0.26	0.10	0.26	35.2
16	R2	All MCs	126	2.0	126	2.0	0.436	6.8	LOS A	2.6	66.1	0.26	0.10	0.26	27.8
Approach			1115	2.0	1115	2.0	0.436	6.9	LOS A	2.7	67.8	0.26	0.10	0.26	34.0
North: David Love Pl															
7	L2	All MCs	39	2.0	39	2.0	0.134	8.0	LOS A	0.4	11.2	0.62	0.61	0.62	26.4
4	T1	All MCs	1	2.0	1	2.0	0.134	8.0	LOS A	0.4	11.2	0.62	0.61	0.62	22.3
14	R2	All MCs	36	2.0	36	2.0	0.134	8.0	LOS A	0.4	11.2	0.62	0.61	0.62	26.6
Approach			76	2.0	76	2.0	0.134	8.0	LOS A	0.4	11.2	0.62	0.61	0.62	26.4
West: Hollister Ave															
5	L2	All MCs	63	2.0	63	2.0	0.217	4.7	LOS A	1.0	24.9	0.20	0.08	0.20	28.0
2	T1	All MCs	485	2.0	485	2.0	0.217	4.6	LOS A	1.0	24.9	0.19	0.07	0.19	36.3
12	R2	All MCs	5	2.0	5	2.0	0.217	4.5	LOS A	1.0	24.2	0.19	0.07	0.19	28.6
Approach			553	2.0	553	2.0	0.217	4.6	LOS A	1.0	24.9	0.19	0.07	0.19	35.0
All Vehicles			1766	2.0	1766	2.0	0.436	6.2	LOS A	2.7	67.8	0.26	0.12	0.26	33.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 169P [169. Carlo Dr & Cathedral Oaks Rd (Site Folder: 2050 Future PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Future PM Conditions
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Carlo Dr															
3	L2	All MCs	26	2.0	26	2.0	0.087	7.2	LOS A	0.3	8.2	0.62	0.58	0.62	24.9
8	T1	All MCs	2	2.0	2	2.0	0.087	7.2	LOS A	0.3	8.2	0.62	0.58	0.62	22.3
18	R2	All MCs	23	2.0	23	2.0	0.087	7.2	LOS A	0.3	8.2	0.62	0.58	0.62	25.1
Approach			51	2.0	51	2.0	0.087	7.2	LOS A	0.3	8.2	0.62	0.58	0.62	24.9
East: Cathedral Oaks Rd															
1	L2	All MCs	15	2.0	15	2.0	0.355	5.7	LOS A	2.2	56.1	0.18	0.05	0.18	25.9
6	T1	All MCs	440	2.0	440	2.0	0.355	5.7	LOS A	2.2	56.1	0.18	0.05	0.18	30.2
16	R2	All MCs	8	2.0	8	2.0	0.355	5.7	LOS A	2.2	56.1	0.18	0.05	0.18	26.1
Approach			463	2.0	463	2.0	0.355	5.7	LOS A	2.2	56.1	0.18	0.05	0.18	29.9
North: Carlo Dr															
7	L2	All MCs	14	2.0	14	2.0	0.028	4.7	LOS A	0.1	2.7	0.50	0.38	0.50	25.5
4	T1	All MCs	3	2.0	3	2.0	0.028	4.7	LOS A	0.1	2.7	0.50	0.38	0.50	22.8
14	R2	All MCs	5	2.0	5	2.0	0.028	4.7	LOS A	0.1	2.7	0.50	0.38	0.50	25.7
Approach			23	2.0	23	2.0	0.028	4.7	LOS A	0.1	2.7	0.50	0.38	0.50	25.1
West: Cathedral Oaks Rd															
5	L2	All MCs	7	2.0	7	2.0	0.609	8.7	LOS A	6.1	154.4	0.28	0.08	0.28	25.1
2	T1	All MCs	767	2.0	767	2.0	0.609	8.7	LOS A	6.1	154.4	0.28	0.08	0.28	29.1
12	R2	All MCs	24	2.0	24	2.0	0.609	8.7	LOS A	6.1	154.4	0.28	0.08	0.28	25.2
Approach			798	2.0	798	2.0	0.609	8.7	LOS A	6.1	154.4	0.28	0.08	0.28	28.9
All Vehicles			1335	2.0	1335	2.0	0.609	7.5	LOS A	6.1	154.4	0.26	0.10	0.26	29.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 282P [282. Calle Real & Carlo Dr (Site Folder: 2050 Future PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Future PM Conditions
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
East: Calle Real															
6	T1	All MCs	538	2.0	538	2.0	0.475	7.6	LOS A	3.4	86.5	0.36	0.15	0.36	32.2
16	R2	All MCs	49	2.0	49	2.0	0.475	7.6	LOS A	3.4	86.5	0.36	0.15	0.36	32.0
Approach			587	2.0	587	2.0	0.475	7.6	LOS A	3.4	86.5	0.36	0.15	0.36	32.2
North: Carlo Dr															
7	L2	All MCs	71	2.0	71	2.0	0.163	6.4	LOS A	0.7	17.1	0.57	0.47	0.57	31.0
14	R2	All MCs	54	2.0	54	2.0	0.163	6.4	LOS A	0.7	17.1	0.57	0.47	0.57	31.4
Approach			125	2.0	125	2.0	0.163	6.4	LOS A	0.7	17.1	0.57	0.47	0.57	31.2
West: Calle Real															
5	L2	All MCs	87	2.0	87	2.0	0.596	9.4	LOS A	5.4	138.4	0.41	0.16	0.41	30.7
2	T1	All MCs	663	2.0	663	2.0	0.596	9.4	LOS A	5.4	138.4	0.41	0.16	0.41	31.2
Approach			750	2.0	750	2.0	0.596	9.4	LOS A	5.4	138.4	0.41	0.16	0.41	31.1
All Vehicles			1462	2.0	1462	2.0	0.596	8.4	LOS A	5.4	138.4	0.40	0.18	0.40	31.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 506P [506. Cathedral Oaks 101 SB-Ramp (Site Folder: 2050 Future PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Future PM Conditions
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Cathedral Oaks Rd															
8	T1	All MCs	476	2.0	476	2.0	0.684	12.8	LOS B	8.7	222.0	0.71	0.49	0.84	24.8
18	R2	All MCs	291	2.0	291	2.0	0.684	12.8	LOS B	8.7	222.0	0.71	0.49	0.84	27.0
Approach			767	2.0	767	2.0	0.684	12.8	LOS B	8.7	222.0	0.71	0.49	0.84	25.6
North: Cathedral Oaks Rd															
7	L2	All MCs	138	2.0	138	2.0	0.440	4.9	LOS A	0.0	0.0	0.00	0.00	0.00	31.1
4	T1	All MCs	458	2.0	458	2.0	0.440	4.9	LOS A	0.0	0.0	0.00	0.00	0.00	28.5
Approach			596	2.0	596	2.0	0.440	4.9	LOS A	0.0	0.0	0.00	0.00	0.00	29.1
West: Cathedral Oaks Rd															
5	L2	All MCs	39	2.0	39	2.0	0.121	6.3	LOS A	0.5	12.1	0.58	0.49	0.58	28.3
2	T1	All MCs	1	2.0	1	2.0	0.121	6.3	LOS A	0.5	12.1	0.58	0.49	0.58	31.9
12	R2	All MCs	47	2.0	47	2.0	0.121	6.3	LOS A	0.5	12.1	0.58	0.49	0.58	28.5
Approach			87	2.0	87	2.0	0.121	6.3	LOS A	0.5	12.1	0.58	0.49	0.58	28.4
All Vehicles			1450	2.0	1450	2.0	0.684	9.1	LOS A	8.7	222.0	0.41	0.29	0.48	27.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 512P [512. Hollister & Palo Alto Dr (1-lane RAB) (Site Folder: 2050 Future PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Future PM Conditions
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Palo Alto Dr															
3	L2	All MCs	25	2.0	25	2.0	0.050	4.8	LOS A	0.2	5.0	0.51	0.40	0.51	26.4
8	T1	All MCs	1	2.0	1	2.0	0.050	4.8	LOS A	0.2	5.0	0.51	0.40	0.51	22.8
18	R2	All MCs	15	2.0	15	2.0	0.050	4.8	LOS A	0.2	5.0	0.51	0.40	0.51	26.6
Approach			41	2.0	41	2.0	0.050	4.8	LOS A	0.2	5.0	0.51	0.40	0.51	26.4
East: Hollister Ave															
1	L2	All MCs	28	2.0	28	2.0	0.606	8.8	LOS A	5.9	151.0	0.30	0.09	0.30	25.9
6	T1	All MCs	753	2.0	753	2.0	0.606	8.8	LOS A	5.9	151.0	0.30	0.09	0.30	31.6
16	R2	All MCs	8	2.0	8	2.0	0.606	8.8	LOS A	5.9	151.0	0.30	0.09	0.30	26.1
Approach			789	2.0	789	2.0	0.606	8.8	LOS A	5.9	151.0	0.30	0.09	0.30	31.3
North: Palo Alto Dr															
7	L2	All MCs	16	2.0	16	2.0	0.144	8.0	LOS A	0.5	13.8	0.64	0.61	0.64	25.9
4	T1	All MCs	1	2.0	1	2.0	0.144	8.0	LOS A	0.5	13.8	0.64	0.61	0.64	22.4
14	R2	All MCs	65	2.0	65	2.0	0.144	8.0	LOS A	0.5	13.8	0.64	0.61	0.64	26.2
Approach			83	2.0	83	2.0	0.144	8.0	LOS A	0.5	13.8	0.64	0.61	0.64	26.1
West: Hollister Ave															
5	L2	All MCs	11	2.0	11	2.0	0.366	5.9	LOS A	2.3	58.5	0.22	0.07	0.22	26.8
2	T1	All MCs	440	2.0	440	2.0	0.366	5.9	LOS A	2.3	58.5	0.22	0.07	0.22	32.9
12	R2	All MCs	22	2.0	22	2.0	0.366	5.9	LOS A	2.3	58.5	0.22	0.07	0.22	27.0
Approach			473	2.0	473	2.0	0.366	5.9	LOS A	2.3	58.5	0.22	0.07	0.22	32.4
All Vehicles			1386	2.0	1386	2.0	0.606	7.6	LOS A	5.9	151.0	0.30	0.12	0.30	31.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 512P [512. Hollister & Palo Alto Dr (2-lane RAB) (Site Folder: 2050 Future PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Future PM Conditions
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Palo Alto Dr															
3	L2	All MCs	25	2.0	25	2.0	0.045	4.3	LOS A	0.2	3.9	0.44	0.34	0.44	26.7
8	T1	All MCs	1	2.0	1	2.0	0.045	4.3	LOS A	0.2	3.9	0.44	0.34	0.44	23.0
18	R2	All MCs	15	2.0	15	2.0	0.045	4.3	LOS A	0.2	3.9	0.44	0.34	0.44	27.0
Approach			41	2.0	41	2.0	0.045	4.3	LOS A	0.2	3.9	0.44	0.34	0.44	26.7
East: Hollister Ave															
1	L2	All MCs	28	2.0	28	2.0	0.300	5.2	LOS A	1.5	38.9	0.16	0.05	0.16	27.3
6	T1	All MCs	753	2.0	753	2.0	0.300	5.1	LOS A	1.5	38.9	0.15	0.05	0.15	33.8
16	R2	All MCs	8	2.0	8	2.0	0.300	5.0	LOS A	1.5	37.8	0.15	0.04	0.15	27.6
Approach			789	2.0	789	2.0	0.300	5.1	LOS A	1.5	38.9	0.15	0.05	0.15	33.5
North: Palo Alto Dr															
7	L2	All MCs	16	2.0	16	2.0	0.123	6.7	LOS A	0.4	10.6	0.58	0.54	0.58	26.6
4	T1	All MCs	1	2.0	1	2.0	0.123	6.7	LOS A	0.4	10.6	0.58	0.54	0.58	22.8
14	R2	All MCs	65	2.0	65	2.0	0.123	6.7	LOS A	0.4	10.6	0.58	0.54	0.58	26.8
Approach			83	2.0	83	2.0	0.123	6.7	LOS A	0.4	10.6	0.58	0.54	0.58	26.7
West: Hollister Ave															
5	L2	All MCs	11	2.0	11	2.0	0.181	4.2	LOS A	0.8	20.2	0.15	0.05	0.15	27.7
2	T1	All MCs	440	2.0	440	2.0	0.181	4.2	LOS A	0.8	20.2	0.15	0.05	0.15	34.3
12	R2	All MCs	22	2.0	22	2.0	0.181	4.1	LOS A	0.8	19.6	0.14	0.05	0.14	27.9
Approach			473	2.0	473	2.0	0.181	4.2	LOS A	0.8	20.2	0.15	0.05	0.15	33.8
All Vehicles			1386	2.0	1386	2.0	0.300	4.9	LOS A	1.5	38.9	0.19	0.08	0.19	32.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 518P [518. Hollister & Santa Felicia (1-lane RAB) (Site Folder: 2050 Future PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Future PM Conditions
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Santa Felicia Dr															
3	L2	All MCs	47	2.0	47	2.0	0.374	10.9	LOS B	1.8	45.7	0.71	0.70	0.82	25.1
8	T1	All MCs	7	2.0	7	2.0	0.374	10.9	LOS B	1.8	45.7	0.71	0.70	0.82	21.8
18	R2	All MCs	183	2.0	183	2.0	0.374	10.9	LOS B	1.8	45.7	0.71	0.70	0.82	25.3
Approach			236	2.0	236	2.0	0.374	10.9	LOS B	1.8	45.7	0.71	0.70	0.82	25.1
East: Hollister Ave															
1	L2	All MCs	252	2.0	252	2.0	1.031	38.2	LOS F	84.3	2140.2	1.00	1.26	1.46	19.3
6	T1	All MCs	991	2.0	991	2.0	1.031	38.2	LOS F	84.3	2140.2	1.00	1.26	1.46	22.3
16	R2	All MCs	54	2.0	54	2.0	1.031	38.2	LOS F	84.3	2140.2	1.00	1.26	1.46	19.4
Approach			1298	2.0	1298	2.0	1.031	38.2	LOS E	84.3	2140.2	1.00	1.26	1.46	21.5
North: Santa Felicia Dr															
7	L2	All MCs	48	2.0	48	2.0	0.287	15.5	LOS C	1.0	26.5	0.79	0.82	0.85	23.6
4	T1	All MCs	9	2.0	9	2.0	0.287	15.5	LOS C	1.0	26.5	0.79	0.82	0.85	20.7
14	R2	All MCs	46	2.0	46	2.0	0.287	15.5	LOS C	1.0	26.5	0.79	0.82	0.85	23.8
Approach			102	2.0	102	2.0	0.287	15.5	LOS C	1.0	26.5	0.79	0.82	0.85	23.4
West: Hollister Ave															
5	L2	All MCs	16	2.0	16	2.0	0.771	18.0	LOS C	14.4	366.2	0.91	0.93	1.61	23.4
2	T1	All MCs	655	2.0	655	2.0	0.771	18.0	LOS C	14.4	366.2	0.91	0.93	1.61	28.0
12	R2	All MCs	87	2.0	87	2.0	0.771	18.0	LOS C	14.4	366.2	0.91	0.93	1.61	23.6
Approach			759	2.0	759	2.0	0.771	18.0	LOS C	14.4	366.2	0.91	0.93	1.61	27.3
All Vehicles			2395	2.0	2395	2.0	1.031	28.1	LOS D	84.3	2140.2	0.93	1.08	1.42	23.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 518P [518. Hollister & Santa Felicia (2-lane RAB) (Site Folder: 2050 Future PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Future PM Conditions
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Santa Felicia Dr															
3	L2	All MCs	47	2.0	47	2.0	0.324	8.9	LOS A	1.3	33.5	0.63	0.58	0.67	25.9
8	T1	All MCs	7	2.0	7	2.0	0.324	8.9	LOS A	1.3	33.5	0.63	0.58	0.67	22.3
18	R2	All MCs	183	2.0	183	2.0	0.324	8.9	LOS A	1.3	33.5	0.63	0.58	0.67	26.2
Approach			236	2.0	236	2.0	0.324	8.9	LOS A	1.3	33.5	0.63	0.58	0.67	26.0
East: Hollister Ave															
1	L2	All MCs	252	2.0	252	2.0	0.509	8.0	LOS A	3.5	89.2	0.31	0.12	0.31	25.9
6	T1	All MCs	991	2.0	991	2.0	0.509	7.8	LOS A	3.5	89.2	0.30	0.12	0.30	32.2
16	R2	All MCs	54	2.0	54	2.0	0.509	7.7	LOS A	3.4	87.0	0.29	0.11	0.29	26.7
Approach			1298	2.0	1298	2.0	0.509	7.9	LOS A	3.5	89.2	0.30	0.12	0.30	30.5
North: Santa Felicia Dr															
7	L2	All MCs	48	2.0	48	2.0	0.237	12.1	LOS B	0.8	19.4	0.73	0.74	0.75	24.7
4	T1	All MCs	9	2.0	9	2.0	0.237	12.1	LOS B	0.8	19.4	0.73	0.74	0.75	21.5
14	R2	All MCs	46	2.0	46	2.0	0.237	12.1	LOS B	0.8	19.4	0.73	0.74	0.75	24.9
Approach			102	2.0	102	2.0	0.237	12.1	LOS B	0.8	19.4	0.73	0.74	0.75	24.5
West: Hollister Ave															
5	L2	All MCs	16	2.0	16	2.0	0.372	7.6	LOS A	1.8	45.8	0.51	0.35	0.51	26.6
2	T1	All MCs	655	2.0	655	2.0	0.372	7.4	LOS A	1.8	45.8	0.50	0.34	0.50	32.7
12	R2	All MCs	87	2.0	87	2.0	0.372	7.2	LOS A	1.8	45.0	0.49	0.33	0.49	26.9
Approach			759	2.0	759	2.0	0.372	7.4	LOS A	1.8	45.8	0.50	0.34	0.50	31.8
All Vehicles			2395	2.0	2395	2.0	0.509	8.0	LOS A	3.5	89.2	0.41	0.26	0.42	30.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 526P [526. Cremona Dr & Hollister Ave (1-lane RAB) (Site Folder: 2050 Future PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Future PM Conditions
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
East: Hollister Ave															
6	T1	All MCs	926	2.0	926	2.0	0.845	16.1	LOS C	17.0	432.3	0.78	0.28	0.78	30.4
16	R2	All MCs	153	2.0	153	2.0	0.845	16.1	LOS C	17.0	432.3	0.78	0.28	0.78	24.7
Approach			1079	2.0	1079	2.0	0.845	16.1	LOS C	17.0	432.3	0.78	0.28	0.78	29.4
North: Cremona Dr															
7	L2	All MCs	42	2.0	42	2.0	0.159	9.2	LOS A	0.6	14.9	0.67	0.66	0.67	25.8
14	R2	All MCs	38	2.0	38	2.0	0.159	9.2	LOS A	0.6	14.9	0.67	0.66	0.67	26.0
Approach			80	2.0	80	2.0	0.159	9.2	LOS A	0.6	14.9	0.67	0.66	0.67	25.9
West: Hollister Ave															
5	L2	All MCs	55	2.0	55	2.0	0.669	10.1	LOS B	7.6	193.0	0.38	0.12	0.38	26.2
2	T1	All MCs	811	2.0	811	2.0	0.669	10.1	LOS B	7.6	193.0	0.38	0.12	0.38	33.0
Approach			866	2.0	866	2.0	0.669	10.1	LOS B	7.6	193.0	0.38	0.12	0.38	32.4
All Vehicles			2026	2.0	2026	2.0	0.845	13.3	LOS B	17.0	432.3	0.60	0.22	0.60	30.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 526P [526. Cremona Dr & Hollister Ave (2-lane RAB) (Site Folder: 2050 Future PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Future PM Conditions
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
East: Hollister Ave															
6	T1	All MCs	926	2.0	926	2.0	0.699	10.9	LOS B	7.3	186.5	0.40	0.14	0.40	33.3
16	R2	All MCs	153	2.0	153	2.0	0.122	3.8	LOS A	0.5	12.7	0.16	0.06	0.16	28.6
Approach			1079	2.0	1079	2.0	0.699	9.9	LOS A	7.3	186.5	0.37	0.13	0.37	32.5
North: Cremona Dr															
7	L2	All MCs	42	2.0	42	2.0	0.133	7.5	LOS A	0.4	11.3	0.60	0.59	0.60	26.5
14	R2	All MCs	38	2.0	38	2.0	0.133	7.5	LOS A	0.4	11.3	0.60	0.59	0.60	26.7
Approach			80	2.0	80	2.0	0.133	7.5	LOS A	0.4	11.3	0.60	0.59	0.60	26.6
West: Hollister Ave															
5	L2	All MCs	55	2.0	55	2.0	0.331	5.6	LOS A	1.8	44.7	0.18	0.06	0.18	27.9
2	T1	All MCs	811	2.0	811	2.0	0.331	5.5	LOS A	1.8	44.7	0.17	0.05	0.17	35.9
Approach			866	2.0	866	2.0	0.331	5.5	LOS A	1.8	44.7	0.17	0.06	0.17	35.3
All Vehicles			2026	2.0	2026	2.0	0.699	7.9	LOS A	7.3	186.5	0.29	0.12	0.29	33.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 553P [553. Storke & Santa Felicia (1-lane RAB) (Site Folder: 2050 Future PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Future PM Conditions
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Storke Rd															
3	L2	All MCs	154	2.0	154	2.0	0.901	19.7	LOS C	24.1	610.9	1.00	0.39	1.00	22.9
8	T1	All MCs	992	2.0	992	2.0	0.901	19.7	LOS C	24.1	610.9	1.00	0.39	1.00	27.3
Approach			1147	2.0	1147	2.0	0.901	19.7	LOS C	24.1	610.9	1.00	0.39	1.00	26.6
North: Storke Rd															
4	T1	All MCs	818	2.0	818	2.0	0.809	17.6	LOS C	19.4	492.2	0.91	0.69	1.27	28.2
14	R2	All MCs	112	2.0	112	2.0	0.809	17.6	LOS C	19.4	492.2	0.91	0.69	1.27	23.7
Approach			930	2.0	930	2.0	0.809	17.6	LOS C	19.4	492.2	0.91	0.69	1.27	27.5
West: Santa Felicia Dr															
5	L2	All MCs	59	2.0	59	2.0	0.389	12.2	LOS B	1.8	46.5	0.73	0.76	0.88	24.6
12	R2	All MCs	162	2.0	162	2.0	0.389	12.2	LOS B	1.8	46.5	0.73	0.76	0.88	24.9
Approach			221	2.0	221	2.0	0.389	12.2	LOS B	1.8	46.5	0.73	0.76	0.88	24.8
All Vehicles			2298	2.0	2298	2.0	0.901	18.2	LOS C	24.1	610.9	0.94	0.54	1.10	26.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 553P [553. Storke & Santa Felicia (2-lane RAB) (Site Folder: 2050 Future PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Future PM Conditions
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Storke Rd															
3	L2	All MCs	154	2.0	154	2.0	0.445	7.0	LOS A	2.8	70.7	0.25	0.09	0.25	26.4
8	T1	All MCs	992	2.0	992	2.0	0.445	6.9	LOS A	2.8	70.7	0.25	0.09	0.25	32.8
Approach			1147	2.0	1147	2.0	0.445	6.9	LOS A	2.8	70.7	0.25	0.09	0.25	31.7
North: Storke Rd															
4	T1	All MCs	818	2.0	818	2.0	0.395	6.9	LOS A	2.1	54.4	0.38	0.20	0.38	33.0
14	R2	All MCs	112	2.0	112	2.0	0.395	6.8	LOS A	2.1	53.2	0.37	0.19	0.37	27.0
Approach			930	2.0	930	2.0	0.395	6.9	LOS A	2.1	54.4	0.38	0.20	0.38	32.2
West: Santa Felicia Dr															
5	L2	All MCs	59	2.0	59	2.0	0.332	9.7	LOS A	1.4	34.4	0.65	0.65	0.74	25.6
12	R2	All MCs	162	2.0	162	2.0	0.332	9.7	LOS A	1.4	34.4	0.65	0.65	0.74	25.8
Approach			221	2.0	221	2.0	0.332	9.7	LOS A	1.4	34.4	0.65	0.65	0.74	25.8
All Vehicles			2298	2.0	2298	2.0	0.445	7.2	LOS A	2.8	70.7	0.34	0.19	0.35	31.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 636P [636. Hollister & Cathedral Oaks (Site Folder: 2050 Future PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Future PM Conditions
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
East: Hollister Ave															
6	T1	All MCs	63	2.0	63	2.0	0.604	9.8	LOS A	5.4	137.1	0.48	0.21	0.48	32.1
16	R2	All MCs	676	2.0	676	2.0	0.604	9.8	LOS A	5.4	137.1	0.48	0.21	0.48	27.9
Approach			739	2.0	739	2.0	0.604	9.8	LOS A	5.4	137.1	0.48	0.21	0.48	28.2
North: Cathedral Oaks Rd															
7	L2	All MCs	425	2.0	425	2.0	0.394	6.4	LOS A	2.6	64.8	0.27	0.10	0.27	27.7
14	R2	All MCs	75	2.0	75	2.0	0.394	6.4	LOS A	2.6	64.8	0.27	0.10	0.27	28.6
Approach			500	2.0	500	2.0	0.394	6.4	LOS A	2.6	64.8	0.27	0.10	0.27	27.8
West: Hollister Ave															
5	L2	All MCs	96	2.0	96	2.0	0.181	6.0	LOS A	0.8	19.9	0.53	0.40	0.53	29.0
2	T1	All MCs	61	2.0	61	2.0	0.181	6.0	LOS A	0.8	19.9	0.53	0.40	0.53	32.8
Approach			157	2.0	157	2.0	0.181	6.0	LOS A	0.8	19.9	0.53	0.40	0.53	30.4
All Vehicles			1396	2.0	1396	2.0	0.604	8.2	LOS A	5.4	137.1	0.41	0.19	0.41	28.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: L:\All-DKS\SAC\P\24000\600s\24675-002 Goleta TO 2 Model and DIF Update\11 DIF Update\03 Analysis\SIDRA Analysis\Goleta RAB Analysis.sip9

MOVEMENT SUMMARY

Site: 856P [856. Hollister & Cortona (1-lane RAB) (Site Folder: 2050 Future PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Future PM Conditions
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Commercial Dwy															
3	L2	All MCs	125	2.0	125	2.0	0.298	11.7	LOS B	1.2	30.6	0.72	0.73	0.78	24.2
8	T1	All MCs	5	2.0	5	2.0	0.298	11.7	LOS B	1.2	30.6	0.72	0.73	0.78	21.1
18	R2	All MCs	17	2.0	17	2.0	0.298	11.7	LOS B	1.2	30.6	0.72	0.73	0.78	24.4
Approach			148	2.0	148	2.0	0.298	11.7	LOS B	1.2	30.6	0.72	0.73	0.78	24.1
East: Hollister Ave															
1	L2	All MCs	30	2.0	30	2.0	1.468	224.3	LOS F	173.8	4414.1	1.00	4.69	8.91	7.5
6	T1	All MCs	1404	2.0	1404	2.0	1.468	224.3	LOS F	173.8	4414.1	1.00	4.69	8.91	7.9
16	R2	All MCs	57	2.0	57	2.0	1.468	224.3	LOS F	173.8	4414.1	1.00	4.69	8.91	7.5
Approach			1491	2.0	1491	2.0	1.468	224.3	LOS F	173.8	4414.1	1.00	4.69	8.91	7.8
North: Cortona Dr															
7	L2	All MCs	22	2.0	22	2.0	0.925	57.3	LOS F	8.9	225.2	0.97	1.60	2.50	16.5
4	T1	All MCs	7	2.0	7	2.0	0.925	57.3	LOS F	8.9	225.2	0.97	1.60	2.50	15.0
14	R2	All MCs	359	2.0	359	2.0	0.925	57.3	LOS F	8.9	225.2	0.97	1.60	2.50	16.6
Approach			387	2.0	387	2.0	0.925	57.3	LOS F	8.9	225.2	0.97	1.60	2.50	16.6
West: Hollister Ave															
5	L2	All MCs	141	2.0	141	2.0	0.804	13.9	LOS B	14.0	356.4	0.62	0.21	0.62	24.4
2	T1	All MCs	784	2.0	784	2.0	0.804	13.9	LOS B	14.0	356.4	0.62	0.21	0.62	29.3
12	R2	All MCs	115	2.0	115	2.0	0.804	13.9	LOS B	14.0	356.4	0.62	0.21	0.62	24.5
Approach			1040	2.0	1040	2.0	0.804	13.9	LOS B	14.0	356.4	0.62	0.21	0.62	27.9
All Vehicles			3066	2.0	3066	2.0	1.468	121.6	LOS F	173.8	4414.1	0.85	2.59	4.90	11.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 856P [856. Hollister & Cortona (2-lane RAB Mitigated) (Site Folder: 2050 Future PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Future PM Conditions
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Commercial Dwy															
3	L2	All MCs	125	2.0	125	2.0	0.250	9.3	LOS A	0.9	22.2	0.64	0.63	0.64	25.0
8	T1	All MCs	5	2.0	5	2.0	0.250	9.3	LOS A	0.9	22.2	0.64	0.63	0.64	21.8
18	R2	All MCs	17	2.0	17	2.0	0.250	9.3	LOS A	0.9	22.2	0.64	0.63	0.64	25.2
Approach			148	2.0	148	2.0	0.250	9.3	LOS A	0.9	22.2	0.64	0.63	0.64	24.9
East: Hollister Ave															
1	L2	All MCs	30	2.0	30	2.0	0.706	14.6	LOS B	10.6	268.6	0.76	0.72	1.23	24.6
6	T1	All MCs	1404	2.0	1404	2.0	0.706	14.3	LOS B	10.6	269.6	0.75	0.70	1.21	29.8
16	R2	All MCs	57	2.0	57	2.0	0.706	14.0	LOS B	10.6	269.6	0.74	0.69	1.19	24.9
Approach			1491	2.0	1491	2.0	0.706	14.3	LOS B	10.6	269.6	0.75	0.70	1.21	29.5
North: Cortona Dr															
7	L2	All MCs	22	2.0	22	2.0	0.196	14.3	LOS B	0.6	14.7	0.78	0.78	0.78	24.3
4	T1	All MCs	7	2.0	7	2.0	0.196	14.3	LOS B	0.6	14.7	0.78	0.78	0.78	21.2
14	R2	All MCs	359	2.0	359	2.0	0.196	1.6	LOS A	0.6	14.7	0.08	0.08	0.08	24.7
Approach			387	2.0	387	2.0	0.196	2.5	LOS A	0.6	14.7	0.13	0.13	0.13	24.6
West: Hollister Ave															
5	L2	All MCs	141	2.0	141	2.0	0.404	6.5	LOS A	2.4	60.0	0.24	0.09	0.24	26.5
2	T1	All MCs	784	2.0	784	2.0	0.404	6.4	LOS A	2.4	60.0	0.23	0.08	0.23	32.9
12	R2	All MCs	115	2.0	115	2.0	0.404	6.3	LOS A	2.3	58.4	0.22	0.08	0.22	27.2
Approach			1040	2.0	1040	2.0	0.404	6.4	LOS A	2.4	60.0	0.23	0.08	0.23	31.2
All Vehicles			3066	2.0	3066	2.0	0.706	9.9	LOS A	10.6	269.6	0.49	0.42	0.72	29.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 1141P [1141. Sperling Preserve/Ellwood Dwy & Hollister Ave (Site Folder: 2050 Future PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Future PM Conditions
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Sperling Preserve Dwy															
3	L2	All MCs	8	2.0	8	2.0	0.032	4.9	LOS A	0.1	3.1	0.52	0.40	0.52	26.8
8	T1	All MCs	1	2.0	1	2.0	0.032	4.9	LOS A	0.1	3.1	0.52	0.40	0.52	23.0
18	R2	All MCs	16	2.0	16	2.0	0.032	4.9	LOS A	0.1	3.1	0.52	0.40	0.52	27.0
Approach			25	2.0	25	2.0	0.032	4.9	LOS A	0.1	3.1	0.52	0.40	0.52	26.7
East: Hollister Ave															
1	L2	All MCs	42	2.0	42	2.0	0.647	9.9	LOS A	6.9	174.1	0.39	0.13	0.39	25.6
6	T1	All MCs	692	2.0	692	2.0	0.647	9.9	LOS A	6.9	174.1	0.39	0.13	0.39	31.1
16	R2	All MCs	97	2.0	97	2.0	0.647	9.9	LOS A	6.9	174.1	0.39	0.13	0.39	25.7
Approach			832	2.0	832	2.0	0.647	9.9	LOS A	6.9	174.1	0.39	0.13	0.39	30.0
North: Ellwood School Dwy															
7	L2	All MCs	20	2.0	20	2.0	0.067	6.6	LOS A	0.2	6.3	0.61	0.56	0.61	26.1
4	T1	All MCs	16	2.0	16	2.0	0.067	6.6	LOS A	0.2	6.3	0.61	0.56	0.61	22.5
14	R2	All MCs	5	2.0	5	2.0	0.067	6.6	LOS A	0.2	6.3	0.61	0.56	0.61	26.3
Approach			41	2.0	41	2.0	0.067	6.6	LOS A	0.2	6.3	0.61	0.56	0.61	24.6
West: Hollister Ave															
5	L2	All MCs	41	2.0	41	2.0	0.404	6.6	LOS A	2.6	66.6	0.31	0.12	0.31	26.5
2	T1	All MCs	454	2.0	454	2.0	0.404	6.6	LOS A	2.6	66.6	0.31	0.12	0.31	32.5
12	R2	All MCs	9	2.0	9	2.0	0.404	6.6	LOS A	2.6	66.6	0.31	0.12	0.31	26.7
Approach			504	2.0	504	2.0	0.404	6.6	LOS A	2.6	66.6	0.31	0.12	0.31	31.8
All Vehicles			1402	2.0	1402	2.0	0.647	8.5	LOS A	6.9	174.1	0.37	0.15	0.37	30.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 1159P [1159. Hollister & David Love Pl (1-lane RAB) (Site Folder: 2050 Future PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Future PM Conditions
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: David Love Pl															
3	L2	All MCs	5	2.0	5	2.0	0.099	9.5	LOS A	0.3	8.8	0.69	0.69	0.69	26.2
8	T1	All MCs	2	2.0	2	2.0	0.099	9.5	LOS A	0.3	8.8	0.69	0.69	0.69	22.1
18	R2	All MCs	36	2.0	36	2.0	0.099	9.5	LOS A	0.3	8.8	0.69	0.69	0.69	26.4
Approach			43	2.0	43	2.0	0.099	9.5	LOS A	0.3	8.8	0.69	0.69	0.69	26.1
East: Hollister Ave															
1	L2	All MCs	18	2.0	18	2.0	0.777	13.4	LOS B	11.9	301.8	0.59	0.21	0.59	25.3
6	T1	All MCs	903	2.0	903	2.0	0.777	13.4	LOS B	11.9	301.8	0.59	0.21	0.59	31.5
16	R2	All MCs	71	2.0	71	2.0	0.777	13.4	LOS B	11.9	301.8	0.59	0.21	0.59	25.4
Approach			992	2.0	992	2.0	0.777	13.4	LOS B	11.9	301.8	0.59	0.21	0.59	30.9
North: David Love Pl															
7	L2	All MCs	113	2.0	113	2.0	0.396	13.6	LOS B	1.8	46.1	0.74	0.81	0.93	24.5
4	T1	All MCs	4	2.0	4	2.0	0.396	13.6	LOS B	1.8	46.1	0.74	0.81	0.93	21.0
14	R2	All MCs	83	2.0	83	2.0	0.396	13.6	LOS B	1.8	46.1	0.74	0.81	0.93	24.7
Approach			200	2.0	200	2.0	0.396	13.6	LOS B	1.8	46.1	0.74	0.81	0.93	24.5
West: Hollister Ave															
5	L2	All MCs	48	2.0	48	2.0	0.818	17.8	LOS C	19.0	481.8	0.91	0.60	1.17	24.1
2	T1	All MCs	893	2.0	893	2.0	0.818	17.8	LOS C	19.0	481.8	0.91	0.60	1.17	29.7
12	R2	All MCs	18	2.0	18	2.0	0.818	17.8	LOS C	19.0	481.8	0.91	0.60	1.17	24.2
Approach			960	2.0	960	2.0	0.818	17.8	LOS C	19.0	481.8	0.91	0.60	1.17	29.2
All Vehicles			2196	2.0	2196	2.0	0.818	15.2	LOS C	19.0	481.8	0.75	0.44	0.88	29.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 1159P [1159. Hollister & David Love Pl (2-lane RAB) (Site Folder: 2050 Future PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Future PM Conditions
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: David Love Pl															
3	L2	All MCs	5	2.0	5	2.0	0.081	7.7	LOS A	0.3	6.5	0.62	0.62	0.62	27.0
8	T1	All MCs	2	2.0	2	2.0	0.081	7.7	LOS A	0.3	6.5	0.62	0.62	0.62	22.7
18	R2	All MCs	36	2.0	36	2.0	0.081	7.7	LOS A	0.3	6.5	0.62	0.62	0.62	27.3
Approach			43	2.0	43	2.0	0.081	7.7	LOS A	0.3	6.5	0.62	0.62	0.62	27.0
East: Hollister Ave															
1	L2	All MCs	18	2.0	18	2.0	0.384	6.3	LOS A	2.2	55.5	0.22	0.08	0.22	27.8
6	T1	All MCs	903	2.0	903	2.0	0.384	6.2	LOS A	2.2	55.5	0.22	0.08	0.22	35.7
16	R2	All MCs	71	2.0	71	2.0	0.384	6.1	LOS A	2.1	54.0	0.21	0.07	0.21	28.0
Approach			992	2.0	992	2.0	0.384	6.2	LOS A	2.2	55.5	0.22	0.08	0.22	34.8
North: David Love Pl															
7	L2	All MCs	113	2.0	113	2.0	0.332	10.5	LOS B	1.3	33.7	0.67	0.70	0.79	25.5
4	T1	All MCs	4	2.0	4	2.0	0.332	10.5	LOS B	1.3	33.7	0.67	0.70	0.79	21.7
14	R2	All MCs	83	2.0	83	2.0	0.332	10.5	LOS B	1.3	33.7	0.67	0.70	0.79	25.8
Approach			200	2.0	200	2.0	0.332	10.5	LOS B	1.3	33.7	0.67	0.70	0.79	25.5
West: Hollister Ave															
5	L2	All MCs	48	2.0	48	2.0	0.400	7.0	LOS A	2.2	56.2	0.37	0.18	0.37	27.4
2	T1	All MCs	893	2.0	893	2.0	0.400	6.9	LOS A	2.2	56.2	0.36	0.18	0.36	35.2
12	R2	All MCs	18	2.0	18	2.0	0.400	6.7	LOS A	2.2	54.9	0.35	0.17	0.35	27.8
Approach			960	2.0	960	2.0	0.400	6.9	LOS A	2.2	56.2	0.36	0.18	0.36	34.5
All Vehicles			2196	2.0	2196	2.0	0.400	6.9	LOS A	2.2	56.2	0.33	0.19	0.34	33.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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ATTACHMENT A.6

TECHNICAL MEMORANDUM: SOUTH PATTERSON OPERATIONS ANALYSIS

SOUTH PATTERSON
LOCAL TRAFFIC ANALYSIS

APRIL 2026

PREPARED FOR:

COUNTY OF SANTA BARBARA CALIFORNIA

CITY OF GOLETA

DKS

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TABLE OF CONTENTS

INTRODUCTION **1**

STUDY SCENARIOS 2

STUDY INTERSECTIONS 2

FORECASTING **3**

ANALYSIS **5**

METHODOLOGY 5

LOCAL TRANSPORTATION DEFICIENCY CRITERIA 6

TRAFFIC OPERATIONS ANALYSIS 7

INTERSECTION QUEUEING ANALYSIS 10

CONCLUSION AND RECOMMENDATIONS FOR FURTHER ANALYSIS **13**

APPENDIX **14**

LIST OF FIGURES

FIGURE 1: PROPOSED DEVELOPMENT LOCATION MAP 1

FIGURE 2: ROADWAY NETWORK AND STUDY INTERSECTIONS 3

LIST OF TABLES

TABLE 1: MODEL LAND USE SUMMARY 4

TABLE 2: INTERSECTION LEVEL-OF-SERVICE 5

TABLE 3: INTERSECTION OPERATIONS ANALYSIS RESULTS - ALL SCENARIOS 8

TABLE 4: INTERSECTION 95TH PERCENTILE QUEUEING ANALYSIS RESULTS - ALL SCENARIOS . 11

INTRODUCTION

This report has been prepared as an initial evaluation of the traffic implications associated with the development of several properties within Santa Barabara County in close proximity to the City of Goleta. This evaluation and findings can facilitate future scoping of traffic studies to be completed for these developments. All results presented herein should be considered draft. Assumed land use totals, site access, and site circulation may change. The study properties are generally located south of Hollister Avenue between Ward Drive and the Maria Ygnacio Creek. **Figure 1** shows the location of the developments under review.

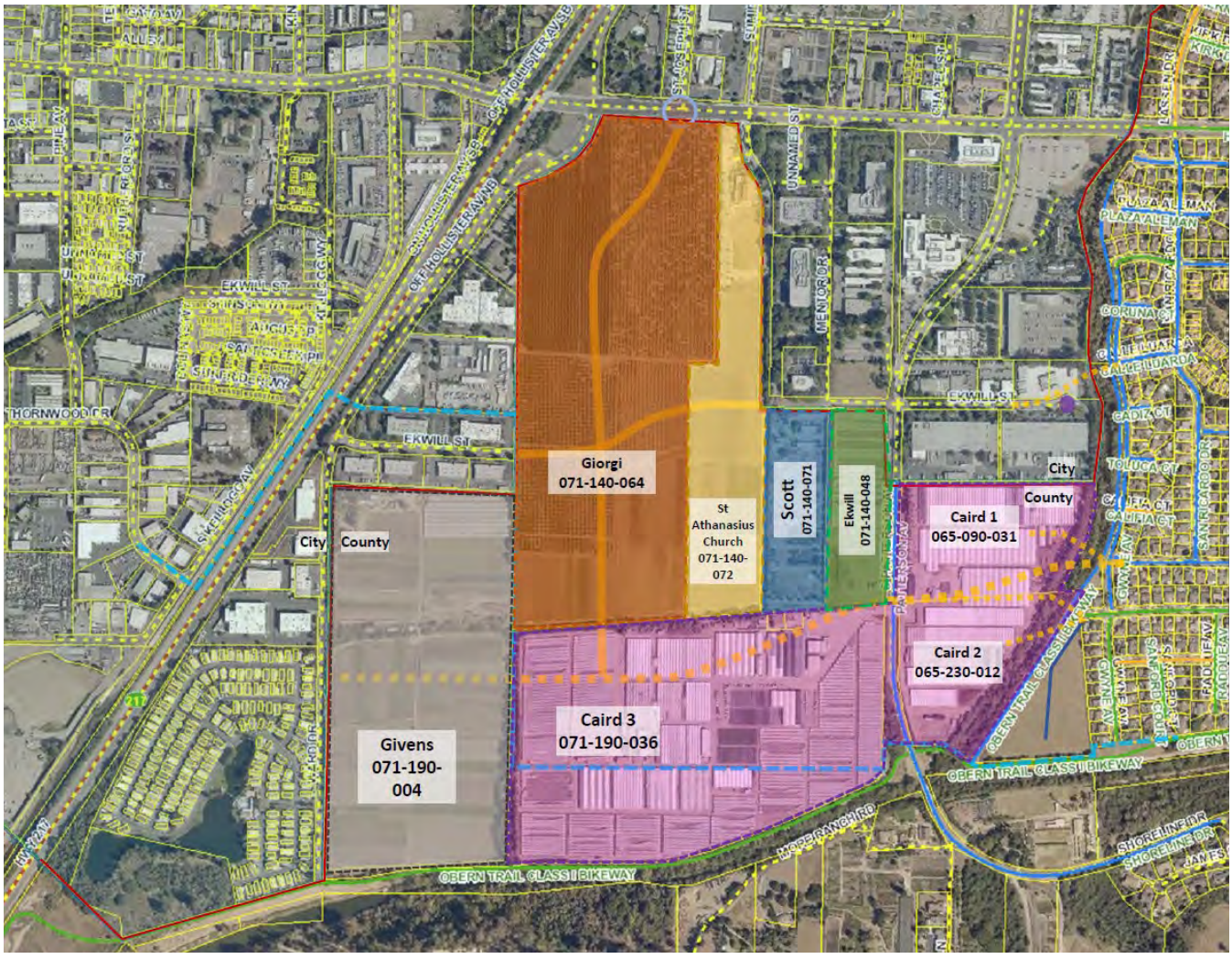

FIGURE 1: PROPOSED DEVELOPMENT LOCATION MAP

STUDY SCENARIOS

The focus of this analysis is on future conditions and the potential deficiencies triggered by the collection of developments in the county. For this evaluation, the following scenarios were considered:

- **Existing Conditions (2024)**: Existing conditions based upon current 2024 traffic conditions.
- **Future Baseline Conditions (2050)**: Future conditions reflecting the City of Goleta's build-out, estimated by the Goleta Travel Model without the South Patterson development.

STUDY INTERSECTIONS

The roadway network and study intersections are shown in **Figure 2**. The following fourteen intersections were analyzed:

1. Hollister Avenue & SR-217 WB ramps
2. Hollister Avenue & Ward Drive / SR-217 EB on-ramp
3. Hollister Avenue & St. Joseph Street
4. Hollister Avenue & Sumida Gardens Lane
5. Hollister Avenue & S Patterson Avenue
6. Hollister Avenue & San Ricardo Drive
7. SR-217 EB off-ramp & Ward Drive
8. Ekwill Street & Ward Drive
9. Ekwill Street & S Patterson Avenue
10. US-101 SB ramps & N Patterson Avenue
11. US-101 NB ramps & N Patterson Avenue
12. Hollister Avenue & S Fairview Avenue
13. US-101 SB ramps & N Fairview Avenue
14. US-101 NB ramps & N Fairview Avenue

Where available, recent traffic counts from other City projects were used for this analysis. New traffic counts for the study area were collected in November 2025 for locations where traffic counts had not been previously collected. Given the staggered scheduling of traffic counts (i.e., different days), volume balancing was performed for adjacent intersections prior to analysis being completed. Traffic counts are provided in **Appendix A**. Adjusted existing conditions volumes are shown in **Appendix B**.

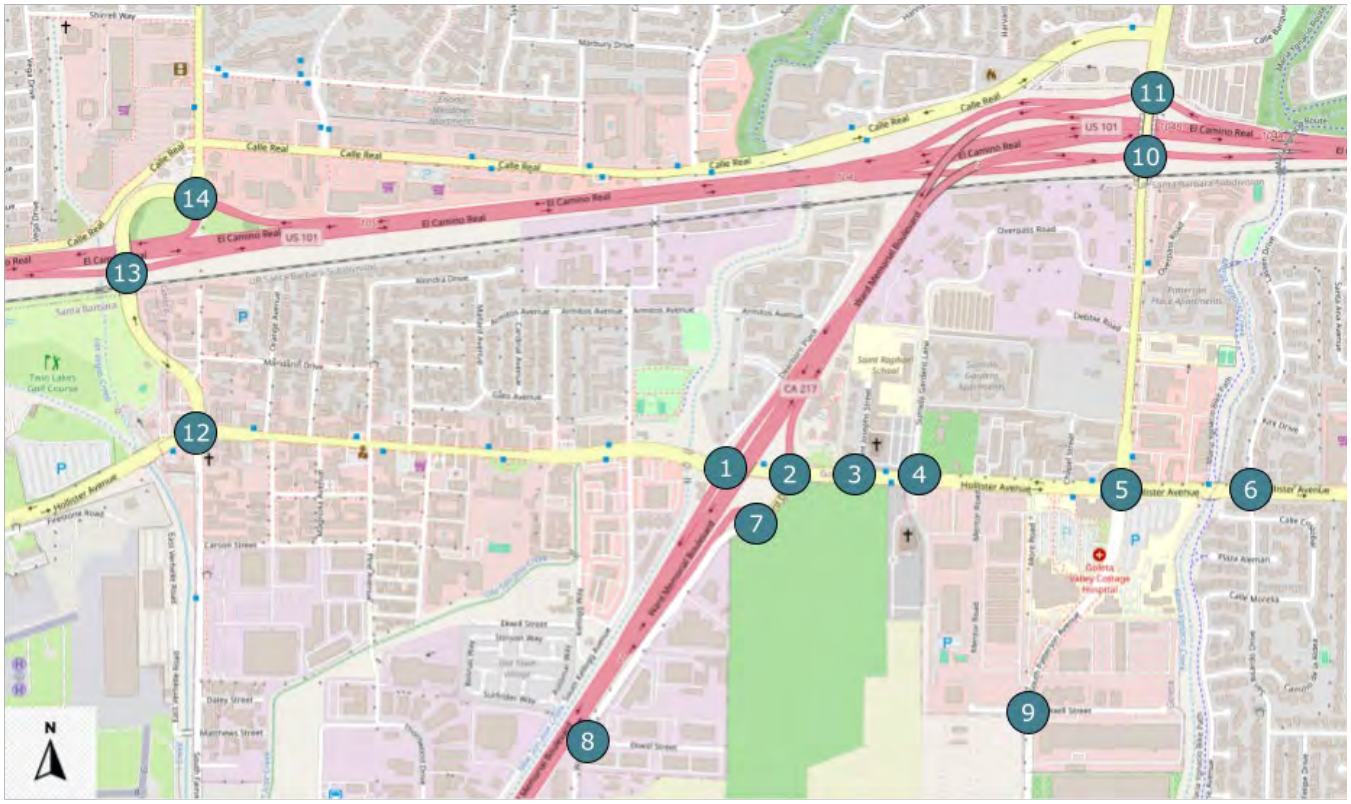

FIGURE 2: ROADWAY NETWORK AND STUDY INTERSECTIONS

FORECASTING

The recently updated City of Goleta travel demand model was used to generate forecasts for this study[1]. Minor revisions were made to the model to create additional traffic analysis zones and refine zone connections to the roadway network to better reflect the proposed development. Model forecasts were post processed using the Difference Method, consistent with the methodologies recommended in NCHRP Report 765.

The "Existing" land use reflects the City's 2024 baseline model, the "Future Baseline" reflects a 2050 forecast horizon. The latter reflects the City's General Plan land use, County of Santa Barbara General Plan land use including rezones, and specific plans in the unincorporated Goleta Valley, City of Santa Barbara Specific Plans and Santa Barbara Airport enplanement projections, UCSB's Long Range Development Plan, and K-12 enrollment projections.

Table 1 summarizes the model land use data per property that was used for this analysis. The "Proposed" land use reflects information provided by the County which was added to the model for this analysis.

[1] City of Goleta Travel Model Update Technical Memorandum (DKS, December 2025) is available upon request.

TABLE 1: MODEL LAND USE SUMMARY

Property	Existing	Future Baseline	Proposed
GIORGI	60 Agricultural/ Industrial Employees	60 Agricultural/ Industrial + 27 Indoor Recreation Employees	1,147 Multi-Family Dwelling Unit
SAINT ATHANASIUS	N/A	N/A	300 Multi-Family Dwelling Unit
SCOTT	N/A	N/A	246 Multi-Family Dwelling Unit
EKWILL	N/A	N/A	218 Multi-Family Dwelling Unit
CAIRD	205 Agricultural/ Industrial +2 Office Employees 1 Single-Family Dwelling Unit	205 Agricultural/ Industrial +2 Office Employees 1 Single-Family Dwelling Unit	658 Multi-Family Dwelling Unit

Figures showing the forecasted volumes and trip distributions for each development are provided in **Appendix C**. Figures showing the resultant forecasted demands per intersection are shown in **Appendix D**.

ANALYSIS

This section summarizes the applied methodologies and criteria used for analysis and the results of the analysis conducted.

METHODOLOGY

INTERSECTION LEVEL OF SERVICE

The Level of Service (LOS) is an intersection performance measure commonly used to provide an overview of how each movement and the overall intersection is operating. The LOS provides a "report card" rating of letters A through F based on average vehicle delay through the intersection. LOS A indicates free flow conditions with minimal delay traveling through an intersection while LOS F indicates excessive vehicle delay and demand is greater than capacity. For signals, intersection average delay and LOS are based on the average for all vehicles, while at two-way stop-controlled intersections, it's based on the movement with the highest delay. The Highway Capacity Manual has LOS criteria for unsignalized and signalized intersections as shown in **Table 2**.

Traffic operations analysis for traffic signals and stop controlled intersections in the study area was conducted using Synchro 12. Roundabout intersections were analyzed using Sidra 10. Both software platforms employ the methodologies from the *Highway Capacity Manual* (HCM) *7th Edition.*

TABLE 2: INTERSECTION LEVEL-OF-SERVICE

LEVEL OF SERVICE (LOS)	TOTAL DELAY PER VEHICLE (SECONDS)	
	SIGNALIZED	UNSIGNALIZED
A	< 10	< 10
B	> 10 and < 20	> 10 and < 15
C	> 20 and < 35	> 15 and < 25
D	> 35 and < 55	> 25 and < 35
E	> 55 and < 80	> 35 and < 50
F	> 80	> 50

Source: Highway Capacity Manual 7th Edition, Transportation Research Board.

INTERSECTION QUEUING ANALYSIS

95th percentile queue results are defined as the length of the queue which is exceeded five percent of the time during the analysis time period. The 95th percentile queue is useful in determining the appropriate storage requirements such as length of turn pockets but is not representative of what an average driver would experience during their commute. Queue lengths were estimated using Synchro 12 for stop-controlled and signalized intersections and Sidra 10 for roundabout intersections.

LOCAL TRANSPORTATION DEFICIENCY CRITERIA

The City of Goleta defines transportation deficiency criteria through the City General Plan Circulation Element. The primary policies of concern for this study are TE 4, which defines target LOS standards, TE 5, which defines planned street and road improvements, and TE 13, which defines traffic impacts for new developments. From these policies, the City defines a traffic impact as any project which causes an intersection on a major arterial, minor arterial, or collector roadway to degrade below a LOS C except at the intersection of Storke and Hollister where an LOS D standard will be maintained. Projects are required to evaluate the creation of safety hazards, potential adverse effects on local neighborhood streets, and other substantial transportation concerns. The following criteria has been used in this study to identify intersection deficiencies where the projects may be considered responsible for improving the intersection:

- At **signalized** and **roundabout intersections**:
  - The traffic generated by the project results in an intersection operating at an acceptable LOS to deteriorate to an unacceptable LOS.
  - The traffic generated by the project results in an increase to average delay of more than 5 seconds at an intersection that is operating at an unacceptable LOS without the project.
  - Results in increasing the length of an existing queue beyond the available storage at any intersection's right- or left-turn storage pocket by more than one vehicle length (25-feet).
  - Results in increasing the length of an existing queue already exceeding the available storage at any intersection's right- or left-turn storage pocket by more than one vehicle length (25-feet).
  - Results in queueing into adjacent intersections.
- At **unsignalized intersections**:
  - The traffic generated by the project results in an unsignalized intersection movement/approach operating at an acceptable LOS to deteriorate to an unacceptable LOS, and results in the intersection meeting a traffic signal warrant.
  - For an unsignalized intersection that meets a signal warrant, traffic generated by the project increases the delay by more than 5 seconds at a movement/approach that is operating at an unacceptable LOS without the project.
  - Results in increasing the length of an existing queue beyond the available storage at any intersection's right- or left-turn storage pocket by more than one vehicle length (25-feet).
  - Result in increasing the length of an existing queue already exceeding the available storage at any intersection's right- or left-turn storage pocket by more than one vehicle length (25-feet).

TRAFFIC OPERATIONS ANALYSIS

Table 3 summarizes the delay and LOS findings from the analysis for the AM and PM peak hours. From this analysis, the following intersections were found to have delay deficiencies in the future baseline condition:

1. Hollister Avenue & SR-217 WB ramps
2. Hollister Avenue & Ward Drive and SR-217 EB on-ramp
3. Hollister Avenue & St. Joseph Street
5. Hollister Avenue & S Patterson Avenue
10. US-101 SB ramps & N Patterson Avenue
11. US-101 NB ramps & N Patterson Avenue
12. Hollister Avenue & S Fairview Avenue
13. US-101 SB ramps & N Fairview Avenue

Of these intersections, only one operates at LOS E, US-101 SB ramps & N Fairview Avenue, and none operate at LOS F.

When all five development properties are added, the following intersections have either a new operational deficiency or cause an operationally deficient intersection to increase in average delay by more than 5 seconds:

1. Hollister Avenue & SR-217 WB ramps
2. Hollister Avenue & Ward Drive / SR-217 EB On-Ramp
3. Hollister Avenue & St. Joseph Street
5. Hollister Avenue & S Patterson Avenue
7. SR-217 EB off-ramp & Ward Drive
9. Ekwill Street & S Patterson Avenue
10. US-101 SB ramps & N Patterson Avenue
13. US-101 SB ramps & N Fairview Avenue

Of these intersections, Hollister Avenue & SR-217 WB ramps and Hollister Avenue & Ward Drive / SR-217 EB On-Ramp operate at an LOS F during the AM peak hour; Hollister Avenue & S Patterson Avenue operates at an LOS E during the AM peak hour; and Hollister Avenue & Ward Drive / SR-217 EB On-Ramp and US-101 SB ramps & N Fairview Avenue operate at LOS E in the PM peak hour.

TABLE 3: INTERSECTION OPERATIONS ANALYSIS RESULTS - ALL SCENARIOS

INTERSECTION	EXISTING				FUTURE BASELINE				FUTURE + ALL PROJECTS			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
HOLLISTER AVENUE & SR-217 WB RAMPS (ROUNDABOUT)	24.4	C	21.9	C	**32.6**	**D**	12.4	B	**50.6**	**F**	18.0	C
HOLLISTER AVENUE & WARD DRIVE / SR-217 EB ON-RAMP (ROUNDABOUT)	29.9	C	**35.3**	**D**	16.6	C	**31.7**	**D**	**52.8**	**F**	**37.1**	**E**
HOLLISTER AVENUE & ST. JOSEPH STREET (TWO-WAY STOP)	1.1 [12.0]	A [B]	0.7 [17.3]	A [C]	1.2 [17.9]	A [C]	**0.7 [25.3]**	**A [D]**	1.3 [23.6]	A [C]	**0.7 [31.5]**	**A [D]**
HOLLISTER AVENUE & SUMIDA GARDENS LANE (SIGNALIZED)	11.5	B	11.5	B	12.7	B	12.1	B	18.0	B	17.0	B
HOLLISTER AVENUE & S PATTERSON AVENUE (SIGNALIZED)	**35.7**	**D**	33.1	C	**67.5**	**E**	**44.3**	**D**	**75.5**	**E**	**45.0**	**D**
HOLLISTER AVENUE & SAN RICARDO DRIVE (SIGNALIZED)	13.5	B	12.8	B	28.1	C	17.2	B	21.1	C	16.2	B
SR-217 EB OFF-RAMP & WARD DRIVE (TWO-WAY STOP)	1.8 [11.8]	A [B]	4.4 [14.3]	A [B]	2.3 [12.1]	A [B]	7.2 [17.0]	A [C]	2.3 [15.2]	A [C]	**9.5 [28.6]**	**A [D]**
EKWILL STREET & WARD DRIVE (TWO-WAY STOP)	2.1 [8.9]	A [A]	2.7 [9.2]	A [A]	1.8 [9.1]	A [A]	2.6 [9.2]	A [A]	3.7 [9.2]	A [A]	4.0 [9.5]	A [A]
EKWILL STREET & S PATTERSON AVENUE (TWO-WAY STOP)	2.1 [11.1]	A [B]	2.1 [10.8]	A [B]	3.4 [10.6]	A [B]	3.9 [11.2]	A [B]	**6.9 [28.3]**	**A [D]**	**4.2 [25.6]**	**A [D]**
US-101 SB RAMPS & N PATTERSON AVENUE (SIGNALIZED)	24.8	C	**40.4**	**D**	**35.5**	**D**	**35.6**	**D**	**49.2**	**D**	**50.8**	**D**

INTERSECTION	EXISTING				FUTURE BASELINE				FUTURE + ALL PROJECTS			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
US-101 NB RAMPS & N PATTERSON AVENUE (SIGNALIZED)	31.1	C	26.0	C	**44.1**	**D**	28.6	C	**42.7**	**D**	30.8	C
HOLLISTER AVENUE & FAIRVIEW AVENUE (SIGNALIZED)	29.6	C	31.6	C	**37.9**	**D**	**42.5**	**D**	**40.4**	**D**	**44.5**	**D**
US-101 SB RAMPS & N FAIRVIEW AVENUE (SIGNALIZED)	15.0	B	**47.3**	**D**	18.6	B	**63.2**	**E**	18.8	B	**75.3**	**E**
US-101 NB RAMPS & N FAIRVIEW AVENUE (SIGNALIZED)	9.1	A	11.6	B	9.7	A	10.1	B	9.7	A	10.1	B

1. [Worst stop-controlled delay] for TWSC intersections.
2. Bold numbers indicate the intersection does not meet City LOS Standard, Highlight indicates the project contributes

INTERSECTION QUEUEING ANALYSIS

Table 4 summarizes the intersections queueing deficiencies identified as part of the traffic operations analysis. The table reports all freeway off-ramp queues in order to confirm if there are any potential safety impacts to freeway operations from queues extending onto the freeway mainline. For all other intersections, only movements which exceed the available storage for that movement are reported. For turning movements, this is when the 95th percentile queue exceeds the length of the storage pocket and for through movements, this is when the 95th percentile queue exceeds the distance between intersections.

Based on the findings of this analysis queueing deficiencies are expected to be created by or exacerbated by the combination of proposed projects at the following locations:

4. Hollister Avenue & Sumida Gardens Lane
5. Hollister Avenue & S Patterson Avenue
10. US-101 SB ramps & N Patterson Avenue
12. Hollister Avenue & S Fairview Avenue
13. US-101 SB ramps & N Fairview Avenue

From this analysis it is important to note that no queues are anticipated to extend from ramp terminal intersections onto Caltrans freeway mainline.

TABLE 4: INTERSECTION 95TH PERCENTILE QUEUEING ANALYSIS RESULTS - ALL SCENARIOS

INTERSECTION[1]	PEAK PERIOD	MOVEMENT / APPROACH	AVAILABLE STORAGE	EXISTING CONDITIONS	FUTURE BASELINE	FUTURE + ALL PROJECTS
4. HOLLISTER AVENUE/ SUMIDA GARDENS LANE	AM	Northbound Left	100		17	**182**
	PM	Northbound Left	100		52	**144**
5. HOLLISTER AVENUE/ S PATTERSON AVENUE	AM	Westbound Left	145		188	171
		Westbound Through	815		823[2]	718[2]
		Northbound Left	150		104	**378[2]**
		Southbound Left	155		187	195
	PM	Eastbound Left	135		192[2]	159
		Northbound Left	150		126	**213**
		Southbound Left	155		388	395
6. HOLLISTER AVENUE/ SAN RICARDO DRIVE	AM	Northbound	115		190[2]	152
	PM	Eastbound Left	145		230	196
7. SR-217 EB OFF-RAMP/ WARD DRIVE	AM	Eastbound	1,300	10	15	25
	PM	Eastbound	1,300	40	75	135
10. US-101 SB RAMPS/ N PATTERSON AVENUE	AM	Eastbound	240	294[2]	444[2]	435[2]
	PM	Eastbound	240	286	317	**518[2]**
		Northbound Through	790		360[2]	

INTERSECTION[1]	PEAK PERIOD	MOVEMENT / APPROACH	AVAILABLE STORAGE	EXISTING CONDITIONS	FUTURE BASELINE	FUTURE + ALL PROJECTS
11. US-101 NB RAMPS/ N PATTERSON AVENUE	AM	Westbound	800	273	271	264
		Northbound Left	300		293[3]	
	PM	Westbound	800	205	235[2]	
		Northbound Left	300		313[3]	304[3]
12. HOLLISTER AVENUE/ S FAIRVIEW AVE	AM	Northbound Left	75	121	169[2]	153
		Southbound Left	240		243[2]	231[2]
		Southbound Right	105	138	563[2]	514[2]
	PM	Westbound Right	200		570	**598**
		Northbound Left	75	188	253	246
		Southbound Left	240		267	277
		Southbound Right	105		118	109
13. US-101 SB RAMPS/ N FAIRVIEW AVENUE	AM	Eastbound	1,250	95	183	176
	PM	Eastbound	1,250	159	273[2]	273[2]
		Northbound Right	190	494[2]	925[2]	**1052[2]**
14. US-101 NB RAMPS/ N FAIRVIEW AVENUE	AM	Westbound	1,260	230	482[2]	524[2]
	PM	Westbound	1,260	159	382	423

Source: DKS Associates, 2026.
1. All queues are reported for all freeway ramps, only deficient queues are reported for local street intersections.
2. 95th percentile volume exceeds capacity, queue may be longer.
3. Volume for 95th percentile queue is metered by upstream signal.

CONCLUSION AND RECOMMENDATIONS FOR FURTHER ANALYSIS

The findings of this report are based on a baseline version of project access and assumed land development capacities provided by the County. These findings are subject to change with future evaluations as better information becomes available regarding the total potential future development. The purpose of this study is to help inform Santa Barbara County and the City of Goleta about potential future traffic deficiencies off site if the total proposed land development were to be realized.

Based on this evaluation, it is anticipated that the collection of proposed projects within Santa Barbara County will create several potential operational deficiencies within the City of Goleta. While most of these projects would not individually trigger the need for operational improvements, the cumulative effect of all five properties developing would create deficiencies within the City of Goleta. The following intersections have been identified as potential operational deficiencies that will require more focused study as these developments move forward:

1. Hollister Avenue & SR-217 WB ramps
2. Hollister Avenue & Ward Drive / SR-217 EB On-Ramp
3. Hollister Avenue & St. Joseph Street
4. Hollister Avenue & Sumida Gardens Lane
5. Hollister Avenue & S Patterson Avenue
7. SR-217 EB off-ramp & Ward Drive
9. Ekwill Street & S Patterson Avenue
10. US-101 SB ramps & N Patterson Avenue
12. Hollister Avenue & S Fairview Avenue
13. US-101 SB ramps & N Fairview Avenue

A joint traffic study or specific plan for these properties is suggested to ensure that no one property owner is held responsible for the full expense of roadway improvements necessary to accommodate the cumulative traffic generated by these properties.

Future evaluations should also include consideration for roadway network improvements that can reduce the reliance of these properties on access to Hollister Avenue via Ward Drive and South Patterson Way and to minimize the intersection operational deficiencies identified herein.

APPENDIX

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CONTENTS

SECTION A. TRAFFIC COUNTS

SECTION B. BALANCED EXISTING CONDITIONS VOLUMES

SECTION C. FORECASTING AND DISTRIBUTION

SECTION D: FORECAST INTERSECTION DEMAND

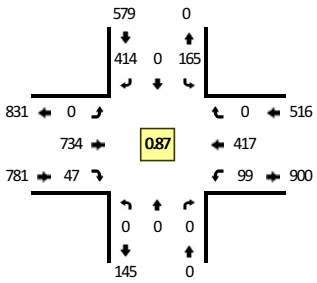
SECTION E: SYNCHRO OUTPUTS

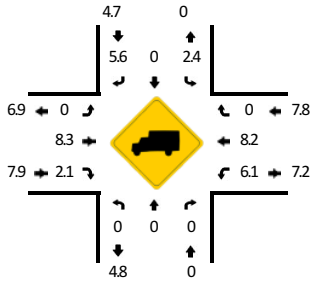
SECTION A. TRAFFIC COUNTS

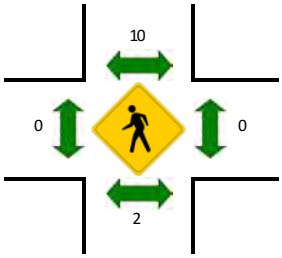
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

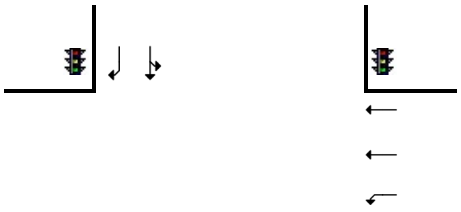
LOCATION: US 217 WB Ramps -- Hollister Ave | **QC JOB #:** 16570191
CITY/STATE: Goleta, CA | **DATE:** Tue, May 7 2024

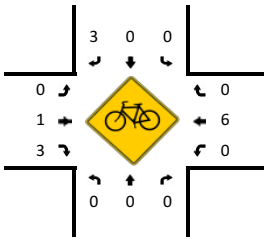
Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

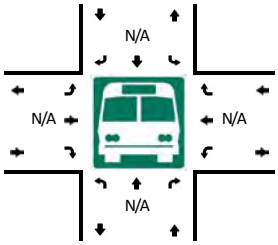


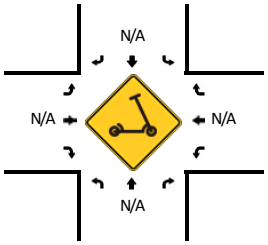












5-Min Count Period Beginning At	US 217 WB Ramps (Northbound)				US 217 WB Ramps (Southbound)				Hollister Ave (Eastbound)				Hollister Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	8	0	27	0	0	53	0	0	4	29	0	0	121	
7:05 AM	0	0	0	0	6	0	36	0	0	38	2	0	3	17	0	0	102	
7:10 AM	0	0	0	0	13	0	28	0	0	28	0	0	5	8	0	0	82	
7:15 AM	0	0	0	0	6	0	17	0	0	57	4	0	4	18	0	0	106	
7:20 AM	0	0	0	0	10	1	23	0	0	54	3	0	7	11	0	0	109	
7:25 AM	0	0	0	0	12	0	20	0	0	56	4	0	1	19	0	0	112	
7:30 AM	0	0	0	0	7	0	29	0	0	45	1	0	3	33	0	0	118	
7:35 AM	0	0	0	0	18	0	37	0	0	63	2	0	3	22	0	0	145	
7:40 AM	0	0	0	0	9	0	31	0	0	54	2	0	11	16	0	0	123	
7:45 AM	0	0	0	0	34	0	30	0	0	72	4	0	8	30	0	0	178	
7:50 AM	0	0	0	0	17	0	50	0	0	73	3	0	12	28	0	0	183	
7:55 AM	0	0	0	0	14	0	38	0	0	82	5	0	8	30	0	0	177	1556
8:00 AM	0	0	0	0	15	0	32	0	0	58	7	0	10	43	0	1	166	1601
8:05 AM	0	0	0	0	9	0	40	0	0	62	2	0	10	38	0	0	161	1660
8:10 AM	0	0	0	0	12	0	29	0	0	73	5	0	6	36	0	0	161	1739
8:15 AM	0	0	0	0	9	0	41	0	0	50	5	0	5	31	0	0	141	1774
8:20 AM	0	0	0	0	15	0	36	0	0	57	2	0	10	48	0	0	168	1833
8:25 AM	0	0	0	0	9	0	33	0	0	56	6	0	5	38	0	0	147	1868
8:30 AM	0	0	0	0	9	0	27	0	0	47	1	0	8	33	0	0	125	1875
8:35 AM	0	0	0	0	5	0	22	0	0	58	5	0	9	36	0	0	135	1865
8:40 AM	0	0	0	0	17	0	36	0	0	46	2	0	7	26	0	0	134	1876
8:45 AM	0	0	0	0	6	0	39	0	0	37	6	0	11	23	0	0	122	1820
8:50 AM	0	0	0	0	13	0	44	0	0	42	2	0	4	22	0	0	127	1764
8:55 AM	0	0	0	0	10	0	42	0	0	49	1	0	9	37	0	0	148	1735

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	260	0	472	0	0	908	48	0	112	352	0	0	2152
Heavy Trucks	0	0	0		4	0	12		0	84	4		8	32	0		144
Buses																	
Pedestrians		4				20				0				0			24
Bicycles	0	0	0		0	0	4		0	0	4		0	0	0		8
Scooters																	

Comments:

Report generated on 6/20/2024 3:42 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

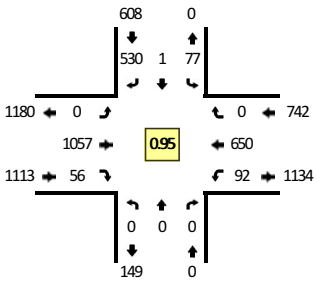
Type of peak hour being reported: Intersection Peak

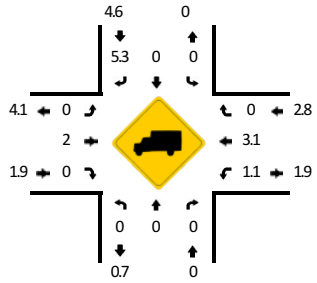
Method for determining peak hour: Total Entering Volume

LOCATION: US 217 WB Ramps -- Hollister Ave
CITY/STATE: Goleta, CA

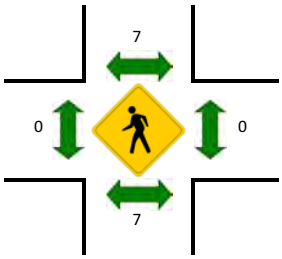
QC JOB #: 16570192
DATE: Tue, May 7 2024

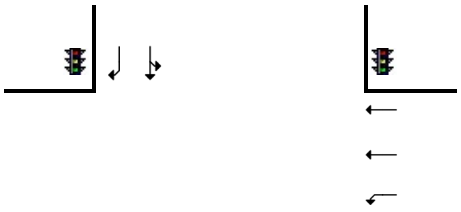
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

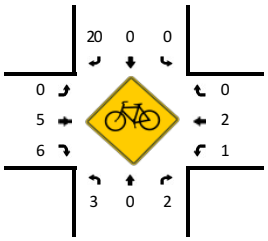


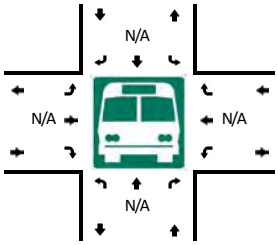


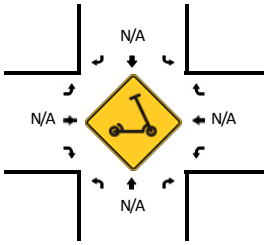
TRUE DATA TO IMPROVE MOBILITY











5-Min Count Period Beginning At	US 217 WB Ramps (Northbound)				US 217 WB Ramps (Southbound)				Hollister Ave (Eastbound)				Hollister Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	8	0	39	0	0	70	4	0	17	48	0	0	186	
4:05 PM	0	0	0	0	10	0	44	0	0	68	2	0	9	50	0	0	183	
4:10 PM	0	0	0	0	9	0	47	0	0	69	4	0	7	41	0	0	177	
4:15 PM	0	0	0	0	5	0	34	0	1	96	4	0	11	40	0	0	191	
4:20 PM	0	0	0	0	4	0	44	0	0	88	3	0	6	34	0	0	179	
4:25 PM	0	0	0	0	11	0	47	0	0	88	2	0	7	49	0	0	204	
4:30 PM	0	0	0	0	6	0	44	0	0	88	4	0	6	65	0	0	213	
4:35 PM	0	0	0	0	7	0	39	0	0	92	5	0	8	47	0	0	198	
4:40 PM	0	0	0	0	1	1	40	0	0	90	4	0	11	47	0	0	194	
4:45 PM	0	0	0	0	9	0	35	0	0	108	6	0	10	55	0	0	223	
4:50 PM	0	0	0	0	7	0	40	0	0	79	5	0	12	61	0	0	204	
4:55 PM	0	0	0	0	5	0	35	0	0	84	6	0	9	33	0	0	172	2324
5:00 PM	0	0	0	0	5	0	36	0	0	79	5	0	5	57	0	0	187	2325
5:05 PM	0	0	0	0	6	0	46	0	0	91	1	0	7	62	0	0	213	2355
5:10 PM	0	0	0	0	11	0	53	0	0	74	3	0	10	66	0	0	217	2395
5:15 PM	0	0	0	0	5	0	55	0	0	81	7	0	8	60	0	0	216	2420
5:20 PM	0	0	0	0	5	0	51	0	0	104	3	0	1	45	0	0	209	2450
5:25 PM	0	0	0	0	10	0	56	0	0	87	7	0	5	52	0	0	217	2463
5:30 PM	0	0	0	0	8	1	45	0	0	98	6	0	4	37	0	0	199	2449
5:35 PM	0	0	0	0	1	1	36	0	0	91	1	0	9	41	0	0	180	2431
5:40 PM	0	0	0	0	11	0	30	0	0	73	5	0	6	41	0	0	166	2403
5:45 PM	0	0	0	0	4	0	39	0	0	62	4	0	4	30	0	0	143	2323
5:50 PM	0	0	0	0	6	0	23	0	0	63	2	0	6	42	0	0	142	2261
5:55 PM	0	0	0	0	5	0	24	0	0	54	2	0	11	43	0	0	139	2228

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	88	0	616	0	0	984	44	0	100	752	0	0	2584
Heavy Trucks	0	0	0		0	0	28		0	24	0		0	20	0		72
Buses																	
Pedestrians		0				4				0				0			4
Bicycles	4	0	4		0	0	20		0	4	8		4	0	0		44
Scooters																	

Comments:

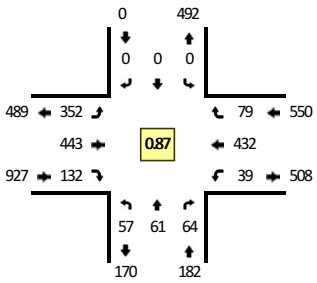
Report generated on 6/20/2024 3:42 PM

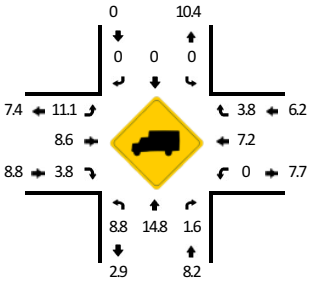
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

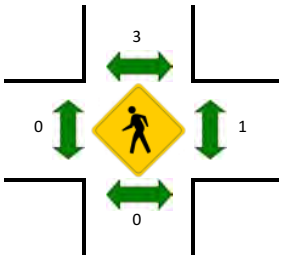
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

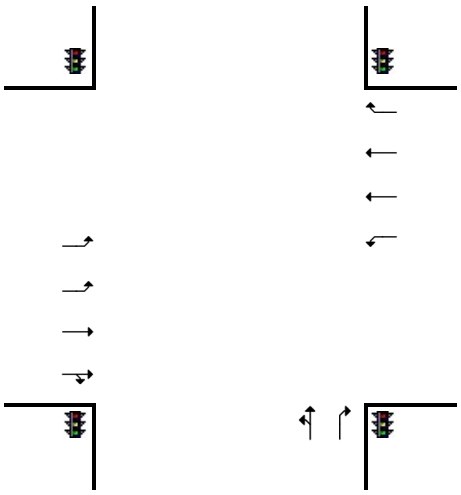
LOCATION: US 217 EB Ramp/Ward Dr -- Hollister Ave | **QC JOB #:** 16570193
CITY/STATE: Goleta, CA | **DATE:** Tue, May 7 2024

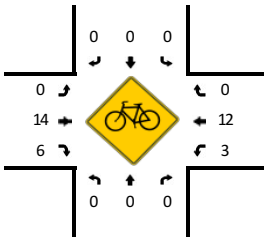
Peak-Hour: 7:35 AM -- 8:35 AM
Peak 15-Min: 7:50 AM -- 8:05 AM

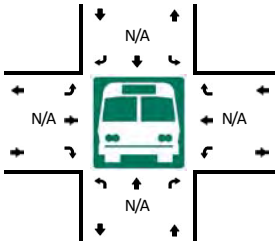


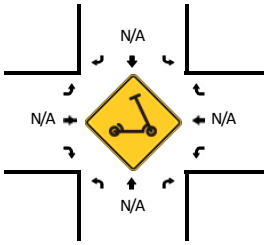












5-Min Count Period Beginning At	US 217 EB Ramp/Ward Dr (Northbound)				US 217 EB Ramp/Ward Dr (Southbound)				Hollister Ave (Eastbound)				Hollister Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	6	1	3	0	0	0	0	0	16	26	14	0	4	28	2	0	100	
7:05 AM	1	5	1	0	0	0	0	0	23	7	6	0	4	17	1	0	65	
7:10 AM	3	3	1	0	0	0	0	0	24	21	12	0	3	10	1	0	78	
7:15 AM	2	3	4	0	0	0	0	0	21	34	11	0	3	22	1	0	101	
7:20 AM	2	3	5	0	0	0	0	0	30	17	10	0	3	21	5	0	96	
7:25 AM	1	5	4	0	0	0	0	0	29	20	21	0	2	14	4	0	100	
7:30 AM	2	5	3	0	0	0	0	0	7	11	12	0	1	33	2	0	76	
7:35 AM	0	3	2	0	0	0	0	0	45	27	10	0	4	26	2	0	119	
7:40 AM	3	9	5	0	0	0	0	0	37	37	5	0	0	25	9	0	130	
7:45 AM	3	7	6	0	0	0	0	0	21	40	22	0	0	35	7	0	141	
7:50 AM	4	7	8	0	0	0	0	0	40	56	13	0	1	37	6	0	172	
7:55 AM	3	8	6	0	0	0	0	0	36	50	9	0	5	32	9	0	158	1336
8:00 AM	6	3	10	0	0	0	0	0	20	38	12	0	3	47	7	0	146	1382
8:05 AM	4	2	1	0	0	0	0	0	27	41	8	0	4	40	7	0	134	1451
8:10 AM	7	10	7	0	0	0	0	0	27	45	13	0	4	34	9	0	156	1529
8:15 AM	7	3	3	0	0	0	0	0	31	17	9	0	4	37	1	0	112	1540
8:20 AM	8	1	5	0	0	0	0	0	31	28	10	0	8	52	8	0	151	1595
8:25 AM	8	6	6	0	0	0	0	0	18	35	12	0	2	31	7	1	126	1621
8:30 AM	4	2	5	0	0	0	0	0	19	29	9	0	3	36	7	0	114	1659
8:35 AM	5	3	4	0	0	0	0	0	21	25	5	0	3	36	3	1	106	1646
8:40 AM	3	3	2	0	0	0	0	0	29	22	18	0	1	29	4	0	111	1627
8:45 AM	0	6	4	0	0	0	0	0	28	16	7	0	2	33	5	0	101	1587
8:50 AM	6	12	2	0	0	0	0	0	27	17	11	0	2	26	5	1	109	1524
8:55 AM	4	7	8	0	0	0	0	0	22	28	8	0	4	44	6	0	131	1497

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	52	72	96	0	0	0	0	0	384	576	136	0	36	464	88	0	1904
Heavy Trucks	0	20	4		0	0	0		20	80	4		0	28	0		156
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	16	0		8	4	0		28
Scooters																	

Comments:

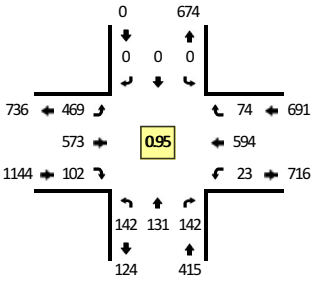
Report generated on 6/20/2024 3:42 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

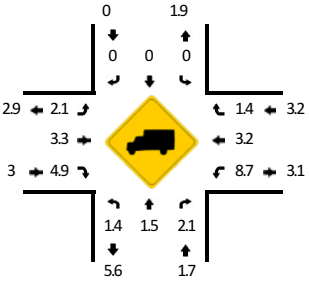
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

LOCATION: US 217 EB Ramp/Ward Dr -- Hollister Ave
CITY/STATE: Goleta, CA

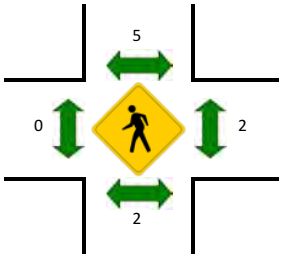
QC JOB #: 16570194
DATE: Tue, May 7 2024

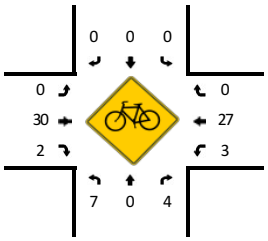
Peak-Hour: 4:25 PM -- 5:25 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

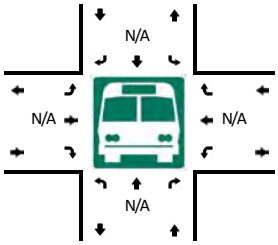


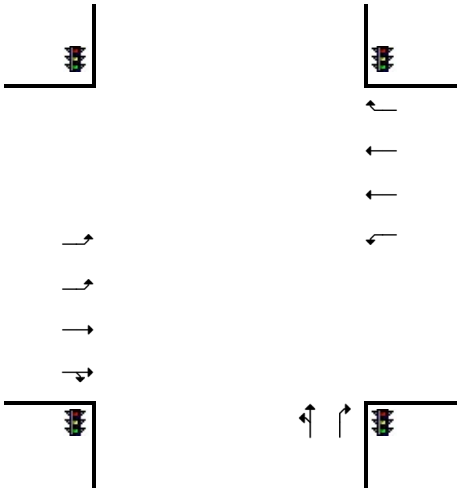


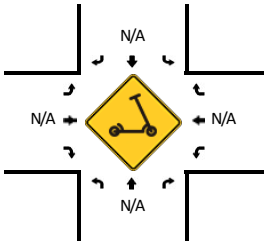
TRUE DATA TO IMPROVE MOBILITY











5-Min Count Period Beginning At	US 217 EB Ramp/Ward Dr (Northbound)				US 217 EB Ramp/Ward Dr (Southbound)				Hollister Ave (Eastbound)				Hollister Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	11	8	7	0	0	0	0	0	30	32	8	0	7	52	3	0	158	
4:05 PM	12	15	10	0	0	0	0	0	36	43	12	0	4	47	3	0	182	
4:10 PM	14	15	13	0	0	0	0	0	31	44	8	0	1	33	3	0	162	
4:15 PM	5	11	17	0	0	0	0	0	28	59	12	0	3	37	2	0	174	
4:20 PM	3	9	19	0	0	0	0	0	43	40	7	0	1	52	7	0	181	
4:25 PM	12	14	9	0	0	0	0	0	35	46	16	0	2	45	7	0	186	
4:30 PM	8	10	13	0	0	0	0	0	30	45	4	0	3	52	5	0	170	
4:35 PM	11	9	13	0	0	0	0	0	59	55	12	0	1	45	4	0	209	
4:40 PM	6	11	12	0	0	0	0	0	47	43	3	0	4	51	7	0	184	
4:45 PM	10	13	6	0	0	0	0	0	36	55	10	0	0	55	5	0	190	
4:50 PM	6	6	16	0	0	0	0	0	24	44	10	0	3	68	4	0	181	
4:55 PM	9	19	10	0	0	0	0	0	48	51	7	0	1	31	2	0	178	2155
5:00 PM	16	10	8	0	0	0	0	0	36	39	9	0	4	44	12	0	178	2175
5:05 PM	17	7	16	0	0	0	0	0	38	37	9	0	2	52	6	0	184	2177
5:10 PM	21	14	13	0	0	0	0	0	26	34	13	0	0	61	5	0	187	2202
5:15 PM	13	9	11	0	0	0	0	0	42	63	6	0	1	49	12	1	207	2235
5:20 PM	13	9	15	0	0	0	0	0	48	61	3	0	1	41	5	0	196	2250
5:25 PM	8	13	7	0	0	0	0	0	33	53	7	0	3	45	6	1	176	2240
5:30 PM	6	10	12	0	0	0	0	0	21	56	12	0	1	47	5	0	170	2240
5:35 PM	7	13	12	0	0	0	0	0	47	53	1	0	1	34	3	1	172	2203
5:40 PM	7	6	11	0	0	0	0	0	24	34	10	0	1	39	4	0	136	2155
5:45 PM	6	8	11	0	0	0	0	0	50	28	14	0	1	38	3	0	159	2124
5:50 PM	6	8	6	0	0	0	0	0	27	30	9	0	2	29	0	0	117	2060
5:55 PM	8	8	5	0	0	0	0	0	25	30	5	0	1	43	3	0	128	2010

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	188	128	156	0	0	0	0	0	464	632	88	0	8	604	88	4	2360
Heavy Trucks	0	4	4		0	0	0		8	24	8		0	4	0		52
Buses																	
Pedestrians		0				0				0				4			4
Bicycles	4	0	4		0	0	0		0	52	4		8	24	0		96
Scooters																	

Comments:

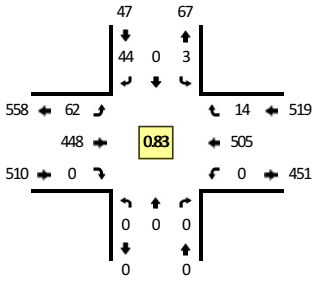
Report generated on 6/20/2024 3:42 PM

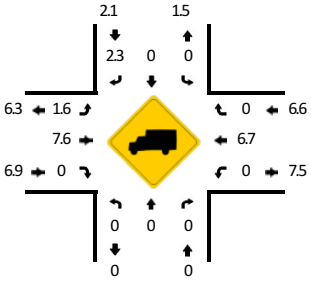
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

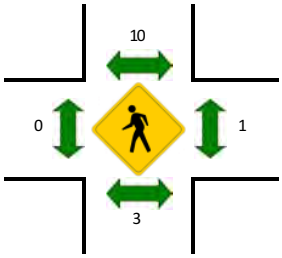
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

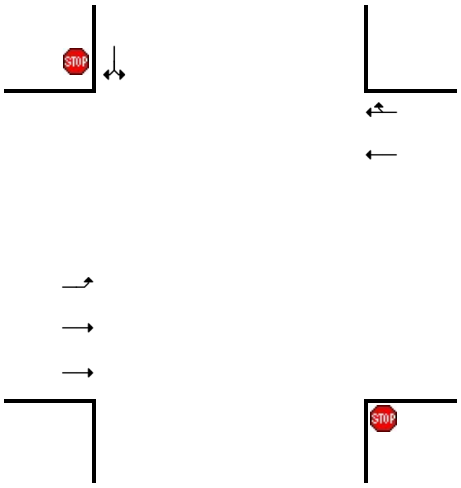
LOCATION: St Josephs St -- Hollister Ave | **QC JOB #:** 16570195
CITY/STATE: Goleta, CA | **DATE:** Tue, May 7 2024

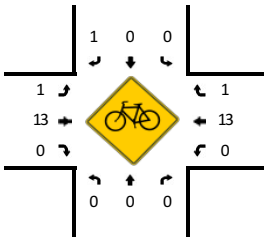
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 7:50 AM -- 8:05 AM

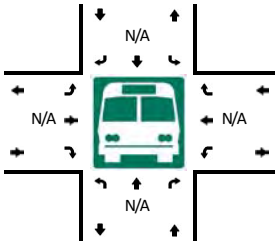


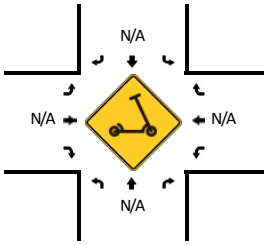












5-Min Count Period Beginning At	St Josephs St (Northbound)				St Josephs St (Southbound)				Hollister Ave (Eastbound)				Hollister Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	2	28	0	0	0	34	1	0	65	
7:05 AM	0	0	0	0	0	0	0	0	0	7	0	0	0	23	2	0	32	
7:10 AM	0	0	0	0	0	0	1	0	2	21	0	0	0	13	1	0	38	
7:15 AM	0	0	0	0	0	0	1	0	1	36	0	0	0	25	0	0	63	
7:20 AM	0	0	0	0	0	0	1	0	2	20	0	0	0	29	0	0	52	
7:25 AM	0	0	0	0	0	0	0	0	0	14	0	0	0	23	0	0	37	
7:30 AM	0	0	0	0	1	0	1	0	2	22	0	1	0	32	1	0	60	
7:35 AM	0	0	0	0	0	0	2	0	3	22	0	0	0	24	0	0	51	
7:40 AM	0	0	0	0	0	0	2	0	5	33	0	0	0	36	3	0	79	
7:45 AM	0	0	0	0	0	0	1	0	12	40	0	0	0	37	2	0	92	
7:50 AM	0	0	0	0	0	0	5	0	12	51	0	2	0	39	2	0	111	
7:55 AM	0	0	0	0	0	0	12	0	5	49	0	0	0	51	4	0	121	801
8:00 AM	0	0	0	0	0	0	5	0	7	42	0	1	0	37	1	0	93	829
8:05 AM	0	0	0	0	0	0	2	0	2	41	0	0	0	49	1	0	95	892
8:10 AM	0	0	0	0	0	0	2	0	4	45	0	2	0	43	1	0	97	951
8:15 AM	0	0	0	0	0	0	0	0	1	18	0	1	0	51	0	0	71	959
8:20 AM	0	0	0	0	0	0	4	0	3	28	0	0	0	55	0	0	90	997
8:25 AM	0	0	0	0	0	0	1	0	1	40	0	0	0	35	0	0	77	1037
8:30 AM	0	0	0	0	3	0	8	0	1	33	0	1	0	31	0	0	77	1054
8:35 AM	0	0	0	0	0	0	2	0	0	28	0	2	0	41	0	0	73	1076
8:40 AM	0	0	0	0	1	0	3	0	0	24	0	0	0	37	1	0	66	1063
8:45 AM	0	0	0	0	1	0	2	0	0	18	0	1	0	28	0	0	50	1021
8:50 AM	0	0	0	0	1	0	0	0	1	17	0	2	0	40	0	0	61	971
8:55 AM	0	0	0	0	2	0	2	0	1	35	0	0	0	40	0	0	80	930

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	88	0	96	568	0	12	0	508	28	0	1300
Heavy Trucks	0	0	0		0	0	4		4	76	0		0	28	0		112
Buses																	
Pedestrians		4				24				0				0			28
Bicycles	0	0	0		0	0	0		0	16	0		0	12	4		32
Scooters																	

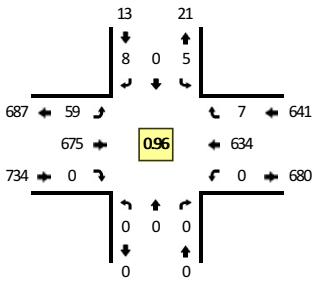
Comments:

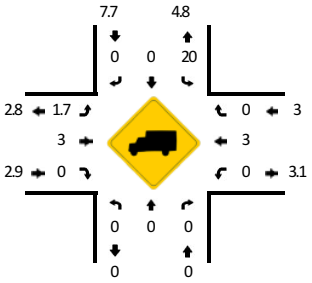
Report generated on 6/20/2024 3:42 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

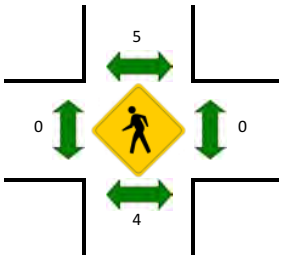
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

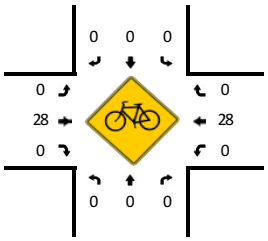
LOCATION: St Josephs St -- Hollister Ave | **QC JOB #:** 16570196
CITY/STATE: Goleta, CA | **DATE:** Tue, May 7 2024

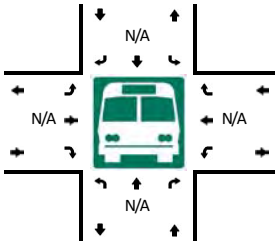
Peak-Hour: 4:35 PM -- 5:35 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

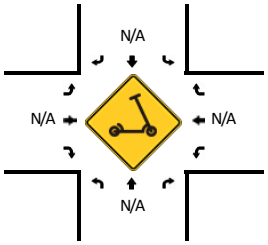












5-Min Count Period Beginning At	St Josephs St (Northbound)				St Josephs St (Southbound)				Hollister Ave (Eastbound)				Hollister Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	0	0	1	39	0	0	0	59	0	0	99	
4:05 PM	0	0	0	0	2	0	3	0	0	52	0	3	0	48	1	0	109	
4:10 PM	0	0	0	0	0	0	1	0	1	55	0	2	0	36	0	0	95	
4:15 PM	0	0	0	0	2	0	2	0	0	72	0	2	0	43	0	0	121	
4:20 PM	0	0	0	0	0	0	1	0	3	52	0	1	0	56	0	0	113	
4:25 PM	0	0	0	0	0	0	1	0	0	55	0	3	0	47	0	0	106	
4:30 PM	0	0	0	0	0	0	1	0	0	57	0	2	0	53	0	0	113	
4:35 PM	0	0	0	0	0	0	1	0	1	57	0	1	0	61	0	0	121	
4:40 PM	0	0	0	0	0	0	0	0	0	52	0	2	0	60	0	0	114	
4:45 PM	0	0	0	0	0	0	0	0	1	57	0	6	0	40	1	0	105	
4:50 PM	0	0	0	0	0	0	0	0	1	60	0	3	0	71	0	0	135	
4:55 PM	0	0	0	0	0	0	1	0	0	55	0	2	0	38	1	0	97	1328
5:00 PM	0	0	0	0	2	0	3	0	0	40	0	5	0	58	1	0	109	1338
5:05 PM	0	0	0	0	1	0	1	0	0	53	0	4	0	63	0	0	122	1351
5:10 PM	0	0	0	0	0	0	0	0	0	52	0	1	0	49	1	0	103	1359
5:15 PM	0	0	0	0	0	0	1	0	1	71	0	4	0	55	2	0	134	1372
5:20 PM	0	0	0	0	0	0	0	0	2	66	0	5	0	40	1	0	114	1373
5:25 PM	0	0	0	0	1	0	0	0	1	52	0	8	0	51	0	0	113	1380
5:30 PM	0	0	0	0	1	0	1	0	7	60	0	4	0	48	0	0	121	1388
5:35 PM	0	0	0	0	0	0	1	0	1	64	0	1	0	31	1	0	99	1366
5:40 PM	0	0	0	0	1	0	0	0	1	43	0	1	0	44	1	0	91	1343
5:45 PM	0	0	0	0	0	0	2	0	1	33	0	3	0	40	1	0	80	1318
5:50 PM	0	0	0	0	0	0	1	0	2	33	0	4	0	29	2	0	71	1254
5:55 PM	0	0	0	0	0	0	0	0	1	31	0	3	0	43	0	0	78	1235

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	4	0	4	0	16	756	0	68	0	584	12	0	1444
Heavy Trucks	0	0	0		0	0	0		0	28	0		0	0	0		28
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	40	0		0	16	0		56
Scooters																	

Comments:

Report generated on 6/20/2024 3:42 PM

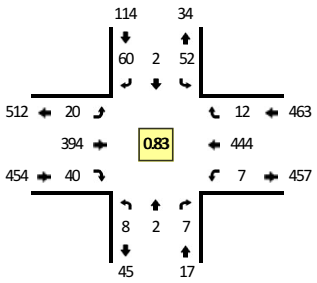
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

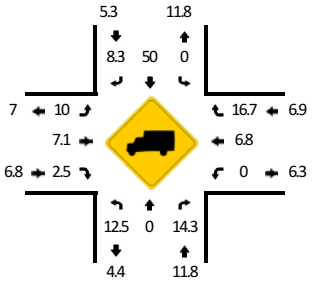
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

LOCATION: Sumida Gardens Ln -- Hollister Ave
CITY/STATE: Goleta, CA

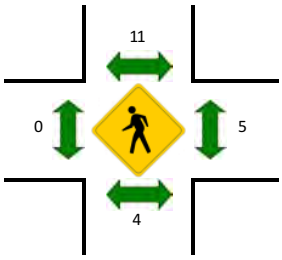
QC JOB #: 16570197
DATE: Tue, May 7 2024

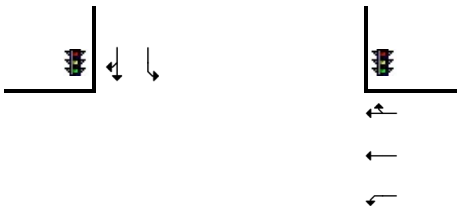
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 7:50 AM -- 8:05 AM

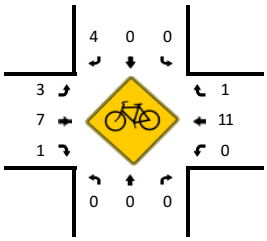


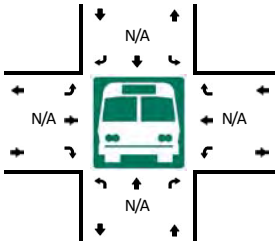


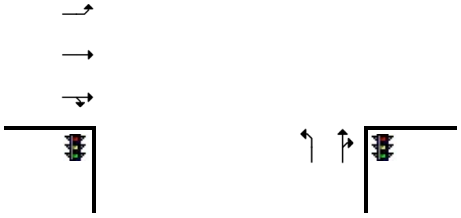
TRUE DATA TO IMPROVE MOBILITY

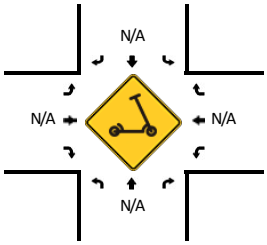












5-Min Count Period Beginning At	Sumida Gardens Ln (Northbound)				Sumida Gardens Ln (Southbound)				Hollister Ave (Eastbound)				Hollister Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	1	0	2	0	0	20	4	0	0	33	2	0	62	
7:05 AM	1	0	0	0	0	0	4	0	2	8	1	0	0	19	1	0	36	
7:10 AM	0	0	0	0	1	0	4	0	1	17	3	0	0	14	1	0	41	
7:15 AM	0	0	1	0	1	0	3	0	2	30	5	0	0	17	0	0	59	
7:20 AM	0	0	0	0	0	0	6	0	1	18	1	0	0	23	0	0	49	
7:25 AM	0	0	1	0	2	0	3	0	1	10	1	0	0	21	0	0	39	
7:30 AM	1	0	0	0	0	0	1	0	2	22	0	0	2	33	1	0	62	
7:35 AM	3	0	1	0	2	1	4	0	3	16	4	0	0	23	0	0	57	
7:40 AM	0	0	1	0	4	0	7	0	3	27	1	0	0	26	0	0	69	
7:45 AM	1	0	1	0	4	0	3	0	3	35	3	0	0	35	1	0	86	
7:50 AM	0	0	2	0	6	0	6	0	5	44	3	0	0	37	3	0	106	
7:55 AM	2	0	1	0	9	1	13	0	1	40	6	0	1	40	2	0	116	782
8:00 AM	1	0	0	0	10	1	5	0	3	37	4	0	0	31	2	0	94	814
8:05 AM	1	1	0	0	6	0	6	0	1	38	2	0	0	42	2	2	101	879
8:10 AM	0	0	1	0	2	0	4	0	2	41	4	0	0	38	0	0	92	930
8:15 AM	1	0	0	0	3	0	3	0	0	14	4	0	1	49	1	0	76	947
8:20 AM	0	0	0	0	1	0	5	0	1	25	2	0	0	48	0	1	83	981
8:25 AM	1	0	1	0	2	0	4	0	0	37	4	0	0	33	1	0	83	1025
8:30 AM	1	1	0	0	0	0	0	0	1	32	4	0	1	28	0	1	69	1032
8:35 AM	0	0	0	0	5	0	4	0	0	24	3	0	0	37	0	0	73	1048
8:40 AM	0	1	1	0	1	0	8	0	2	21	3	0	0	28	1	1	67	1046
8:45 AM	1	0	0	0	1	0	4	0	1	16	2	0	0	24	0	1	50	1010
8:50 AM	1	0	0	0	1	1	5	0	0	16	2	0	1	35	0	0	62	966
8:55 AM	0	0	0	0	5	0	3	0	3	31	0	0	1	34	1	0	78	928

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	0	12	0	100	8	96	0	36	484	52	0	4	432	28	0	1264
Heavy Trucks	0	0	4		0	4	4		8	52	4		0	28	8		112
Buses																	
Pedestrians		4				20				0				4			28
Bicycles	0	0	0		0	0	8		4	8	4		0	0	0		24
Scooters																	

Comments:

Report generated on 6/20/2024 3:42 PM

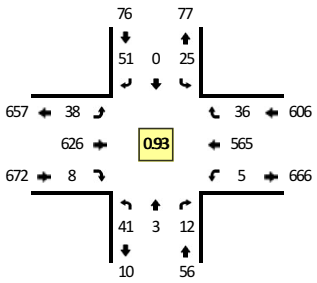
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

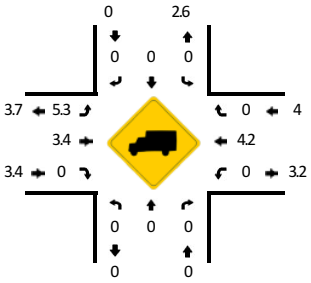
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

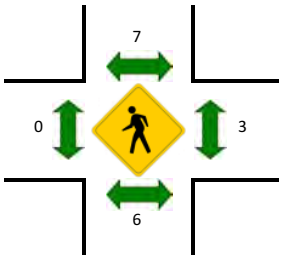
LOCATION: Sumida Gardens Ln -- Hollister Ave
CITY/STATE: Goleta, CA

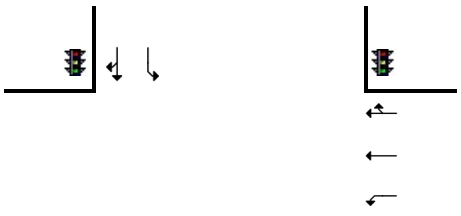
QC JOB #: 16570198
DATE: Tue, May 7 2024

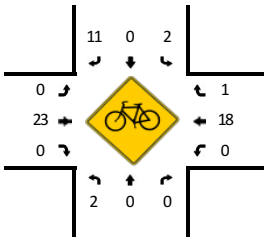
Peak-Hour: 4:20 PM -- 5:20 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

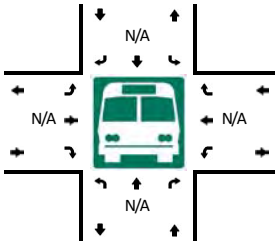


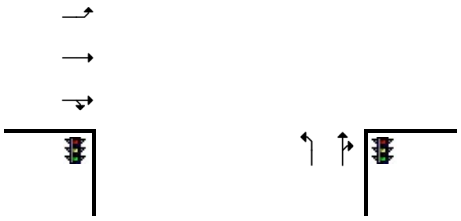


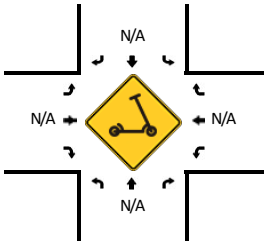












5-Min Count Period Beginning At	Sumida Gardens Ln (Northbound)				Sumida Gardens Ln (Southbound)				Hollister Ave (Eastbound)				Hollister Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	0	0	0	1	0	4	0	1	38	0	0	0	54	0	0	100	
4:05 PM	2	0	0	0	1	0	3	0	1	57	2	0	0	46	0	0	112	
4:10 PM	2	0	0	0	1	0	1	0	3	49	0	0	0	33	1	0	90	
4:15 PM	1	1	0	0	0	0	4	0	7	72	0	0	0	42	4	0	131	
4:20 PM	1	0	1	0	2	0	5	0	3	47	2	0	0	48	2	0	111	
4:25 PM	5	0	0	0	1	0	3	0	3	52	1	0	0	41	2	0	108	
4:30 PM	2	0	0	0	3	0	5	0	3	55	0	0	0	43	4	0	115	
4:35 PM	8	0	2	0	0	0	5	0	2	47	0	0	0	53	2	1	120	
4:40 PM	5	0	1	0	0	0	3	0	1	52	1	0	0	46	3	1	113	
4:45 PM	1	0	0	0	1	0	6	0	3	51	1	0	0	35	3	0	101	
4:50 PM	2	0	2	0	2	0	4	0	6	59	0	0	0	65	2	1	143	
4:55 PM	2	0	1	0	1	0	6	0	5	48	3	0	0	32	2	0	100	1344
5:00 PM	5	0	2	0	6	0	5	0	1	43	0	0	0	53	4	0	119	1363
5:05 PM	3	1	2	0	5	0	1	0	6	51	0	0	0	60	5	0	134	1385
5:10 PM	3	2	1	0	2	0	3	0	4	51	0	0	1	41	3	0	111	1406
5:15 PM	4	0	0	0	2	0	5	0	1	70	0	0	1	48	4	0	135	1410
5:20 PM	1	0	1	0	3	0	2	0	6	56	1	0	0	34	3	0	107	1406
5:25 PM	2	0	0	0	0	0	2	0	4	51	0	0	1	48	1	0	109	1407
5:30 PM	4	1	1	0	2	1	2	0	3	55	1	0	0	42	2	0	114	1406
5:35 PM	2	0	0	0	0	0	3	0	1	64	0	0	0	34	4	1	109	1395
5:40 PM	5	0	0	0	2	0	2	0	4	41	1	0	0	33	1	0	89	1371
5:45 PM	1	0	0	0	1	0	1	0	2	30	0	1	1	36	1	0	74	1344
5:50 PM	0	0	0	0	1	0	3	0	2	30	0	0	0	28	5	0	69	1270
5:55 PM	1	0	1	0	1	0	2	0	3	30	0	0	0	40	2	0	80	1250

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	40	12	12	0	36	0	36	0	44	688	0	0	8	596	48	0	1520
Heavy Trucks	0	0	0		0	0	0		0	20	0		0	20	0		40
Buses																	
Pedestrians		4				4				0				8			16
Bicycles	0	0	0		8	0	4		0	28	0		0	20	0		60
Scooters																	

Comments:

Report generated on 6/20/2024 3:42 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

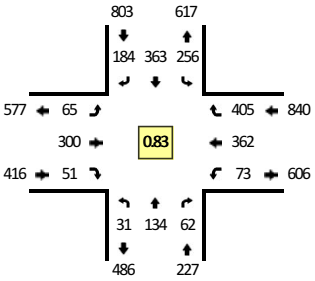
Type of peak hour being reported: Intersection Peak

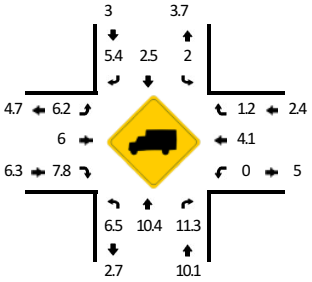
Method for determining peak hour: Total Entering Volume

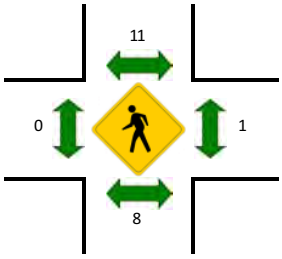
LOCATION: S Patterson Ave -- Hollister Ave
CITY/STATE: Goleta, CA

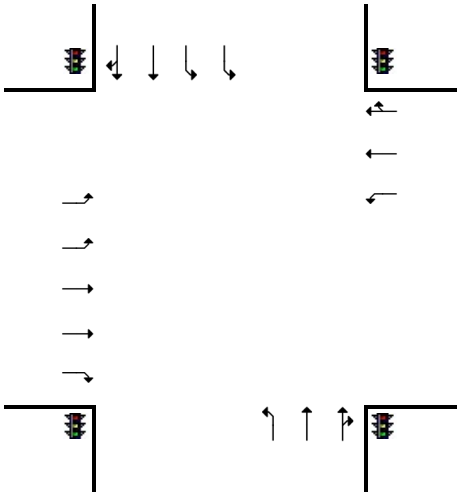
QC JOB #: 165701101
DATE: Tue, May 7 2024

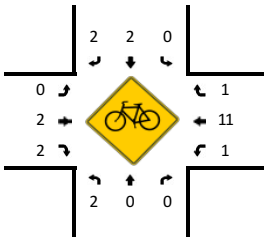
Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 7:50 AM -- 8:05 AM

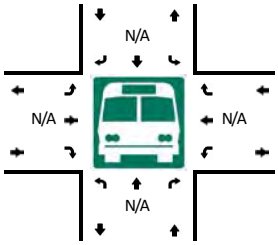


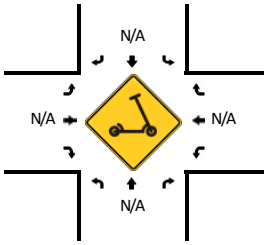












5-Min Count Period Beginning At	S Patterson Ave (Northbound)				S Patterson Ave (Southbound)				Hollister Ave (Eastbound)				Hollister Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	3	8	3	0	8	26	9	0	2	14	2	0	3	23	13	0	114	
7:05 AM	0	11	3	0	5	23	2	0	3	12	1	0	4	13	14	0	91	
7:10 AM	1	9	2	0	9	15	9	0	3	10	3	0	6	12	11	0	90	
7:15 AM	1	12	1	0	6	20	8	1	5	12	7	0	2	9	9	0	93	
7:20 AM	1	8	2	0	13	16	1	0	3	15	5	0	6	17	24	0	111	
7:25 AM	0	4	5	0	12	21	11	0	3	10	1	0	2	22	13	0	104	
7:30 AM	2	14	16	0	23	22	9	0	3	19	1	0	2	25	13	0	149	
7:35 AM	4	9	8	0	9	22	4	0	7	17	2	0	1	22	26	0	131	
7:40 AM	2	12	9	0	7	22	9	1	3	25	3	0	5	29	20	1	148	
7:45 AM	3	12	7	0	8	29	18	1	2	23	3	0	2	21	30	1	160	
7:50 AM	4	15	10	0	17	32	9	1	9	22	9	0	10	27	50	0	215	
7:55 AM	2	15	9	0	24	45	13	1	6	39	7	0	4	45	36	0	246	1652
8:00 AM	1	7	9	0	16	32	19	1	12	42	6	0	11	37	37	0	230	1768
8:05 AM	1	6	6	0	33	33	24	0	3	40	1	0	7	24	24	0	202	1879
8:10 AM	1	8	1	0	17	26	10	1	5	34	2	0	10	39	50	0	204	1993
8:15 AM	4	7	1	0	29	12	15	1	6	9	2	0	4	38	47	0	175	2075
8:20 AM	2	16	6	0	21	34	18	0	3	13	4	0	6	33	29	0	185	2149
8:25 AM	2	3	5	0	16	33	15	3	5	29	6	0	5	23	32	0	177	2222
8:30 AM	7	17	3	0	23	28	14	1	6	20	2	0	5	17	24	0	167	2240
8:35 AM	0	9	3	0	21	25	15	2	7	17	4	0	3	34	26	0	166	2275
8:40 AM	4	19	2	0	18	34	14	1	1	12	5	0	5	24	20	0	159	2286
8:45 AM	1	13	2	0	21	20	8	2	11	2	4	0	6	20	33	0	143	2269
8:50 AM	4	8	4	0	33	26	13	3	3	17	2	0	4	27	34	0	178	2232
8:55 AM	3	20	5	0	14	22	16	1	4	25	0	0	6	35	27	0	178	2164

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	28	148	112	0	228	436	164	12	108	412	88	0	100	436	492	0	2764
Heavy Trucks	4	20	28		8	12	12		4	40	12		0	12	4		156
Buses																	
Pedestrians		12				0				0				0			12
Bicycles	0	0	0		0	8	0		0	0	0		0	8	0		16
Scooters																	

Comments:

Report generated on 6/20/2024 3:42 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

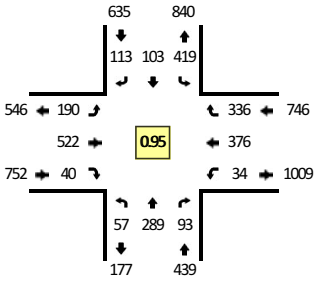
Type of peak hour being reported: Intersection Peak

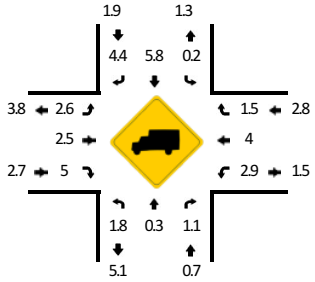
Method for determining peak hour: Total Entering Volume

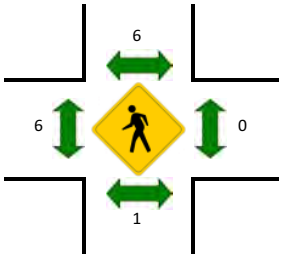
LOCATION: S Patterson Ave -- Hollister Ave
CITY/STATE: Goleta, CA

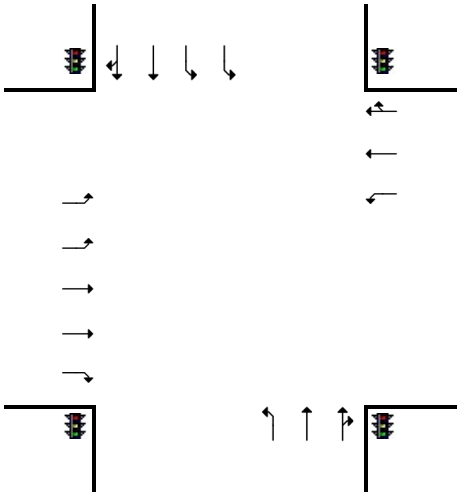
QC JOB #: 165701102
DATE: Tue, May 7 2024

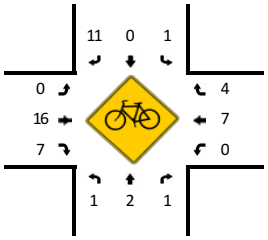
Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

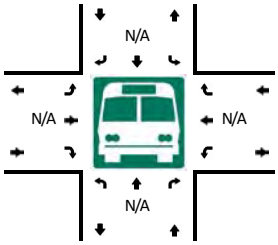


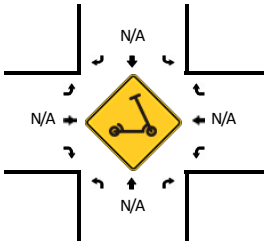












5-Min Count Period Beginning At	S Patterson Ave (Northbound)				S Patterson Ave (Southbound)				Hollister Ave (Eastbound)				Hollister Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	6	24	8	0	25	7	16	5	15	19	6	0	1	29	22	0	183	
4:05 PM	1	16	8	0	43	12	8	3	7	52	4	0	1	35	29	0	219	
4:10 PM	5	26	12	0	26	12	7	0	15	43	0	0	4	27	31	0	208	
4:15 PM	5	26	8	0	37	11	12	3	15	51	6	0	2	29	27	0	232	
4:20 PM	4	27	7	0	31	12	13	1	16	38	3	0	1	33	28	0	214	
4:25 PM	5	18	7	0	42	12	8	4	11	39	2	0	1	34	28	0	211	
4:30 PM	1	23	10	0	26	7	8	2	17	38	2	0	3	26	26	0	189	
4:35 PM	7	20	9	0	34	5	12	1	25	46	5	0	4	41	24	0	233	
4:40 PM	7	28	7	0	28	9	9	2	10	41	3	0	5	24	41	0	214	
4:45 PM	4	20	3	0	26	4	5	1	18	47	2	0	3	48	22	0	203	
4:50 PM	7	20	4	0	38	19	10	2	9	42	3	0	2	29	29	0	214	
4:55 PM	2	22	2	0	22	5	6	1	20	42	4	0	7	28	25	0	186	2506
5:00 PM	8	22	7	0	37	7	9	3	18	42	2	0	3	30	21	0	209	2532
5:05 PM	6	39	15	0	47	5	10	1	13	56	5	0	1	26	32	0	256	2569
5:10 PM	1	24	14	0	26	7	11	4	18	40	3	0	2	28	33	0	211	2572
5:15 PM	2	20	6	0	22	5	8	2	19	56	2	0	1	42	29	0	214	2554
5:20 PM	2	15	6	0	49	10	15	3	14	38	4	0	0	24	34	0	214	2554
5:25 PM	1	12	4	0	31	10	4	3	18	49	5	0	5	40	32	0	214	2557
5:30 PM	4	14	3	0	38	8	7	2	16	31	3	0	2	25	21	1	175	2543
5:35 PM	4	18	5	0	24	5	4	3	10	57	3	0	1	30	26	0	190	2500
5:40 PM	0	20	5	0	31	10	6	0	7	48	3	0	0	29	28	0	187	2473
5:45 PM	3	12	4	0	39	12	3	3	9	18	2	0	2	24	31	0	162	2432
5:50 PM	1	7	5	0	28	1	6	3	12	33	0	0	3	36	28	1	164	2382
5:55 PM	1	8	3	0	21	6	6	1	5	38	1	0	0	31	31	0	152	2348

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	60	340	144	0	440	76	120	32	196	552	40	0	24	336	344	0	2704
Heavy Trucks	0	0	0		0	4	8		0	8	4		0	24	8		56
Buses																	
Pedestrians		4				4				0				0			8
Bicycles	4	0	0		0	0	0		0	20	8		0	8	4		44
Scooters																	

Comments:

Report generated on 6/20/2024 3:42 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

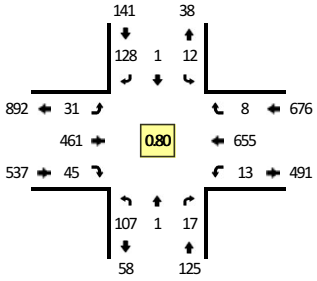
Type of peak hour being reported: Intersection Peak

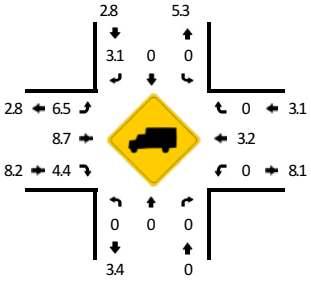
Method for determining peak hour: Total Entering Volume

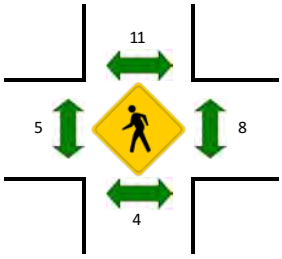
LOCATION: Lassen Dr/San Ricardo Dr -- Hollister Ave
CITY/STATE: Eastern Goleta Valley, CA

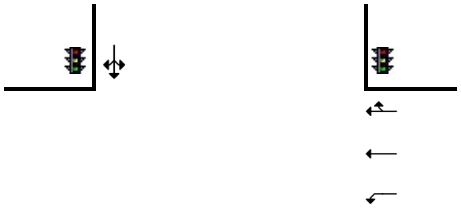
QC JOB #: 17324801
DATE: Thu, Nov 13 2025

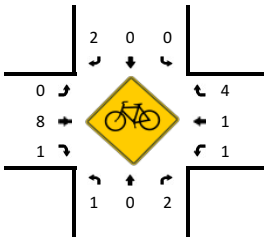
Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 8:00 AM -- 8:15 AM

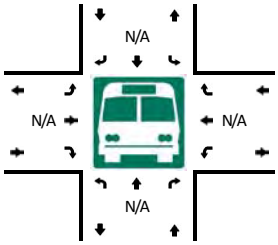


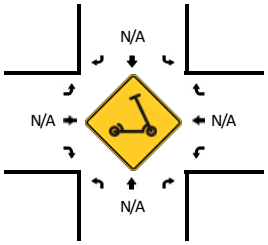












5-Min Count Period Beginning At	Lassen Dr/San Ricardo Dr (Northbound)				Lassen Dr/San Ricardo Dr (Southbound)				Hollister Ave (Eastbound)				Hollister Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	4	0	2	0	0	0	5	0	0	19	1	0	1	25	0	1	58	
7:05 AM	1	0	2	0	0	0	3	0	0	19	2	0	0	24	0	0	51	
7:10 AM	7	0	2	0	0	0	6	0	0	17	1	0	1	17	0	0	51	
7:15 AM	7	0	1	0	0	0	3	0	0	24	3	0	0	27	0	0	65	
7:20 AM	7	0	3	0	0	0	3	0	0	19	0	0	0	39	0	0	71	
7:25 AM	10	0	2	0	1	0	6	0	2	28	1	0	0	21	0	0	71	
7:30 AM	9	0	0	0	0	0	6	0	1	27	5	0	0	29	0	1	78	
7:35 AM	10	0	0	0	0	0	7	0	0	38	0	0	0	26	0	2	83	
7:40 AM	6	0	3	0	1	0	10	0	3	41	2	0	0	29	1	0	96	
7:45 AM	13	0	2	0	0	0	3	0	2	34	1	0	0	58	0	0	113	
7:50 AM	13	0	2	0	0	0	8	0	0	43	4	0	0	77	1	0	148	
7:55 AM	7	0	3	0	1	0	9	0	5	43	6	0	0	40	2	0	116	1001
8:00 AM	6	0	3	0	3	0	11	0	6	62	4	1	1	58	0	0	155	1098
8:05 AM	9	0	2	0	1	0	15	0	5	57	1	0	1	70	0	0	161	1208
8:10 AM	11	0	1	0	1	0	16	0	6	37	7	0	1	64	1	0	145	1302
8:15 AM	6	0	1	0	0	0	18	0	2	37	5	0	1	43	2	1	116	1353
8:20 AM	8	1	0	0	3	1	16	0	0	20	3	1	2	73	0	0	128	1410
8:25 AM	6	0	0	0	1	0	8	0	0	23	2	0	2	50	1	0	93	1432
8:30 AM	7	0	2	0	0	0	10	0	3	37	4	0	0	40	1	0	104	1458
8:35 AM	9	0	0	0	1	0	10	0	0	28	2	0	3	49	0	0	102	1477
8:40 AM	12	0	1	0	1	0	4	0	0	40	6	0	1	33	0	0	98	1479
8:45 AM	4	0	1	0	0	0	6	0	0	24	1	0	0	53	0	0	89	1455
8:50 AM	13	0	2	0	2	0	7	0	1	41	7	0	0	41	1	1	116	1423
8:55 AM	9	0	1	0	0	0	3	0	3	26	4	0	3	54	0	0	103	1410

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	104	0	24	0	20	0	168	0	68	624	48	4	12	768	4	0	1844
Heavy Trucks	0	0	0		0	0	8		4	52	0		0	24	0		88
Buses																	
Pedestrians		4				24				0				4			32
Bicycles	0	0	4		0	0	4		0	4	4		0	0	4		20
Scooters																	

Comments:

Report generated on 11/20/2025 3:08 PM

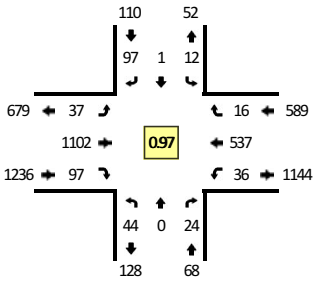
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

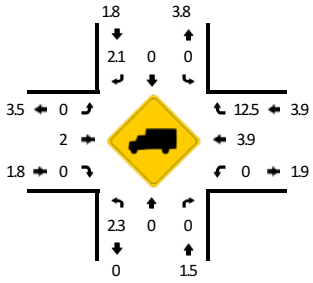
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

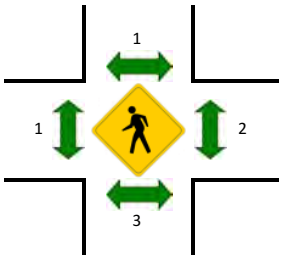
LOCATION: Lassen Dr/San Ricardo Dr -- Hollister Ave
CITY/STATE: Eastern Goleta Valley, CA

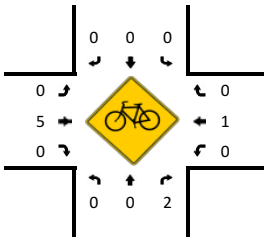
QC JOB #: 17324802
DATE: Thu, Nov 13 2025

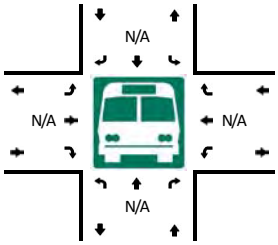
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:40 PM -- 4:55 PM

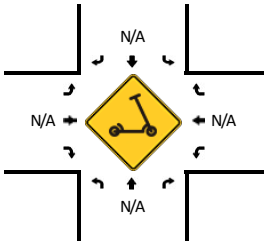












5-Min Count Period Beginning At	Lassen Dr/San Ricardo Dr (Northbound)				Lassen Dr/San Ricardo Dr (Southbound)				Hollister Ave (Eastbound)				Hollister Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	3	0	0	0	1	0	3	0	3	58	10	1	2	57	1	2	141	
4:05 PM	8	0	4	0	0	0	4	0	3	61	13	1	0	44	1	0	139	
4:10 PM	2	0	0	0	0	0	5	0	3	68	5	0	4	54	1	0	142	
4:15 PM	7	0	0	0	1	0	7	0	6	82	12	0	2	48	6	0	171	
4:20 PM	5	0	2	0	1	0	4	0	4	82	8	0	1	47	5	1	160	
4:25 PM	6	0	1	0	1	0	1	0	6	83	11	0	1	33	1	1	145	
4:30 PM	6	0	1	0	0	0	6	0	3	88	7	0	3	42	2	1	159	
4:35 PM	3	0	2	0	2	0	7	0	2	75	13	0	2	46	3	0	155	
4:40 PM	2	0	2	0	1	0	9	0	4	106	8	0	2	46	3	1	184	
4:45 PM	13	0	3	0	0	1	9	0	2	87	5	0	2	44	0	1	167	
4:50 PM	4	0	1	0	2	0	5	0	3	82	8	0	4	50	4	1	164	
4:55 PM	4	0	3	0	0	0	4	0	3	95	8	0	5	47	2	0	171	1898
5:00 PM	2	0	5	0	1	0	6	0	4	99	8	0	4	37	1	0	167	1924
5:05 PM	0	0	0	0	3	0	5	0	2	110	3	0	2	50	0	1	176	1961
5:10 PM	2	0	0	0	2	0	13	0	1	91	7	0	3	41	0	0	160	1979
5:15 PM	5	0	2	0	1	0	15	0	3	88	9	0	1	36	1	1	162	1970
5:20 PM	3	0	3	0	0	0	8	0	6	93	11	1	1	46	0	0	172	1982
5:25 PM	0	0	2	0	0	0	10	0	3	88	10	0	1	52	0	0	166	2003
5:30 PM	4	0	2	0	0	0	4	0	5	64	4	0	5	35	1	0	124	1968
5:35 PM	5	0	2	0	1	0	13	0	5	81	7	0	5	53	1	0	173	1986
5:40 PM	5	0	0	0	0	0	0	0	3	68	10	0	6	43	2	1	138	1940
5:45 PM	3	0	0	0	2	0	5	0	3	52	3	0	1	50	2	0	121	1894
5:50 PM	5	0	0	0	1	0	7	0	5	59	12	0	4	44	2	0	139	1869
5:55 PM	5	0	1	0	2	0	2	0	1	36	8	0	1	32	1	0	89	1787

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	76	0	24	0	12	4	92	0	36	1100	84	0	32	560	28	12	2060
Heavy Trucks	4	0	0		0	0	0		0	24	0		0	12	4		44
Buses																	
Pedestrians		8				4				4				4			20
Bicycles	0	0	8		0	0	0		0	4	0		0	0	0		12
Scooters																	

Comments:

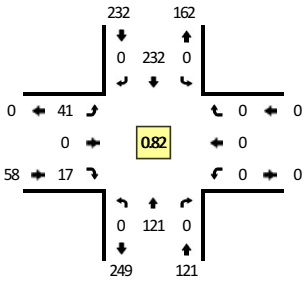
Report generated on 11/20/2025 3:08 PM

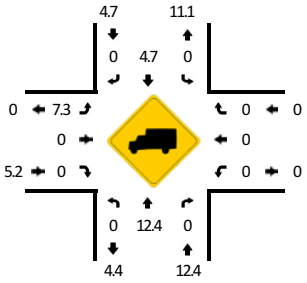
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

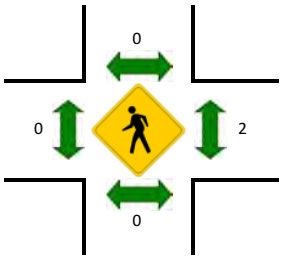
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

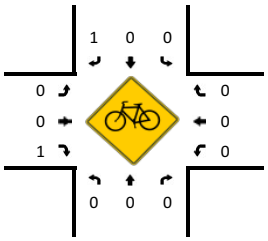
LOCATION: Ward Dr -- CA-217 NB Off-Ramp | **QC JOB #:** 17324803
CITY/STATE: Goleta, CA | **DATE:** Tue, Nov 18 2025

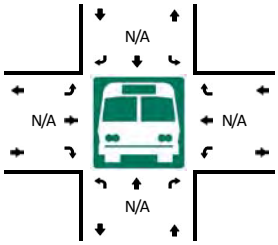
Peak-Hour: 7:50 AM -- 8:50 AM
Peak 15-Min: 8:00 AM -- 8:15 AM

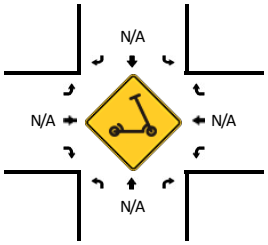












5-Min Count Period Beginning At	Ward Dr (Northbound)				Ward Dr (Southbound)				CA-217 NB Off-Ramp (Eastbound)				CA-217 NB Off-Ramp (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	3	0	0	0	9	0	0	2	0	0	0	0	0	0	0	14	
7:05 AM	0	5	0	0	0	10	0	0	1	0	1	0	0	0	0	0	17	
7:10 AM	0	8	0	0	0	11	0	0	2	0	0	0	0	0	0	0	21	
7:15 AM	0	4	0	0	0	20	0	0	0	0	0	0	0	0	0	0	24	
7:20 AM	0	9	0	0	0	16	0	0	0	0	0	0	0	0	0	0	25	
7:25 AM	0	4	0	0	0	13	0	0	2	0	0	0	0	0	0	0	19	
7:30 AM	0	9	0	0	0	16	0	0	4	0	0	0	0	0	0	0	29	
7:35 AM	0	13	0	0	0	14	0	0	1	0	1	0	0	0	0	0	29	
7:40 AM	0	7	0	0	0	12	0	0	4	0	0	0	0	0	0	0	23	
7:45 AM	0	12	0	0	0	14	0	0	3	0	0	0	0	0	0	0	29	
7:50 AM	0	15	0	0	0	16	0	0	1	0	1	0	0	0	0	0	33	
7:55 AM	0	6	0	0	0	17	0	0	2	0	1	0	0	0	0	0	26	289
8:00 AM	0	14	0	0	0	33	0	0	5	0	1	0	0	0	0	0	53	328
8:05 AM	0	5	0	0	0	30	0	0	2	0	3	0	0	0	0	0	40	351
8:10 AM	0	6	0	0	0	24	0	0	2	0	0	0	0	0	0	0	32	362
8:15 AM	0	5	0	0	0	14	0	0	3	0	3	0	0	0	0	0	25	363
8:20 AM	0	14	0	0	0	20	0	0	2	0	1	0	0	0	0	0	37	375
8:25 AM	0	9	0	0	0	16	0	0	6	0	2	0	0	0	0	0	33	389
8:30 AM	0	7	0	0	0	16	0	0	3	0	2	0	0	0	0	0	28	388
8:35 AM	0	9	0	0	0	20	0	0	3	0	3	0	0	0	0	0	35	394
8:40 AM	0	12	0	0	0	14	0	0	5	0	0	0	0	0	0	0	31	402
8:45 AM	0	19	0	0	0	12	0	0	7	0	0	0	0	0	0	0	38	411
8:50 AM	0	8	0	0	0	12	0	0	2	0	1	0	0	0	0	0	23	401
8:55 AM	0	10	0	0	0	17	0	0	1	0	0	0	0	0	0	0	28	403

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	100	0	0	0	348	0	0	36	0	16	0	0	0	0	0	500
Heavy Trucks	0	12	0		0	12	0		4	0	0		0	0	0		28
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	4		0	0	4		0	0	0		8
Scooters																	

Comments:

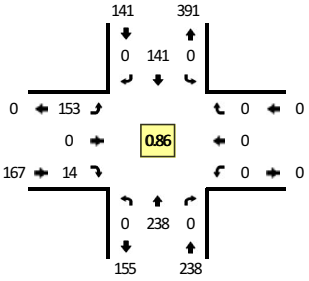
Report generated on 11/20/2025 3:08 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

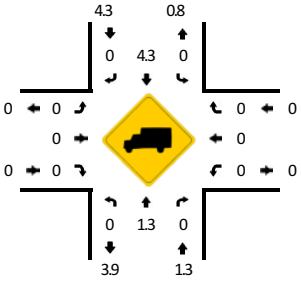
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

LOCATION: Ward Dr -- CA-217 NB Off-Ramp
CITY/STATE: Goleta, CA

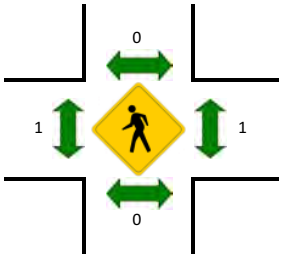
QC JOB #: 17324804
DATE: Tue, Nov 18 2025

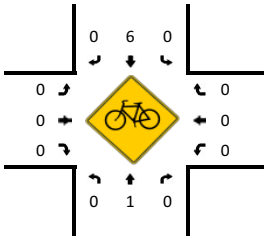
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

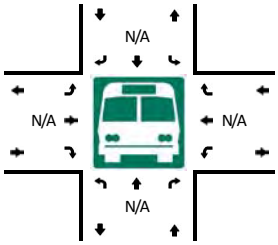


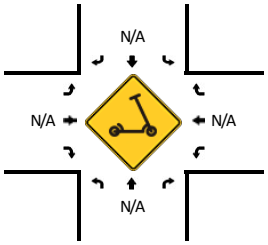


TRUE DATA TO IMPROVE MOBILITY









5-Min Count Period Beginning At	Ward Dr (Northbound)				Ward Dr (Southbound)				CA-217 NB Off-Ramp (Eastbound)				CA-217 NB Off-Ramp (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	24	0	0	0	8	0	0	3	0	1	0	0	0	0	0	36	
4:05 PM	0	15	0	0	0	4	0	0	13	0	0	0	0	0	0	0	32	
4:10 PM	0	22	0	0	0	14	0	0	10	0	5	0	0	0	0	0	51	
4:15 PM	0	22	0	0	0	11	0	0	9	0	0	0	0	0	0	0	42	
4:20 PM	0	15	0	0	0	15	0	0	12	0	2	0	0	0	0	0	44	
4:25 PM	0	21	0	0	0	8	0	0	12	0	0	0	0	0	0	0	41	
4:30 PM	0	21	0	0	0	11	0	0	9	0	1	0	0	0	0	0	42	
4:35 PM	0	25	0	0	0	15	0	0	12	0	0	0	0	0	0	0	52	
4:40 PM	0	20	0	0	0	11	0	0	8	0	0	0	0	0	0	0	39	
4:45 PM	0	13	0	0	0	8	0	0	14	0	0	0	0	0	0	0	35	
4:50 PM	0	18	0	0	0	13	0	0	11	0	1	0	0	0	0	0	43	
4:55 PM	0	14	0	0	0	9	0	0	10	0	2	0	0	0	0	0	35	492
5:00 PM	0	23	0	0	0	11	0	0	9	0	1	0	0	0	0	0	44	500
5:05 PM	0	24	0	0	0	11	0	0	14	0	1	0	0	0	0	0	50	518
5:10 PM	0	24	0	0	0	6	0	0	17	0	1	0	0	0	0	0	48	515
5:15 PM	0	21	0	0	0	15	0	0	16	0	2	0	0	0	0	0	54	527
5:20 PM	0	16	0	0	0	17	0	0	15	0	3	0	0	0	0	0	51	534
5:25 PM	0	19	0	0	0	14	0	0	18	0	2	0	0	0	0	0	53	546
5:30 PM	0	22	0	0	0	9	0	0	6	0	0	0	0	0	0	0	37	541
5:35 PM	0	17	0	0	0	8	0	0	15	0	2	0	0	0	0	0	42	531
5:40 PM	0	15	0	0	0	10	0	0	18	0	3	0	0	0	0	0	46	538
5:45 PM	0	13	0	0	0	8	0	0	8	0	0	0	0	0	0	0	29	532
5:50 PM	0	15	0	0	0	12	0	0	14	0	0	0	0	0	0	0	41	530
5:55 PM	0	6	0	0	0	9	0	0	9	0	0	0	0	0	0	0	24	519

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	224	0	0	0	184	0	0	196	0	28	0	0	0	0	0	632
Heavy Trucks	0	0	0		0	4	0		0	0	0		0	0	0		4
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	4	0		0	0	0		0	0	0		4
Scooters																	

Comments:

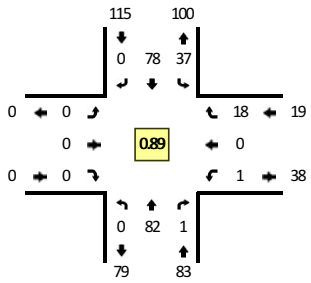
Report generated on 11/20/2025 3:08 PM

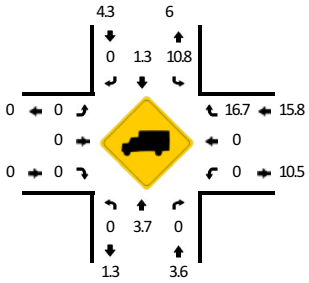
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

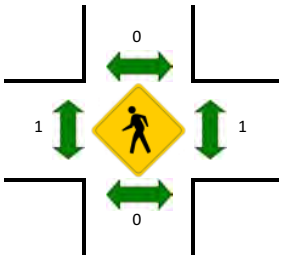
LOCATION: Ward Dr -- Ekwill St | **QC JOB #:** 16570199
CITY/STATE: Goleta, CA | **DATE:** Tue, May 7 2024

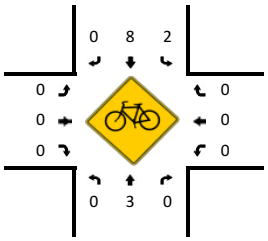
Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 8:00 AM -- 8:15 AM

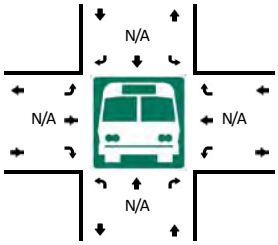


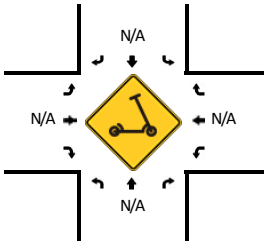


TRUE DATA TO IMPROVE MOBILITY









5-Min Count Period Beginning At	Ward Dr (Northbound)				Ward Dr (Southbound)				Ekwill St (Eastbound)				Ekwill St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	4	0	0	5	7	0	0	0	0	0	0	0	0	1	0	17	
7:05 AM	0	2	0	0	4	4	0	0	0	0	0	0	0	0	8	0	18	
7:10 AM	0	3	0	0	3	5	0	0	0	0	0	0	0	0	0	0	11	
7:15 AM	0	6	0	0	5	4	0	0	0	0	0	0	0	0	0	0	15	
7:20 AM	0	6	0	0	1	2	0	0	0	0	0	0	0	0	1	0	10	
7:25 AM	0	7	0	0	10	8	0	0	0	0	0	0	0	0	1	0	26	
7:30 AM	0	3	0	0	5	5	0	0	0	0	0	0	0	0	0	0	13	
7:35 AM	0	4	0	0	5	5	0	0	0	0	0	0	0	0	2	0	16	
7:40 AM	0	8	0	0	2	0	0	0	0	0	0	0	0	0	2	0	12	
7:45 AM	0	10	0	0	4	6	0	0	0	0	0	0	0	0	2	0	22	
7:50 AM	0	6	0	0	1	7	0	0	0	0	0	0	0	0	1	0	15	
7:55 AM	0	8	1	0	3	7	0	0	0	0	0	0	0	0	0	0	19	194
8:00 AM	0	10	0	0	2	8	0	0	0	0	0	0	0	0	0	0	20	197
8:05 AM	0	4	0	0	2	6	0	0	0	0	0	0	0	0	1	0	13	192
8:10 AM	0	12	0	0	5	8	0	0	0	0	0	0	1	0	2	0	28	209
8:15 AM	0	4	0	0	1	3	0	0	0	0	0	0	0	0	2	0	10	204
8:20 AM	0	5	0	0	1	8	0	0	0	0	0	0	0	0	3	0	17	211
8:25 AM	0	8	0	0	5	9	0	0	0	0	0	0	0	0	2	0	24	209
8:30 AM	0	4	0	0	4	6	0	0	0	0	0	0	0	0	0	0	14	210
8:35 AM	0	4	0	0	1	4	0	0	0	0	0	0	0	0	5	0	14	208
8:40 AM	0	7	0	0	8	6	0	0	0	0	0	0	0	0	0	0	21	217
8:45 AM	0	7	1	0	1	4	0	0	0	0	0	0	0	0	2	0	15	210
8:50 AM	0	7	0	0	2	8	0	0	0	0	0	0	0	0	4	0	21	216
8:55 AM	0	9	0	0	4	5	0	0	0	0	0	0	0	0	2	0	20	217

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	104	0	0	36	88	0	0	0	0	0	0	4	0	12	0	244
Heavy Trucks	0	0	0		4	0	0		0	0	0		0	0	0		4
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		4	8	0		0	0	0		0	0	0		12
Scooters																	

Comments:

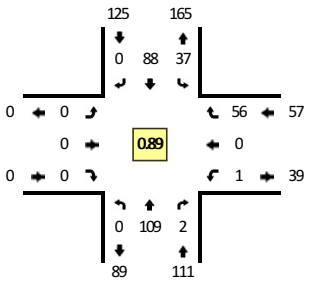
Report generated on 6/20/2024 3:42 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

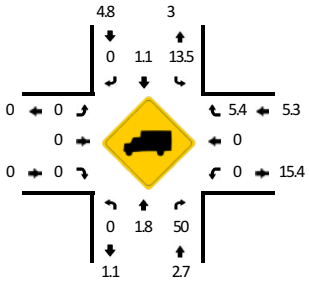
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

LOCATION: Ward Dr -- Ekwill St
CITY/STATE: Goleta, CA

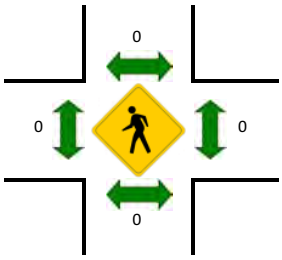
QC JOB #: 165701100
DATE: Tue, May 7 2024

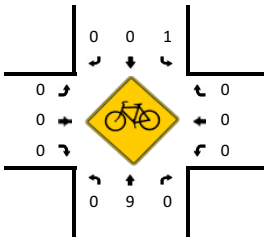
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:15 PM -- 4:30 PM

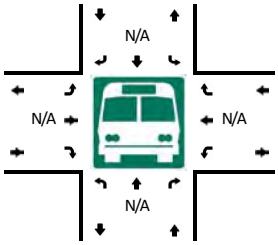


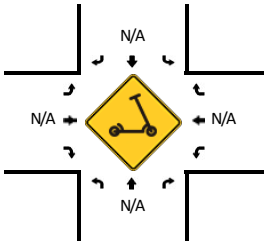


TRUE DATA TO IMPROVE MOBILITY









5-Min Count Period Beginning At	Ward Dr (Northbound)				Ward Dr (Southbound)				Ekwill St (Eastbound)				Ekwill St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	13	1	0	1	12	0	0	0	0	0	0	0	0	4	0	31	
4:05 PM	0	13	0	0	4	7	0	0	0	0	0	0	0	0	2	0	26	
4:10 PM	0	10	0	0	3	6	0	0	0	0	0	0	0	0	5	0	24	
4:15 PM	0	6	0	0	4	10	0	0	0	0	0	0	0	0	6	0	26	
4:20 PM	0	9	0	0	1	10	0	0	0	0	0	0	0	0	8	0	28	
4:25 PM	0	7	1	0	9	5	0	0	0	0	0	0	0	0	6	0	28	
4:30 PM	0	6	0	0	0	8	0	0	0	0	0	0	0	0	3	0	17	
4:35 PM	0	9	0	0	4	7	0	0	0	0	0	0	0	0	6	0	26	
4:40 PM	0	10	0	0	2	2	0	0	0	0	0	0	1	0	5	0	20	
4:45 PM	0	6	0	0	3	6	0	0	0	0	0	0	0	0	2	0	17	
4:50 PM	0	7	0	0	4	9	0	0	0	0	0	0	0	0	5	0	25	
4:55 PM	0	13	0	0	2	6	0	0	0	0	0	0	0	0	4	0	25	293
5:00 PM	0	8	0	0	7	5	0	0	0	0	0	0	0	0	1	0	21	283
5:05 PM	0	9	0	0	4	6	0	0	0	0	0	0	0	0	4	0	23	280
5:10 PM	0	5	0	0	8	10	0	0	0	0	0	0	0	0	6	0	29	285
5:15 PM	0	7	0	0	2	4	0	0	0	0	0	0	0	0	4	0	17	276
5:20 PM	0	3	0	0	2	2	0	0	0	0	0	0	0	0	5	0	12	260
5:25 PM	0	7	1	0	3	4	0	0	0	0	0	0	1	0	5	0	21	253
5:30 PM	0	11	1	0	4	8	0	0	0	0	0	0	0	0	6	0	30	266
5:35 PM	0	6	0	0	1	5	0	0	0	0	0	0	1	0	7	0	20	260
5:40 PM	0	6	0	0	3	7	0	0	0	0	0	0	0	0	4	0	20	260
5:45 PM	0	3	0	0	6	9	0	0	0	0	0	0	0	0	9	0	27	270
5:50 PM	0	5	0	0	4	7	0	0	0	0	0	0	1	0	7	0	24	269
5:55 PM	0	2	0	0	0	6	0	0	0	0	0	0	0	0	8	0	16	260

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	88	4	0	56	100	0	0	0	0	0	0	0	0	80	0	328
Heavy Trucks	0	0	4		0	4	0		0	0	0		0	0	4		12
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	12	0		0	0	0		0	0	0		0	0	0		12
Scooters																	

Comments:

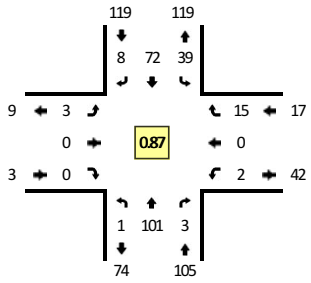
Report generated on 6/20/2024 3:42 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

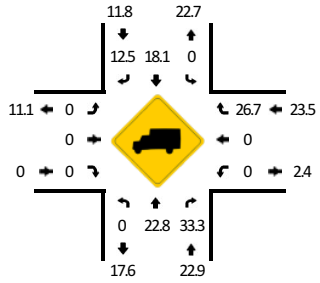
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

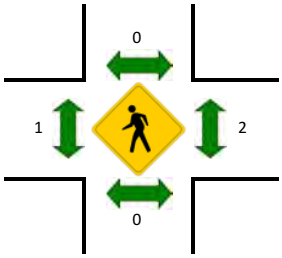
LOCATION: S Patterson Ave -- Ekwill St | **QC JOB #:** 17324805
CITY/STATE: Goleta, CA | **DATE:** Thu, Nov 13 2025

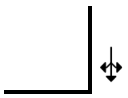
Peak-Hour: 7:20 AM -- 8:20 AM
Peak 15-Min: 8:00 AM -- 8:15 AM

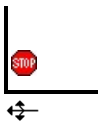


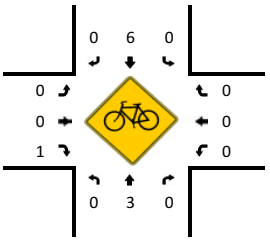
TRUE DATA TO IMPROVE MOBILITY

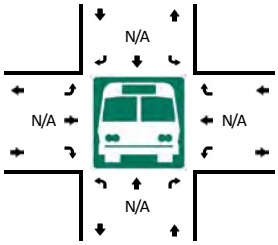


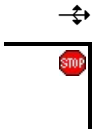


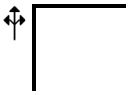


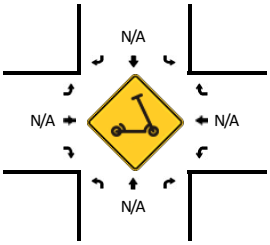












5-Min Count Period Beginning At	S Patterson Ave (Northbound)				S Patterson Ave (Southbound)				Ekwill St (Eastbound)				Ekwill St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	6	0	0	2	15	1	0	1	0	0	0	0	0	0	0	25	
7:05 AM	0	3	0	0	1	11	1	0	0	0	0	0	0	0	0	0	16	
7:10 AM	0	8	0	0	1	10	2	0	0	0	0	0	0	0	2	0	23	
7:15 AM	0	4	0	0	1	7	0	0	0	0	0	0	0	0	0	0	12	
7:20 AM	0	11	0	0	4	8	3	0	0	0	0	0	1	0	0	0	27	
7:25 AM	0	4	0	0	4	4	0	0	0	0	0	0	0	0	2	0	14	
7:30 AM	0	13	0	0	1	5	2	0	0	0	0	0	1	0	1	0	23	
7:35 AM	0	9	1	0	3	5	0	0	2	0	0	0	0	0	1	0	21	
7:40 AM	0	11	0	0	1	7	0	0	0	0	0	0	0	0	2	0	21	
7:45 AM	0	7	0	0	6	5	0	0	0	0	0	0	0	0	1	0	19	
7:50 AM	0	6	0	0	1	4	0	0	0	0	0	0	0	0	0	0	11	
7:55 AM	0	9	0	0	7	3	0	0	0	0	0	0	0	0	1	0	20	232
8:00 AM	0	10	0	0	3	10	0	0	0	0	0	0	0	0	1	0	24	231
8:05 AM	1	11	1	0	3	9	0	0	0	0	0	0	0	0	0	0	25	240
8:10 AM	0	5	0	0	4	6	2	0	1	0	0	0	0	0	3	0	21	238
8:15 AM	0	5	1	0	2	6	1	0	0	0	0	0	0	0	3	0	18	244
8:20 AM	0	8	0	0	1	8	0	0	0	0	0	0	0	0	1	0	18	235
8:25 AM	0	2	0	0	3	7	0	0	1	0	0	0	0	0	0	0	13	234
8:30 AM	0	5	0	0	1	8	0	0	0	0	0	0	0	0	0	0	14	225
8:35 AM	0	13	0	0	0	5	0	0	1	0	0	0	0	0	0	0	19	223
8:40 AM	0	9	0	0	2	5	0	0	0	0	0	0	0	0	0	0	16	218
8:45 AM	0	4	0	0	0	11	0	0	0	0	0	0	0	1	0	0	16	215
8:50 AM	0	8	0	0	2	6	3	0	0	0	0	0	0	0	0	0	19	223
8:55 AM	0	4	0	0	2	10	1	1	0	0	0	0	0	0	2	0	20	223

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	104	4	0	40	100	8	0	4	0	0	0	0	0	16	0	280
Heavy Trucks	0	12	0		0	12	4		0	0	0		0	0	12		40
Buses																	
Pedestrians		0				0				4				4			8
Bicycles	0	4	0		0	0	0		0	0	0		0	0	0		4
Scooters																	

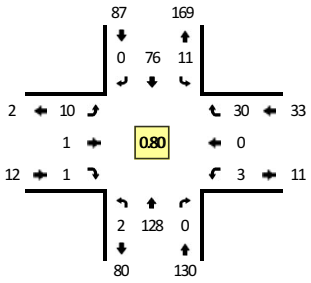
Comments:

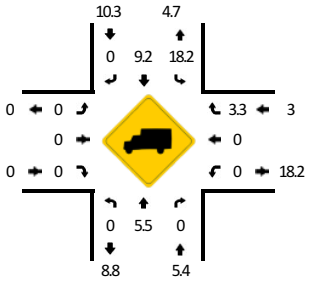
Report generated on 11/20/2025 3:08 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

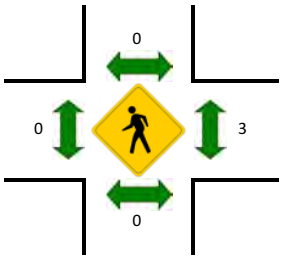
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

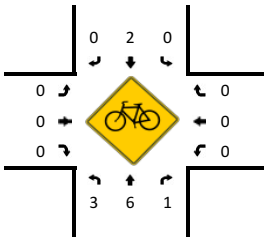
LOCATION: S Patterson Ave -- Ekwill St | **QC JOB #:** 17324806
CITY/STATE: Goleta, CA | **DATE:** Thu, Nov 13 2025

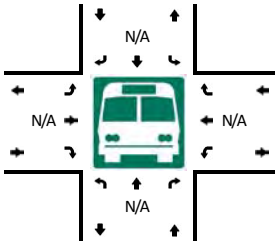
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:00 PM -- 4:15 PM

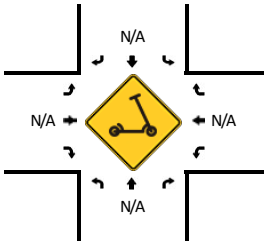












5-Min Count Period Beginning At	S Patterson Ave (Northbound)				S Patterson Ave (Southbound)				Ekwill St (Eastbound)				Ekwill St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	15	0	0	1	6	0	0	0	0	0	0	0	0	3	0	25	
4:05 PM	0	11	0	0	2	8	0	0	1	0	0	0	0	0	1	0	23	
4:10 PM	0	18	0	0	1	8	0	0	5	0	0	0	1	0	1	0	34	
4:15 PM	0	19	0	0	2	2	0	0	0	0	0	0	1	0	0	0	24	
4:20 PM	0	10	0	0	1	5	0	0	0	0	1	0	0	0	1	0	18	
4:25 PM	0	7	0	0	0	2	0	0	0	0	0	0	0	0	4	0	13	
4:30 PM	0	8	0	0	3	12	0	1	0	0	0	0	0	0	9	0	33	
4:35 PM	1	8	0	0	0	7	0	0	2	0	0	0	0	0	5	0	23	
4:40 PM	0	10	0	0	0	7	0	0	0	0	0	0	0	0	1	0	18	
4:45 PM	0	14	0	0	0	8	0	0	1	0	0	0	0	0	1	0	24	
4:50 PM	1	3	0	0	0	4	0	0	1	1	0	0	0	0	1	0	11	
4:55 PM	0	5	0	0	0	7	0	0	0	0	0	0	1	0	3	0	16	262
5:00 PM	0	3	1	0	0	5	0	1	0	0	0	0	0	0	4	0	14	251
5:05 PM	0	4	0	0	0	5	0	0	0	0	0	0	0	0	5	0	14	242
5:10 PM	0	4	0	0	2	3	1	0	0	0	0	0	0	0	4	0	14	222
5:15 PM	0	2	0	0	0	8	0	0	0	0	0	0	0	1	2	0	13	211
5:20 PM	0	3	0	0	0	4	0	0	0	0	0	0	0	0	2	0	9	202
5:25 PM	0	3	0	0	2	7	0	0	0	0	0	0	0	0	1	0	13	202
5:30 PM	0	5	0	0	1	5	0	0	0	0	0	0	0	0	2	0	13	182
5:35 PM	0	5	0	0	0	1	0	0	0	0	0	0	0	0	1	0	7	166
5:40 PM	0	5	0	0	0	3	0	0	0	0	0	0	0	0	0	0	8	156
5:45 PM	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	4	136
5:50 PM	0	3	0	0	0	5	0	0	1	0	0	0	0	0	0	0	9	134
5:55 PM	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3	121

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	176	0	0	16	88	0	0	24	0	0	0	4	0	20	0	328
Heavy Trucks	0	4	0		4	16	0		0	0	0		0	0	0		24
Buses																	
Pedestrians		0				0				0				12			12
Bicycles	0	16	4		0	4	0		0	0	0		0	0	0		24
Scooters																	

Comments:

Report generated on 11/20/2025 3:08 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

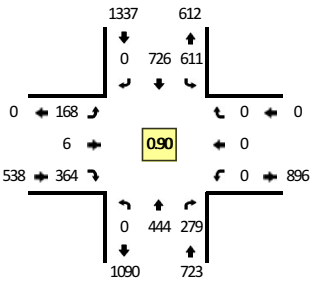
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

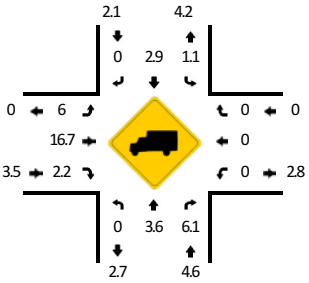
LOCATION: S Patterson Ave -- US 101 SB Ramps
CITY/STATE: Goleta, CA

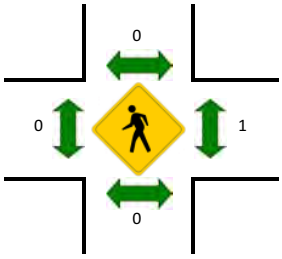
QC JOB #: 165701107
DATE: Tue, May 7 2024

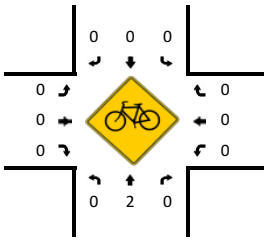
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 7:50 AM -- 8:05 AM

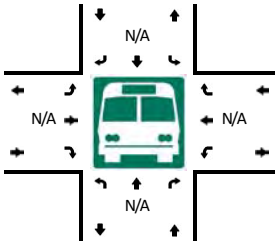


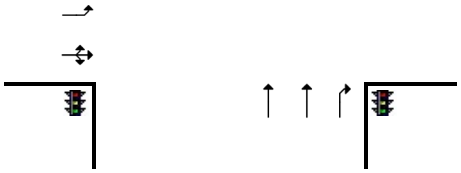
TRUE DATA TO IMPROVE MOBILITY

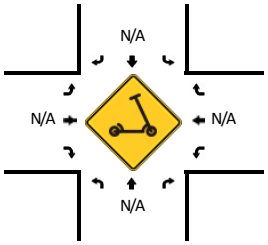












5-Min Count Period Beginning At	S Patterson Ave (Northbound)				S Patterson Ave (Southbound)				US 101 SB Ramps (Eastbound)				US 101 SB Ramps (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	16	9	0	16	37	0	0	8	0	27	0	0	0	0	0	113	
7:05 AM	0	17	11	0	25	23	0	0	3	0	22	0	0	0	0	0	101	
7:10 AM	0	11	19	0	26	22	0	0	6	0	21	0	0	0	0	0	105	
7:15 AM	0	16	14	0	28	34	0	0	4	0	22	0	0	0	0	0	118	
7:20 AM	0	25	25	0	32	22	0	0	7	0	23	0	0	0	0	0	134	
7:25 AM	0	7	24	0	29	23	0	0	8	0	21	0	0	0	0	0	112	
7:30 AM	0	21	19	0	33	48	0	0	18	0	26	0	0	0	0	0	165	
7:35 AM	0	15	27	0	48	32	0	0	6	0	24	0	0	0	0	0	152	
7:40 AM	0	27	23	0	47	39	0	0	13	1	30	0	0	0	0	0	180	
7:45 AM	0	35	21	0	48	63	0	0	16	0	27	0	0	0	0	0	210	
7:50 AM	0	44	21	0	51	88	0	0	9	0	29	0	0	0	0	0	242	
7:55 AM	0	47	23	0	42	72	0	0	14	0	41	0	0	0	0	0	239	1871
8:00 AM	0	47	20	0	53	66	0	0	16	2	39	0	0	0	0	0	243	2001
8:05 AM	0	46	22	0	38	61	0	0	10	2	26	0	0	0	0	0	205	2105
8:10 AM	0	32	23	0	74	58	0	0	17	0	24	0	0	0	0	0	228	2228
8:15 AM	0	42	23	0	54	54	0	0	20	0	25	0	0	0	0	0	218	2328
8:20 AM	0	41	23	0	48	55	0	0	14	0	30	0	0	0	0	0	211	2405
8:25 AM	0	26	14	0	58	64	0	0	12	0	33	0	0	0	0	0	207	2500
8:30 AM	0	27	33	0	39	57	0	0	16	0	38	0	0	0	0	0	210	2545
8:35 AM	0	30	33	0	59	49	0	0	11	1	22	0	0	0	0	0	205	2598
8:40 AM	0	18	24	0	47	50	0	0	13	0	20	0	0	0	0	0	172	2590
8:45 AM	0	44	26	0	31	59	0	0	16	0	18	0	0	0	0	0	194	2574
8:50 AM	0	31	19	0	61	65	0	0	16	0	25	0	0	0	0	0	217	2549
8:55 AM	0	41	22	0	48	47	0	0	9	0	31	0	0	0	0	0	198	2508

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	552	256	0	584	904	0	0	156	8	436	0	0	0	0	0	2896
Heavy Trucks	0	8	16		8	20	0		4	0	8		0	0	0		64
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	4	0		0	0	0		0	0	0		0	0	0		4
Scooters																	

Comments:

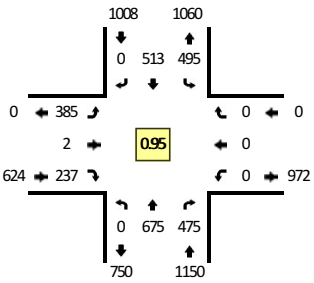
Report generated on 6/20/2024 3:42 PM

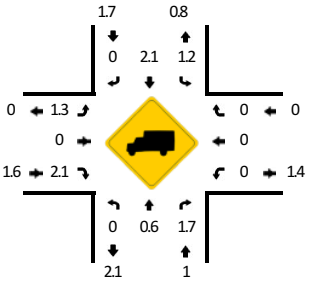
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

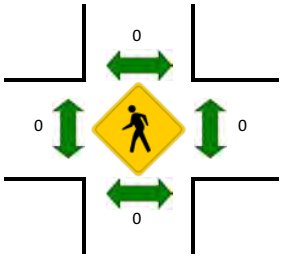
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

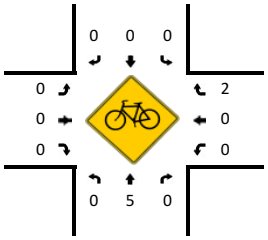
LOCATION: S Patterson Ave -- US 101 SB Ramps | **QC JOB #:** 165701108
CITY/STATE: Goleta, CA | **DATE:** Tue, May 7 2024

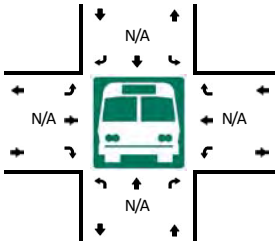
Peak-Hour: 4:25 PM -- 5:25 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

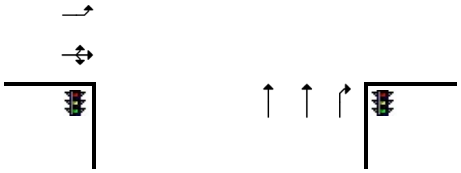


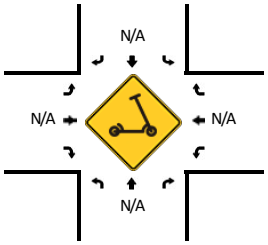












5-Min Count Period Beginning At	S Patterson Ave (Northbound)				S Patterson Ave (Southbound)				US 101 SB Ramps (Eastbound)				US 101 SB Ramps (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	52	37	0	42	45	0	0	25	3	18	0	0	0	0	0	222	
4:05 PM	0	47	44	0	40	58	0	0	22	2	21	0	0	0	0	0	234	
4:10 PM	0	52	23	0	42	68	0	0	28	0	11	0	0	0	0	0	224	
4:15 PM	0	55	33	0	44	46	0	0	29	1	24	0	0	0	0	0	232	
4:20 PM	0	72	33	0	41	48	0	0	22	0	11	0	0	0	0	0	227	
4:25 PM	0	38	31	0	26	51	0	0	37	0	23	0	0	0	0	0	206	
4:30 PM	0	58	29	0	31	51	0	0	13	0	24	0	0	0	0	0	206	
4:35 PM	0	60	42	0	40	37	0	0	31	0	21	0	0	0	0	0	231	
4:40 PM	0	63	48	0	48	42	0	0	34	0	14	0	0	0	0	0	249	
4:45 PM	0	47	38	0	52	40	0	0	35	1	19	0	0	0	0	0	232	
4:50 PM	0	47	41	0	45	48	0	0	28	0	24	0	0	0	0	0	233	
4:55 PM	0	56	50	0	35	32	0	0	42	1	14	0	0	0	0	0	230	2726
5:00 PM	0	50	46	0	32	48	0	0	33	0	22	0	0	0	0	0	231	2735
5:05 PM	0	73	44	0	42	38	0	0	35	0	20	0	0	0	0	0	252	2753
5:10 PM	0	78	44	0	37	41	0	0	31	0	15	0	0	0	0	0	246	2775
5:15 PM	0	55	36	0	51	40	0	0	32	0	17	0	0	0	0	0	231	2774
5:20 PM	0	50	26	0	56	45	0	0	34	0	24	0	0	0	0	0	235	2782
5:25 PM	0	50	20	0	32	42	0	0	29	0	27	0	0	0	0	0	200	2776
5:30 PM	0	47	32	0	23	47	0	0	27	1	11	0	0	0	0	0	188	2758
5:35 PM	0	41	30	0	44	35	0	0	29	0	14	0	0	0	0	0	193	2720
5:40 PM	0	42	24	0	39	34	0	0	26	0	22	0	0	0	0	0	187	2658
5:45 PM	0	38	29	0	41	36	0	0	22	0	23	0	0	0	0	0	189	2615
5:50 PM	0	35	25	0	51	27	0	0	28	1	24	0	0	0	0	0	191	2573
5:55 PM	0	36	28	0	31	22	0	0	24	0	10	0	0	0	0	0	151	2494

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	804	536	0	444	508	0	0	396	0	228	0	0	0	0	0	2916
Heavy Trucks	0	4	4		4	8	0		0	0	4		0	0	0		24
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	8	0		0	0	0		0	0	0		0	0	4		12
Scooters																	

Comments:

Report generated on 6/20/2024 3:42 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

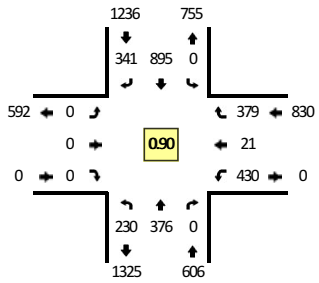
Type of peak hour being reported: Intersection Peak

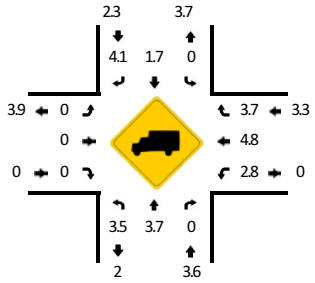
Method for determining peak hour: Total Entering Volume

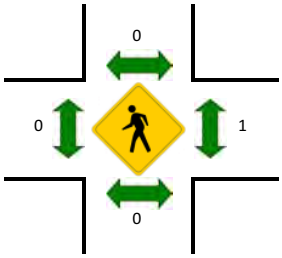
LOCATION: S Patterson Ave -- US 101 NB Ramps
CITY/STATE: Goleta, CA

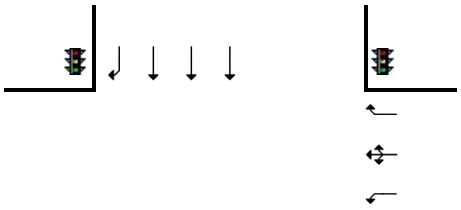
QC JOB #: 165701109
DATE: Tue, May 7 2024

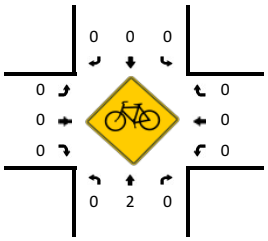
Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 7:50 AM -- 8:05 AM

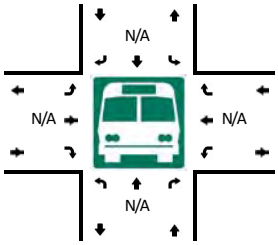


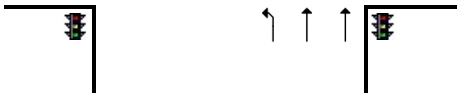


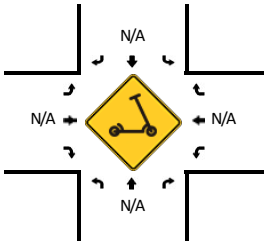












5-Min Count Period Beginning At	S Patterson Ave (Northbound)				S Patterson Ave (Southbound)				US 101 NB Ramps (Eastbound)				US 101 NB Ramps (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	13	11	0	0	0	26	6	0	0	0	0	0	27	11	16	0	110	
7:05 AM	11	16	0	0	0	33	11	0	0	0	0	0	9	3	9	0	92	
7:10 AM	5	10	0	0	0	36	11	0	0	0	0	0	14	0	12	0	88	
7:15 AM	11	8	0	0	0	33	7	0	0	0	0	0	29	3	16	0	107	
7:20 AM	15	22	0	0	0	35	15	0	0	0	0	0	18	3	15	0	123	
7:25 AM	5	10	0	0	0	33	12	0	0	0	0	0	16	2	19	0	97	
7:30 AM	12	20	0	0	0	49	14	0	0	0	0	0	27	6	17	0	145	
7:35 AM	5	21	0	0	0	64	19	0	0	0	0	0	21	2	27	0	159	
7:40 AM	19	20	0	0	0	48	14	0	0	0	0	0	28	2	23	0	154	
7:45 AM	19	22	0	0	0	73	34	0	0	0	0	0	39	5	25	0	217	
7:50 AM	30	33	0	0	0	84	28	0	0	0	0	0	46	3	30	0	254	
7:55 AM	24	37	0	0	0	83	28	0	0	0	0	0	38	2	44	0	256	1802
8:00 AM	11	36	0	0	0	71	29	0	0	0	0	0	45	4	34	0	230	1922
8:05 AM	30	44	0	0	0	61	33	0	0	0	0	0	32	0	35	0	235	2065
8:10 AM	14	35	0	0	0	92	34	0	0	0	0	0	37	2	33	0	247	2224
8:15 AM	23	35	0	0	0	74	31	0	0	0	0	0	38	0	27	0	228	2345
8:20 AM	19	42	0	0	0	71	27	0	0	0	0	0	30	0	38	0	227	2449
8:25 AM	12	25	0	0	0	82	35	0	0	0	0	0	32	2	42	0	230	2582
8:30 AM	13	23	0	0	0	56	20	0	0	0	0	0	40	0	21	0	173	2610
8:35 AM	15	29	0	0	0	79	20	0	0	0	0	0	27	1	20	0	191	2642
8:40 AM	20	15	0	0	0	69	22	0	0	0	0	0	26	2	30	0	184	2672
8:45 AM	25	31	0	0	0	47	18	0	0	0	0	0	41	5	33	0	200	2655
8:50 AM	11	32	0	0	0	99	39	0	0	0	0	0	28	0	31	0	240	2641
8:55 AM	32	26	0	0	0	66	39	0	0	0	0	0	29	0	32	0	224	2609

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	260	424	0	0	0	952	340	0	0	0	0	0	516	36	432	0	2960
Heavy Trucks	4	8	0		0	12	8		0	0	0		16	4	24		76
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	4	0		0	0	0		0	0	0		0	0	0		4
Scooters																	

Comments:

Report generated on 6/20/2024 3:42 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

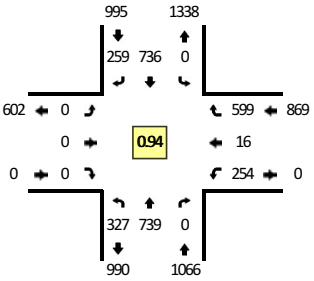
Type of peak hour being reported: Intersection Peak

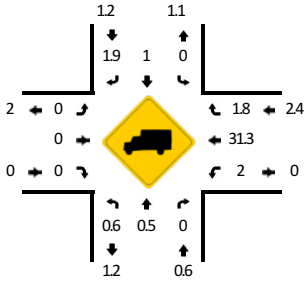
Method for determining peak hour: Total Entering Volume

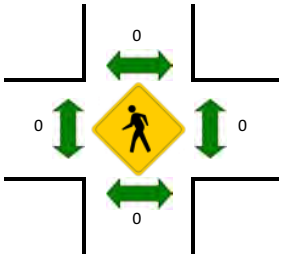
LOCATION: S Patterson Ave -- US 101 NB Ramps
CITY/STATE: Goleta, CA

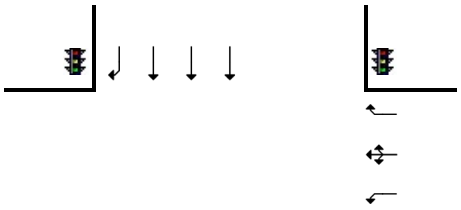
QC JOB #: 165701110
DATE: Tue, May 7 2024

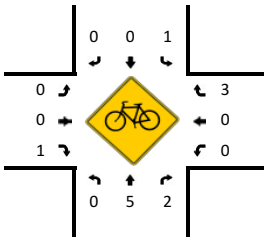
Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 4:40 PM -- 4:55 PM

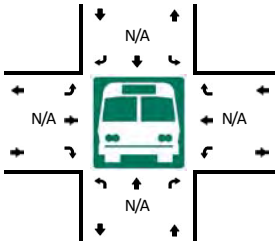


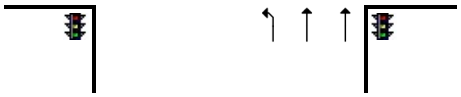


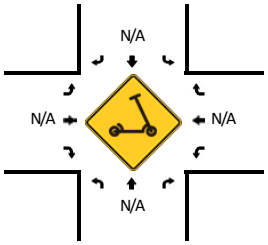












5-Min Count Period Beginning At	S Patterson Ave (Northbound)				S Patterson Ave (Southbound)				US 101 NB Ramps (Eastbound)				US 101 NB Ramps (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	28	51	0	0	0	58	24	0	0	0	0	0	28	2	41	0	232	
4:05 PM	28	44	0	0	0	74	20	0	0	0	0	0	26	0	38	0	230	
4:10 PM	20	52	0	0	0	81	28	0	0	0	0	0	30	1	47	0	259	
4:15 PM	31	54	0	0	0	60	18	0	0	0	0	0	24	0	50	0	237	
4:20 PM	33	61	0	0	0	65	19	0	0	0	0	0	29	1	60	0	268	
4:25 PM	20	55	0	0	0	52	26	0	0	0	0	0	23	1	62	0	239	
4:30 PM	23	47	0	0	0	53	16	0	0	0	0	0	20	1	40	0	200	
4:35 PM	21	68	0	0	0	57	19	0	0	0	0	0	19	2	44	0	230	
4:40 PM	35	72	0	0	0	87	27	0	0	0	0	0	19	1	46	0	287	
4:45 PM	16	57	0	0	0	63	22	0	0	0	0	0	15	1	55	0	229	
4:50 PM	28	57	0	0	0	68	28	0	0	0	0	0	30	3	49	0	263	
4:55 PM	33	56	0	0	0	47	14	0	0	0	0	0	26	1	52	0	229	2903
5:00 PM	28	58	0	0	0	52	24	0	0	0	0	0	22	2	42	0	228	2899
5:05 PM	31	72	0	0	0	74	25	0	0	0	0	0	10	1	41	0	254	2923
5:10 PM	28	82	0	0	0	58	21	0	0	0	0	0	17	2	58	0	266	2930
5:15 PM	31	58	0	0	0	71	19	0	0	0	0	0	12	0	40	0	231	2924
5:20 PM	36	57	0	0	0	81	18	0	0	0	0	0	26	0	51	0	269	2925
5:25 PM	27	47	0	0	0	56	20	0	0	0	0	0	20	0	59	0	229	2915
5:30 PM	25	51	0	0	0	50	22	1	0	0	0	0	18	0	36	0	203	2918
5:35 PM	24	46	0	0	0	58	24	0	0	0	0	0	17	0	45	0	214	2902
5:40 PM	17	55	0	0	0	55	19	0	0	0	0	0	14	1	44	0	205	2820
5:45 PM	15	45	0	0	0	76	16	0	0	0	0	0	15	0	59	0	226	2817
5:50 PM	12	46	0	0	0	59	14	0	0	0	0	0	11	1	35	0	178	2732
5:55 PM	21	41	0	0	0	44	19	0	0	0	0	0	8	0	36	0	169	2672

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	316	744	0	0	0	872	308	0	0	0	0	0	256	20	600	0	3116
Heavy Trucks	0	0	0		0	12	4		0	0	0		4	12	12		44
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	4	0		0	0	0		0	0	0		0	0	0		4
Scooters																	

Comments:

Report generated on 6/20/2024 3:42 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

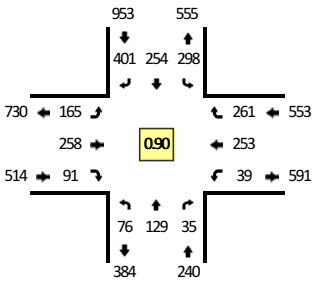
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

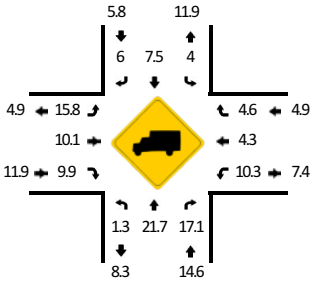
LOCATION: S Fairview Ave -- Hollister Ave
CITY/STATE: Goleta, CA

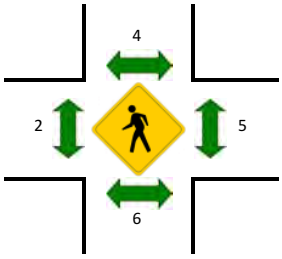
QC JOB #: 16570175
DATE: Tue, May 7 2024

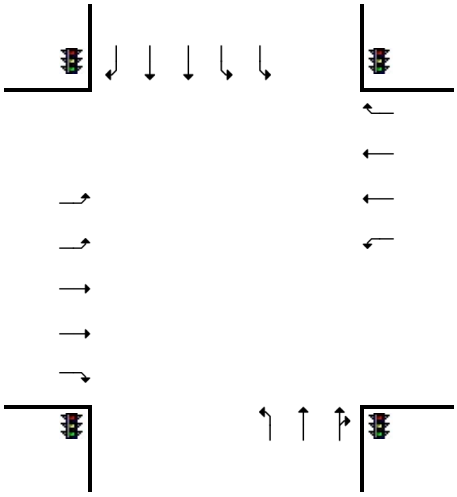
Peak-Hour: 7:50 AM -- 8:50 AM
Peak 15-Min: 7:55 AM -- 8:10 AM

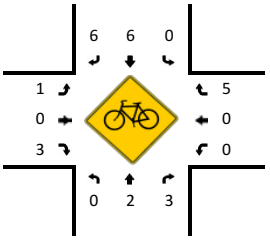


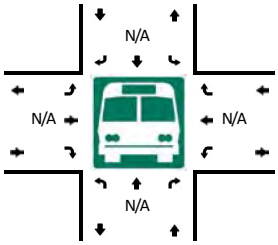
TRUE DATA TO IMPROVE MOBILITY

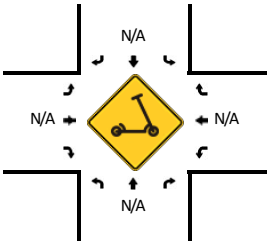












5-Min Count Period Beginning At	S Fairview Ave (Northbound)				S Fairview Ave (Southbound)				Hollister Ave (Eastbound)				Hollister Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	5	5	3	0	11	16	24	0	9	21	3	0	1	18	21	0	137	
7:05 AM	1	4	1	0	11	10	20	0	12	19	4	0	1	16	22	0	121	
7:10 AM	2	7	4	0	11	10	28	0	10	9	7	0	2	18	15	0	123	
7:15 AM	4	7	0	0	8	4	28	0	8	6	5	0	2	8	12	0	92	
7:20 AM	5	7	1	0	23	8	23	0	14	15	6	0	1	18	18	0	139	
7:25 AM	5	4	0	0	15	18	25	0	7	23	3	0	2	26	17	0	145	
7:30 AM	4	7	2	0	20	7	25	0	13	17	9	0	1	18	12	0	135	
7:35 AM	4	6	1	0	25	9	31	0	16	15	7	0	0	28	17	0	159	
7:40 AM	4	5	2	0	19	24	27	0	14	23	7	0	2	13	29	0	169	
7:45 AM	3	4	1	0	24	20	30	0	12	21	10	0	4	17	29	0	175	
7:50 AM	10	8	3	0	25	19	21	0	25	30	11	0	4	24	24	0	204	
7:55 AM	6	13	2	0	20	15	45	0	13	40	8	0	2	32	27	0	223	1822
8:00 AM	6	10	3	0	28	26	39	0	17	13	7	0	3	22	26	0	200	1885
8:05 AM	7	8	2	0	29	25	34	0	13	35	11	0	5	15	21	0	205	1969
8:10 AM	8	14	3	0	25	23	32	0	7	18	13	0	5	12	19	0	179	2025
8:15 AM	3	11	4	0	28	15	34	0	12	19	4	0	2	29	23	0	184	2117
8:20 AM	5	6	3	0	32	22	32	0	12	17	9	0	5	25	18	0	186	2164
8:25 AM	5	8	0	0	23	21	33	0	18	11	8	0	3	25	20	0	175	2194
8:30 AM	7	8	5	0	21	27	39	0	13	25	5	0	3	15	19	0	187	2246
8:35 AM	8	15	5	0	26	12	25	0	12	15	2	0	1	17	20	0	158	2245
8:40 AM	5	16	3	0	16	25	32	0	12	16	4	0	4	21	26	0	180	2256
8:45 AM	6	12	2	0	25	24	35	0	11	19	9	0	2	16	18	0	179	2260
8:50 AM	6	10	6	0	30	24	38	0	9	13	3	0	5	21	27	0	192	2248
8:55 AM	9	4	2	0	18	20	30	0	18	23	7	0	0	23	23	0	177	2202

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	76	124	28	0	308	264	472	0	172	352	104	0	40	276	296	0	2512
Heavy Trucks	0	28	4		8	28	28		36	48	16		0	16	16		228
Buses																	
Pedestrians		0				0				0				4			4
Bicycles	0	0	8		0	4	4		0	0	4		0	0	0		20
Scooters																	

Comments:

Report generated on 6/20/2024 3:42 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

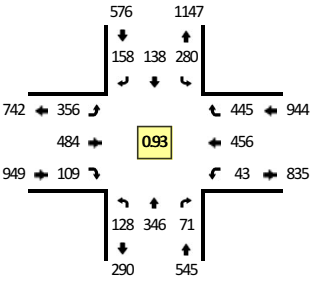
Type of peak hour being reported: Intersection Peak

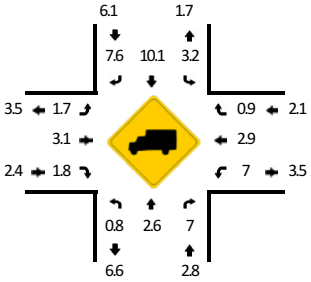
Method for determining peak hour: Total Entering Volume

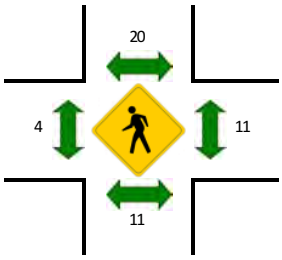
LOCATION: S Fairview Ave -- Hollister Ave
CITY/STATE: Goleta, CA

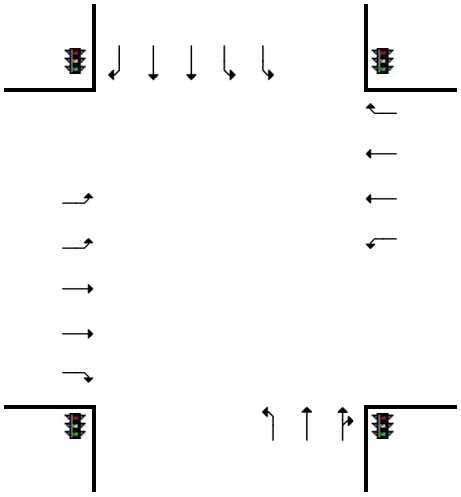
QC JOB #: 16570176
DATE: Tue, May 7 2024

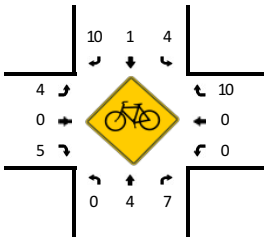
Peak-Hour: 4:20 PM -- 5:20 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

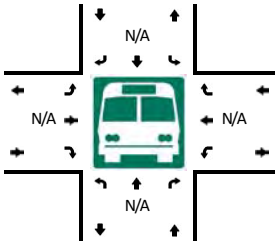


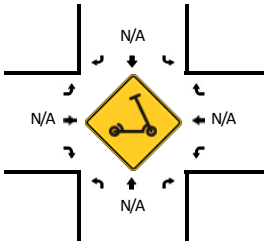












5-Min Count Period Beginning At	S Fairview Ave (Northbound)				S Fairview Ave (Southbound)				Hollister Ave (Eastbound)				Hollister Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	5	35	7	0	28	16	14	0	31	19	5	0	5	27	34	0	226	
4:05 PM	9	40	11	0	17	11	19	0	43	43	15	0	5	33	30	0	276	
4:10 PM	13	16	5	0	23	19	21	0	46	44	10	0	7	35	39	0	278	
4:15 PM	9	34	13	0	24	16	16	0	28	34	8	0	5	24	41	0	252	
4:20 PM	15	30	5	0	14	13	8	0	24	39	9	0	3	42	26	0	228	
4:25 PM	5	27	9	0	23	9	18	0	26	37	10	0	3	28	31	0	226	
4:30 PM	9	25	4	0	25	4	14	0	24	51	6	0	5	43	48	0	258	
4:35 PM	8	25	5	0	15	13	15	0	34	43	11	0	2	39	40	0	250	
4:40 PM	12	28	5	0	27	12	13	0	34	38	9	0	1	37	37	0	253	
4:45 PM	12	21	8	0	31	26	23	0	27	54	11	0	2	22	28	0	265	
4:50 PM	17	21	8	0	27	10	11	0	22	35	3	0	2	42	48	0	246	
4:55 PM	7	30	5	0	25	11	12	0	26	38	13	0	7	49	22	0	245	3003
5:00 PM	9	29	5	0	17	7	8	0	37	41	9	0	2	32	36	0	232	3009
5:05 PM	16	51	7	0	31	16	12	0	23	27	4	0	2	26	43	0	258	2991
5:10 PM	9	20	3	0	23	9	15	0	48	51	10	0	1	49	44	0	282	2995
5:15 PM	9	39	7	0	22	8	9	0	31	30	14	0	13	47	42	0	271	3014
5:20 PM	3	41	6	0	29	5	11	0	27	37	7	0	3	33	26	0	228	3014
5:25 PM	5	31	9	0	31	7	14	0	21	20	8	0	4	28	28	0	206	2994
5:30 PM	10	24	8	0	26	9	4	0	29	22	6	0	5	29	32	0	204	2940
5:35 PM	4	31	7	0	14	7	11	0	34	38	10	0	3	43	19	0	221	2911
5:40 PM	10	22	8	0	12	6	14	0	35	17	4	0	6	35	31	0	200	2858
5:45 PM	11	14	4	0	16	6	10	0	25	38	9	0	4	27	31	0	195	2788
5:50 PM	7	23	6	0	21	11	11	0	18	17	8	0	6	20	30	0	178	2720
5:55 PM	6	9	5	0	28	12	12	0	15	27	5	0	3	24	28	0	174	2649

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	136	440	68	0	304	132	144	0	408	432	112	0	64	488	516	0	3244
Heavy Trucks	4	8	4		20	4	12		4	12	4		4	16	0		92
Buses																	
Pedestrians		8				20				0				0			28
Bicycles	0	4	16		0	0	4		4	0	8		0	0	4		40
Scooters																	

Comments:

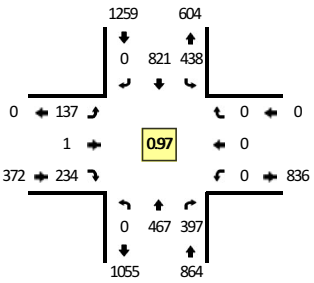
Report generated on 6/20/2024 3:42 PM

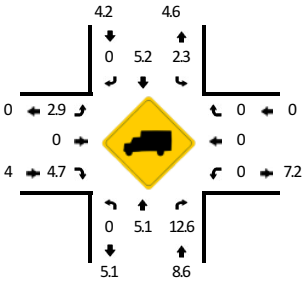
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

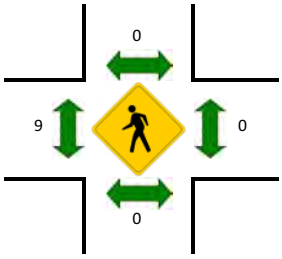
LOCATION: N Los Carneros Rd -- US 101 SB Ramps | **QC JOB #:** 16570179
CITY/STATE: Goleta, CA | **DATE:** Thu, May 9 2024

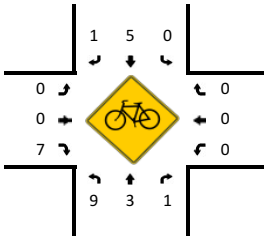
Peak-Hour: 7:55 AM -- 8:55 AM
Peak 15-Min: 8:00 AM -- 8:15 AM

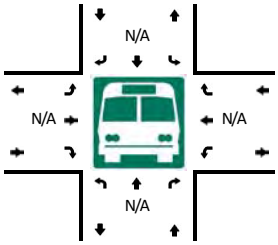


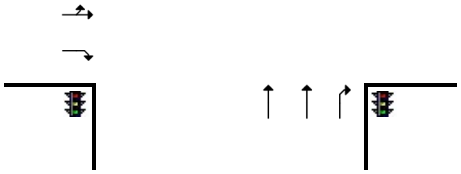


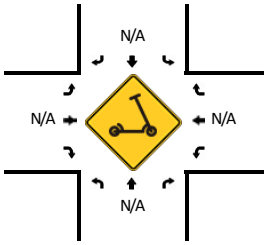
TRUE DATA TO IMPROVE MOBILITY











5-Min Count Period Beginning At	N Los Carneros Rd (Northbound)				N Los Carneros Rd (Southbound)				US 101 SB Ramps (Eastbound)				US 101 SB Ramps (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	19	17	0	12	36	0	0	3	0	19	0	0	0	0	0	106	
7:05 AM	0	18	27	0	19	29	0	0	5	0	11	0	0	0	0	0	109	
7:10 AM	0	19	23	0	19	26	0	0	3	0	14	0	0	0	0	0	104	
7:15 AM	0	20	24	0	14	40	0	0	9	0	19	0	0	0	0	0	126	
7:20 AM	0	21	33	0	24	56	0	0	6	0	18	0	0	0	0	0	158	
7:25 AM	0	18	28	0	21	49	0	0	6	0	16	0	0	0	0	0	138	
7:30 AM	0	20	29	0	33	59	0	0	13	0	20	0	0	0	0	0	174	
7:35 AM	0	20	40	0	28	51	0	0	6	0	25	0	0	0	0	0	170	
7:40 AM	0	22	36	0	28	53	0	0	8	0	23	0	0	0	0	0	170	
7:45 AM	0	30	44	0	35	68	0	0	11	0	21	0	0	0	0	0	209	
7:50 AM	0	31	44	0	30	59	0	0	7	0	17	0	0	0	0	0	188	
7:55 AM	0	52	35	0	17	73	0	0	7	0	28	0	0	0	0	0	212	1864
8:00 AM	0	45	33	0	34	68	0	0	5	0	16	0	0	0	0	0	201	1959
8:05 AM	0	46	41	0	39	62	0	0	13	0	22	0	0	0	0	0	223	2073
8:10 AM	0	33	36	0	34	88	0	0	13	0	18	0	0	0	0	0	222	2191
8:15 AM	0	33	30	0	43	60	0	0	13	0	12	0	0	0	0	0	191	2256
8:20 AM	0	33	31	0	37	83	0	0	9	0	14	0	0	0	0	0	207	2305
8:25 AM	0	40	24	0	37	84	0	0	11	0	18	0	0	0	0	0	214	2381
8:30 AM	0	24	30	0	22	64	0	0	13	0	21	0	0	0	0	0	174	2381
8:35 AM	0	39	19	0	43	64	0	0	12	0	28	0	0	0	0	0	205	2416
8:40 AM	0	35	37	0	50	54	0	0	9	0	21	0	0	0	0	0	206	2452
8:45 AM	0	33	45	0	56	62	0	0	12	0	19	0	0	0	0	0	227	2470
8:50 AM	0	54	36	0	26	59	0	0	20	1	17	0	0	0	0	0	213	2495
8:55 AM	0	34	24	0	54	69	0	0	10	0	19	0	0	0	0	0	210	2493

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	496	440	0	428	872	0	0	124	0	224	0	0	0	0	0	2584
Heavy Trucks	0	28	68		8	44	0		4	0	4		0	0	0		156
Buses																	
Pedestrians		0				0				8				0			8
Bicycles	4	0	4		0	4	0		0	0	4		0	0	0		16
Scooters																	

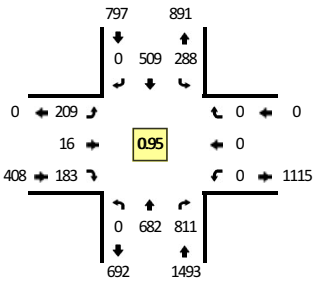
Comments:

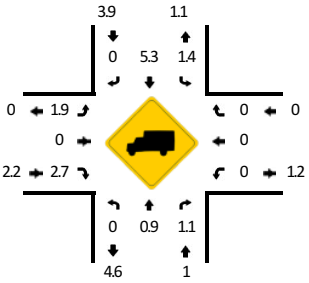
Report generated on 6/20/2024 3:42 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

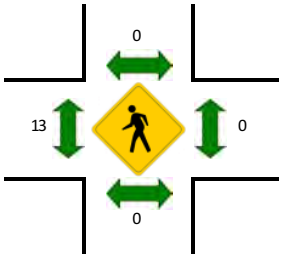
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

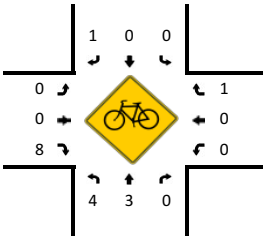
LOCATION: N Los Carneros Rd -- US 101 SB Ramps | **QC JOB #:** 16570180
CITY/STATE: Goleta, CA | **DATE:** Thu, May 9 2024

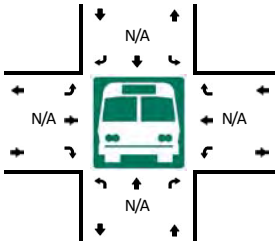
Peak-Hour: 4:35 PM -- 5:35 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

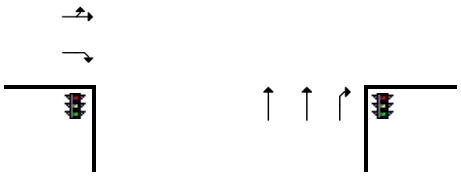


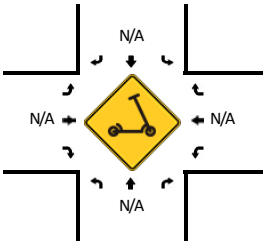












5-Min Count Period Beginning At	N Los Carneros Rd (Northbound)				N Los Carneros Rd (Southbound)				US 101 SB Ramps (Eastbound)				US 101 SB Ramps (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	50	62	0	22	41	0	0	14	1	11	0	0	0	0	0	201	
4:05 PM	0	62	66	0	30	45	0	0	14	0	19	0	0	0	0	0	236	
4:10 PM	0	56	57	0	17	41	0	0	28	1	14	0	0	0	0	0	214	
4:15 PM	0	51	56	0	24	41	0	0	12	3	12	0	0	0	0	0	199	
4:20 PM	0	66	56	0	20	40	0	0	16	0	14	0	0	0	0	0	212	
4:25 PM	0	64	52	0	14	64	0	0	18	0	13	0	0	0	0	0	225	
4:30 PM	0	47	47	0	30	41	0	0	17	3	16	0	0	0	0	0	201	
4:35 PM	0	54	72	0	21	50	0	0	23	0	15	0	0	0	0	0	235	
4:40 PM	0	63	68	0	28	47	0	0	17	2	14	0	0	0	0	0	239	
4:45 PM	0	55	75	0	13	42	0	0	16	4	14	0	0	0	0	0	219	
4:50 PM	0	41	64	0	24	32	0	0	17	3	14	0	0	0	0	0	195	
4:55 PM	0	54	69	0	19	45	0	0	14	1	18	0	0	0	0	0	220	2596
5:00 PM	0	64	63	0	24	36	0	0	17	0	21	0	0	0	0	0	225	2620
5:05 PM	0	64	50	0	38	51	0	0	13	0	16	0	0	0	0	0	232	2616
5:10 PM	0	61	75	0	25	57	0	0	17	1	13	0	0	0	0	0	249	2651
5:15 PM	0	61	77	0	23	38	0	0	12	1	15	0	0	0	0	0	227	2679
5:20 PM	0	53	73	0	20	39	0	0	23	0	11	0	0	0	0	0	219	2686
5:25 PM	0	53	66	0	33	31	0	0	20	0	13	0	0	0	0	0	216	2677
5:30 PM	0	59	59	0	20	41	0	0	20	4	19	0	0	0	0	0	222	2698
5:35 PM	0	65	54	0	30	29	0	0	21	1	11	0	0	0	0	0	211	2674
5:40 PM	0	53	49	0	25	36	0	0	30	2	14	0	0	0	0	0	209	2644
5:45 PM	0	59	56	0	17	25	0	0	16	1	19	0	0	0	0	0	193	2618
5:50 PM	0	59	37	0	22	26	0	0	20	2	15	0	0	0	0	0	181	2604
5:55 PM	0	44	43	0	17	35	0	0	16	1	16	0	0	0	0	0	172	2556

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	744	808	0	344	584	0	0	168	8	176	0	0	0	0	0	2832
Heavy Trucks	0	12	8		4	60	0		0	0	0		0	0	0		84
Buses																	
Pedestrians		0				0				20				0			20
Bicycles	4	4	0		0	0	0		0	0	4		0	0	4		16
Scooters																	

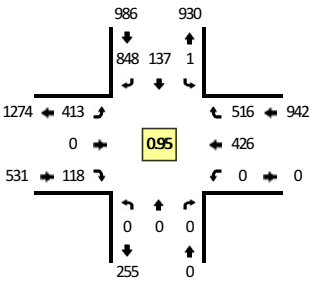
Comments:

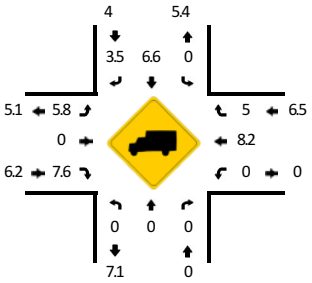
Report generated on 6/20/2024 3:42 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

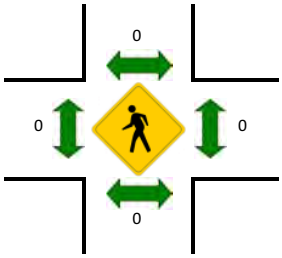
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

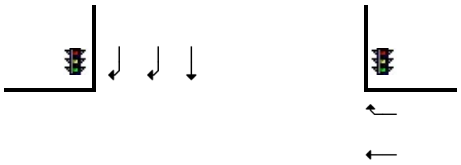
LOCATION: N Fairview Ave -- US 101 NB Ramps | **QC JOB #:** 165701111
CITY/STATE: Goleta, CA | **DATE:** Tue, May 7 2024

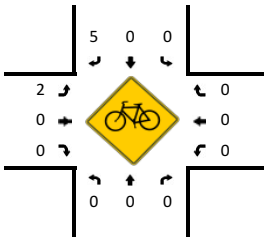
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:40 AM -- 8:55 AM

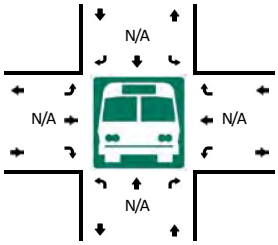


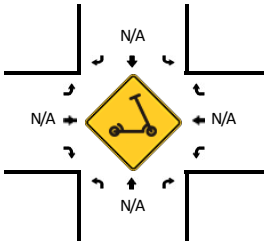












5-Min Count Period Beginning At	N Fairview Ave (Northbound)				N Fairview Ave (Southbound)				US 101 NB Ramps (Eastbound)				US 101 NB Ramps (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	7	28	0	18	0	6	0	0	36	25	0	120	
7:05 AM	0	0	0	0	0	4	22	0	23	0	9	0	0	20	13	0	91	
7:10 AM	0	0	0	0	0	3	30	0	23	0	5	0	0	32	18	0	111	
7:15 AM	0	0	0	0	0	7	33	0	18	0	6	0	0	25	25	0	114	
7:20 AM	0	0	0	0	0	5	39	0	19	0	5	0	0	36	18	0	122	
7:25 AM	0	0	0	0	0	9	42	0	20	0	8	0	0	35	23	0	137	
7:30 AM	0	0	0	0	0	7	35	0	23	0	7	0	0	27	19	0	118	
7:35 AM	0	0	0	0	0	10	39	0	17	0	5	0	0	33	19	0	123	
7:40 AM	0	0	0	0	0	7	64	0	30	0	5	0	0	38	30	0	174	
7:45 AM	0	0	0	0	0	10	64	0	39	0	7	0	0	26	26	0	172	
7:50 AM	0	0	0	0	0	9	67	0	39	0	8	0	0	45	29	0	197	
7:55 AM	0	0	0	0	0	3	54	0	28	0	11	0	0	60	44	0	200	1679
8:00 AM	0	0	0	0	0	16	45	0	58	0	12	0	0	22	37	0	190	1749
8:05 AM	0	0	0	0	0	12	65	0	24	0	10	0	0	55	46	0	212	1870
8:10 AM	0	0	0	0	0	13	81	1	36	0	9	0	0	32	46	0	218	1977
8:15 AM	0	0	0	0	0	6	68	0	45	0	8	0	0	28	44	0	199	2062
8:20 AM	0	0	0	0	0	10	86	0	23	0	6	0	0	48	53	0	226	2166
8:25 AM	0	0	0	0	0	6	61	0	34	0	4	0	0	28	45	0	178	2207
8:30 AM	0	0	0	0	0	13	77	0	22	0	5	0	0	45	44	0	206	2295
8:35 AM	0	0	0	0	0	11	69	0	21	0	11	0	0	22	37	0	171	2343
8:40 AM	0	0	0	0	0	12	73	0	44	0	13	0	0	30	41	0	213	2382
8:45 AM	0	0	0	0	0	13	80	0	44	0	10	0	0	38	47	0	232	2442
8:50 AM	0	0	0	0	0	12	70	0	40	0	19	0	0	37	24	0	202	2447
8:55 AM	0	0	0	0	0	13	73	0	22	0	11	0	0	41	52	0	212	2459

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	148	892	0	512	0	168	0	0	420	448	0	2588
Heavy Trucks	0	0	0		0	0	24		40	0	16		0	36	8		124
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	4		8	0	0		0	0	0		12
Scooters																	

Comments:

Report generated on 6/20/2024 3:42 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

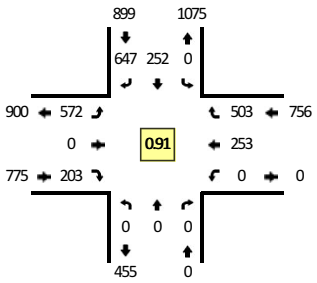
Type of peak hour being reported: Intersection Peak

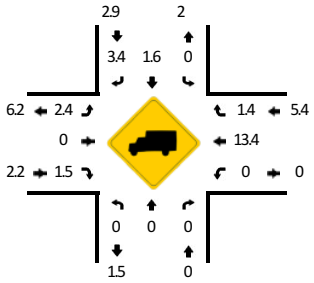
Method for determining peak hour: Total Entering Volume

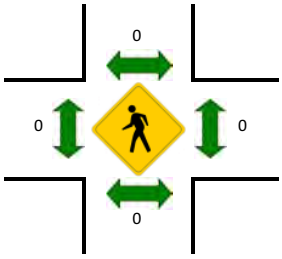
LOCATION: N Fairview Ave -- US 101 NB Ramps
CITY/STATE: Goleta, CA

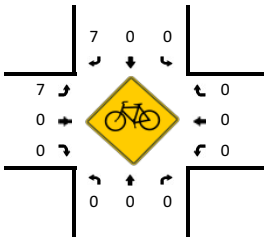
QC JOB #: 165701112
DATE: Tue, May 7 2024

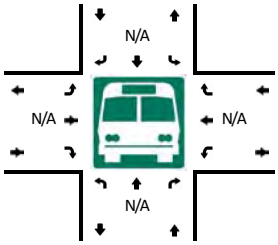
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:05 PM -- 4:20 PM

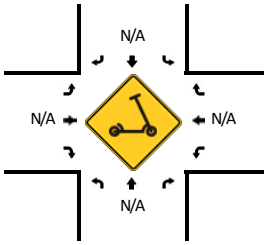












5-Min Count Period Beginning At	N Fairview Ave (Northbound)				N Fairview Ave (Southbound)				US 101 NB Ramps (Eastbound)				US 101 NB Ramps (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	20	67	0	44	0	14	0	0	22	45	0	212	
4:05 PM	0	0	0	0	0	19	58	0	47	0	27	0	0	34	38	0	223	
4:10 PM	0	0	0	0	0	11	49	0	55	0	22	0	0	30	48	0	215	
4:15 PM	0	0	0	0	0	28	50	0	54	0	26	0	0	22	47	0	227	
4:20 PM	0	0	0	0	0	19	48	0	47	0	10	0	0	14	40	0	178	
4:25 PM	0	0	0	0	0	25	59	0	46	0	15	0	0	18	33	0	196	
4:30 PM	0	0	0	0	0	18	40	0	33	0	20	0	0	16	55	0	182	
4:35 PM	0	0	0	0	0	27	51	0	62	0	17	0	0	16	38	0	211	
4:40 PM	0	0	0	0	0	25	52	0	48	0	11	0	0	14	40	0	190	
4:45 PM	0	0	0	0	0	23	78	0	50	0	20	0	0	33	36	0	240	
4:50 PM	0	0	0	0	0	21	52	0	38	0	10	0	0	17	47	0	185	
4:55 PM	0	0	0	0	0	16	43	0	48	0	11	0	0	17	36	0	171	2430
5:00 PM	0	0	0	0	0	20	44	0	58	0	11	0	0	17	43	0	193	2411
5:05 PM	0	0	0	0	0	16	65	0	40	0	20	0	0	17	43	0	201	2389
5:10 PM	0	0	0	0	0	17	57	0	64	0	27	0	0	11	36	0	212	2386
5:15 PM	0	0	0	0	0	28	44	0	60	0	16	0	0	22	38	0	208	2367
5:20 PM	0	0	0	0	0	16	52	0	54	0	11	0	0	10	46	0	189	2378
5:25 PM	0	0	0	0	0	17	45	0	63	0	24	0	0	12	44	0	205	2387
5:30 PM	0	0	0	0	0	21	41	0	30	0	17	0	0	13	46	0	168	2373
5:35 PM	0	0	0	0	0	24	33	0	59	0	11	0	0	6	42	0	175	2337
5:40 PM	0	0	0	0	0	24	44	0	51	0	12	0	0	14	36	0	181	2328
5:45 PM	0	0	0	0	0	22	43	0	45	0	8	0	0	10	37	0	165	2253
5:50 PM	0	0	0	0	0	25	40	0	42	0	12	0	0	16	50	0	185	2253
5:55 PM	0	0	0	0	0	11	45	0	58	0	11	0	0	15	33	0	173	2255

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	232	628	0	624	0	300	0	0	344	532	0	2660
Heavy Trucks	0	0	0		0	8	24		20	0	0		0	60	12		124
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	8		0	0	0		0	0	0		8
Scooters																	

Comments:

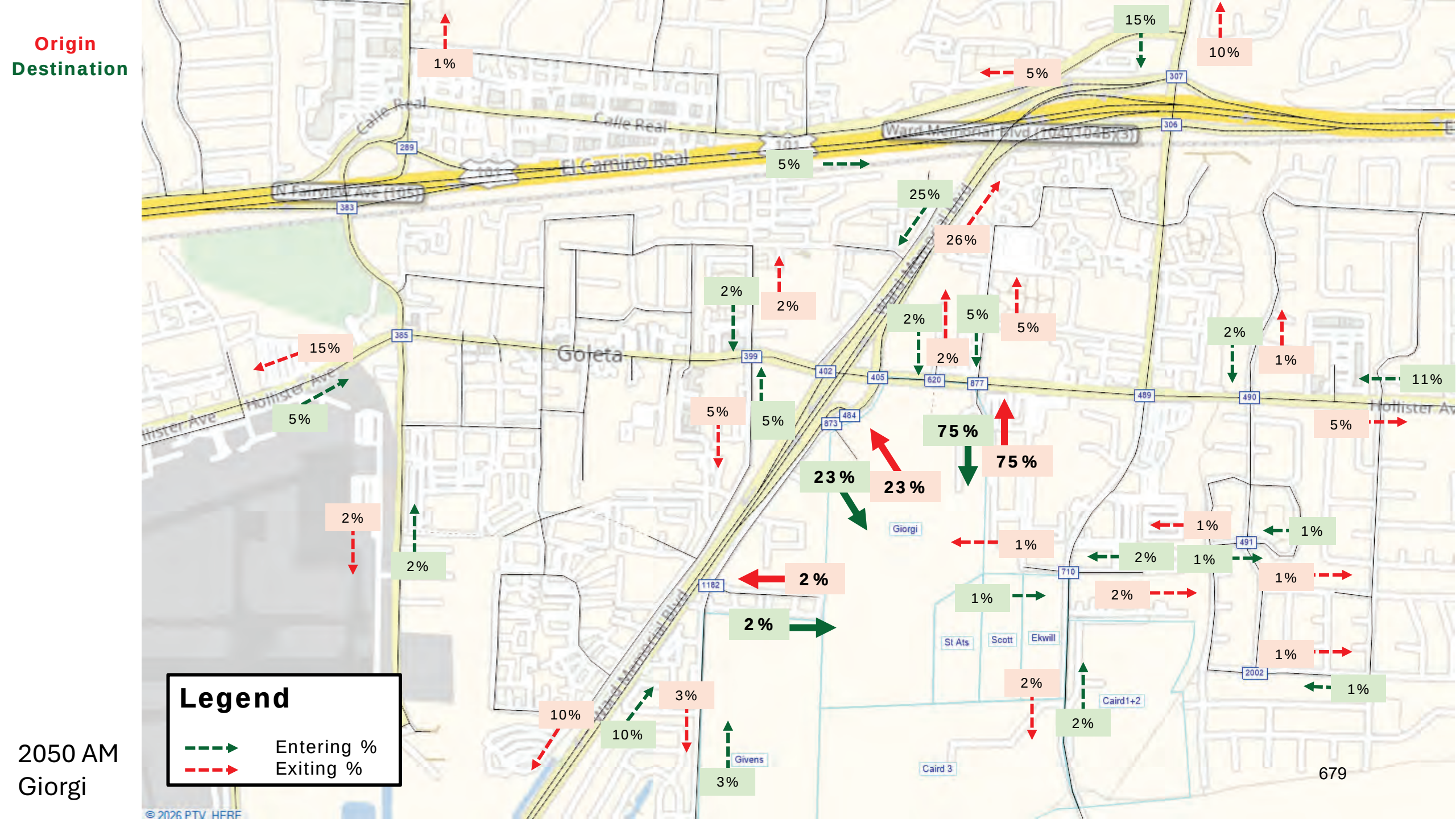
Report generated on 6/20/2024 3:42 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

SECTION B. BALANCED EXISTING CONDITIONS VOLUMES

Intersection	Control	Existing																								
		AM													PM											
		EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
SR-217 WB Ramps & Hollister Ave	Signal			814	47	99	417					183		414			1,093	56	93	654					79	1	530
SR-217 EB On-Ramp/Ward Dr & Hollister Ave	Signal		362	448	187	46	447	68	69	62	65					469	588	115	26	605	75	142	131	146			
St Josephs St & Hollister Ave	TWSC	9	53	451			505	14				3		44	45	14	675			650	7				5		8
Sumida Gardens Ln & Hollister Ave	Signal		20	394	40	7	450	12	8	2	7	52	2	61		38	634	8	5	565	36	41	3	12	25		51
South Patterson Ave & Hollister Ave	Signal		65	300	51	73	362	405	31	134	62	256	363	184		190	580	40	34	376	336	57	289	103	462	103	113
Lassen Dr/San Ricardo Dr & Hollister Ave	Signal		31	461	45	13	655	8	107	1	17	12	1	128		35	1,052	93	36	537	16	44		24	12	1	97
Ward Dr & SR-217 EB Off-Ramp	TWSC		50		17					146			233			164		14					255			141	
Ward Dr & Ekwill St	TWSC					1		18		82	1	37	78						1		56		109	2	37	88	
South Patterson Ave & Ekwill St	TWSC		3			2		15	1	101	3	39	72	8		10	1	1	3		30	2	128		11	76	
South Patterson Ave & US-101 SB Ramps	Signal		168	6	364					444	279	611	726			387	2	237					679	475	495	513	
South Patterson Ave & US-101 NB Ramps	Signal					434	21	379	232	380			903	341					259	16	599	327	739			749	259
South Fairview Ave & Hollister Ave	Signal		165	258	91	39	253	261	76	129	35	298	254	401		356	484	109	43	456	445	128	346	71	280	138	158
North Fairview Ave & US-101 SB Ramps	Signal		137	1	234					467	397	443	831			182	14	159					593	900	325	575	
North Fairview Ave & US-101 NB Ramps	Signal		470		134		426	516					137	848		572		203		253	503					252	647

SECTION C. FORECASTING AND DISTRIBUTION


Origin
Destination
1%
15%
5%
10%
Calle Real
El Camino Real
Ward Memorial Blvd
5%
25%
26%
2%
2%
2%
5%
5%
2%
1%
11%
15%
5%
Goleta
Hollister Ave
5%
5%
5%
75 %
75 %
23 %
23 %
Giorgi
2%
2%
1%
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1%
2%
1%
1%
2%
2 %
2 %
1%
St Ats
Scott
Ekwill
1%
2%
10%
10%
3%
3%
Givens
Caird 3
Caird1+2
2%
2%
1%
1%
Legend
Entering %
Exiting %
2050 AM
Giorgi
679
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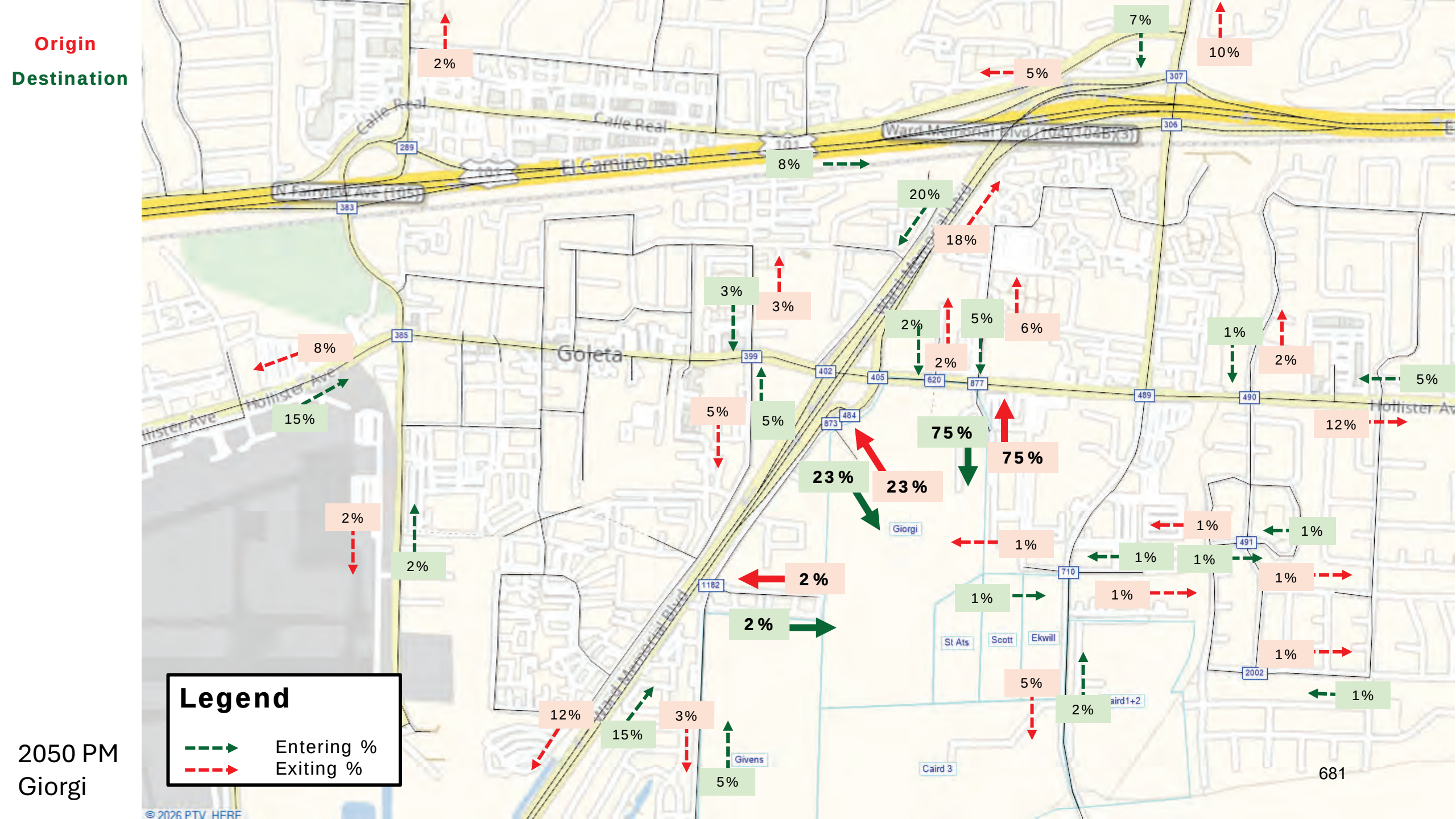
			Origin												Destination										
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	Hollister/SR217 WB Ramp					0	0	0		0	0	10	25					25	0	0		14	0	0	0	
2	Hollister/SR217 EB Ramp		7	10	6				0	0	0	1	28	16	0	0	10				0	25	14	8	0	0
3	Hollister/St Joseph					0		0	1	5			45	1				1		1	0	35			7	0
4	**Hollister/Sumida Gardens**		46	3	26	0	0	0	2	3	0	0	0	0	0	0	0	0	3	2	0	0	36	36	5	0
5	Hollister/Patterson		0	0	0	0	0	0	15	9	5	0	0	0	5	0	0	0	0	20	0	0	0	0	16	0
6	Hollister/San Ricardo		0	0	0	0	0	0	1	5	3	0	0	0	3	0	0	0	0	2	0	0	0	0	11	0
7	Ward/SR217 EB Off Ramp			23			1		0		0					2			22		8		2			
8	**Ward/Ekwill**			0	0	0	2					1		1		3	0	2	0					0		0
9	Ekwill/Patterson		0	0	0	2	2	1	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	2
10	Calle Luarda/San Ricardo		0	0	0	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1
13	San Vicente/San Ricardo					1		0	0	0			0	0				0		0	0	0			0	1
14	US101 SB/Patterson			15	0	0	0		0	0	0					0	0	0	15		0	0	5			
15	US101 NB/Patterson		5	10			0	0				0	0	0	0	0			15	0				0	0	0
16	Hollister/Fairview		0	0	0	0	0	0	0	0	0	2	15	1	0	0	2	0	0	0	0	5	0	0	0	0
17	US101 SB/Fairview			1	0	0	0		0	0	0					0	0	0	0		0	0	0			
18	US101 NB/Fairview						0	0	1		0		0	0					0	0	0		0		0	0
20	Hollister/Kellogg		0	0	0	0	0	0	0	0	0	5	18	2	0	0	5	2	0	0	0	7	0	0	0	0
21	**Ward/Street A**			1	0	0	1					1		22		2	1	22	2					0		0
		Combined	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**												
1	Hollister/SR217 WB Ramp					25	0	0		14	0	10	25													
2	Hollister/SR217 EB Ramp		7	10	16				0	25	14	9	28	16												
3	Hollister/St Joseph					1		1	1	40			52	1												
4	**Hollister/Sumida Gardens**		46	3	26	0	3	2	2	3	36	36	5	0												
5	Hollister/Patterson		5	0	0	0	0	20	15	9	5	0	16	0												
6	Hollister/San Ricardo		3	0	0	0	0	2	1	5	3	0	11	0												
7	Ward/SR217 EB Off Ramp			25			23		8		2															
8	**Ward/Ekwill**			3	0	2	2					1		1												
9	Ekwill/Patterson		0	2	0	2	2	1	1	0	0	0	0	2												
10	Calle Luarda/San Ricardo		0	1	0	1	1	1	1	0	0	0	0	1												
13	San Vicente/San Ricardo					1		0	0	0			0	1												
14	US101 SB/Patterson			15	0	0	15		0	0	5															
15	US101 NB/Patterson		5	10			15	0				0	0	0												
16	Hollister/Fairview		0	0	2	0	0	0	0	5	0	2	15	1												
17	US101 SB/Fairview			1	0	0	0		0	0	0															
18	US101 NB/Fairview						0	0	1		0		0	0												
20	Hollister/Kellogg		0	0	5	2	0	0	0	7	0	5	18	2												
21	**Ward/Street A**			3	1	22	3					1		22												

2050 AM
Giorgi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Destination
Legend
Entering %
Exiting %
2050 PM
Giorgi
681
Goleta
Calle Real
El Camino Real
Ward Memorial Blvd
Hollister Ave
Giorgi
Caird 3
Givens
St Ats
Scott
Ekwill
2%
10%
7%
5%
8%
20%
18%
3%
3%
2%
5%
6%
1%
2%
5%
8%
15%
5%
5%
75%
75%
23%
23%
12%
2%
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5%
2%
12%
15%
3%
5%
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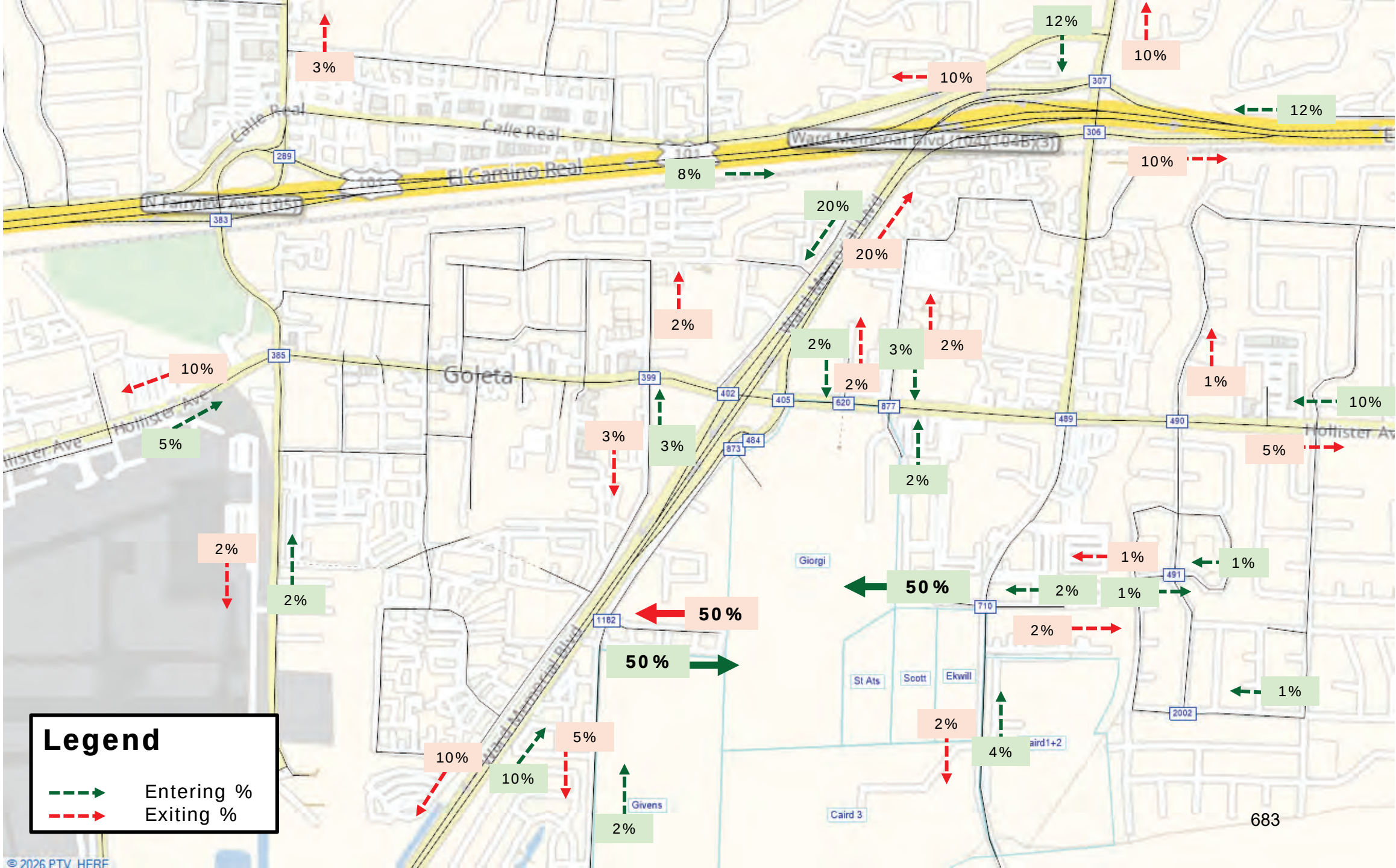
			Origin												Destination										
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	Hollister/SR217 WB Ramp					0	0	0		0	0	12	20					20	0	0		25	0	0	0	
2	Hollister/SR217 EB Ramp		7	5	12				0	0	0	2	25	13	0	0	15				0	34	11	9	0	0
3	Hollister/St Joseph					0		0	1	11			40	1				1		1	0	49			8	0
4	**Hollister/Sumida Gardens**		41	5	29	0	0	0	1	10	0	0	0	0	0	0	0	0	3	2	0	0	50	22	6	0
5	Hollister/Patterson		0	0	0	0	0	0	15	17	7	0	0	0	4	0	0	0	0	15	0	0	0	0	9	0
6	Hollister/San Ricardo		0	0	0	0	0	0	2	12	3	0	0	0	3	0	0	0	0	1	0	0	0	0	5	0
7	Ward/SR217 EB Off Ramp			24			2		0		0					3			20		12		3			
8	**Ward/Ekwill**			0	0	0	2					1		1		4	1	1	0					0		0
9	Ekwill/Patterson		0	0	0	1	5	1	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	1
10	Calle Luarda/San Ricardo		0	0	0	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1
13	San Vicente/San Ricardo					1		0	0	0			0	0				0		0	0	0			0	1
14	US101 SB/Patterson			15	0	0	0		0	0	0					0	0	0	7		0	0	8			
15	US101 NB/Patterson		5	10			0	0				0	0	0	0	0			7	0				0	0	0
16	Hollister/Fairview		0	0	0	0	0	0	0	0	0	2	8	2	0	0	2	0	0	0	0	15	0	0	0	0
17	US101 SB/Fairview			2	0	0	0		0	0	0					0	0	0	0		0	0	0			
18	US101 NB/Fairview						0	0	2		0		0	0					0	0	0		0		0	0
20	Hollister/Kellogg		0	0	0	0	0	0	0	0	0	5	12	3	0	0	5	3	0	0	0	17	0	0	0	0
21	**Ward/Street A**			2	0	0	2					1		22		3	1	22	1					0		0
		Combined	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR												
1	Hollister/SR217 WB Ramp					20	0	0		25	0	12	20													
2	Hollister/SR217 EB Ramp		7	5	27				0	34	11	11	25	13												
3	Hollister/St Joseph					1		1	1	60			48	1												
4	**Hollister/Sumida Gardens**		41	5	29	0	3	2	1	10	50	22	6	0												
5	Hollister/Patterson		4	0	0	0	0	15	15	17	7	0	9	0												
6	Hollister/San Ricardo		3	0	0	0	0	1	2	12	3	0	5	0												
7	Ward/SR217 EB Off Ramp			27			22		12		3															
8	**Ward/Ekwill**			4	1	1	2					1		1												
9	Ekwill/Patterson		0	2	0	1	5	1	1	0	0	0	0	1												
10	Calle Luarda/San Ricardo		0	1	0	1	1	1	1	0	0	0	0	1												
13	San Vicente/San Ricardo					1		0	0	0			0	1												
14	US101 SB/Patterson			15	0	0	7		0	0	8															
15	US101 NB/Patterson		5	10			7	0				0	0	0												
16	Hollister/Fairview		0	0	2	0	0	0	0	15	0	2	8	2												
17	US101 SB/Fairview			2	0	0	0		0	0	0															
18	US101 NB/Fairview						0	0	2		0		0	0												
20	Hollister/Kellogg		0	0	5	3	0	0	0	17	0	5	12	3												
21	**Ward/Street A**			5	1	22	3					1		22												

2050 PM
Giorgi

Origin

Destination



2050 AM

St. Ant

			Origin												Destination										
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	Hollister/SR217 WB Ramp					0	0	0		0	0	10	20					20	0	0		10	0	0	0	
2	Hollister/SR217 EB Ramp		16	20	11				0	0	0	2	14	0	0	0	5				0	6	24	19	0	0
3	Hollister/St Joseph					0		0	1	10			16	1				1		1	0	11			18	0
4	**Hollister/Sumida Gardens**		0	0	0	0	0	0	1	9	0	0	17	1	1	0	1	1	0	2	0	12	0	0	15	0
5	Hollister/Patterson		18	24	5	0	0	0	6	2	1	0	0	0	2	0	0	0	28	4	0	0	14	4	9	0
6	Hollister/San Ricardo		0	0	0	0	0	0	1	5	1	0	0	0	3	0	0	0	0	0	0	0	0	0	10	0
7	Ward/SR217 EB Off Ramp			47			2		0		0					0			43		5		5			
8	**Ward/Ekwill**			0	0	0	2					3		47		0	2	48	0					0		0
9	Ekwill/Patterson		0	0	0	1	0	0	47	1	2	0	0	0	2	2	0	0	0	46	0	0	0	0	2	0
10	Calle Luarda/San Ricardo		0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1
13	San Vicente/San Ricardo					0		0	0	0			0	0				0		0	0	0			0	1
14	US101 SB/Patterson			20	10	0	0		0	0	0					0	0	0	24		0	0	8			
15	US101 NB/Patterson		10	10			0	0				0	0	0	0	0			12	0				12	0	0
16	Hollister/Fairview		0	0	0	0	0	0	0	0	0	2	10	3	0	0	2	0	0	0	0	5	0	0	0	0
17	US101 SB/Fairview			3	0	0	0		0	0	0					0	2	0	0		0	0	0			
18	US101 NB/Fairview						0	0	3		0		0	0					0	0	0		0		0	0
20	Hollister/Kellogg		0	0	0	0	0	0	0	0	0	3	15	2	0	0	3	0	0	0	0	7	0	0	0	0
21	**Ward/Street A**			47	0	0	2					0		0		0	0	0	48					0		0
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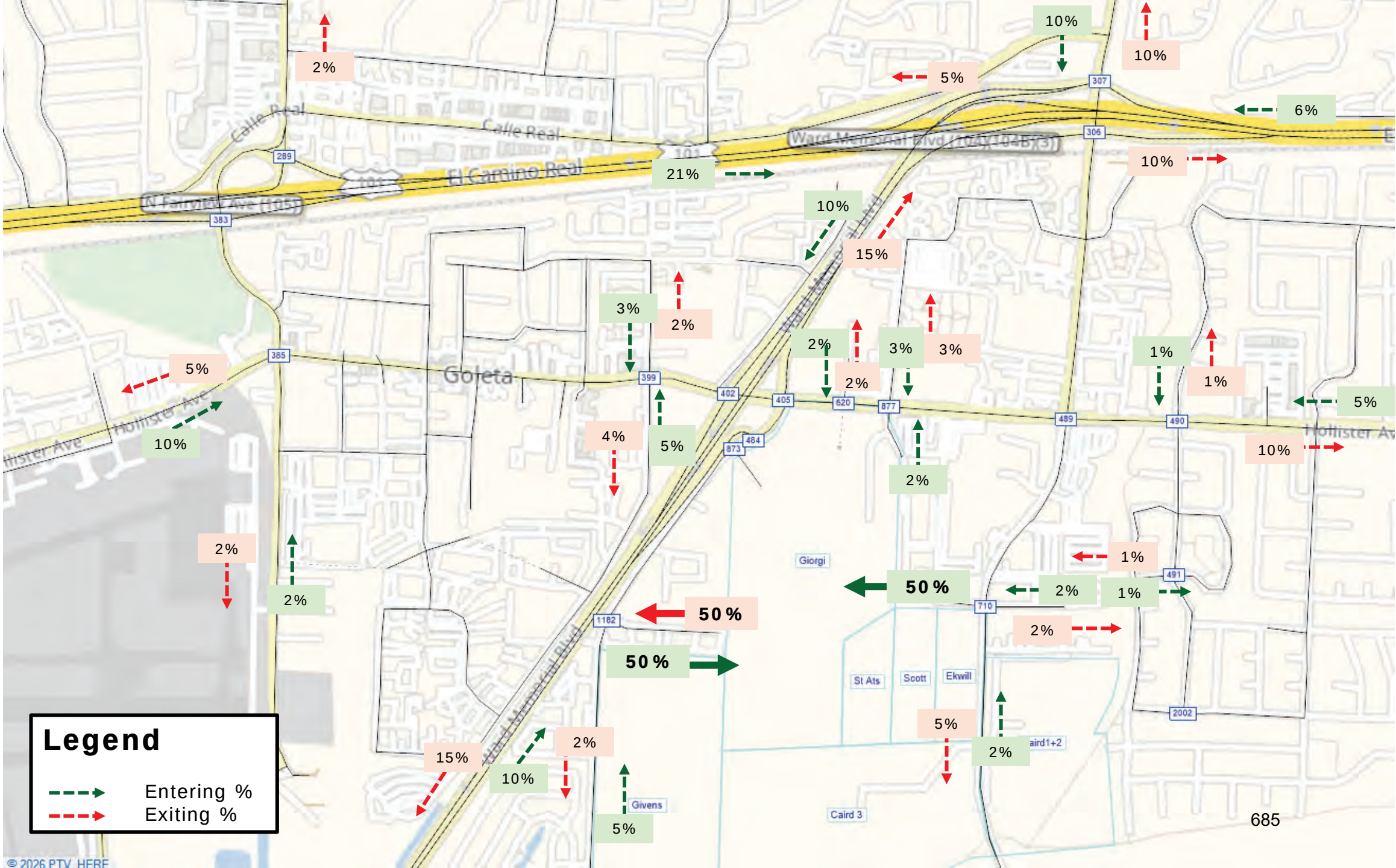
1	Hollister/SR217 WB Ramp					20	0	0		10	0	10	20													
2	Hollister/SR217 EB Ramp		16	20	16				0	6	24	21	14	0												
3	Hollister/St Joseph					1		1	1	21			34	1												
4	**Hollister/Sumida Gardens**		1	0	1	1	0	2	1	21	0	0	32	1												
5	Hollister/Patterson		20	24	5	0	28	4	6	2	15	4	9	0												
6	Hollister/San Ricardo		3	0	0	0	0	0	1	5	1	0	10	0												
7	Ward/SR217 EB Off Ramp			47			45		5		5															
8	**Ward/Ekwill**			0	2	48	2					3		47												
9	Ekwill/Patterson		2	2	0	1	0	46	47	1	2	0	2	0												
10	Calle Luarda/San Ricardo		0	1	0	0	0	1	1	0	0	0	0	1												
13	San Vicente/San Ricardo					0		0	0	0			0	1												
14	US101 SB/Patterson			20	10	0	24		0	0	8															
15	US101 NB/Patterson		10	10			12	0				12	0	0												
16	Hollister/Fairview		0	0	2	0	0	0	0	5	0	2	10	3												
17	US101 SB/Fairview			3	2	0	0		0	0	0															
18	US101 NB/Fairview						0	0	3		0		0	0												
20	Hollister/Kellogg		0	0	3	0	0	0	0	7	0	3	15	2												
21	**Ward/Street A**			47	0	0	50					0		0												

2050 AM
St. Ant

Origin

Destination



2050 PM
St. Ant

			Origin												Destination										
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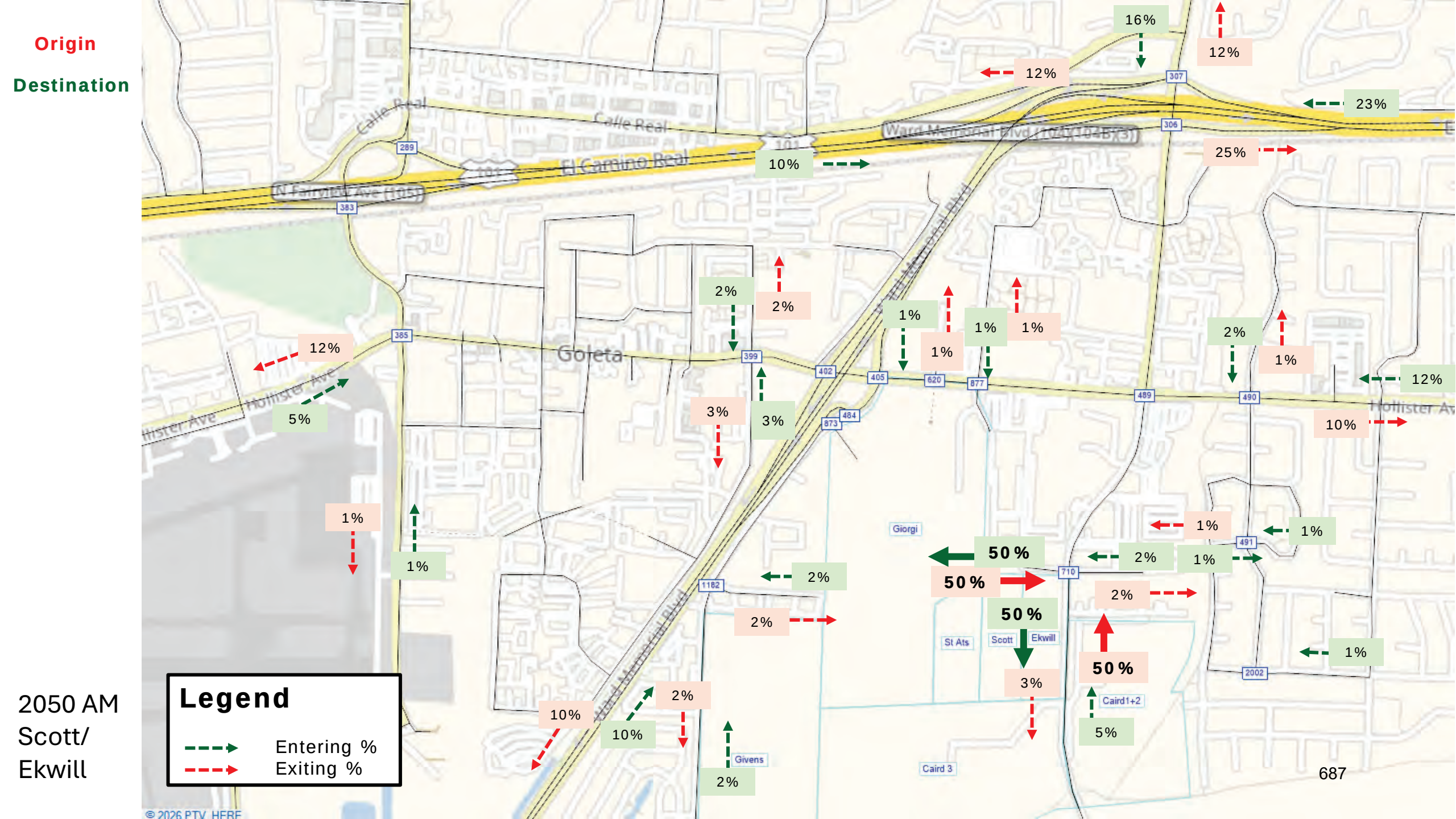
1	Hollister/SR217 WB Ramp					0	0	0		0	0	15	15					10	0	0		20	0	0	0	
2	Hollister/SR217 EB Ramp		14	15	20				0	0	0	1	16	0	0	0	2				0	7	23	14	0	0
3	Hollister/St Joseph					0		0	1	19			17	1				1		1	0	9			13	0
4	**Hollister/Sumida Gardens**		0	0	0	0	0	0	2	16	1	1	18	1	1	0	1	1	0	2	0	10	0	0	10	0
5	Hollister/Patterson		20	19	6	0	0	0	6	8	2	0	0	0	0	0	0	0	30	7	0	0	12	4	3	0
6	Hollister/San Ricardo		0	0	0	0	0	0	1	10	3	0	0	0	1	0	0	0	0	1	0	0	0	0	5	0
7	Ward/SR217 EB Off Ramp			49			1		0		0					0			37		2		8			
8	**Ward/Ekwill**			0	0	0	1					1		49		0	5	45	0					0		0
9	Ekwill/Patterson		0	0	0	0	2	0	45	2	3	0	0	0	2	0	0	0	0	46	0	0	0	0	2	0
10	Calle Luarda/San Ricardo		0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
13	San Vicente/San Ricardo					1		0	0	0			0	0				0		0	0	0			0	0
14	US101 SB/Patterson			15	10	0	0		0	0	0					0	0	0	16		0	0	21			
15	US101 NB/Patterson		5	10			0	0				0	0	0	0	0			10	0				6	0	0
16	Hollister/Fairview		0	0	0	0	0	0	0	0	0	2	5	2	0	0	2	0	0	0	0	10	0	0	0	0
17	US101 SB/Fairview			2	0	0	0		0	0	0					0	0	0	0		0	0	0			
18	US101 NB/Fairview						0	0	2		0		0	0					0	0	0		0		0	0
20	Hollister/Kellogg		0	0	0	0	0	0	0	0	0	4	9	2	0	0	5	3	0	0	0	12	0	0	0	0
21	**Ward/Street A**			49	0	0	1					0		0		0	0	0	45					0		0
		Combined	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR												
1	Hollister/SR217 WB Ramp					10	0	0		20	0	15	15													
2	Hollister/SR217 EB Ramp		14	15	22				0	7	23	15	16	0												
3	Hollister/St Joseph					1		1	1	28			30	1												
4	**Hollister/Sumida Gardens**		1	0	1	1	0	2	2	26	1	1	28	1												
5	Hollister/Patterson		20	19	6	0	30	7	6	8	14	4	3	0												
6	Hollister/San Ricardo		1	0	0	0	0	1	1	10	3	0	5	0												
7	Ward/SR217 EB Off Ramp			49			38		2		8															
8	**Ward/Ekwill**			0	5	45	1					1		49												
9	Ekwill/Patterson		2	0	0	0	2	46	45	2	3	0	2	0												
10	Calle Luarda/San Ricardo		0	0	0	1	1	1	1	0	0	0	0	0												
13	San Vicente/San Ricardo					1		0	0	0			0	0												
14	US101 SB/Patterson			15	10	0	16		0	0	21															
15	US101 NB/Patterson		5	10			10	0				6	0	0												
16	Hollister/Fairview		0	0	2	0	0	0	0	10	0	2	5	2												
17	US101 SB/Fairview			2	0	0	0		0	0	0															
18	US101 NB/Fairview						0	0	2		0		0	0												
20	Hollister/Kellogg		0	0	5	3	0	0	0	12	0	4	9	2												
21	**Ward/Street A**			49	0	0	46					0		0												

2050 PM
St. Ant


Origin
Destination
Legend
Entering %
Exiting %
2050 AM
Scott/
Ekwill
Goleta
Calle Real
El Camino Real
Ward Memorial Blvd
Hollister Ave
Giorgi
St Ats
Scott
Ekwill
Givens
Caird 3
Caird1+2
16%
12%
12%
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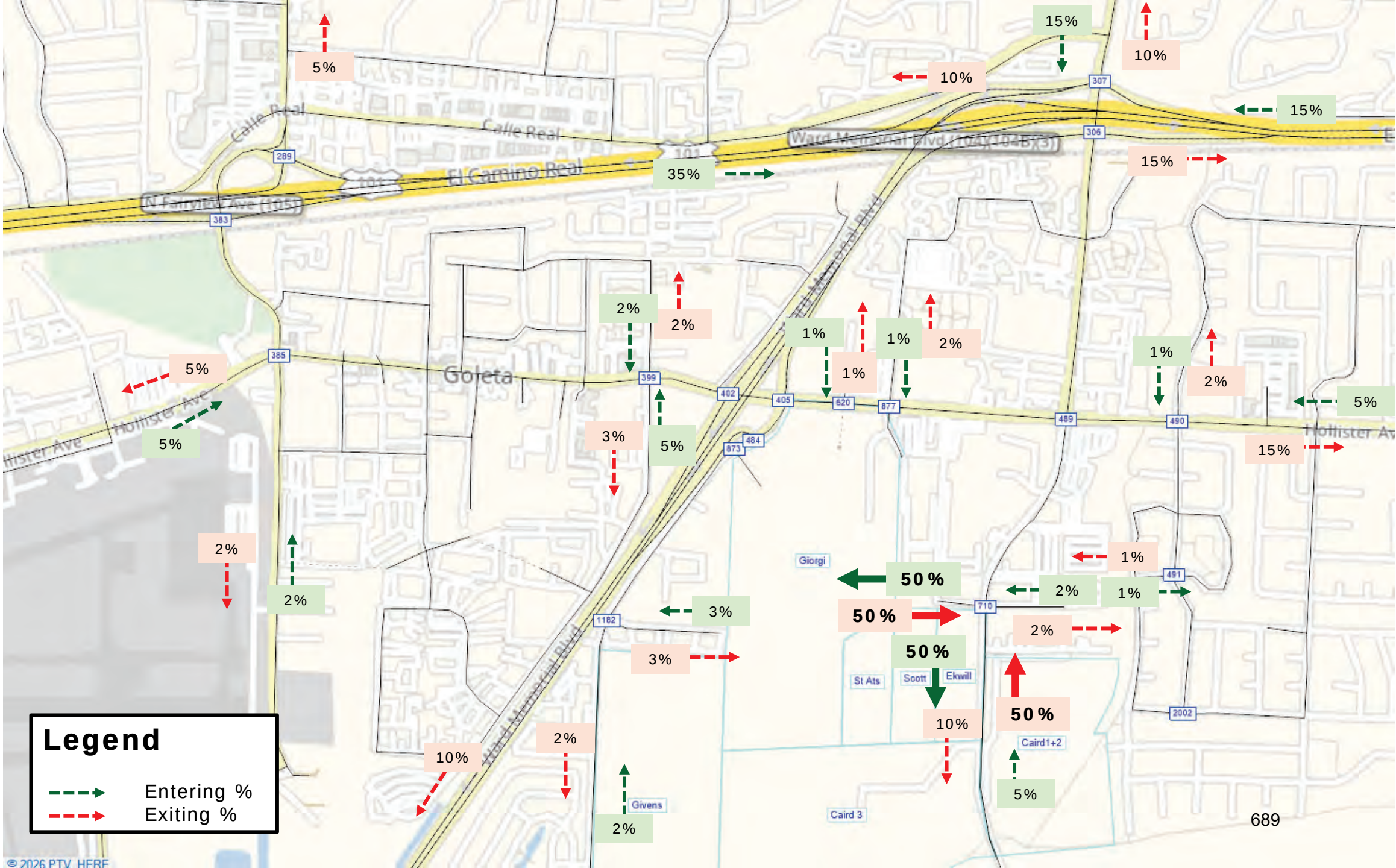
687

		Origin												Destination										
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	Hollister/SR217 WB Ramp				0	0	0		0	0	10	18					0	0	0		11	0	0	0	
2	Hollister/SR217 EB Ramp	0	0	0				0	0	0	4	28	0	0	0	14				0	11	0	0	0	0
3	Hollister/St Joseph				0		0	0	0			32	1				1		0	0	25			0	0
4	**Hollister/Sumida Gardens**	0	0	0	0	0	0	0	0	0	0	33	1	0	0	0	1	0	0	0	26	0	0	0	0
5	Hollister/Patterson	34	49	12	0	0	0	0	0	0	0	0	0	0	0	0	0	49	0	0	0	27	17	0	0
6	Hollister/San Ricardo	0	0	0	0	0	0	1	10	1	0	0	0	3	0	0	0	0	2	0	0	0	0	12	0
7	Ward/SR217 EB Off Ramp		0			4		0		0					4			0		10		0			
8	**Ward/Ekwill**		0	0	2	2					0		0		2	0	0	0					0		2
9	Ekwill/Patterson	0	49	1	0	0	0	46	1	3	0	0	0	5	0	0	0	49	44	0	0	0	1	1	0
10	Calle Luarda/San Ricardo	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1
13	San Vicente/San Ricardo				0		0	0	0			0	0				0		0	0	0			0	1
14	US101 SB/Patterson		24	25	0	0		0	0	0					0	0	0	39		0	0	10			
15	US101 NB/Patterson	12	12			0	0				0	0	0	0	0			16	0				23	0	0
16	Hollister/Fairview	0	0	0	0	0	0	0	0	0	1	12	0	0	0	1	0	0	0	0	5	0	0	0	0
17	US101 SB/Fairview		0	0	0	0		0	0	0					0	0	0	0		0	0	0			
18	US101 NB/Fairview					0	0	0		0		0	0					0	0	0		0		0	0
20	Hollister/Kellogg	0	0	0	0	0	0	0	0	0	3	13	2	0	0	3	2	0	0	0	6	0	0	0	0
21	**Ward/Street A**		0	0	0	4					0		0		4	0	0	0					0		0
	Combined	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR												
1	Hollister/SR217 WB Ramp				0	0	0		11	0	10	18													
2	Hollister/SR217 EB Ramp	0	0	14				0	11	0	4	28	0												
3	Hollister/St Joseph				1		0	0	25			32	1												
4	**Hollister/Sumida Gardens**	0	0	0	1	0	0	0	26	0	0	33	1												
5	Hollister/Patterson	34	49	12	0	49	0	0	0	27	17	0	0												
6	Hollister/San Ricardo	3	0	0	0	0	2	1	10	1	0	12	0												
7	Ward/SR217 EB Off Ramp		4			4		10		0															
8	**Ward/Ekwill**		2	0	2	2					0		2												
9	Ekwill/Patterson	5	49	1	0	49	44	46	1	3	1	1	0												
10	Calle Luarda/San Ricardo	0	1	0	0	0	1	1	0	0	0	0	1												
13	San Vicente/San Ricardo				0		0	0	0			0	1												
14	US101 SB/Patterson		24	25	0	39		0	0	10															
15	US101 NB/Patterson	12	12			16	0				23	0	0												
16	Hollister/Fairview	0	0	1	0	0	0	0	5	0	1	12	0												
17	US101 SB/Fairview		0	0	0	0		0	0	0															
18	US101 NB/Fairview					0	0	0		0		0	0												
20	Hollister/Kellogg	0	0	3	2	0	0	0	6	0	3	13	2												
21	**Ward/Street A**		4	0	0	4					0		0												

2050 AM
Scott/Ekwill

Origin

Destination



2050 PM
Scott/
Ekwill

		Origin												Destination										
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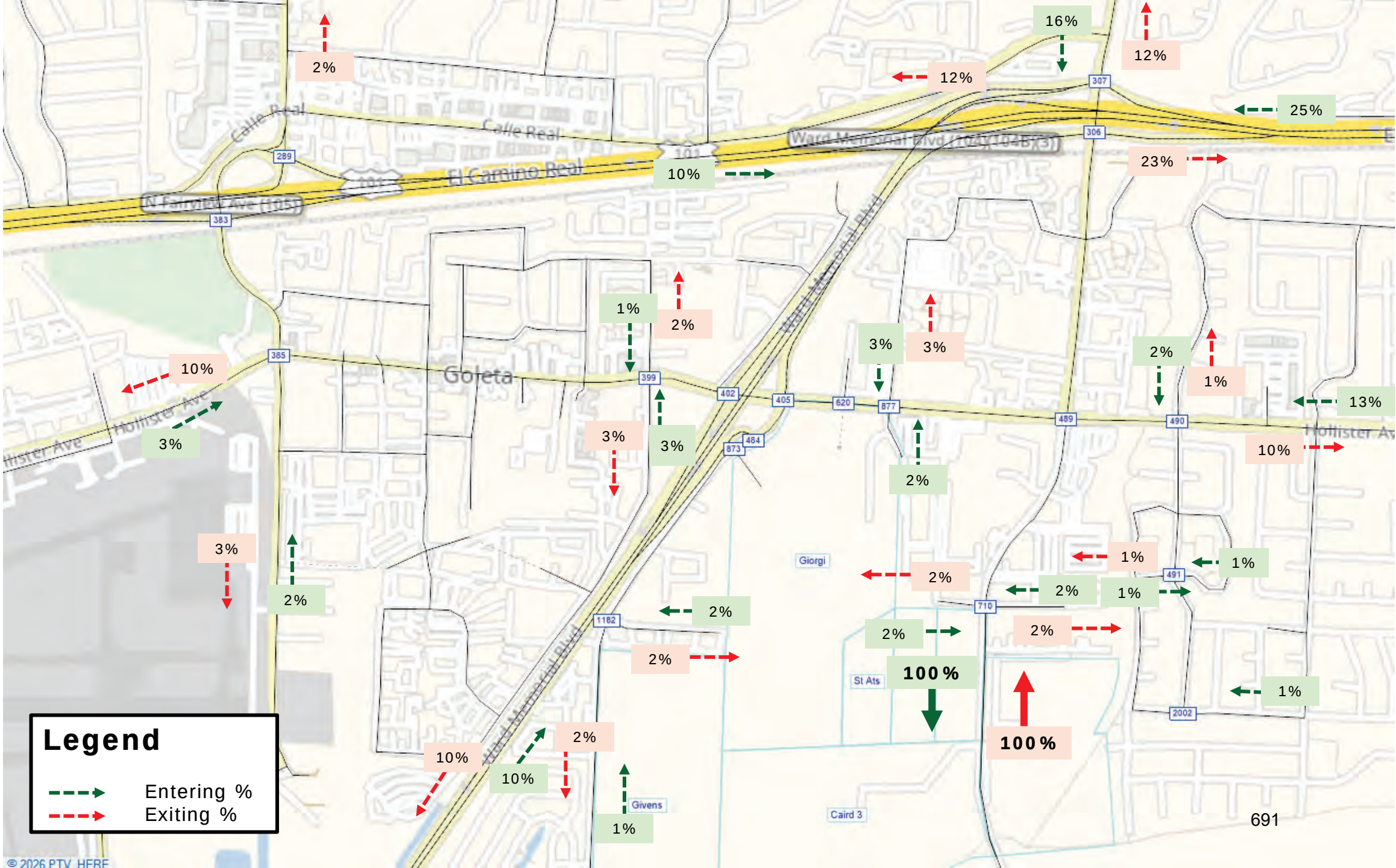
1	Hollister/SR217 WB Ramp				0	0	0		0	0	10	17					0	0	0		14	0	0	0	
2	Hollister/SR217 EB Ramp	0	0	0				0	0	0	5	27	0	0	0	5				0	14	0	0	0	0
3	Hollister/St Joseph				0		0	0	0			32	1				1		0	0	19			0	0
4	**Hollister/Sumida Gardens**	0	0	0	0	0	0	0	0	0	0	33	2	0	0	0	1	0	0	0	20	0	0	0	0
5	Hollister/Patterson	35	35	18	0	0	0	0	0	0	0	0	0	0	0	0	0	65	0	0	0	21	7	0	0
6	Hollister/San Ricardo	0	0	0	0	0	0	2	15	1	0	0	0	1	0	0	0	0	1	0	0	0	0	5	0
7	Ward/SR217 EB Off Ramp		0			5		0		0					5			0		0		0			
8	**Ward/Ekwill**		0	0	3	2					0		0		2	0	0	0					0		3
9	Ekwill/Patterson	0	49	1	0	0	0	39	1	10	0	0	0	5	0	0	0	49	44	0	0	0	1	1	0
10	Calle Luarda/San Ricardo	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
13	San Vicente/San Ricardo				0		0	0	0			0	0				0		0	0	0			0	0
14	US101 SB/Patterson		20	15	0	0		0	0	0					0	0	0	30		0	0	35			
15	US101 NB/Patterson	10	10			0	0				0	0	0	0	0			15	0				15	0	0
16	Hollister/Fairview	0	0	0	0	0	0	0	0	0	2	5	5	0	0	2	0	0	0	0	5	0	0	0	0
17	US101 SB/Fairview		5	0	0	1		0	0	0					0	0	0	0		0	0	0			
18	US101 NB/Fairview					0	0	5		0		0	0					0	0	0		0		0	0
20	Hollister/Kellogg	0	0	0	0	0	0	0	0	0	3	12	2	0	0	5	2	0	0	0	7	0	0	0	0
21	**Ward/Street A**		0	0	0	5					0		0		5	0	0	0					0		0
	Combined	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR												
1	Hollister/SR217 WB Ramp				0	0	0		14	0	10	17													
2	Hollister/SR217 EB Ramp	0	0	5				0	14	0	5	27	0												
3	Hollister/St Joseph				1		0	0	19			32	1												
4	**Hollister/Sumida Gardens**	0	0	0	1	0	0	0	20	0	0	33	2												
5	Hollister/Patterson	35	35	18	0	65	0	0	0	21	7	0	0												
6	Hollister/San Ricardo	1	0	0	0	0	1	2	15	1	0	5	0												
7	Ward/SR217 EB Off Ramp		5			5		0		0															
8	**Ward/Ekwill**		2	0	3	2					0		3												
9	Ekwill/Patterson	5	49	1	0	49	44	39	1	10	1	1	0												
10	Calle Luarda/San Ricardo	0	0	0	0	0	1	1	0	0	0	0	0												
13	San Vicente/San Ricardo				0		0	0	0			0	0												
14	US101 SB/Patterson		20	15	0	30		0	0	35															
15	US101 NB/Patterson	10	10			15	0				15	0	0												
16	Hollister/Fairview	0	0	2	0	0	0	0	5	0	2	5	5												
17	US101 SB/Fairview		5	0	0	1		0	0	0															
18	US101 NB/Fairview					0	0	5		0		0	0												
20	Hollister/Kellogg	0	0	5	2	0	0	0	7	0	3	12	2												
21	**Ward/Street A**		5	0	0	5					0		0												

2050 PM
Scott/Ekwill

Origin

Destination



2050 AM

Caird

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			Origin												Destination										
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	Hollister/SR217 WB Ramp					0	0	0		0	0	10	20					0	0	0		9	0	0	0	
2	Hollister/SR217 EB Ramp		0	0	0				0	0	0	4	30	0	0	0	13				0	9	0	0	0	0
3	Hollister/St Joseph					0		0	0	0			34	0				0		0	0	16			0	0
4	**Hollister/Sumida Gardens**		0	0	0	0	0	0	0	0	0	0	34	3	0	0	2	3	0	0	0	22	0	0	0	0
5	Hollister/Patterson		37	47	12	0	0	0	0	0	0	0	0	0	0	0	0	0	51	0	0	0	27	18	0	0
6	Hollister/San Ricardo		0	0	0	0	0	0	1	10	1	0	0	0	3	0	0	0	0	2	0	0	0	0	13	0
7	Ward/SR217 EB Off Ramp			0			4		0		0					3			0		10		0			
8	**Ward/Ekwill**			0	0	2	2					0		0		1	0	0	0					0		2
9	Ekwill/Patterson		2	96	2	0	0	0	0	0	0	0	0	0	0	0	0	0	96	0	0	0	2	2	0	0
10	Calle Luarda/San Ricardo		0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1
13	San Vicente/San Ricardo					0		0	0	0			0	0				0		0	0	0			0	1
14	US101 SB/Patterson			24	23	0	0		0	0	0					0	0	0	41		0	0	10			
15	US101 NB/Patterson		12	12			0	0				0	0	0	0	0			16	0				25	0	0
16	Hollister/Fairview		0	0	0	0	0	0	0	0	0	3	10	2	0	0	2	0	0	0	0	3	0	0	0	0
17	US101 SB/Fairview			2	0	0	0		0	0	0					0	2	0	0		0	0	0			
18	US101 NB/Fairview						0	0	2		0		0	0					0	0	0		0		0	0
20	Hollister/Kellogg		0	0	0	0	0	0	0	0	0	3	15	2	0	0	3	1	0	0	0	5	0	0	0	0
21	**Ward/Street A**			0	0	0	4					0		0		3	0	0	0					0		0
		Combined	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR												
1	Hollister/SR217 WB Ramp					0	0	0		9	0	10	20													
2	Hollister/SR217 EB Ramp		0	0	13				0	9	0	4	30	0												
3	Hollister/St Joseph					0		0	0	16			34	0												
4	**Hollister/Sumida Gardens**		0	0	2	3	0	0	0	22	0	0	34	3												
5	Hollister/Patterson		37	47	12	0	51	0	0	0	27	18	0	0												
6	Hollister/San Ricardo		3	0	0	0	0	2	1	10	1	0	13	0												
7	Ward/SR217 EB Off Ramp			3			4		10		0															
8	**Ward/Ekwill**			1	0	2	2					0		2												
9	Ekwill/Patterson		2	96	2	0	96	0	0	0	2	2	0	0												
10	Calle Luarda/San Ricardo		0	1	0	0	0	1	1	0	0	0	0	1												
13	San Vicente/San Ricardo					0		0	0	0			0	1												
14	US101 SB/Patterson			24	23	0	41		0	0	10															
15	US101 NB/Patterson		12	12			16	0				25	0	0												
16	Hollister/Fairview		0	0	2	0	0	0	0	3	0	3	10	2												
17	US101 SB/Fairview			2	2	0	0		0	0	0															
18	US101 NB/Fairview						0	0	2		0		0	0												
20	Hollister/Kellogg		0	0	3	1	0	0	0	5	0	3	15	2												
21	**Ward/Street A**			3	0	0	4					0		0												

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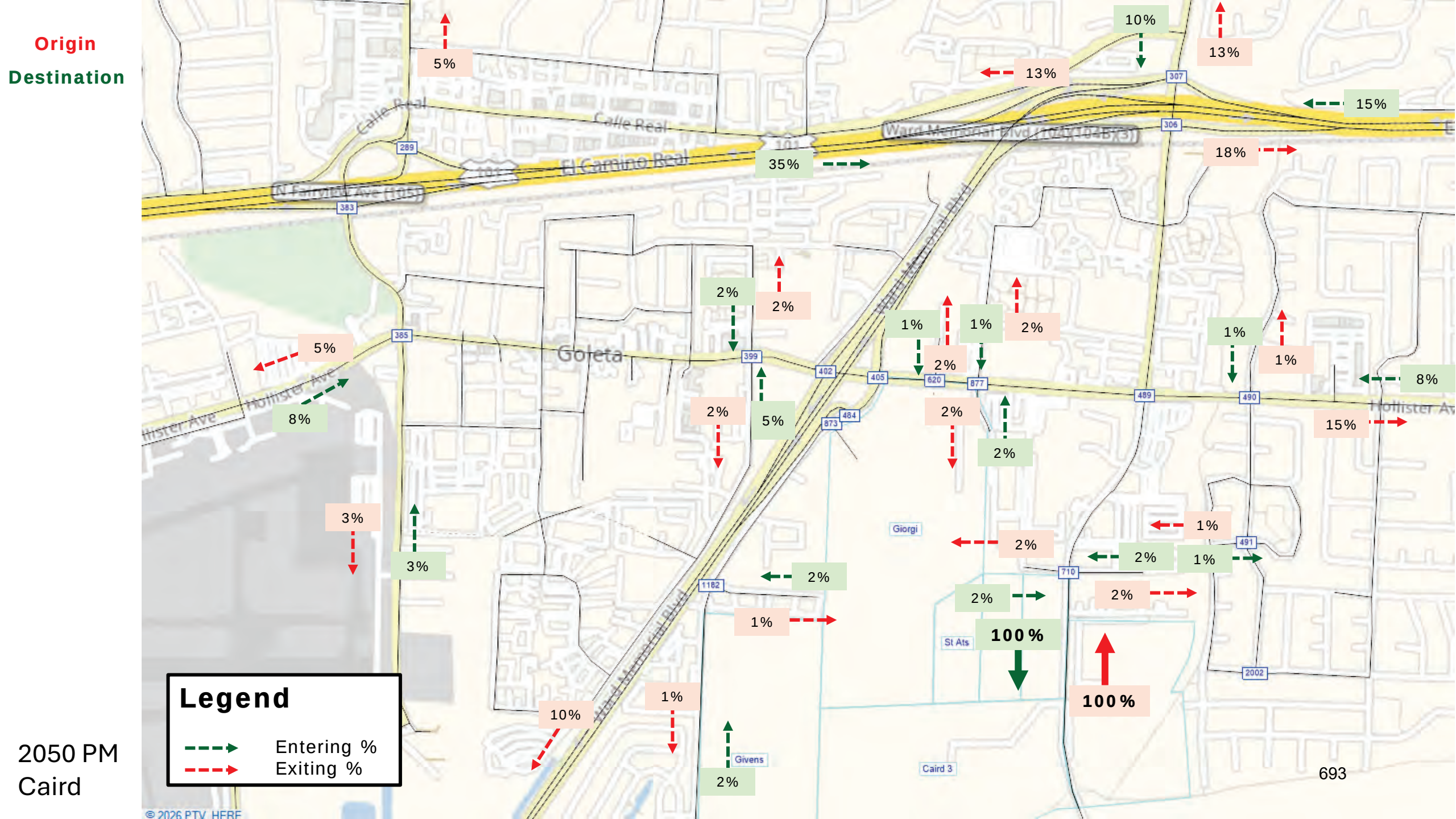
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693
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			Origin												Destination											
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	Hollister/SR217 WB Ramp					0	0	0		0	0	10	17					0	0	0		18	0	0	0	
2	Hollister/SR217 EB Ramp		0	0	0				0	0	0	2	27	0	0	0	4				0	18	0	0	0	0
3	Hollister/St Joseph					0		0	0	0			29	2				1		0	0	22			0	0
4	**Hollister/Sumida Gardens**		0	0	0	0	0	0	0	0	0	2	31	2	0	0	2	1	0	0	0	23	0	0	0	0
5	Hollister/Patterson		35	44	17	0	0	0	0	0	0	0	0	0	0	0	0	0	60	0	0	0	26	10	0	0
6	Hollister/San Ricardo		0	0	0	0	0	0	1	15	1	0	0	0	1	0	0	0	0	1	0	0	0	0	8	0
7	Ward/SR217 EB Off Ramp			0			2		0		0					4			0		0		0			
8	**Ward/Ekwill**			0	0	1	1					0		0		2	0	0	0					0		2
9	Ekwill/Patterson		2	96	2	0	0	0	0	0	0	0	0	0	0	0	0	0	96	0	0	0	2	2	0	0
10	Calle Luarda/San Ricardo		0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
13	San Vicente/San Ricardo					0		0	0	0			0	0				0		0	0	0			0	0
14	US101 SB/Patterson			26	18	0	0		0	0	0					0	0	0	25		0	0	35			
15	US101 NB/Patterson		13	13			0	0				0	0	0	0	0			10	0				15	0	0
16	Hollister/Fairview		0	0	0	0	0	0	0	0	0	3	5	5	0	0	3	0	0	0	0	8	0	0	0	0
17	US101 SB/Fairview			5	0	0	0		0	0	0					0	0	0	0		0	0	0			
18	US101 NB/Fairview						0	0	5		0		0	0					0	0	0		0		0	0
20	Hollister/Kellogg		0	0	0	0	0	0	0	0	0	2	13	2	0	0	5	2	0	0	0	11	0	0	0	0
21	**Ward/Street A**			0	0	0	2					0		0		4	0	0	0					0		0
		Combined	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR												
1	Hollister/SR217 WB Ramp					0	0	0		18	0	10	17													
2	Hollister/SR217 EB Ramp		0	0	4				0	18	0	2	27	0												
3	Hollister/St Joseph					1		0	0	22			29	2												
4	**Hollister/Sumida Gardens**		0	0	2	1	0	0	0	23	0	2	31	2												
5	Hollister/Patterson		35	44	17	0	60	0	0	0	26	10	0	0												
6	Hollister/San Ricardo		1	0	0	0	0	1	1	15	1	0	8	0												
7	Ward/SR217 EB Off Ramp			4			2		0		0															
8	**Ward/Ekwill**			2	0	1	1					0		2												
9	Ekwill/Patterson		2	96	2	0	96	0	0	0	2	2	0	0												
10	Calle Luarda/San Ricardo		0	0	0	0	0	1	1	0	0	0	0	0												
13	San Vicente/San Ricardo					0		0	0	0			0	0												
14	US101 SB/Patterson			26	18	0	25		0	0	35															
15	US101 NB/Patterson		13	13			10	0				15	0	0												
16	Hollister/Fairview		0	0	3	0	0	0	0	8	0	3	5	5												
17	US101 SB/Fairview			5	0	0	0		0	0	0															
18	US101 NB/Fairview						0	0	5		0		0	0												
20	Hollister/Kellogg		0	0	5	2	0	0	0	11	0	2	13	2												
21	**Ward/Street A**			4	0	0	2					0		0												

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SECTION D: FORECAST INTERSECTION DEMAND

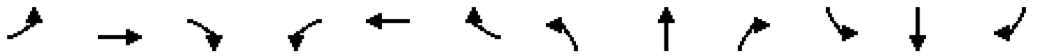
Intersection	Control	Future Baseline																									
		AM													PM												
		EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
SR-217 WB Ramps & Hollister Ave[A]	RAB		5	735	50	235	580	20				215		550		5	1460	60	100	615	60				80		560
SR-217 EB On-Ramp/Ward Dr & Hollister Ave	RAB		420	455	150	75	760	75	75	60	85					650	825	100	30	635	75	140	95	260			
St Josephs St & Hollister Ave	TWSC	10	55	475			850	15				5		45	45	15	1,025			685	10				10		10
Sumida Gardens Ln & Hollister Ave	Signal		25	410	45	20	790	25	10	5	5	55	5	65		35	990	10	5	590	50	45	5	30	45	5	60
South Patterson Ave & Hollister Ave	Signal		65	310	55	115	700	600	55	150	65	260	400	200		235	980	35	45	420	365	70	305	145	610	125	130
Lassen Dr/San Ricardo Dr & Hollister Ave	Signal		55	450	45	10	1,060	5	130	5	5	10	5	275		190	1,465	110	30	535	15	50	5	20	10	5	175
Ward Dr & SR-217 EB Off-Ramp	TWSC		70		20					150			225			255		15					240			130	
Ward Dr & Ekwill St	TWSC					5		15		85	5	30	80						5		45		105	5	35	85	
South Patterson Ave & Ekwill St	TWSC		5		5	5		30	5	100	5	70	65	15		15	5	5	10		60	5	115	5	30	65	5
South Patterson Ave & US-101 SB Ramps	Signal		175	5	440					570	345	615	785			420	5	415					865	470	490	525	
South Patterson Ave & US-101 NB Ramps	Signal					445	20	360	290	455			955	465					250	15	570	345	940			765	320
South Fairview Ave & Hollister Ave	Signal		225	300	105	60	400	255	105	165	45	365	385	565		405	630	145	75	520	545	165	505	110	405	210	230
North Fairview Ave & US-101 SB Ramps	Signal		125	5	305					480	455	445	1,165			180	15	240					720	1,095	290	815	
North Fairview Ave & US-101 NB Ramps	Signal		470		135		660	555					130	950		590		310		430	470					265	675

A. Dearborn Place approach volumes not included in this table, See operations output results for full volume set

Intersection	Control	Future + All Projects																									
		AM													PM												
		EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
SR-217 WB Ramps & Hollister Ave[A]	RAB		5	710	50	300	705	20				220		520		5	1520	50	130	625	60				170		545
SR-217 EB On-Ramp/Ward Dr & Hollister Ave	RAB		420	420	165	95	895	130	130	120	125					570	960	195	80	655	75	160	115	290			
St Josephs St & Hollister Ave	TWSC	10	55	480			1,060	15				5		45	45	15	1,190			760	10				10		10
Sumida Gardens Ln & Hollister Ave	Signal		25	370	90	50	815	20	190	15	115	50	5	70		35	915	250	100	595	45	125	10	80	35	15	50
South Patterson Ave & Hollister Ave	Signal		105	305	95	100	620	575	195	340	90	260	385	200		210	825	165	50	410	360	135	305	145	620	355	145
Lassen Dr/San Ricardo Dr & Hollister Ave	Signal		45	480	45	10	980	5	125	5	5	25	5	240		160	1,365	100	35	535	15	45	5	25	10	5	175
Ward Dr & SR-217 EB Off-Ramp	TWSC		80		20					295			260			250		45					315			275	
Ward Dr & Ekwill St	TWSC					5		75		85	5	45	80						5		75		110	5	100	85	
South Patterson Ave & Ekwill St	TWSC		125	5	5	5	5	30	5	355	10	65	65	45		70	5	10	15	5	55	10	150	5	30	320	145
South Patterson Ave & US-101 SB Ramps	Signal		190	5	445					690	395	610	745			420	5	600					785	470	485	545	
South Patterson Ave & US-101 NB Ramps	Signal					440	20	345	305	575			915	455					260	15	575	345	860			770	355
South Fairview Ave & Hollister Ave	Signal		220	295	100	60	445	265	100	160	45	355	380	595		395	710	140	75	515	560	160	565	100	420	200	225
North Fairview Ave & US-101 SB Ramps	Signal		125	5	295					480	475	440	1,185			180	15	225					705	1,180	290	835	
North Fairview Ave & US-101 NB Ramps	Signal		470		135		695	520					125	930		590		295		465	455					265	660

A. Dearborn Place approach volumes not included in this table, See operations output results for full volume set

SECTION E: OPERATIONS ANALYSIS OUTPUTS



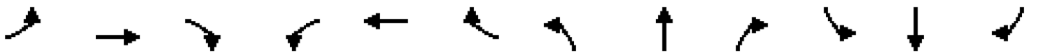
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	814	47	99	417	0	0	0	0	183	0	414
Future Volume (veh/h)	0	814	47	99	417	0	0	0	0	183	0	414
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1796	1796	1796	1796	0				1796	1796	1796
Adj Flow Rate, veh/h	0	936	54	114	479	0				210	200	343
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87				0.87	0.87	0.87
Percent Heavy Veh, %	0	7	7	7	7	0				7	7	7
Cap, veh/h	0	1491	86	197	2125	0				245	233	415
Arrive On Green	0.00	0.46	0.46	0.23	1.00	0.00				0.27	0.27	0.27
Sat Flow, veh/h	0	3364	189	1711	3503	0				897	854	1522
Grp Volume(v), veh/h	0	488	502	114	479	0				410	0	343
Grp Sat Flow(s),veh/h/ln	0	1706	1756	1711	1706	0				1751	0	1522
Q Serve(g_s), s	0.0	19.6	19.6	5.3	0.0	0.0				20.0	0.0	19.0
Cycle Q Clear(g_c), s	0.0	19.6	19.6	5.3	0.0	0.0				20.0	0.0	19.0
Prop In Lane	0.00		0.11	1.00		0.00				0.51		1.00
Lane Grp Cap(c), veh/h	0	777	800	197	2125	0				478	0	415
V/C Ratio(X)	0.00	0.63	0.63	0.58	0.23	0.00				0.86	0.00	0.83
Avail Cap(c_a), veh/h	0	777	800	215	2125	0				590	0	512
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.96	0.96	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	18.7	18.7	32.7	0.0	0.0				31.1	0.0	30.7
Incr Delay (d2), s/veh	0.0	3.8	3.7	3.1	0.2	0.0				10.2	0.0	8.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.3	8.5	2.2	0.1	0.0				9.5	0.0	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	22.5	22.4	35.8	0.2	0.0				41.3	0.0	39.6
LnGrp LOS		C	C	D	A					D		D
Approach Vol, veh/h		990			593						753	
Approach Delay, s/veh		22.5			7.1						40.5	
Approach LOS		C			A						D	

Timer - Assigned Phs		3	4		6		8					
Phs Duration (G+Y+Rc), s		15.1	45.7		29.3		60.7					
Change Period (Y+Rc), s		4.7	* 4.7		4.7		4.7					
Max Green Setting (Gmax), s		11.3	* 34		30.3		50.3					
Max Q Clear Time (g_c+I1), s		7.3	21.6		22.0		2.0					
Green Ext Time (p_c), s		0.1	5.5		2.6		3.7					

Intersection Summary	
HCM 7th Control Delay, s/veh	24.4
HCM 7th LOS	C

Notes
User approved volume balancing among the lanes for turning movement.

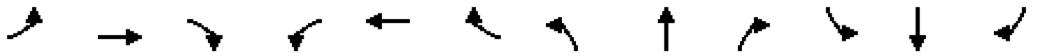
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	362	448	187	46	447	68	69	62	65	0	0	0
Future Volume (veh/h)	362	448	187	46	447	68	69	62	65	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1781	1781	1781	1781	1781	1781	1781	1781	1781			
Adj Flow Rate, veh/h	416	515	215	53	514	78	79	71	75			
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87			
Percent Heavy Veh, %	8	8	8	8	8	8	8	8	8			
Cap, veh/h	1713	1479	614	125	659	284	110	99	181			
Arrive On Green	0.17	0.21	0.21	0.07	0.19	0.19	0.12	0.12	0.12			
Sat Flow, veh/h	3291	2305	957	1697	3385	1459	914	822	1506			
Grp Volume(v), veh/h	416	377	353	53	514	78	150	0	75			
Grp Sat Flow(s),veh/h/ln	1646	1692	1570	1697	1692	1459	1736	0	1506			
Q Serve(g_s), s	9.8	17.1	17.2	2.7	13.0	4.1	7.5	0.0	4.1			
Cycle Q Clear(g_c), s	9.8	17.1	17.2	2.7	13.0	4.1	7.5	0.0	4.1			
Prop In Lane	1.00		0.61	1.00		1.00	0.53		1.00			
Lane Grp Cap(c), veh/h	1713	1086	1007	125	659	284	209	0	181			
V/C Ratio(X)	0.24	0.35	0.35	0.43	0.78	0.27	0.72	0.00	0.41			
Avail Cap(c_a), veh/h	1713	1086	1007	181	925	399	681	0	591			
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.74	0.74	0.74	1.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	21.9	19.4	19.5	39.9	34.4	30.8	38.1	0.0	36.6			
Incr Delay (d2), s/veh	0.1	0.7	0.7	2.3	8.9	2.4	4.6	0.0	1.5			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.2	7.8	7.4	1.2	5.9	1.6	3.4	0.0	1.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	22.0	20.1	20.2	42.2	43.3	33.2	42.7	0.0	38.1			
LnGrp LOS	C	C	C	D	D	C	D		D			
Approach Vol, veh/h		1146			645			225				
Approach Delay, s/veh		20.8			42.0			41.2				
Approach LOS		C			D			D				

Timer - Assigned Phs		2	3	4			7	8				
Phs Duration (G+Y+Rc), s		15.5	12.0	62.5			51.5	22.9				
Change Period (Y+Rc), s		4.7	5.4	4.7			4.7	5.4				
Max Green Setting (Gmax), s		35.3	9.6	30.3			15.3	24.6				
Max Q Clear Time (g_c+I1), s		9.5	4.7	19.2			11.8	15.0				
Green Ext Time (p_c), s		1.1	0.0	3.6			0.6	2.4				

Intersection Summary												
HCM 7th Control Delay, s/veh			29.9									
HCM 7th LOS			C									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	394	40	7	450	12	8	2	7	52	2	61
Future Volume (veh/h)	20	394	40	7	450	12	8	2	7	52	2	61
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.95	0.99		0.99	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796
Adj Flow Rate, veh/h	24	475	48	8	542	14	10	2	8	63	2	73
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	7	7	7	7	7	7	7	7	7	7	7	7
Cap, veh/h	80	1113	112	29	1112	29	423	73	293	485	9	341
Arrive On Green	0.05	0.36	0.36	0.02	0.33	0.33	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1711	3115	313	1711	3394	88	1265	312	1250	1341	40	1456
Grp Volume(v), veh/h	24	259	264	8	272	284	10	0	10	63	0	75
Grp Sat Flow(s),veh/h/ln	1711	1706	1722	1711	1706	1775	1265	0	1562	1341	0	1496
Q Serve(g_s), s	0.6	4.7	4.7	0.2	5.2	5.2	0.3	0.0	0.2	1.5	0.0	1.6
Cycle Q Clear(g_c), s	0.6	4.7	4.7	0.2	5.2	5.2	1.9	0.0	0.2	1.7	0.0	1.6
Prop In Lane	1.00		0.18	1.00		0.05	1.00		0.80	1.00		0.97
Lane Grp Cap(c), veh/h	80	610	615	29	559	582	423	0	366	485	0	351
V/C Ratio(X)	0.30	0.42	0.43	0.28	0.49	0.49	0.02	0.00	0.03	0.13	0.00	0.21
Avail Cap(c_a), veh/h	404	1662	1677	404	1662	1729	1225	0	1356	1321	0	1284
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.7	9.9	9.9	19.7	10.9	10.9	13.3	0.0	12.0	12.7	0.0	12.5
Incr Delay (d2), s/veh	2.1	0.5	0.5	5.0	0.7	0.6	0.0	0.0	0.0	0.1	0.0	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.3	1.3	0.1	1.5	1.5	0.1	0.0	0.1	0.4	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	20.8	10.4	10.4	24.7	11.6	11.6	13.3	0.0	12.0	12.8	0.0	12.8
LnGrp LOS	C	B	B	C	B	B	B		B	B		B
Approach Vol, veh/h		547			564			20			138	
Approach Delay, s/veh		10.8			11.8			12.7			12.8	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	14.6	6.1	19.9	14.6	7.3	18.7
Change Period (Y+Rc), s	* 5.1	5.4	5.4	5.1	5.4	5.4
Max Green Setting (Gmax), s	* 35	9.6	39.6	34.9	9.6	39.6
Max Q Clear Time (g_c+I1), s	3.9	2.2	6.7	3.7	2.6	7.2
Green Ext Time (p_c), s	0.0	0.0	3.1	0.7	0.0	3.3

Intersection Summary	
HCM 7th Control Delay, s/veh	11.5
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

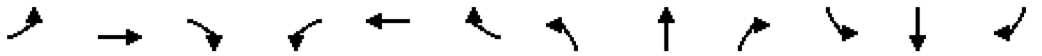
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	300	51	73	362	405	31	134	62	256	363	184
Future Volume (veh/h)	65	300	51	73	362	405	31	134	62	256	363	184
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	78	361	61	88	436	488	37	161	75	308	437	222
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	350	1044	175	187	618	535	128	465	206	404	557	280
Arrive On Green	0.10	0.35	0.35	0.11	0.35	0.35	0.07	0.20	0.20	0.12	0.25	0.25
Sat Flow, veh/h	3401	2986	499	1753	1749	1514	1753	2344	1039	3401	2238	1126
Grp Volume(v), veh/h	78	210	212	88	436	488	37	118	118	308	340	319
Grp Sat Flow(s),veh/h/ln	1700	1749	1737	1753	1749	1514	1753	1749	1634	1700	1749	1615
Q Serve(g_s), s	2.0	8.2	8.4	4.4	19.9	28.5	1.9	5.4	5.8	8.1	16.8	17.1
Cycle Q Clear(g_c), s	2.0	8.2	8.4	4.4	19.9	28.5	1.9	5.4	5.8	8.1	16.8	17.1
Prop In Lane	1.00		0.29	1.00		1.00	1.00		0.64	1.00		0.70
Lane Grp Cap(c), veh/h	350	611	607	187	618	535	128	347	324	404	435	402
V/C Ratio(X)	0.22	0.34	0.35	0.47	0.71	0.91	0.29	0.34	0.36	0.76	0.78	0.79
Avail Cap(c_a), veh/h	536	653	649	276	653	566	290	572	535	731	659	609
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.2	22.3	22.3	38.9	25.8	28.6	40.7	31.9	32.1	39.5	32.5	32.6
Incr Delay (d2), s/veh	0.3	0.3	0.3	1.8	3.3	18.6	1.2	0.6	0.7	3.0	3.5	4.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	3.2	3.3	1.9	8.3	12.4	0.8	2.3	2.3	3.5	7.3	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	38.5	22.6	22.7	40.8	29.1	47.2	41.9	32.5	32.7	42.6	36.0	36.7
LnGrp LOS	D	C	C	D	C	D	D	C	C	D	D	D
Approach Vol, veh/h		500			1012			273			967	
Approach Delay, s/veh		25.1			38.8			33.9			38.3	
Approach LOS		C			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.1	23.5	15.3	37.8	11.5	28.1	14.9	38.1
Change Period (Y+Rc), s	5.1	* 5.1	5.4	5.4	4.7	5.1	5.4	5.4
Max Green Setting (Gmax), s	19.9	* 30	14.6	34.6	15.3	34.9	14.6	34.6
Max Q Clear Time (g_c+I1), s	10.1	7.8	6.4	10.4	3.9	19.1	4.0	30.5
Green Ext Time (p_c), s	0.7	1.3	0.1	2.3	0.0	3.7	0.1	2.1

Intersection Summary	
HCM 7th Control Delay, s/veh	35.7
HCM 7th LOS	D

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	461	45	13	655	8	107	1	17	12	1	128
Future Volume (veh/h)	31	461	45	13	655	8	107	1	17	12	1	128
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	0.99		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	39	576	56	16	819	10	134	1	21	15	1	160
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	118	1256	122	56	1260	15	423	13	46	96	21	346
Arrive On Green	0.07	0.39	0.39	0.03	0.36	0.36	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1739	3181	308	1739	3508	43	1130	51	184	56	83	1381
Grp Volume(v), veh/h	39	313	319	16	405	424	156	0	0	176	0	0
Grp Sat Flow(s),veh/h/ln	1739	1735	1754	1739	1735	1816	1364	0	0	1519	0	0
Q Serve(g_s), s	1.0	6.4	6.4	0.4	9.3	9.3	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.0	6.4	6.4	0.4	9.3	9.3	3.9	0.0	0.0	4.6	0.0	0.0
Prop In Lane	1.00		0.18	1.00		0.02	0.86		0.13	0.09		0.91
Lane Grp Cap(c), veh/h	118	685	693	56	623	652	482	0	0	462	0	0
V/C Ratio(X)	0.33	0.46	0.46	0.29	0.65	0.65	0.32	0.00	0.00	0.38	0.00	0.00
Avail Cap(c_a), veh/h	313	1513	1530	313	1513	1584	1059	0	0	1167	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	21.2	10.7	10.7	22.6	12.8	12.8	14.9	0.0	0.0	15.1	0.0	0.0
Incr Delay (d2), s/veh	1.6	0.5	0.5	2.8	1.2	1.1	0.4	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.9	1.9	0.2	2.9	3.0	1.3	0.0	0.0	1.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	22.8	11.1	11.1	25.3	13.9	13.9	15.2	0.0	0.0	15.7	0.0	0.0
LnGrp LOS	C	B	B	C	B	B	B			B		
Approach Vol, veh/h		671			845			156			176	
Approach Delay, s/veh		11.8			14.1			15.2			15.7	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		16.5	6.9	24.2		16.5	8.6	22.5				
Change Period (Y+Rc), s		4.6	5.4	5.4		4.6	5.4	5.4				
Max Green Setting (Gmax), s		34.4	8.6	41.6		34.4	8.6	41.6				
Max Q Clear Time (g_c+I1), s		5.9	2.4	8.4		6.6	3.0	11.3				
Green Ext Time (p_c), s		1.1	0.0	3.9		1.2	0.0	5.4				

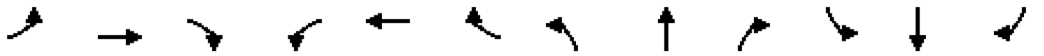
Intersection Summary	
HCM 7th Control Delay, s/veh	13.5
HCM 7th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	168	6	364	0	0	0	0	444	279	611	726	0
Future Volume (veh/h)	168	6	364	0	0	0	0	444	279	611	726	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	187	7	404				0	493	310	679	807	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	492	7	431				0	836	367	1093	2160	0
Arrive On Green	0.28	0.28	0.28				0.00	0.24	0.24	0.64	1.00	0.00
Sat Flow, veh/h	1767	27	1550				0	3618	1549	3428	3618	0
Grp Volume(v), veh/h	187	0	411				0	493	310	679	807	0
Grp Sat Flow(s),veh/h/ln	1767	0	1577				0	1763	1549	1714	1763	0
Q Serve(g_s), s	7.7	0.0	22.9				0.0	11.2	17.2	10.7	0.0	0.0
Cycle Q Clear(g_c), s	7.7	0.0	22.9				0.0	11.2	17.2	10.7	0.0	0.0
Prop In Lane	1.00		0.98				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	492	0	439				0	836	367	1093	2160	0
V/C Ratio(X)	0.38	0.00	0.94				0.00	0.59	0.84	0.62	0.37	0.00
Avail Cap(c_a), veh/h	497	0	443				0	975	428	1093	2160	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.97	0.97	0.66	0.66	0.00
Uniform Delay (d), s/veh	26.2	0.0	31.7				0.0	30.4	32.7	13.0	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	27.4				0.0	3.0	20.0	0.7	0.3	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	11.8				0.0	4.9	8.2	2.9	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	26.7	0.0	59.1				0.0	33.4	52.8	13.8	0.3	0.0
LnGrp LOS	C		E					C	D	B	A	
Approach Vol, veh/h		598						803			1486	
Approach Delay, s/veh		48.9						40.9			6.5	
Approach LOS		D						D			A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	33.8	26.4		29.8		60.2
Change Period (Y+Rc), s	5.1	5.1		4.7		5.1
Max Green Setting (Gmax), s	24.9	24.9		25.3		54.9
Max Q Clear Time (g_c+I1), s	12.7	19.2		24.9		2.0
Green Ext Time (p_c), s	2.1	2.2		0.2		6.6

Intersection Summary		
HCM 7th Control Delay, s/veh		24.8
HCM 7th LOS		C

Notes
User approved volume balancing among the lanes for turning movement.



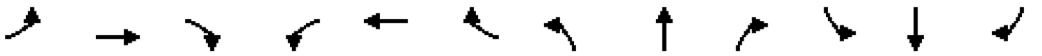
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	434	21	379	232	380	0	0	903	341
Future Volume (veh/h)	0	0	0	434	21	379	232	380	0	0	903	341
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1856	1856	1856	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				622	0	288	258	422	0	0	1003	379
Peak Hour Factor				0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %				3	3	3	3	3	0	0	3	3
Cap, veh/h				785	0	349	605	2359	0	0	1369	425
Arrive On Green				0.22	0.00	0.22	0.68	1.00	0.00	0.00	0.27	0.27
Sat Flow, veh/h				3534	0	1572	1767	3618	0	0	5233	1572
Grp Volume(v), veh/h				622	0	288	258	422	0	0	1003	379
Grp Sat Flow(s),veh/h/ln				1767	0	1572	1767	1763	0	0	1689	1572
Q Serve(g_s), s				15.0	0.0	15.7	5.9	0.0	0.0	0.0	16.2	20.9
Cycle Q Clear(g_c), s				15.0	0.0	15.7	5.9	0.0	0.0	0.0	16.2	20.9
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				785	0	349	605	2359	0	0	1369	425
V/C Ratio(X)				0.79	0.00	0.83	0.43	0.18	0.00	0.00	0.73	0.89
Avail Cap(c_a), veh/h				994	0	442	605	2359	0	0	1401	435
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.81	0.81	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.1	0.0	33.3	10.3	0.0	0.0	0.0	29.9	31.6
Incr Delay (d2), s/veh				3.5	0.0	9.8	0.4	0.1	0.0	0.0	3.5	23.5
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.6	0.0	6.8	1.8	0.0	0.0	0.0	6.7	10.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				36.6	0.0	43.2	10.7	0.1	0.0	0.0	33.4	55.1
LnGrp LOS				D		D	B	A			C	E
Approach Vol, veh/h					910			680			1382	
Approach Delay, s/veh					38.6			4.1			39.3	
Approach LOS					D			A			D	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		65.3			35.9	29.4		24.7				
Change Period (Y+Rc), s		5.1			5.1	5.1		4.7				
Max Green Setting (Gmax), s		54.9			24.9	24.9		25.3				
Max Q Clear Time (g_c+I1), s		2.0			7.9	22.9		17.7				
Green Ext Time (p_c), s		3.0			0.7	1.5		2.3				

Intersection Summary		
HCM 7th Control Delay, s/veh	31.1	
HCM 7th LOS	C	

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	165	258	91	39	253	261	76	129	35	298	254	401
Future Volume (veh/h)	165	258	91	39	253	261	76	129	35	298	254	401
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1781	1781	1781	1781	1781	1781	1781	1781	1781	1781	1781	1781
Adj Flow Rate, veh/h	183	287	101	43	281	290	84	143	39	331	282	446
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	8	8	8	8	8	8	8	8	8	8	8	8
Cap, veh/h	384	980	428	122	785	534	193	788	208	420	1058	636
Arrive On Green	0.12	0.29	0.29	0.07	0.23	0.23	0.11	0.30	0.30	0.13	0.31	0.31
Sat Flow, veh/h	3291	3385	1478	1697	3385	1473	1697	2637	695	3291	3385	1472
Grp Volume(v), veh/h	183	287	101	43	281	290	84	90	92	331	282	446
Grp Sat Flow(s),veh/h/ln	1646	1692	1478	1697	1692	1473	1697	1692	1639	1646	1692	1472
Q Serve(g_s), s	4.9	6.2	4.9	2.3	6.5	14.7	4.3	3.7	3.9	9.1	5.8	23.2
Cycle Q Clear(g_c), s	4.9	6.2	4.9	2.3	6.5	14.7	4.3	3.7	3.9	9.1	5.8	23.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.42	1.00		1.00
Lane Grp Cap(c), veh/h	384	980	428	122	785	534	193	506	490	420	1058	636
V/C Ratio(X)	0.48	0.29	0.24	0.35	0.36	0.54	0.43	0.18	0.19	0.79	0.27	0.70
Avail Cap(c_a), veh/h	500	1420	620	189	1282	751	241	549	532	715	1351	764
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.6	25.8	25.3	41.3	30.1	23.9	38.6	24.2	24.3	39.5	24.1	21.8
Incr Delay (d2), s/veh	0.9	0.2	0.3	1.7	0.3	0.9	1.5	0.2	0.2	3.3	0.1	2.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	2.4	1.7	1.0	2.7	5.2	1.9	1.5	1.5	3.8	2.3	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	39.5	25.9	25.6	43.0	30.3	24.7	40.1	24.4	24.5	42.9	24.2	24.1
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		571			614			266			1059	
Approach Delay, s/veh		30.2			28.6			29.4			30.0	
Approach LOS		C			C			C			C	

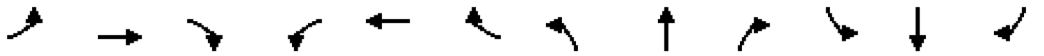
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.6	32.6	11.3	32.9	15.3	33.9	16.7	27.5
Change Period (Y+Rc), s	4.7	4.7	4.6	5.8	4.7	4.7	5.8	* 5.8
Max Green Setting (Gmax), s	20.3	30.3	10.4	39.2	13.3	37.3	14.2	* 35
Max Q Clear Time (g_c+I1), s	11.1	5.9	4.3	8.2	6.3	25.2	6.9	16.7
Green Ext Time (p_c), s	0.8	1.0	0.0	2.1	0.1	2.9	0.3	2.9

Intersection Summary	
HCM 7th Control Delay, s/veh	29.6
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

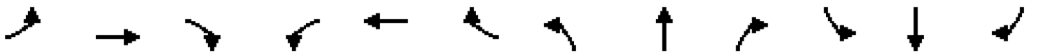
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	137	1	234	0	0	0	0	467	397	443	831	0
Future Volume (veh/h)	137	1	234	0	0	0	0	467	397	443	831	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1811	1811	1811				0	1811	1811	1811	1811	0
Adj Flow Rate, veh/h	141	1	241				0	481	409	457	857	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	6	6	6				0	6	6	6	6	0
Cap, veh/h	341	2	305				0	1157	506	617	2113	0
Arrive On Green	0.20	0.20	0.20				0.00	0.34	0.34	0.18	0.61	0.00
Sat Flow, veh/h	1713	12	1535				0	3532	1503	3346	3532	0
Grp Volume(v), veh/h	142	0	241				0	481	409	457	857	0
Grp Sat Flow(s),veh/h/ln	1725	0	1535				0	1721	1503	1673	1721	0
Q Serve(g_s), s	3.6	0.0	7.5				0.0	5.4	12.5	6.5	6.4	0.0
Cycle Q Clear(g_c), s	3.6	0.0	7.5				0.0	5.4	12.5	6.5	6.4	0.0
Prop In Lane	0.99		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	343	0	305				0	1157	506	617	2113	0
V/C Ratio(X)	0.41	0.00	0.79				0.00	0.42	0.81	0.74	0.41	0.00
Avail Cap(c_a), veh/h	422	0	376				0	1389	607	885	2622	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	17.6	0.0	19.1				0.0	12.9	15.2	19.4	5.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	8.9				0.0	0.2	6.8	2.0	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	3.1				0.0	1.8	4.5	2.4	1.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.4	0.0	28.0				0.0	13.1	22.0	21.4	5.1	0.0
LnGrp LOS	B		C					B	C	C	A	
Approach Vol, veh/h		383						890			1314	
Approach Delay, s/veh		24.4						17.2			10.8	
Approach LOS		C						B			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	14.0	21.6		14.7		35.6
Change Period (Y+Rc), s	4.7	4.7		4.7		4.7
Max Green Setting (Gmax), s	13.3	20.3		12.3		38.3
Max Q Clear Time (g_c+I1), s	8.5	14.5		9.5		8.4
Green Ext Time (p_c), s	0.8	2.4		0.5		7.0

Intersection Summary	
HCM 7th Control Delay, s/veh	15.0
HCM 7th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	470	0	134	0	426	516	0	0	0	0	137	848
Future Volume (veh/h)	470	0	134	0	426	516	0	0	0	0	137	848
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1826	0	1826	0	1826	1826				0	1826	1826
Adj Flow Rate, veh/h	495	0	0	0	448	543				0	144	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	5	0	5	0	5	5				0	5	5
Cap, veh/h	826	0		0	854	723				0	0	
Arrive On Green	0.24	0.00	0.00	0.00	0.47	0.47				0.00	0.00	0.00
Sat Flow, veh/h	3374	495		0	1826	1547					0	
Grp Volume(v), veh/h	495	11.6		0	448	543					0.0	
Grp Sat Flow(s),veh/h/ln	1687	B		0	1826	1547						
Q Serve(g_s), s	4.2			0.0	5.7	9.4						
Cycle Q Clear(g_c), s	4.2			0.0	5.7	9.4						
Prop In Lane	1.00			0.00		1.00						
Lane Grp Cap(c), veh/h	826			0	854	723						
V/C Ratio(X)	0.60			0.00	0.52	0.75						
Avail Cap(c_a), veh/h	1373			0	1246	1056						
HCM Platoon Ratio	1.00			1.00	1.00	1.00						
Upstream Filter(I)	1.00			0.00	1.00	1.00						
Uniform Delay (d), s/veh	10.9			0.0	6.1	7.1						
Incr Delay (d2), s/veh	0.7			0.0	0.5	1.8						
Initial Q Delay(d3), s/veh	0.0			0.0	0.0	0.0						
%ile BackOfQ(50%),veh/ln	1.2			0.0	1.3	2.0						
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.6			0.0	6.6	8.9						
LnGrp LOS	B				A	A						
Approach Vol, veh/h					991							
Approach Delay, s/veh					7.9							
Approach LOS					A							

Timer - Assigned Phs			7	8
Phs Duration (G+Y+Rc), s			12.7	20.0
Change Period (Y+Rc), s			4.7	4.7
Max Green Setting (Gmax), s			13.3	22.3
Max Q Clear Time (g_c+I1), s			6.2	11.4
Green Ext Time (p_c), s			1.1	3.9

Intersection Summary		
HCM 7th Control Delay, s/veh	9.1	
HCM 7th LOS	A	

Notes

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.1

Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Vol, veh/h	9	53	451	505	14	3	44
Future Vol, veh/h	9	53	451	505	14	3	44
Conflicting Peds, #/hr	0	10	0	0	10	1	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	-	140	-	-	-	0	-
Veh in Median Storage, #	-	-	0	0	-	0	-
Grade, %	-	-	0	0	-	0	-
Peak Hour Factor	96	83	83	83	83	83	83
Heavy Vehicles, %	3	6	6	6	6	6	6
Mvmt Flow	9	64	543	608	17	4	53

Major/Minor	Major1		Major2		Minor2		
Conflicting Flow All	625	635	0	-	0	1046	323
Stage 1	-	-	-	-	-	627	-
Stage 2	-	-	-	-	-	419	-
Critical Hdwy	6.46	4.22	-	-	-	6.92	7.02
Critical Hdwy Stg 1	-	-	-	-	-	5.92	-
Critical Hdwy Stg 2	-	-	-	-	-	5.92	-
Follow-up Hdwy	2.53	2.26	-	-	-	3.56	3.36
Pot Cap-1 Maneuver	573	917	-	-	-	217	661
Stage 1	-	-	-	-	-	484	-
Stage 2	-	-	-	-	-	620	-
Platoon blocked, %			-	-	-		
Mov Cap-1 Maneuver	831	831	-	-	-	196	655
Mov Cap-2 Maneuver	-	-	-	-	-	196	-
Stage 1	-	-	-	-	-	437	-
Stage 2	-	-	-	-	-	619	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	1.16	0	12.01
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	831	-	-	-	570
HCM Lane V/C Ratio	0.088	-	-	-	0.099
HCM Ctrl Dly (s/v)	9.7	-	-	-	12
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.3

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	50	17	0	146	233	0
Future Vol, veh/h	50	17	0	146	233	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	300	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	7	7	7	7	7	7
Mvmt Flow	61	21	0	178	284	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	462	284	-	0	-	0
Stage 1	284	-	-	-	-	-
Stage 2	178	-	-	-	-	-
Critical Hdwy	6.47	6.27	-	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.363	-	-	-	-
Pot Cap-1 Maneuver	549	743	0	-	-	0
Stage 1	753	-	0	-	-	0
Stage 2	841	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	549	743	-	-	-	-
Mov Cap-2 Maneuver	549	-	-	-	-	-
Stage 1	753	-	-	-	-	-
Stage 2	841	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	11.77	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	-	549	743	-
HCM Lane V/C Ratio	-	0.111	0.028	-
HCM Ctrl Dly (s/v)	-	12.4	10	-
HCM Lane LOS	-	B	A	-
HCM 95th %tile Q(veh)	-	0.4	0.1	-

Intersection	
Int Delay, s/veh	2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	18	82	1	37	78
Future Vol, veh/h	1	18	82	1	37	78
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	1	20	92	1	42	88

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	264	94	0	0	94	0
Stage 1	94	-	-	-	-	-
Stage 2	171	-	-	-	-	-
Critical Hdwy	6.45	6.25	-	-	4.15	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	718	955	-	-	1481	-
Stage 1	922	-	-	-	-	-
Stage 2	852	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	696	954	-	-	1480	-
Mov Cap-2 Maneuver	696	-	-	-	-	-
Stage 1	922	-	-	-	-	-
Stage 2	827	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	8.87	0	2.41
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	950	579	-
HCM Lane V/C Ratio	-	-	0.022	0.028	-
HCM Ctrl Dly (s/v)	-	-	8.9	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

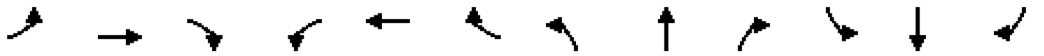
Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	0	2	0	15	1	101	3	39	72	8
Future Vol, veh/h	3	0	0	2	0	15	1	101	3	39	72	8
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	2	2	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	17	17	17	17	17	17	17	17	17	17	17	17
Mvmt Flow	3	0	0	2	0	17	1	116	3	45	83	9

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	296	302	88	295	305	120	93	0	0	122	0	0
Stage 1	178	178	-	122	122	-	-	-	-	-	-	-
Stage 2	118	124	-	172	183	-	-	-	-	-	-	-
Critical Hdwy	7.27	6.67	6.37	7.27	6.67	6.37	4.27	-	-	4.27	-	-
Critical Hdwy Stg 1	6.27	5.67	-	6.27	5.67	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.27	5.67	-	6.27	5.67	-	-	-	-	-	-	-
Follow-up Hdwy	3.653	4.153	3.453	3.653	4.153	3.453	2.353	-	-	2.353	-	-
Pot Cap-1 Maneuver	627	587	930	629	585	893	1412	-	-	1378	-	-
Stage 1	790	724	-	847	767	-	-	-	-	-	-	-
Stage 2	851	765	-	796	721	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	593	564	929	606	562	891	1411	-	-	1375	-	-
Mov Cap-2 Maneuver	593	564	-	606	562	-	-	-	-	-	-	-
Stage 1	762	699	-	845	765	-	-	-	-	-	-	-
Stage 2	834	763	-	768	696	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	11.11	9.37	0.07	2.53
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	17	-	-	593	844	578	-	-
HCM Lane V/C Ratio	0.001	-	-	0.006	0.023	0.033	-	-
HCM Ctrl Dly (s/v)	7.6	0	-	11.1	9.4	7.7	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0.1	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1093	56	93	654	0	0	0	0	79	1	530
Future Volume (veh/h)	0	1093	56	93	654	0	0	0	0	79	1	530
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	0				1856	1856	1856
Adj Flow Rate, veh/h	0	1151	59	98	688	0				0	0	648
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	3	3	3	3	0				3	3	3
Cap, veh/h	0	1686	86	197	2324	0				0	439	743
Arrive On Green	0.00	0.50	0.50	0.22	1.00	0.00				0.00	0.00	0.24
Sat Flow, veh/h	0	3498	174	1767	3618	0				0	1856	3145
Grp Volume(v), veh/h	0	596	614	98	688	0				0	0	648
Grp Sat Flow(s),veh/h/ln	0	1763	1817	1767	1763	0				0	1856	1572
Q Serve(g_s), s	0.0	23.2	23.2	4.4	0.0	0.0				0.0	0.0	17.8
Cycle Q Clear(g_c), s	0.0	23.2	23.2	4.4	0.0	0.0				0.0	0.0	17.8
Prop In Lane	0.00		0.10	1.00		0.00				0.00		1.00
Lane Grp Cap(c), veh/h	0	873	900	197	2324	0				0	439	743
V/C Ratio(X)	0.00	0.68	0.68	0.50	0.30	0.00				0.00	0.00	0.87
Avail Cap(c_a), veh/h	0	873	900	300	2324	0				0	522	884
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.90	0.90	0.00				0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	17.3	17.3	32.7	0.0	0.0				0.0	0.0	33.0
Incr Delay (d2), s/veh	0.0	4.3	4.2	1.7	0.3	0.0				0.0	0.0	8.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	10.0	10.3	1.8	0.1	0.0				0.0	0.0	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	21.6	21.5	34.5	0.3	0.0				0.0	0.0	41.4
LnGrp LOS		C	C	C	A							D
Approach Vol, veh/h		1210			786						648	
Approach Delay, s/veh		21.6			4.6						41.4	
Approach LOS		C			A						D	

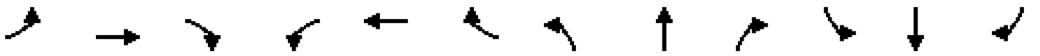
Timer - Assigned Phs		3	4		6		8					
Phs Duration (G+Y+Rc), s		14.8	49.3		26.0		64.0					
Change Period (Y+Rc), s		4.7	* 4.7		4.7		4.7					
Max Green Setting (Gmax), s		15.3	* 35		25.3		55.3					
Max Q Clear Time (g_c+I1), s		6.4	25.2		19.8		2.0					
Green Ext Time (p_c), s		0.1	5.8		1.4		5.7					

Intersection Summary	
HCM 7th Control Delay, s/veh	21.4
HCM 7th LOS	C

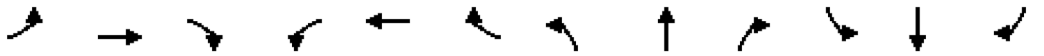
Notes

User approved volume balancing among the lanes for turning movement.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	469	588	115	26	605	75	142	131	146	0	0	0
Future Volume (veh/h)	469	588	115	26	605	75	142	131	146	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.95	1.00		0.97			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	494	619	121	27	637	79	149	138	154			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3			
Cap, veh/h	1414	1706	333	87	781	331	189	175	308			
Arrive On Green	0.14	0.19	0.19	0.05	0.22	0.22	0.20	0.20	0.20			
Sat Flow, veh/h	3428	2916	569	1767	3526	1496	939	870	1530			
Grp Volume(v), veh/h	494	374	366	27	637	79	287	0	154			
Grp Sat Flow(s),veh/h/ln	1714	1763	1722	1767	1763	1496	1809	0	1530			
Q Serve(g_s), s	11.8	16.5	16.6	1.3	15.5	3.9	13.6	0.0	8.0			
Cycle Q Clear(g_c), s	11.8	16.5	16.6	1.3	15.5	3.9	13.6	0.0	8.0			
Prop In Lane	1.00		0.33	1.00		1.00	0.52		1.00			
Lane Grp Cap(c), veh/h	1414	1031	1007	87	781	331	365	0	308			
V/C Ratio(X)	0.35	0.36	0.36	0.31	0.82	0.24	0.79	0.00	0.50			
Avail Cap(c_a), veh/h	1414	1031	1007	188	964	409	709	0	600			
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.64	0.64	0.64	1.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	27.9	21.8	21.8	41.3	33.3	28.8	34.1	0.0	31.9			
Incr Delay (d2), s/veh	0.1	0.6	0.7	2.0	9.2	1.7	3.8	0.0	1.3			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.4	7.9	7.8	0.6	7.3	1.5	6.2	0.0	2.9			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	28.0	22.4	22.4	43.3	42.5	30.5	37.9	0.0	33.1			
LnGrp LOS	C	C	C	D	D	C	D		C			
Approach Vol, veh/h		1234			743			441				
Approach Delay, s/veh		24.7			41.2			36.2				
Approach LOS		C			D			D				
Timer - Assigned Phs		2	3	4			7	8				
Phs Duration (G+Y+Rc), s		22.8	9.8	57.3			41.8	25.3				
Change Period (Y+Rc), s		4.7	5.4	4.7			4.7	5.4				
Max Green Setting (Gmax), s		35.3	9.6	30.3			15.3	24.6				
Max Q Clear Time (g_c+I1), s		15.6	3.3	18.6			13.8	17.5				
Green Ext Time (p_c), s		2.2	0.0	3.7			0.3	2.5				
Intersection Summary												
HCM 7th Control Delay, s/veh			31.9									
HCM 7th LOS			C									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	634	8	5	565	36	41	3	12	25	0	51
Future Volume (veh/h)	38	634	8	5	565	36	41	3	12	25	0	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.95	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	41	682	9	5	608	39	44	3	13	27	0	55
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	128	1407	19	19	1117	72	416	63	275	455	0	324
Arrive On Green	0.07	0.40	0.40	0.01	0.33	0.33	0.21	0.21	0.21	0.21	0.00	0.21
Sat Flow, veh/h	1767	3560	47	1767	3351	215	1333	299	1296	1380	0	1526
Grp Volume(v), veh/h	41	338	353	5	319	328	44	0	16	27	0	55
Grp Sat Flow(s),veh/h/ln	1767	1763	1844	1767	1763	1803	1333	0	1595	1380	0	1526
Q Serve(g_s), s	0.9	6.0	6.0	0.1	6.1	6.2	1.2	0.0	0.3	0.7	0.0	1.2
Cycle Q Clear(g_c), s	0.9	6.0	6.0	0.1	6.1	6.2	2.4	0.0	0.3	1.0	0.0	1.2
Prop In Lane	1.00		0.03	1.00		0.12	1.00		0.81	1.00		1.00
Lane Grp Cap(c), veh/h	128	697	729	19	588	601	416	0	338	455	0	324
V/C Ratio(X)	0.32	0.48	0.48	0.26	0.54	0.55	0.11	0.00	0.05	0.06	0.00	0.17
Avail Cap(c_a), veh/h	408	1677	1755	408	1677	1716	1264	0	1353	1320	0	1280
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.3	9.4	9.4	20.4	11.3	11.3	14.4	0.0	13.1	13.4	0.0	13.4
Incr Delay (d2), s/veh	1.4	0.5	0.5	7.1	0.8	0.8	0.1	0.0	0.1	0.1	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.6	1.7	0.1	1.8	1.9	0.3	0.0	0.1	0.2	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.7	9.9	9.9	27.5	12.1	12.1	14.5	0.0	13.1	13.5	0.0	13.6
LnGrp LOS	B	A	A	C	B	B	B		B	B		B
Approach Vol, veh/h		732			652			60			82	
Approach Delay, s/veh		10.5			12.2			14.1			13.6	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	13.9	5.8	21.8	13.9	8.4	19.3
Change Period (Y+Rc), s	* 5.1	5.4	5.4	5.1	5.4	5.4
Max Green Setting (Gmax), s	* 35	9.6	39.6	34.9	9.6	39.6
Max Q Clear Time (g_c+I1), s	4.4	2.1	8.0	3.2	2.9	8.2
Green Ext Time (p_c), s	0.2	0.0	4.3	0.4	0.0	4.0

Intersection Summary	
HCM 7th Control Delay, s/veh	11.5
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

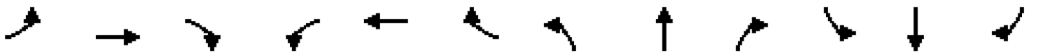
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	580	40	34	376	336	57	289	103	462	103	113
Future Volume (veh/h)	190	580	40	34	376	336	57	289	103	462	103	113
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	200	611	42	36	396	354	60	304	108	486	108	119
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	421	1141	78	129	515	448	169	476	165	583	468	406
Arrive On Green	0.12	0.34	0.34	0.07	0.29	0.29	0.10	0.19	0.19	0.17	0.26	0.26
Sat Flow, veh/h	3456	3366	231	1781	1777	1543	1781	2568	891	3456	1777	1540
Grp Volume(v), veh/h	200	322	331	36	396	354	60	208	204	486	108	119
Grp Sat Flow(s),veh/h/ln	1728	1777	1820	1781	1777	1543	1781	1777	1682	1728	1777	1540
Q Serve(g_s), s	4.8	13.1	13.2	1.7	18.3	19.0	2.8	9.7	10.1	12.2	4.3	5.5
Cycle Q Clear(g_c), s	4.8	13.1	13.2	1.7	18.3	19.0	2.8	9.7	10.1	12.2	4.3	5.5
Prop In Lane	1.00		0.13	1.00		1.00	1.00		0.53	1.00		1.00
Lane Grp Cap(c), veh/h	421	603	617	129	515	448	169	329	312	583	468	406
V/C Ratio(X)	0.48	0.53	0.54	0.28	0.77	0.79	0.35	0.63	0.65	0.83	0.23	0.29
Avail Cap(c_a), veh/h	562	685	702	290	685	595	304	600	568	767	691	599
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.7	23.9	23.9	39.4	29.1	29.3	38.0	33.7	33.9	36.1	25.9	26.4
Incr Delay (d2), s/veh	0.8	0.7	0.7	1.2	3.8	5.3	1.3	2.0	2.3	6.1	0.2	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	5.3	5.4	0.8	7.9	7.2	1.3	4.3	4.2	5.5	1.8	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	37.5	24.7	24.7	40.5	32.9	34.6	39.3	35.7	36.2	42.1	26.2	26.8
LnGrp LOS	D	C	C	D	C	C	D	D	D	D	C	C
Approach Vol, veh/h		853			786			472			713	
Approach Delay, s/veh		27.7			34.0			36.4			37.1	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.2	21.7	11.9	35.8	13.2	28.7	16.3	31.4
Change Period (Y+Rc), s	5.1	* 5.1	5.4	5.4	4.7	5.1	5.4	5.4
Max Green Setting (Gmax), s	19.9	* 30	14.6	34.6	15.3	34.9	14.6	34.6
Max Q Clear Time (g_c+I1), s	14.2	12.1	3.7	15.2	4.8	7.5	6.8	21.0
Green Ext Time (p_c), s	0.9	2.3	0.0	3.6	0.1	1.3	0.4	3.9

Intersection Summary	
HCM 7th Control Delay, s/veh	33.3
HCM 7th LOS	C

Notes

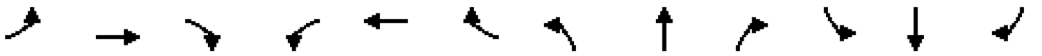
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	1052	93	36	537	16	44	0	24	12	1	97
Future Volume (veh/h)	35	1052	93	36	537	16	44	0	24	12	1	97
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	1085	96	37	554	16	45	0	25	12	1	100
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	113	1386	123	115	1487	43	288	25	107	96	22	280
Arrive On Green	0.06	0.42	0.42	0.06	0.42	0.42	0.20	0.00	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1781	3294	291	1781	3524	102	837	127	536	74	109	1404
Grp Volume(v), veh/h	36	585	596	37	279	291	70	0	0	113	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1808	1781	1777	1849	1500	0	0	1587	0	0
Q Serve(g_s), s	0.9	13.9	13.9	1.0	5.3	5.3	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.9	13.9	13.9	1.0	5.3	5.3	1.6	0.0	0.0	3.0	0.0	0.0
Prop In Lane	1.00		0.16	1.00		0.05	0.64		0.36	0.11		0.88
Lane Grp Cap(c), veh/h	113	748	761	115	750	780	420	0	0	398	0	0
V/C Ratio(X)	0.32	0.78	0.78	0.32	0.37	0.37	0.17	0.00	0.00	0.28	0.00	0.00
Avail Cap(c_a), veh/h	350	895	911	350	895	931	1002	0	0	1057	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	21.9	12.2	12.2	21.8	9.7	9.7	16.3	0.0	0.0	16.8	0.0	0.0
Incr Delay (d2), s/veh	1.6	3.8	3.8	1.6	0.3	0.3	0.2	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	4.7	4.8	0.4	1.6	1.6	0.6	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	23.5	16.0	16.0	23.4	10.0	10.0	16.5	0.0	0.0	17.2	0.0	0.0
LnGrp LOS	C	B	B	C	A	A	B			B		
Approach Vol, veh/h		1217			607			70			113	
Approach Delay, s/veh		16.2			10.8			16.5			17.2	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.3	8.6	25.9		14.3	8.5	26.0				
Change Period (Y+Rc), s		4.6	5.4	5.4		4.6	5.4	5.4				
Max Green Setting (Gmax), s		30.4	9.6	24.6		30.4	9.6	24.6				
Max Q Clear Time (g_c+I1), s		3.6	3.0	15.9		5.0	2.9	7.3				
Green Ext Time (p_c), s		0.4	0.0	4.6		0.7	0.0	2.9				

Intersection Summary	
HCM 7th Control Delay, s/veh	14.7
HCM 7th LOS	B

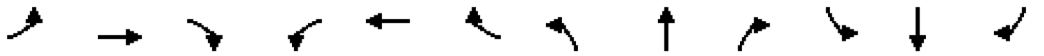


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	387	2	237	0	0	0	0	679	475	495	513	0
Future Volume (veh/h)	387	2	237	0	0	0	0	679	475	495	513	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885				0	1885	1885	1885	1885	0
Adj Flow Rate, veh/h	329	111	249				0	715	500	521	540	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1				0	1	1	1	1	0
Cap, veh/h	441	127	285				0	1221	536	575	2117	0
Arrive On Green	0.25	0.25	0.25				0.00	0.34	0.34	0.16	0.59	0.00
Sat Flow, veh/h	1795	517	1160				0	3676	1573	3483	3676	0
Grp Volume(v), veh/h	329	0	360				0	715	500	521	540	0
Grp Sat Flow(s),veh/h/ln	1795	0	1676				0	1791	1573	1742	1791	0
Q Serve(g_s), s	10.2	0.0	12.4				0.0	9.9	18.4	8.8	4.4	0.0
Cycle Q Clear(g_c), s	10.2	0.0	12.4				0.0	9.9	18.4	8.8	4.4	0.0
Prop In Lane	1.00		0.69				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	441	0	412				0	1221	536	575	2117	0
V/C Ratio(X)	0.75	0.00	0.87				0.00	0.59	0.93	0.91	0.26	0.00
Avail Cap(c_a), veh/h	458	0	427				0	1221	536	575	2117	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.81	0.81	0.85	0.85	0.00
Uniform Delay (d), s/veh	20.9	0.0	21.7				0.0	16.3	19.1	24.6	5.9	0.0
Incr Delay (d2), s/veh	6.3	0.0	17.5				0.0	1.7	21.8	16.0	0.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	6.4				0.0	3.8	9.0	4.6	1.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	27.2	0.0	39.2				0.0	17.9	40.9	40.6	6.2	0.0
LnGrp LOS	C		D					B	D	D	A	
Approach Vol, veh/h		689						1215			1061	
Approach Delay, s/veh		33.5						27.4			23.1	
Approach LOS		C						C			C	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	15.0	25.6		19.4		40.6						
Change Period (Y+Rc), s	5.1	5.1		4.7		5.1						
Max Green Setting (Gmax), s	9.9	19.9		15.3		34.9						
Max Q Clear Time (g_c+I1), s	10.8	20.4		14.4		6.4						
Green Ext Time (p_c), s	0.0	0.0		0.4		3.7						

Intersection Summary	
HCM 7th Control Delay, s/veh	27.3
HCM 7th LOS	C

Notes
User approved volume balancing among the lanes for turning movement.

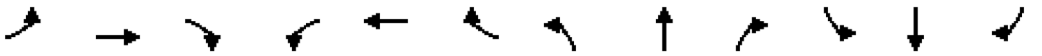


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	259	16	599	327	739	0	0	749	259
Future Volume (veh/h)	0	0	0	259	16	599	327	739	0	0	749	259
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1885	1885	1885	1885	1885	0	0	1885	1885
Adj Flow Rate, veh/h				190	0	741	348	786	0	0	797	276
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				1	1	1	1	1	0	0	1	1
Cap, veh/h				453	0	806	574	2240	0	0	1244	381
Arrive On Green				0.25	0.00	0.25	0.32	0.63	0.00	0.00	0.24	0.24
Sat Flow, veh/h				1795	0	3195	1795	3676	0	0	5316	1577
Grp Volume(v), veh/h				190	0	741	348	786	0	0	797	276
Grp Sat Flow(s),veh/h/ln				1795	0	1598	1795	1791	0	0	1716	1577
Q Serve(g_s), s				7.1	0.0	18.1	13.1	8.4	0.0	0.0	11.1	12.9
Cycle Q Clear(g_c), s				7.1	0.0	18.1	13.1	8.4	0.0	0.0	11.1	12.9
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				453	0	806	574	2240	0	0	1244	381
V/C Ratio(X)				0.42	0.00	0.92	0.61	0.35	0.00	0.00	0.64	0.72
Avail Cap(c_a), veh/h				456	0	811	574	2240	0	0	1602	491
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.68	0.68	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				25.0	0.0	29.1	23.0	7.2	0.0	0.0	27.2	27.9
Incr Delay (d2), s/veh				0.6	0.0	15.5	1.2	0.3	0.0	0.0	2.5	11.4
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.0	0.0	8.4	5.4	2.7	0.0	0.0	4.6	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				25.6	0.0	44.6	24.2	7.5	0.0	0.0	29.8	39.2
LnGrp LOS				C		D	C	A			C	D
Approach Vol, veh/h					931			1134			1073	
Approach Delay, s/veh					40.7			12.6			32.2	
Approach LOS					D			B			C	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	55.1		30.7	24.4		24.9						
Change Period (Y+Rc), s	5.1		5.1	5.1		4.7						
Max Green Setting (Gmax), s	49.9		19.9	24.9		20.3						
Max Q Clear Time (g_c+I1), s	10.4		15.1	14.9		20.1						
Green Ext Time (p_c), s	6.2		0.5	4.5		0.1						

Intersection Summary	
HCM 7th Control Delay, s/veh	27.6
HCM 7th LOS	C

Notes
User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	356	484	109	43	456	445	128	346	71	280	138	158
Future Volume (veh/h)	356	484	109	43	456	445	128	346	71	280	138	158
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.96	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	383	520	117	46	490	478	138	372	76	301	148	170
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	455	1423	615	130	1171	676	216	597	120	377	682	499
Arrive On Green	0.13	0.40	0.40	0.07	0.33	0.33	0.12	0.21	0.21	0.11	0.19	0.19
Sat Flow, veh/h	3428	3526	1523	1767	3526	1516	1767	2900	585	3428	3526	1501
Grp Volume(v), veh/h	383	520	117	46	490	478	138	224	224	301	148	170
Grp Sat Flow(s),veh/h/ln	1714	1763	1523	1767	1763	1516	1767	1763	1722	1714	1763	1501
Q Serve(g_s), s	10.4	9.9	4.7	2.4	10.3	24.6	7.1	11.1	11.4	8.2	3.4	8.2
Cycle Q Clear(g_c), s	10.4	9.9	4.7	2.4	10.3	24.6	7.1	11.1	11.4	8.2	3.4	8.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.34	1.00		1.00
Lane Grp Cap(c), veh/h	455	1423	615	130	1171	676	216	363	354	377	682	499
V/C Ratio(X)	0.84	0.37	0.19	0.35	0.42	0.71	0.64	0.62	0.63	0.80	0.22	0.34
Avail Cap(c_a), veh/h	509	1423	615	284	1304	733	246	687	671	476	1374	794
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.5	20.0	18.4	42.2	24.8	21.8	40.0	34.6	34.7	41.6	32.5	24.5
Incr Delay (d2), s/veh	11.1	0.2	0.1	1.6	0.2	2.9	4.5	1.7	1.9	7.4	0.2	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	3.8	1.7	1.1	4.3	9.0	3.3	4.9	4.9	3.8	1.4	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	51.7	20.1	18.6	43.8	25.0	24.6	44.5	36.3	36.6	49.0	32.6	24.9
LnGrp LOS	D	C	B	D	C	C	D	D	D	D	C	C
Approach Vol, veh/h		1020			1014			586			619	
Approach Delay, s/veh		31.8			25.7			38.3			38.5	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.2	24.4	11.7	44.4	16.4	23.2	18.5	37.6
Change Period (Y+Rc), s	4.7	4.7	4.6	5.8	4.7	4.7	5.8	* 5.8
Max Green Setting (Gmax), s	13.3	37.3	15.4	34.2	13.3	37.3	14.2	* 35
Max Q Clear Time (g_c+I1), s	10.2	13.4	4.4	11.9	9.1	10.2	12.4	26.6
Green Ext Time (p_c), s	0.3	2.8	0.0	3.5	0.1	1.5	0.3	3.6

Intersection Summary	
HCM 7th Control Delay, s/veh	32.3
HCM 7th LOS	C

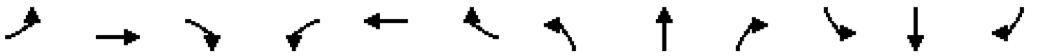
Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	182	14	159	0	0	0	0	593	900	325	575	0
Future Volume (veh/h)	182	14	159	0	0	0	0	593	900	325	575	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	192	15	167				0	624	947	342	605	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	289	23	276				0	1567	688	480	2352	0
Arrive On Green	0.17	0.17	0.17				0.00	0.44	0.44	0.14	0.66	0.00
Sat Flow, veh/h	1658	130	1585				0	3647	1560	3456	3647	0
Grp Volume(v), veh/h	207	0	167				0	624	947	342	605	0
Grp Sat Flow(s),veh/h/ln	1787	0	1585				0	1777	1560	1728	1777	0
Q Serve(g_s), s	6.2	0.0	5.6				0.0	6.8	25.3	5.4	4.0	0.0
Cycle Q Clear(g_c), s	6.2	0.0	5.6				0.0	6.8	25.3	5.4	4.0	0.0
Prop In Lane	0.93		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	312	0	276				0	1567	688	480	2352	0
V/C Ratio(X)	0.66	0.00	0.60				0.00	0.40	1.38	0.71	0.26	0.00
Avail Cap(c_a), veh/h	321	0	285				0	1567	688	620	2497	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.1	0.0	21.9				0.0	10.9	16.0	23.6	4.0	0.0
Incr Delay (d2), s/veh	4.9	0.0	3.4				0.0	0.2	178.3	2.7	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	2.2				0.0	2.3	41.5	2.2	0.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	27.0	0.0	25.3				0.0	11.0	194.3	26.3	4.0	0.0
LnGrp LOS	C		C					B	F	C	A	
Approach Vol, veh/h		374						1571			947	
Approach Delay, s/veh		26.3						121.5			12.1	
Approach LOS		C						F			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	12.7	30.0		14.7		42.7
Change Period (Y+Rc), s	4.7	4.7		4.7		4.7
Max Green Setting (Gmax), s	10.3	25.3		10.3		40.3
Max Q Clear Time (g_c+I1), s	7.4	27.3		8.2		6.0
Green Ext Time (p_c), s	0.4	0.0		0.4		4.6

Intersection Summary			
HCM 7th Control Delay, s/veh		73.4	
HCM 7th LOS		E	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	572	0	203	0	253	503	0	0	0	0	252	647
Future Volume (veh/h)	572	0	203	0	253	503	0	0	0	0	252	647
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1856	0	1856	0	1856	1856				0	1856	1856
Adj Flow Rate, veh/h	629	0	0	0	278	553				0	277	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91				0.91	0.91	0.91
Percent Heavy Veh, %	3	0	3	0	3	3				0	3	3
Cap, veh/h	954	0		0	782	663				0	0	
Arrive On Green	0.28	0.00	0.00	0.00	0.42	0.42				0.00	0.00	0.00
Sat Flow, veh/h	3428	629		0	1856	1572					0	
Grp Volume(v), veh/h	629	10.8		0	278	553					0.0	
Grp Sat Flow(s),veh/h/ln	1714	B		0	1856	1572						
Q Serve(g_s), s	5.1			0.0	3.2	9.8						
Cycle Q Clear(g_c), s	5.1			0.0	3.2	9.8						
Prop In Lane	1.00			0.00		1.00						
Lane Grp Cap(c), veh/h	954			0	782	663						
V/C Ratio(X)	0.66			0.00	0.36	0.83						
Avail Cap(c_a), veh/h	1674			0	906	768						
HCM Platoon Ratio	1.00			1.00	1.00	1.00						
Upstream Filter(I)	1.00			0.00	1.00	1.00						
Uniform Delay (d), s/veh	10.0			0.0	6.2	8.1						
Incr Delay (d2), s/veh	0.8			0.0	0.3	7.0						
Initial Q Delay(d3), s/veh	0.0			0.0	0.0	0.0						
%ile BackOfQ(50%),veh/ln	1.4			0.0	0.8	3.1						
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	10.8			0.0	6.4	15.1						
LnGrp LOS	B				A	B						
Approach Vol, veh/h					831							
Approach Delay, s/veh					12.2							
Approach LOS					B							

Timer - Assigned Phs			7	8
Phs Duration (G+Y+Rc), s			13.4	17.9
Change Period (Y+Rc), s			4.7	4.7
Max Green Setting (Gmax), s			15.3	15.3
Max Q Clear Time (g_c+I1), s			7.1	11.8
Green Ext Time (p_c), s			1.6	1.4

Intersection Summary	
HCM 7th Control Delay, s/veh	11.6
HCM 7th LOS	B

Notes

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0.7

Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Vol, veh/h	45	14	675	650	7	5	8
Future Vol, veh/h	45	14	675	650	7	5	8
Conflicting Peds, #/hr	0	5	0	0	5	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	-	140	-	-	-	0	-
Veh in Median Storage, #	-	-	0	0	-	0	-
Grade, %	-	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96
Heavy Vehicles, %	3	3	3	3	3	3	3
Mvmt Flow	47	15	703	677	7	5	8

Major/Minor	Major1		Major2		Minor2		
Conflicting Flow All	684	689	0	-	0	1160	347
Stage 1	-	-	-	-	-	686	-
Stage 2	-	-	-	-	-	474	-
Critical Hdwy	6.46	4.16	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	-	5.86	-
Follow-up Hdwy	2.53	2.23	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	525	894	-	-	-	187	646
Stage 1	-	-	-	-	-	459	-
Stage 2	-	-	-	-	-	589	-
Platoon blocked, %			-	-	-		
Mov Cap-1 Maneuver	575	575	-	-	-	166	643
Mov Cap-2 Maneuver	-	-	-	-	-	166	-
Stage 1	-	-	-	-	-	408	-
Stage 2	-	-	-	-	-	589	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.97	0	17.31
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	575	-	-	-	306
HCM Lane V/C Ratio	0.107	-	-	-	0.044
HCM Ctrl Dly (s/v)	12	-	-	-	17.3
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.4	-	-	-	0.1

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	164	14	0	255	141	0
Future Vol, veh/h	164	14	0	255	141	0
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	300	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	191	16	0	297	164	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	460	164	-	0	-	0
Stage 1	164	-	-	-	-	-
Stage 2	297	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	559	881	0	-	-	0
Stage 1	865	-	0	-	-	0
Stage 2	754	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	559	881	-	-	-	-
Mov Cap-2 Maneuver	559	-	-	-	-	-
Stage 1	865	-	-	-	-	-
Stage 2	754	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	14.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	-	559	881	-
HCM Lane V/C Ratio	-	0.341	0.018	-
HCM Ctrl Dly (s/v)	-	14.7	9.2	-
HCM Lane LOS	-	B	A	-
HCM 95th %tile Q(veh)	-	1.5	0.1	-

Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	56	109	2	37	88
Future Vol, veh/h	1	56	109	2	37	88
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	1	63	122	2	42	99

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	306	124	0	0	125	0
Stage 1	124	-	-	-	-	-
Stage 2	182	-	-	-	-	-
Critical Hdwy	6.44	6.24	-	-	4.14	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	-	-	2.236	-
Pot Cap-1 Maneuver	682	922	-	-	1450	-
Stage 1	897	-	-	-	-	-
Stage 2	844	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	661	922	-	-	1450	-
Mov Cap-2 Maneuver	661	-	-	-	-	-
Stage 1	897	-	-	-	-	-
Stage 2	819	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.2	0	2.24
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	922	533	-
HCM Lane V/C Ratio	-	-	0.069	0.029	-
HCM Ctrl Dly (s/v)	-	-	9.2	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

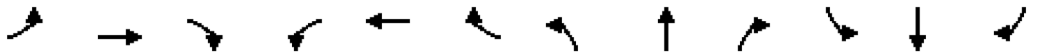
Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	1	1	3	0	30	2	128	0	11	76	0
Future Vol, veh/h	10	1	1	3	0	30	2	128	0	11	76	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	3	3	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	7	7	7	7	7	7	7	7	7	7	7	7
Mvmt Flow	13	1	1	4	0	38	3	160	0	14	95	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	288	291	95	291	291	163	95	0	0	163	0	0
Stage 1	123	123	-	168	168	-	-	-	-	-	-	-
Stage 2	165	168	-	123	123	-	-	-	-	-	-	-
Critical Hdwy	7.17	6.57	6.27	7.17	6.57	6.27	4.17	-	-	4.17	-	-
Critical Hdwy Stg 1	6.17	5.57	-	6.17	5.57	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.17	5.57	-	6.17	5.57	-	-	-	-	-	-	-
Follow-up Hdwy	3.563	4.063	3.363	3.563	4.063	3.363	2.263	-	-	2.263	-	-
Pot Cap-1 Maneuver	655	612	948	651	612	869	1468	-	-	1386	-	-
Stage 1	870	785	-	822	750	-	-	-	-	-	-	-
Stage 2	825	750	-	869	785	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	619	602	948	639	602	866	1468	-	-	1382	-	-
Mov Cap-2 Maneuver	619	602	-	639	602	-	-	-	-	-	-	-
Stage 1	861	777	-	818	747	-	-	-	-	-	-	-
Stage 2	788	747	-	857	777	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	10.8	9.51	0.11	0.96
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	28	-	-	636	839	228	-	-
HCM Lane V/C Ratio	0.002	-	-	0.024	0.049	0.01	-	-
HCM Ctrl Dly (s/v)	7.5	0	-	10.8	9.5	7.6	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0	-	-



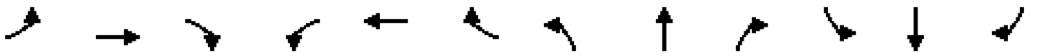
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	410	45	20	790	25	10	5	5	55	5	65
Future Volume (veh/h)	25	410	45	20	790	25	10	5	5	55	5	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	0.99		0.99	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796
Adj Flow Rate, veh/h	30	494	54	24	952	30	12	6	6	66	6	78
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	7	7	7	7	7	7	7	7	7	7	7	7
Cap, veh/h	93	1357	148	77	1450	46	340	170	170	408	22	289
Arrive On Green	0.05	0.44	0.44	0.05	0.43	0.43	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1711	3089	336	1711	3372	106	1255	821	821	1337	108	1398
Grp Volume(v), veh/h	30	272	276	24	482	500	12	0	12	66	0	84
Grp Sat Flow(s),veh/h/ln	1711	1706	1719	1711	1706	1772	1255	0	1641	1337	0	1505
Q Serve(g_s), s	0.9	5.5	5.5	0.7	11.5	11.5	0.4	0.0	0.3	2.1	0.0	2.4
Cycle Q Clear(g_c), s	0.9	5.5	5.5	0.7	11.5	11.5	2.8	0.0	0.3	2.4	0.0	2.4
Prop In Lane	1.00		0.20	1.00		0.06	1.00		0.50	1.00		0.93
Lane Grp Cap(c), veh/h	93	750	755	77	734	762	340	0	339	408	0	311
V/C Ratio(X)	0.32	0.36	0.37	0.31	0.66	0.66	0.04	0.00	0.04	0.16	0.00	0.27
Avail Cap(c_a), veh/h	319	1313	1322	319	1313	1363	942	0	1126	1039	0	1021
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.4	9.6	9.6	23.8	11.6	11.6	18.3	0.0	16.3	17.3	0.0	17.2
Incr Delay (d2), s/veh	2.0	0.3	0.3	2.3	1.0	1.0	0.0	0.0	0.0	0.2	0.0	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.6	1.6	0.3	3.4	3.6	0.1	0.0	0.1	0.6	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.4	9.9	9.9	26.0	12.6	12.6	18.4	0.0	16.4	17.5	0.0	17.6
LnGrp LOS	C	A	A	C	B	B	B		B	B		B
Approach Vol, veh/h		578			1006			24			150	
Approach Delay, s/veh		10.7			12.9			17.4			17.6	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	15.7	7.7	28.0	15.7	8.2	27.5
Change Period (Y+Rc), s	* 5.1	5.4	5.4	5.1	5.4	5.4
Max Green Setting (Gmax), s	* 35	9.6	39.6	34.9	9.6	39.6
Max Q Clear Time (g_c+I1), s	4.8	2.7	7.5	4.4	2.9	13.5
Green Ext Time (p_c), s	0.1	0.0	3.3	0.7	0.0	6.5

Intersection Summary	
HCM 7th Control Delay, s/veh	12.7
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



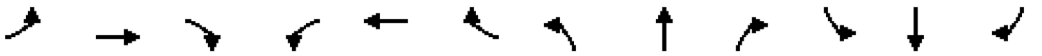
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	310	55	115	700	600	55	150	65	260	400	200
Future Volume (veh/h)	65	310	55	115	700	600	55	150	65	260	400	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	78	373	66	139	843	723	66	181	78	313	482	241
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	261	1314	230	164	836	674	130	480	198	371	534	265
Arrive On Green	0.08	0.44	0.44	0.09	0.46	0.46	0.07	0.20	0.20	0.11	0.24	0.24
Sat Flow, veh/h	3401	2964	519	1753	1816	1465	1753	2401	991	3401	2248	1117
Grp Volume(v), veh/h	78	218	221	139	810	756	66	130	129	313	374	349
Grp Sat Flow(s),veh/h/ln	1700	1749	1734	1753	1749	1532	1753	1749	1644	1700	1749	1617
Q Serve(g_s), s	2.9	10.8	11.0	10.6	62.6	62.6	4.9	8.7	9.3	12.3	28.2	28.5
Cycle Q Clear(g_c), s	2.9	10.8	11.0	10.6	62.6	62.6	4.9	8.7	9.3	12.3	28.2	28.5
Prop In Lane	1.00		0.30	1.00		0.96	1.00		0.60	1.00		0.69
Lane Grp Cap(c), veh/h	261	775	769	164	805	705	130	350	329	371	416	384
V/C Ratio(X)	0.30	0.28	0.29	0.85	1.01	1.07	0.51	0.37	0.39	0.84	0.90	0.91
Avail Cap(c_a), veh/h	290	775	769	253	805	705	262	454	426	497	449	415
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.4	24.1	24.2	60.7	36.7	36.7	60.6	47.0	47.3	59.5	50.3	50.4
Incr Delay (d2), s/veh	0.6	0.2	0.2	14.8	33.2	55.1	3.0	0.7	0.8	9.7	20.0	22.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	4.5	4.5	5.3	32.9	33.1	2.3	3.9	3.9	5.8	14.6	13.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	60.0	24.3	24.4	75.5	69.9	91.8	63.6	47.7	48.0	69.2	70.3	72.9
LnGrp LOS	E	C	C	E	F	F	E	D	D	E	E	E
Approach Vol, veh/h		517			1705			325			1036	
Approach Delay, s/veh		29.7			80.1			51.1			70.8	
Approach LOS		C			F			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.9	32.3	18.1	65.7	14.8	37.4	15.8	68.0
Change Period (Y+Rc), s	5.1	* 5.1	5.4	5.4	4.7	5.1	5.4	5.4
Max Green Setting (Gmax), s	19.9	* 35	19.6	54.6	20.3	34.9	11.6	62.6
Max Q Clear Time (g_c+I1), s	14.3	11.3	12.6	13.0	6.9	30.5	4.9	64.6
Green Ext Time (p_c), s	0.5	1.5	0.2	2.6	0.1	1.8	0.1	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	67.5
HCM 7th LOS	E

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	450	45	10	1060	5	130	5	5	10	5	275
Future Volume (veh/h)	55	450	45	10	1060	5	130	5	5	10	5	275
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	69	562	56	12	1325	6	162	6	6	12	6	344
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	131	1512	150	40	1502	7	270	10	7	51	18	491
Arrive On Green	0.08	0.48	0.48	0.02	0.42	0.42	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1739	3174	315	1739	3541	16	590	31	22	23	57	1528
Grp Volume(v), veh/h	69	306	312	12	649	682	174	0	0	362	0	0
Grp Sat Flow(s),veh/h/ln	1739	1735	1754	1739	1735	1822	643	0	0	1608	0	0
Q Serve(g_s), s	3.3	9.7	9.7	0.6	29.6	29.6	6.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.3	9.7	9.7	0.6	29.6	29.6	24.3	0.0	0.0	17.8	0.0	0.0
Prop In Lane	1.00		0.18	1.00		0.01	0.93		0.03	0.03		0.95
Lane Grp Cap(c), veh/h	131	826	836	40	736	773	288	0	0	560	0	0
V/C Ratio(X)	0.53	0.37	0.37	0.30	0.88	0.88	0.60	0.00	0.00	0.65	0.00	0.00
Avail Cap(c_a), veh/h	194	826	836	194	799	840	381	0	0	697	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	38.3	14.3	14.3	41.3	22.8	22.8	30.3	0.0	0.0	25.9	0.0	0.0
Incr Delay (d2), s/veh	3.3	0.3	0.3	4.0	10.7	10.3	2.0	0.0	0.0	1.4	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	3.5	3.5	0.3	13.0	13.5	3.6	0.0	0.0	6.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	41.5	14.6	14.6	45.3	33.5	33.0	32.3	0.0	0.0	27.4	0.0	0.0
LnGrp LOS	D	B	B	D	C	C	C			C		
Approach Vol, veh/h		687			1343			174			362	
Approach Delay, s/veh		17.3			33.3			32.3			27.4	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	32.2	7.4	46.3	32.2	11.9	41.9
Change Period (Y+Rc), s	4.6	5.4	5.4	4.6	5.4	5.4
Max Green Setting (Gmax), s	35.4	9.6	39.6	35.4	9.6	39.6
Max Q Clear Time (g_c+I1), s	26.3	2.6	11.7	19.8	5.3	31.6
Green Ext Time (p_c), s	0.8	0.0	3.7	2.3	0.0	4.9

Intersection Summary	
HCM 7th Control Delay, s/veh	28.1
HCM 7th LOS	C

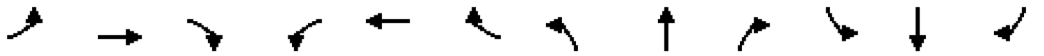
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	5	440	0	0	0	0	570	345	615	785	0
Future Volume (veh/h)	175	5	440	0	0	0	0	570	345	615	785	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	194	6	489				0	633	383	683	872	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	497	5	437				0	953	419	970	2151	0
Arrive On Green	0.28	0.28	0.28				0.00	0.27	0.27	0.57	1.00	0.00
Sat Flow, veh/h	1767	19	1556				0	3618	1549	3428	3618	0
Grp Volume(v), veh/h	194	0	495				0	633	383	683	872	0
Grp Sat Flow(s),veh/h/ln	1767	0	1575				0	1763	1549	1714	1763	0
Q Serve(g_s), s	8.0	0.0	25.3				0.0	14.4	21.6	12.9	0.0	0.0
Cycle Q Clear(g_c), s	8.0	0.0	25.3				0.0	14.4	21.6	12.9	0.0	0.0
Prop In Lane	1.00		0.99				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	497	0	443				0	953	419	970	2151	0
V/C Ratio(X)	0.39	0.00	1.12				0.00	0.66	0.91	0.70	0.41	0.00
Avail Cap(c_a), veh/h	497	0	443				0	975	429	970	2151	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.93	0.93	0.61	0.61	0.00
Uniform Delay (d), s/veh	26.1	0.0	32.4				0.0	29.2	31.8	16.8	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	78.9				0.0	3.4	25.6	1.4	0.3	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.0	19.0				0.0	6.3	10.7	3.7	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	26.6	0.0	111.2				0.0	32.6	57.4	18.2	0.3	0.0
LnGrp LOS	C		F					C	E	B	A	
Approach Vol, veh/h		689						1016			1555	
Approach Delay, s/veh		87.4						42.0			8.2	
Approach LOS		F						D			A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	30.6	29.4		30.0		60.0
Change Period (Y+Rc), s	5.1	5.1		4.7		5.1
Max Green Setting (Gmax), s	24.9	24.9		25.3		54.9
Max Q Clear Time (g_c+I1), s	14.9	23.6		27.3		2.0
Green Ext Time (p_c), s	2.0	0.8		0.0		7.3

Intersection Summary	
HCM 7th Control Delay, s/veh	35.5
HCM 7th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	445	20	360	290	455	0	0	955	465
Future Volume (veh/h)	0	0	0	445	20	360	290	455	0	0	955	465
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1856	1856	1856	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				627	0	274	322	506	0	0	1061	517
Peak Hour Factor				0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %				3	3	3	3	3	0	0	3	3
Cap, veh/h				767	0	341	602	2376	0	0	1401	435
Arrive On Green				0.22	0.00	0.22	0.68	1.00	0.00	0.00	0.28	0.28
Sat Flow, veh/h				3534	0	1572	1767	3618	0	0	5233	1572
Grp Volume(v), veh/h				627	0	274	322	506	0	0	1061	517
Grp Sat Flow(s),veh/h/ln				1767	0	1572	1767	1763	0	0	1689	1572
Q Serve(g_s), s				15.2	0.0	14.9	8.2	0.0	0.0	0.0	17.2	24.9
Cycle Q Clear(g_c), s				15.2	0.0	14.9	8.2	0.0	0.0	0.0	17.2	24.9
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				767	0	341	602	2376	0	0	1401	435
V/C Ratio(X)				0.82	0.00	0.80	0.53	0.21	0.00	0.00	0.76	1.19
Avail Cap(c_a), veh/h				994	0	442	602	2376	0	0	1401	435
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.73	0.73	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.5	0.0	33.4	10.8	0.0	0.0	0.0	29.8	32.5
Incr Delay (d2), s/veh				4.2	0.0	8.0	0.7	0.1	0.0	0.0	3.9	105.7
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.8	0.0	6.3	2.4	0.0	0.0	0.0	7.2	21.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				37.7	0.0	41.4	11.4	0.1	0.0	0.0	33.6	138.2
LnGrp LOS				D		D	B	A			C	F
Approach Vol, veh/h					901			828			1578	
Approach Delay, s/veh					38.8			4.5			67.9	
Approach LOS					D			A			E	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		65.8			35.8	30.0		24.2				
Change Period (Y+Rc), s		5.1			5.1	5.1		4.7				
Max Green Setting (Gmax), s		54.9			24.9	24.9		25.3				
Max Q Clear Time (g_c+I1), s		2.0			10.2	26.9		17.2				
Green Ext Time (p_c), s		3.7			0.8	0.0		2.3				

Intersection Summary												
HCM 7th Control Delay, s/veh			44.1									
HCM 7th LOS			D									

Notes
User approved volume balancing among the lanes for turning movement.

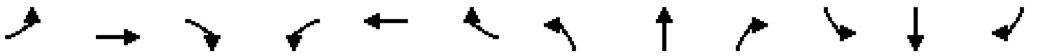
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	225	300	105	60	400	255	105	165	45	365	385	565
Future Volume (veh/h)	225	300	105	60	400	255	105	165	45	365	385	565
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1781	1781	1781	1781	1781	1781	1781	1781	1781	1781	1781	1781
Adj Flow Rate, veh/h	250	333	117	67	444	283	117	183	50	406	428	628
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	8	8	8	8	8	8	8	8	8	8	8	8
Cap, veh/h	346	883	385	139	765	552	188	850	225	477	1208	685
Arrive On Green	0.11	0.26	0.26	0.08	0.23	0.23	0.11	0.32	0.32	0.14	0.36	0.36
Sat Flow, veh/h	3291	3385	1476	1697	3385	1472	1697	2633	698	3291	3385	1474
Grp Volume(v), veh/h	250	333	117	67	444	283	117	116	117	406	428	628
Grp Sat Flow(s),veh/h/ln	1646	1692	1476	1697	1692	1472	1697	1692	1639	1646	1692	1474
Q Serve(g_s), s	7.7	8.4	6.7	3.9	12.2	15.6	6.9	5.2	5.5	12.6	9.7	37.3
Cycle Q Clear(g_c), s	7.7	8.4	6.7	3.9	12.2	15.6	6.9	5.2	5.5	12.6	9.7	37.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.43	1.00		1.00
Lane Grp Cap(c), veh/h	346	883	385	139	765	552	188	547	529	477	1208	685
V/C Ratio(X)	0.72	0.38	0.30	0.48	0.58	0.51	0.62	0.21	0.22	0.85	0.35	0.92
Avail Cap(c_a), veh/h	447	1107	483	250	1146	717	216	547	529	576	1208	685
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.3	31.7	31.0	45.9	36.0	25.6	44.4	25.7	25.8	43.6	24.7	26.3
Incr Delay (d2), s/veh	4.0	0.3	0.4	2.6	0.7	0.7	4.3	0.2	0.2	10.1	0.2	17.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	3.3	2.4	1.8	5.1	5.6	3.1	2.1	2.2	5.7	3.9	17.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	49.3	31.9	31.5	48.4	36.7	26.3	48.7	25.9	26.0	53.7	24.9	43.6
LnGrp LOS	D	C	C	D	D	C	D	C	C	D	C	D
Approach Vol, veh/h		700			794			350			1462	
Approach Delay, s/veh		38.1			34.0			33.6			40.9	
Approach LOS		D			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.8	38.5	13.2	33.1	16.3	42.0	16.8	29.4
Change Period (Y+Rc), s	4.7	4.7	4.6	5.8	4.7	4.7	5.8	* 5.8
Max Green Setting (Gmax), s	18.3	32.3	15.4	34.2	13.3	37.3	14.2	* 35
Max Q Clear Time (g_c+I1), s	14.6	7.5	5.9	10.4	8.9	39.3	9.7	17.6
Green Ext Time (p_c), s	0.6	1.3	0.1	2.3	0.1	0.0	0.3	4.0

Intersection Summary	
HCM 7th Control Delay, s/veh	37.9
HCM 7th LOS	D

Notes

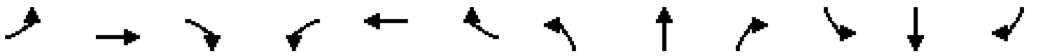
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	5	305	0	0	0	0	480	455	445	1165	0
Future Volume (veh/h)	125	5	305	0	0	0	0	480	455	445	1165	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1811	1811	1811				0	1811	1811	1811	1811	0
Adj Flow Rate, veh/h	129	5	314				0	495	469	459	1201	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	6	6	6				0	6	6	6	6	0
Cap, veh/h	404	16	372				0	1234	539	588	2094	0
Arrive On Green	0.24	0.24	0.24				0.00	0.36	0.36	0.18	0.61	0.00
Sat Flow, veh/h	1663	64	1535				0	3532	1504	3346	3532	0
Grp Volume(v), veh/h	134	0	314				0	495	469	459	1201	0
Grp Sat Flow(s),veh/h/ln	1728	0	1535				0	1721	1504	1673	1721	0
Q Serve(g_s), s	4.0	0.0	12.3				0.0	6.8	18.4	8.3	13.3	0.0
Cycle Q Clear(g_c), s	4.0	0.0	12.3				0.0	6.8	18.4	8.3	13.3	0.0
Prop In Lane	0.96		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	419	0	372				0	1234	539	588	2094	0
V/C Ratio(X)	0.32	0.00	0.84				0.00	0.40	0.87	0.78	0.57	0.00
Avail Cap(c_a), veh/h	555	0	493				0	1378	602	810	2467	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	19.7	0.0	22.8				0.0	15.2	18.9	24.9	7.4	0.0
Incr Delay (d2), s/veh	0.4	0.0	9.8				0.0	0.2	12.1	3.4	0.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	5.1				0.0	2.5	7.5	3.4	3.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	20.1	0.0	32.6				0.0	15.4	30.9	28.3	7.7	0.0
LnGrp LOS	C		C					B	C	C	A	
Approach Vol, veh/h		448						964			1660	
Approach Delay, s/veh		28.9						23.0			13.4	
Approach LOS		C						C			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	15.8	27.4		20.0		43.2
Change Period (Y+Rc), s	4.7	4.7		4.7		4.7
Max Green Setting (Gmax), s	15.3	25.3		20.3		45.3
Max Q Clear Time (g_c+I1), s	10.3	20.4		14.3		15.3
Green Ext Time (p_c), s	0.8	2.3		1.0		10.9

Intersection Summary	
HCM 7th Control Delay, s/veh	18.6
HCM 7th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	470	0	135	0	660	555	0	0	0	0	130	950
Future Volume (veh/h)	470	0	135	0	660	555	0	0	0	0	130	950
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1826	0	1826	0	1826	1826				0	1826	1826
Adj Flow Rate, veh/h	495	0	0	0	695	584				0	137	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	5	0	5	0	5	5				0	5	5
Cap, veh/h	736	0		0	983	833				0	0	
Arrive On Green	0.22	0.00	0.00	0.00	0.54	0.54				0.00	0.00	0.00
Sat Flow, veh/h	3374	495		0	1826	1547					0	
Grp Volume(v), veh/h	495	14.9		0	695	584					0.0	
Grp Sat Flow(s),veh/h/ln	1687	B		0	1826	1547						
Q Serve(g_s), s	5.2			0.0	11.0	10.8						
Cycle Q Clear(g_c), s	5.2			0.0	11.0	10.8						
Prop In Lane	1.00			0.00		1.00						
Lane Grp Cap(c), veh/h	736			0	983	833						
V/C Ratio(X)	0.67			0.00	0.71	0.70						
Avail Cap(c_a), veh/h	1337			0	1670	1415						
HCM Platoon Ratio	1.00			1.00	1.00	1.00						
Upstream Filter(I)	1.00			0.00	1.00	1.00						
Uniform Delay (d), s/veh	13.8			0.0	6.6	6.6						
Incr Delay (d2), s/veh	1.1			0.0	0.9	1.1						
Initial Q Delay(d3), s/veh	0.0			0.0	0.0	0.0						
%ile BackOfQ(50%),veh/ln	1.7			0.0	2.6	2.2						
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.9			0.0	7.6	7.7						
LnGrp LOS	B				A	A						
Approach Vol, veh/h					1279							
Approach Delay, s/veh					7.6							
Approach LOS					A							

Timer - Assigned Phs			7	8
Phs Duration (G+Y+Rc), s			13.1	25.5
Change Period (Y+Rc), s			4.7	4.7
Max Green Setting (Gmax), s			15.3	35.3
Max Q Clear Time (g_c+I1), s			7.2	13.0
Green Ext Time (p_c), s			1.2	7.8

Intersection Summary		
HCM 7th Control Delay, s/veh	9.7	
HCM 7th LOS	A	

Notes
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.2

Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Vol, veh/h	10	55	475	850	15	5	45
Future Vol, veh/h	10	55	475	850	15	5	45
Conflicting Peds, #/hr	0	10	0	0	10	1	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	-	140	-	-	-	0	-
Veh in Median Storage, #	-	-	0	0	-	0	-
Grade, %	-	-	0	0	-	0	-
Peak Hour Factor	96	83	83	83	83	83	83
Heavy Vehicles, %	3	6	6	6	6	6	6
Mvmt Flow	10	66	572	1024	18	6	54

Major/Minor	Major1		Major2		Minor2		
Conflicting Flow All	1042	1052	0	-	0	1484	531
Stage 1	-	-	-	-	-	1043	-
Stage 2	-	-	-	-	-	441	-
Critical Hdwy	6.46	4.22	-	-	-	6.92	7.02
Critical Hdwy Stg 1	-	-	-	-	-	5.92	-
Critical Hdwy Stg 2	-	-	-	-	-	5.92	-
Follow-up Hdwy	2.53	2.26	-	-	-	3.56	3.36
Pot Cap-1 Maneuver	309	634	-	-	-	111	482
Stage 1	-	-	-	-	-	292	-
Stage 2	-	-	-	-	-	605	-
Platoon blocked, %			-	-	-		
Mov Cap-1 Maneuver	534	534	-	-	-	94	478
Mov Cap-2 Maneuver	-	-	-	-	-	94	-
Stage 1	-	-	-	-	-	247	-
Stage 2	-	-	-	-	-	604	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	1.52	0	17.87
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	534	-	-	-	340
HCM Lane V/C Ratio	0.144	-	-	-	0.177
HCM Ctrl Dly (s/v)	12.9	-	-	-	17.9
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.5	-	-	-	0.6

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	70	20	0	150	225	0
Future Vol, veh/h	70	20	0	150	225	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	300	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	7	7	7	7	7	7
Mvmt Flow	85	24	0	183	274	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	457	274	-	0	-	0
Stage 1	274	-	-	-	-	-
Stage 2	183	-	-	-	-	-
Critical Hdwy	6.47	6.27	-	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.363	-	-	-	-
Pot Cap-1 Maneuver	552	752	0	-	-	0
Stage 1	760	-	0	-	-	0
Stage 2	837	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	552	752	-	-	-	-
Mov Cap-2 Maneuver	552	-	-	-	-	-
Stage 1	760	-	-	-	-	-
Stage 2	837	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	12.09	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	-	552	752	-
HCM Lane V/C Ratio	-	0.155	0.032	-
HCM Ctrl Dly (s/v)	-	12.7	9.9	-
HCM Lane LOS	-	B	A	-
HCM 95th %tile Q(veh)	-	0.5	0.1	-

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	15	85	5	30	80
Future Vol, veh/h	5	15	85	5	30	80
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	6	17	96	6	34	90

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	257	99	0	0	102	0
Stage 1	99	-	-	-	-	-
Stage 2	157	-	-	-	-	-
Critical Hdwy	6.45	6.25	-	-	4.15	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	726	948	-	-	1471	-
Stage 1	917	-	-	-	-	-
Stage 2	864	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	707	947	-	-	1470	-
Mov Cap-2 Maneuver	707	-	-	-	-	-
Stage 1	916	-	-	-	-	-
Stage 2	843	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.07	0	2.05
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	908	491	-
HCM Lane V/C Ratio	-	-	0.025	0.023	-
HCM Ctrl Dly (s/v)	-	-	9.1	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

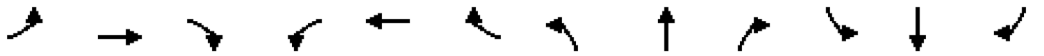
Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	0	5	5	0	30	5	100	5	70	65	15
Future Vol, veh/h	5	0	5	5	0	30	5	100	5	70	65	15
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	2	2	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	17	17	17	17	17	17	17	17	17	17	17	17
Mvmt Flow	6	0	6	6	0	34	6	115	6	80	75	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	372	379	84	367	385	120	93	0	0	123	0	0
Stage 1	245	245	-	131	131	-	-	-	-	-	-	-
Stage 2	126	134	-	236	254	-	-	-	-	-	-	-
Critical Hdwy	7.27	6.67	6.37	7.27	6.67	6.37	4.27	-	-	4.27	-	-
Critical Hdwy Stg 1	6.27	5.67	-	6.27	5.67	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.27	5.67	-	6.27	5.67	-	-	-	-	-	-	-
Follow-up Hdwy	3.653	4.153	3.453	3.653	4.153	3.453	2.353	-	-	2.353	-	-
Pot Cap-1 Maneuver	558	530	935	563	526	893	1412	-	-	1377	-	-
Stage 1	726	676	-	837	760	-	-	-	-	-	-	-
Stage 2	843	757	-	735	670	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	501	494	934	521	490	891	1411	-	-	1374	-	-
Mov Cap-2 Maneuver	501	494	-	521	490	-	-	-	-	-	-	-
Stage 1	681	634	-	832	755	-	-	-	-	-	-	-
Stage 2	806	753	-	685	628	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	10.62	9.68	0.34	3.63
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	81	-	-	652	809	810	-	-
HCM Lane V/C Ratio	0.004	-	-	0.018	0.05	0.059	-	-
HCM Ctrl Dly (s/v)	7.6	0	-	10.6	9.7	7.8	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0.2	-	-



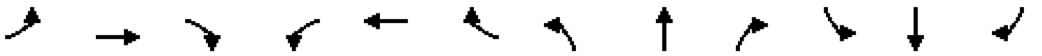
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	990	10	5	590	50	45	5	30	45	5	60
Future Volume (veh/h)	35	990	10	5	590	50	45	5	30	45	5	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.95	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	38	1065	11	5	634	54	48	5	32	48	5	65
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	116	1634	17	19	1317	112	371	44	284	403	23	298
Arrive On Green	0.07	0.46	0.46	0.01	0.40	0.40	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1767	3573	37	1767	3274	278	1315	213	1366	1355	110	1435
Grp Volume(v), veh/h	38	525	551	5	341	347	48	0	37	48	0	70
Grp Sat Flow(s),veh/h/ln	1767	1763	1847	1767	1763	1790	1315	0	1580	1355	0	1545
Q Serve(g_s), s	1.0	11.3	11.3	0.1	7.0	7.1	1.5	0.0	0.9	1.5	0.0	1.8
Cycle Q Clear(g_c), s	1.0	11.3	11.3	0.1	7.0	7.1	3.4	0.0	0.9	2.4	0.0	1.8
Prop In Lane	1.00		0.02	1.00		0.16	1.00		0.86	1.00		0.93
Lane Grp Cap(c), veh/h	116	806	845	19	709	720	371	0	329	403	0	321
V/C Ratio(X)	0.33	0.65	0.65	0.26	0.48	0.48	0.13	0.00	0.11	0.12	0.00	0.22
Avail Cap(c_a), veh/h	525	1960	2054	525	1960	1990	1043	0	1135	1084	0	1098
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.9	10.3	10.3	24.1	10.9	10.9	17.5	0.0	15.8	16.7	0.0	16.1
Incr Delay (d2), s/veh	1.6	0.9	0.9	7.2	0.5	0.5	0.2	0.0	0.2	0.1	0.0	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	3.2	3.4	0.1	2.1	2.2	0.4	0.0	0.3	0.4	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	23.5	11.2	11.2	31.3	11.4	11.4	17.7	0.0	15.9	16.9	0.0	16.5
LnGrp LOS	C	B	B	C	B	B	B		B	B		B
Approach Vol, veh/h		1114			693			85			118	
Approach Delay, s/veh		11.6			11.5			16.9			16.6	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	15.3	5.9	27.9	15.3	8.6	25.2
Change Period (Y+Rc), s	* 5.1	5.4	5.4	5.1	5.4	5.4
Max Green Setting (Gmax), s	* 35	14.6	54.6	34.9	14.6	54.6
Max Q Clear Time (g_c+I1), s	5.4	2.1	13.3	4.4	3.0	9.1
Green Ext Time (p_c), s	0.3	0.0	8.1	0.6	0.0	4.5

Intersection Summary	
HCM 7th Control Delay, s/veh	12.1
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	235	980	35	45	420	365	70	305	145	610	125	130
Future Volume (veh/h)	235	980	35	45	420	365	70	305	145	610	125	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	247	1032	37	47	442	384	74	321	153	642	132	137
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	326	1207	43	131	579	501	153	435	202	738	565	491
Arrive On Green	0.09	0.35	0.35	0.07	0.32	0.32	0.09	0.19	0.19	0.21	0.32	0.32
Sat Flow, veh/h	3456	3495	125	1781	1782	1542	1781	2333	1085	3456	1777	1544
Grp Volume(v), veh/h	247	525	544	47	441	385	74	243	231	642	132	137
Grp Sat Flow(s),veh/h/ln	1728	1777	1843	1781	1777	1546	1781	1777	1641	1728	1777	1544
Q Serve(g_s), s	8.1	31.9	31.9	2.9	25.9	26.1	4.6	15.0	15.6	20.9	6.4	7.7
Cycle Q Clear(g_c), s	8.1	31.9	31.9	2.9	25.9	26.1	4.6	15.0	15.6	20.9	6.4	7.7
Prop In Lane	1.00		0.07	1.00		1.00	1.00		0.66	1.00		1.00
Lane Grp Cap(c), veh/h	326	614	637	131	577	502	153	332	306	738	565	491
V/C Ratio(X)	0.76	0.85	0.85	0.36	0.76	0.77	0.48	0.73	0.76	0.87	0.23	0.28
Avail Cap(c_a), veh/h	404	787	817	193	772	672	311	462	427	1036	685	595
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.4	35.4	35.4	51.3	35.3	35.3	50.8	44.6	44.8	44.2	29.3	29.7
Incr Delay (d2), s/veh	6.3	7.4	7.1	1.6	3.2	3.8	2.4	3.7	4.9	6.0	0.2	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	14.5	15.0	1.3	11.3	10.0	2.2	6.9	6.7	9.4	2.7	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	57.8	42.8	42.5	52.9	38.5	39.1	53.1	48.2	49.7	50.2	29.5	30.0
LnGrp LOS	E	D	D	D	D	D	D	D	D	D	C	C
Approach Vol, veh/h		1316			873			548			911	
Approach Delay, s/veh		45.5			39.5			49.5			44.1	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.0	26.8	14.0	45.6	14.7	42.1	16.4	43.2
Change Period (Y+Rc), s	5.1	* 5.1	5.4	5.4	4.7	5.1	5.4	5.4
Max Green Setting (Gmax), s	34.9	* 30	12.6	51.6	20.3	44.9	13.6	50.6
Max Q Clear Time (g_c+I1), s	22.9	17.6	4.9	33.9	6.6	9.7	10.1	28.1
Green Ext Time (p_c), s	2.0	2.4	0.0	6.3	0.1	1.7	0.3	5.3

Intersection Summary	
HCM 7th Control Delay, s/veh	44.3
HCM 7th LOS	D

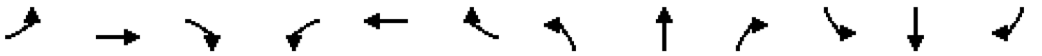
Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	1465	110	30	535	15	50	5	20	10	5	175
Future Volume (veh/h)	190	1465	110	30	535	15	50	5	20	10	5	175
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	196	1510	113	31	552	15	52	5	21	10	5	180
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	241	1941	144	90	1748	47	197	28	54	56	15	245
Arrive On Green	0.14	0.58	0.58	0.05	0.49	0.49	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1781	3346	249	1781	3531	96	707	170	323	35	87	1466
Grp Volume(v), veh/h	196	797	826	31	277	290	78	0	0	195	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1818	1781	1777	1850	1200	0	0	1588	0	0
Q Serve(g_s), s	8.1	26.0	26.6	1.3	7.1	7.1	0.0	0.0	0.0	1.6	0.0	0.0
Cycle Q Clear(g_c), s	8.1	26.0	26.6	1.3	7.1	7.1	4.3	0.0	0.0	8.8	0.0	0.0
Prop In Lane	1.00		0.14	1.00		0.05	0.67		0.27	0.05		0.92
Lane Grp Cap(c), veh/h	241	1031	1054	90	880	916	279	0	0	315	0	0
V/C Ratio(X)	0.81	0.77	0.78	0.34	0.32	0.32	0.28	0.00	0.00	0.62	0.00	0.00
Avail Cap(c_a), veh/h	459	1508	1543	225	1275	1327	583	0	0	681	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	32.0	12.2	12.3	34.9	11.5	11.5	28.0	0.0	0.0	30.1	0.0	0.0
Incr Delay (d2), s/veh	6.5	1.5	1.6	2.3	0.2	0.2	0.5	0.0	0.0	2.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	8.4	8.9	0.6	2.5	2.6	1.3	0.0	0.0	3.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	38.4	13.7	14.0	37.2	11.7	11.7	28.5	0.0	0.0	32.0	0.0	0.0
LnGrp LOS	D	B	B	D	B	B	C			C		
Approach Vol, veh/h		1819			598			78			195	
Approach Delay, s/veh		16.5			13.0			28.5			32.0	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	17.3	9.2	49.5	17.3	15.7	43.1
Change Period (Y+Rc), s	4.6	5.4	5.4	4.6	5.4	5.4
Max Green Setting (Gmax), s	30.4	9.6	64.6	30.4	19.6	54.6
Max Q Clear Time (g_c+I1), s	6.3	3.3	28.6	10.8	10.1	9.1
Green Ext Time (p_c), s	0.4	0.0	15.5	1.2	0.3	3.5

Intersection Summary	
HCM 7th Control Delay, s/veh	17.2
HCM 7th LOS	B



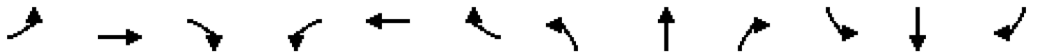
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	420	5	415	0	0	0	0	865	470	490	525	0
Future Volume (veh/h)	420	5	415	0	0	0	0	865	470	490	525	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885				0	1885	1885	1885	1885	0
Adj Flow Rate, veh/h	442	5	437				0	911	495	516	553	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1				0	1	1	1	1	0
Cap, veh/h	553	6	487				0	1071	470	793	2089	0
Arrive On Green	0.31	0.31	0.31				0.00	0.30	0.30	0.46	1.00	0.00
Sat Flow, veh/h	1795	18	1582				0	3676	1572	3483	3676	0
Grp Volume(v), veh/h	442	0	442				0	911	495	516	553	0
Grp Sat Flow(s),veh/h/ln	1795	0	1600				0	1791	1572	1742	1791	0
Q Serve(g_s), s	20.3	0.0	23.8				0.0	21.5	26.9	10.3	0.0	0.0
Cycle Q Clear(g_c), s	20.3	0.0	23.8				0.0	21.5	26.9	10.3	0.0	0.0
Prop In Lane	1.00		0.99				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	553	0	493				0	1071	470	793	2089	0
V/C Ratio(X)	0.80	0.00	0.90				0.00	0.85	1.05	0.65	0.26	0.00
Avail Cap(c_a), veh/h	604	0	539				0	1071	470	793	2089	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.62	0.62	0.78	0.78	0.00
Uniform Delay (d), s/veh	28.6	0.0	29.8				0.0	29.7	31.5	21.7	0.0	0.0
Incr Delay (d2), s/veh	7.0	0.0	16.8				0.0	5.5	47.6	1.5	0.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.5	0.0	11.1				0.0	9.6	15.9	3.5	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	35.6	0.0	46.6				0.0	35.2	79.1	23.2	0.2	0.0
LnGrp LOS	D		D					D	F	C	A	
Approach Vol, veh/h		884						1406			1069	
Approach Delay, s/veh		41.1						50.6			11.3	
Approach LOS		D						D			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	25.6	32.0		32.4		57.6
Change Period (Y+Rc), s	5.1	5.1		4.7		5.1
Max Green Setting (Gmax), s	17.9	26.9		30.3		49.9
Max Q Clear Time (g_c+I1), s	12.3	28.9		25.8		2.0
Green Ext Time (p_c), s	1.0	0.0		1.9		4.1

Intersection Summary	
HCM 7th Control Delay, s/veh	35.6
HCM 7th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

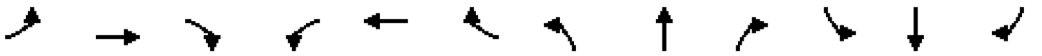


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	250	15	570	345	940	0	0	765	320
Future Volume (veh/h)	0	0	0	250	15	570	345	940	0	0	765	320
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1885	1885	1885	1885	1885	0	0	1885	1885
Adj Flow Rate, veh/h				183	0	706	367	1000	0	0	814	340
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				1	1	1	1	1	0	0	1	1
Cap, veh/h				405	0	721	634	2384	0	0	1315	403
Arrive On Green				0.23	0.00	0.23	0.71	1.00	0.00	0.00	0.26	0.26
Sat Flow, veh/h				1795	0	3195	1795	3676	0	0	5316	1577
Grp Volume(v), veh/h				183	0	706	367	1000	0	0	814	340
Grp Sat Flow(s),veh/h/ln				1795	0	1598	1795	1791	0	0	1716	1577
Q Serve(g_s), s				7.9	0.0	19.8	9.1	0.0	0.0	0.0	12.6	18.4
Cycle Q Clear(g_c), s				7.9	0.0	19.8	9.1	0.0	0.0	0.0	12.6	18.4
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				405	0	721	634	2384	0	0	1315	403
V/C Ratio(X)				0.45	0.00	0.98	0.58	0.42	0.00	0.00	0.62	0.84
Avail Cap(c_a), veh/h				405	0	721	634	2384	0	0	1424	436
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.58	0.58	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				30.1	0.0	34.6	9.9	0.0	0.0	0.0	29.6	31.8
Incr Delay (d2), s/veh				0.8	0.0	28.4	0.8	0.3	0.0	0.0	2.2	19.0
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.4	0.0	10.3	2.5	0.1	0.0	0.0	5.3	8.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				30.8	0.0	63.0	10.6	0.3	0.0	0.0	31.8	50.8
LnGrp LOS				C		E	B	A			C	D
Approach Vol, veh/h					889			1367			1154	
Approach Delay, s/veh					56.4			3.1			37.4	
Approach LOS					E			A			D	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	65.0		36.9	28.1		25.0						
Change Period (Y+Rc), s	5.1		5.1	5.1		4.7						
Max Green Setting (Gmax), s	59.9		29.9	24.9		20.3						
Max Q Clear Time (g_c+I1), s	2.0		11.1	20.4		21.8						
Green Ext Time (p_c), s	9.0		1.0	2.6		0.0						

Intersection Summary	
HCM 7th Control Delay, s/veh	28.6
HCM 7th LOS	C

Notes
User approved volume balancing among the lanes for turning movement.



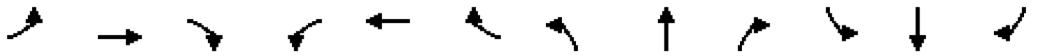
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	405	630	145	75	520	545	165	505	110	405	210	230
Future Volume (veh/h)	405	630	145	75	520	545	165	505	110	405	210	230
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	435	677	156	81	559	586	177	543	118	435	226	247
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	508	1317	568	137	1032	680	207	670	145	519	945	639
Arrive On Green	0.15	0.37	0.37	0.08	0.29	0.29	0.12	0.23	0.23	0.15	0.27	0.27
Sat Flow, veh/h	3428	3526	1521	1767	3526	1511	1767	2861	619	3428	3526	1516
Grp Volume(v), veh/h	435	677	156	81	559	586	177	334	327	435	226	247
Grp Sat Flow(s),veh/h/ln	1714	1763	1521	1767	1763	1511	1767	1763	1717	1714	1763	1516
Q Serve(g_s), s	15.0	18.0	8.7	5.4	16.1	35.4	11.9	21.6	21.8	14.9	6.1	13.7
Cycle Q Clear(g_c), s	15.0	18.0	8.7	5.4	16.1	35.4	11.9	21.6	21.8	14.9	6.1	13.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.36	1.00		1.00
Lane Grp Cap(c), veh/h	508	1317	568	137	1032	680	207	413	402	519	945	639
V/C Ratio(X)	0.86	0.51	0.27	0.59	0.54	0.86	0.85	0.81	0.81	0.84	0.24	0.39
Avail Cap(c_a), veh/h	686	1317	568	225	1032	680	370	573	558	887	1321	801
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.3	29.4	26.4	54.0	35.9	30.5	52.3	43.7	43.8	49.9	34.6	24.6
Incr Delay (d2), s/veh	8.0	0.3	0.3	4.1	0.6	11.0	9.5	5.9	6.4	3.7	0.1	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	7.4	3.2	2.6	7.1	17.4	5.8	10.1	9.9	6.7	2.6	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	58.3	29.7	26.7	58.0	36.5	41.5	61.9	49.6	50.2	53.6	34.7	25.0
LnGrp LOS	E	C	C	E	D	D	E	D	D	D	C	C
Approach Vol, veh/h		1268			1226			838			908	
Approach Delay, s/veh		39.2			40.3			52.5			41.1	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	33.0	13.9	51.0	18.9	37.1	23.7	41.2
Change Period (Y+Rc), s	4.7	4.7	4.6	5.8	4.7	4.7	5.8	* 5.8
Max Green Setting (Gmax), s	31.3	39.3	15.4	44.2	25.3	45.3	24.2	* 35
Max Q Clear Time (g_c+I1), s	16.9	23.8	7.4	20.0	13.9	15.7	17.0	37.4
Green Ext Time (p_c), s	1.4	3.7	0.1	4.9	0.3	2.4	0.9	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	42.5
HCM 7th LOS	D

Notes

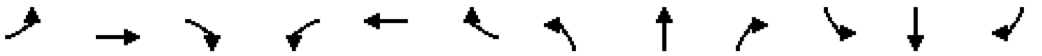
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	15	240	0	0	0	0	720	1095	290	815	0
Future Volume (veh/h)	180	15	240	0	0	0	0	720	1095	290	815	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	189	16	253				0	758	1153	305	858	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	208	18	200				0	2200	967	380	2762	0
Arrive On Green	0.13	0.13	0.13				0.00	0.62	0.62	0.11	0.78	0.00
Sat Flow, veh/h	1648	140	1585				0	3647	1562	3456	3647	0
Grp Volume(v), veh/h	205	0	253				0	758	1153	305	858	0
Grp Sat Flow(s),veh/h/ln	1788	0	1585				0	1777	1562	1728	1777	0
Q Serve(g_s), s	11.0	0.0	12.3				0.0	10.1	60.3	8.4	6.9	0.0
Cycle Q Clear(g_c), s	11.0	0.0	12.3				0.0	10.1	60.3	8.4	6.9	0.0
Prop In Lane	0.92		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	226	0	200				0	2200	967	380	2762	0
V/C Ratio(X)	0.91	0.00	1.26				0.00	0.34	1.19	0.80	0.31	0.00
Avail Cap(c_a), veh/h	226	0	200				0	2200	967	472	2857	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	42.0	0.0	42.6				0.0	9.0	18.6	42.3	3.2	0.0
Incr Delay (d2), s/veh	36.0	0.0	152.4				0.0	0.1	96.9	7.9	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	0.0	13.2				0.0	3.6	44.9	4.0	1.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	78.0	0.0	194.9				0.0	9.1	115.4	50.2	3.2	0.0
LnGrp LOS	E		F					A	F	D	A	
Approach Vol, veh/h		458						1911			1163	
Approach Delay, s/veh		142.6						73.2			15.6	
Approach LOS		F						E			B	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	15.4	65.0		17.0		80.4						
Change Period (Y+Rc), s	4.7	4.7		4.7		4.7						
Max Green Setting (Gmax), s	13.3	60.3		12.3		78.3						
Max Q Clear Time (g_c+I1), s	10.4	62.3		14.3		8.9						
Green Ext Time (p_c), s	0.3	0.0		0.0		7.7						

Intersection Summary												
HCM 7th Control Delay, s/veh			63.2									
HCM 7th LOS			E									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	590	0	310	0	430	470	0	0	0	0	265	675
Future Volume (veh/h)	590	0	310	0	430	470	0	0	0	0	265	675
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1856	0	1856	0	1856	1856				0	1856	1856
Adj Flow Rate, veh/h	648	0	0	0	473	516				0	291	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91				0.91	0.91	0.91
Percent Heavy Veh, %	3	0	3	0	3	3				0	3	3
Cap, veh/h	972	0		0	858	727				0	0	
Arrive On Green	0.28	0.00	0.00	0.00	0.46	0.46				0.00	0.00	0.00
Sat Flow, veh/h	3428	648		0	1856	1572					0	
Grp Volume(v), veh/h	648	12.5		0	473	516					0.0	
Grp Sat Flow(s),veh/h/ln	1714	B		0	1856	1572						
Q Serve(g_s), s	6.2			0.0	6.8	9.7						
Cycle Q Clear(g_c), s	6.2			0.0	6.8	9.7						
Prop In Lane	1.00			0.00		1.00						
Lane Grp Cap(c), veh/h	972			0	858	727						
V/C Ratio(X)	0.67			0.00	0.55	0.71						
Avail Cap(c_a), veh/h	2344			0	1820	1543						
HCM Platoon Ratio	1.00			1.00	1.00	1.00						
Upstream Filter(I)	1.00			0.00	1.00	1.00						
Uniform Delay (d), s/veh	11.7			0.0	7.2	8.0						
Incr Delay (d2), s/veh	0.8			0.0	0.6	1.3						
Initial Q Delay(d3), s/veh	0.0			0.0	0.0	0.0						
%ile BackOfQ(50%),veh/ln	1.9			0.0	1.8	2.3						
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	12.5			0.0	7.7	9.3						
LnGrp LOS	B				A	A						
Approach Vol, veh/h					989							
Approach Delay, s/veh					8.5							
Approach LOS					A							

Timer - Assigned Phs			7	8
Phs Duration (G+Y+Rc), s			15.2	21.8
Change Period (Y+Rc), s			4.7	4.7
Max Green Setting (Gmax), s			25.3	36.3
Max Q Clear Time (g_c+I1), s			8.2	11.7
Green Ext Time (p_c), s			2.3	5.4

Intersection Summary	
HCM 7th Control Delay, s/veh	10.1
HCM 7th LOS	B

Notes

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0.7

Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Vol, veh/h	45	15	1025	685	10	10	10
Future Vol, veh/h	45	15	1025	685	10	10	10
Conflicting Peds, #/hr	0	5	0	0	5	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	-	140	-	-	-	0	-
Veh in Median Storage, #	-	-	0	0	-	0	-
Grade, %	-	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96
Heavy Vehicles, %	3	3	3	3	3	3	3
Mvmt Flow	47	16	1068	714	10	10	10

Major/Minor	Major1		Major2		Minor2		
Conflicting Flow All	724	729	0	-	0	1383	367
Stage 1	-	-	-	-	-	724	-
Stage 2	-	-	-	-	-	659	-
Critical Hdwy	6.46	4.16	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	-	5.86	-
Follow-up Hdwy	2.53	2.23	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	495	864	-	-	-	134	627
Stage 1	-	-	-	-	-	438	-
Stage 2	-	-	-	-	-	474	-
Platoon blocked, %			-	-	-		
Mov Cap-1 Maneuver	546	546	-	-	-	118	624
Mov Cap-2 Maneuver	-	-	-	-	-	118	-
Stage 1	-	-	-	-	-	386	-
Stage 2	-	-	-	-	-	474	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.69	0	25.29
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	546	-	-	-	198
HCM Lane V/C Ratio	0.114	-	-	-	0.105
HCM Ctrl Dly (s/v)	12.4	-	-	-	25.3
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	0.4	-	-	-	0.3

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	255	15	0	240	130	0
Future Vol, veh/h	255	15	0	240	130	0
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	300	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	297	17	0	279	151	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	430	151	-	0	-	0
Stage 1	151	-	-	-	-	-
Stage 2	279	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	582	895	0	-	-	0
Stage 1	877	-	0	-	-	0
Stage 2	768	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	582	895	-	-	-	-
Mov Cap-2 Maneuver	582	-	-	-	-	-
Stage 1	877	-	-	-	-	-
Stage 2	768	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	16.97	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	-	582	895	-
HCM Lane V/C Ratio	-	0.51	0.019	-
HCM Ctrl Dly (s/v)	-	17.4	9.1	-
HCM Lane LOS	-	C	A	-
HCM 95th %tile Q(veh)	-	2.9	0.1	-

Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	45	105	5	35	85
Future Vol, veh/h	5	45	105	5	35	85
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	6	51	118	6	39	96

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	295	121	0	0	124	0
Stage 1	121	-	-	-	-	-
Stage 2	174	-	-	-	-	-
Critical Hdwy	6.44	6.24	-	-	4.14	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	-	-	2.236	-
Pot Cap-1 Maneuver	692	925	-	-	1451	-
Stage 1	900	-	-	-	-	-
Stage 2	851	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	672	925	-	-	1451	-
Mov Cap-2 Maneuver	672	-	-	-	-	-
Stage 1	900	-	-	-	-	-
Stage 2	827	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.2	0	2.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	913	525	-
HCM Lane V/C Ratio	-	-	0.062	0.027	-
HCM Ctrl Dly (s/v)	-	-	9.2	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

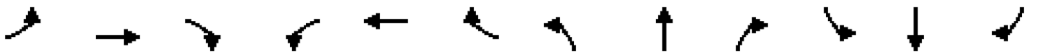
Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	5	5	10	0	60	5	115	5	30	65	5
Future Vol, veh/h	15	5	5	10	0	60	5	115	5	30	65	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	3	3	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	7	7	7	7	7	7	7	7	7	7	7	7
Mvmt Flow	19	6	6	13	0	75	6	144	6	38	81	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	316	325	84	322	325	150	88	0	0	153	0	0
Stage 1	159	159	-	162	162	-	-	-	-	-	-	-
Stage 2	156	166	-	159	163	-	-	-	-	-	-	-
Critical Hdwy	7.17	6.57	6.27	7.17	6.57	6.27	4.17	-	-	4.17	-	-
Critical Hdwy Stg 1	6.17	5.57	-	6.17	5.57	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.17	5.57	-	6.17	5.57	-	-	-	-	-	-	-
Follow-up Hdwy	3.563	4.063	3.363	3.563	4.063	3.363	2.263	-	-	2.263	-	-
Pot Cap-1 Maneuver	627	585	961	622	585	884	1477	-	-	1398	-	-
Stage 1	831	757	-	828	754	-	-	-	-	-	-	-
Stage 2	834	752	-	831	754	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	555	564	961	589	564	881	1477	-	-	1394	-	-
Mov Cap-2 Maneuver	555	564	-	589	564	-	-	-	-	-	-	-
Stage 1	808	735	-	822	749	-	-	-	-	-	-	-
Stage 2	760	746	-	796	733	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	11.24	9.89	0.3	2.3
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	71	-	-	609	823	532	-	-
HCM Lane V/C Ratio	0.004	-	-	0.051	0.106	0.027	-	-
HCM Ctrl Dly (s/v)	7.4	0	-	11.2	9.9	7.7	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.4	0.1	-	-



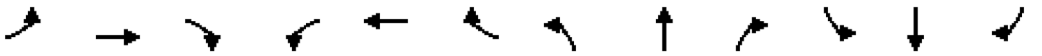
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	370	90	50	815	20	190	15	115	50	5	70
Future Volume (veh/h)	25	370	90	50	815	20	190	15	115	50	5	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.96	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796
Adj Flow Rate, veh/h	30	446	108	60	982	24	229	18	139	60	6	84
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	7	7	7	7	7	7	7	7	7	7	7	7
Cap, veh/h	89	1011	242	141	1376	34	422	51	398	362	29	410
Arrive On Green	0.05	0.37	0.37	0.08	0.40	0.40	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	1711	2702	648	1711	3400	83	1250	177	1365	1177	101	1408
Grp Volume(v), veh/h	30	280	274	60	493	513	229	0	157	60	0	90
Grp Sat Flow(s),veh/h/ln	1711	1706	1644	1711	1706	1777	1250	0	1542	1177	0	1509
Q Serve(g_s), s	1.1	7.7	7.9	2.1	15.2	15.2	10.7	0.0	5.1	2.7	0.0	2.8
Cycle Q Clear(g_c), s	1.1	7.7	7.9	2.1	15.2	15.2	13.5	0.0	5.1	7.7	0.0	2.8
Prop In Lane	1.00		0.39	1.00		0.05	1.00		0.89	1.00		0.93
Lane Grp Cap(c), veh/h	89	638	615	141	691	719	422	0	449	362	0	439
V/C Ratio(X)	0.34	0.44	0.45	0.43	0.71	0.71	0.54	0.00	0.35	0.17	0.00	0.20
Avail Cap(c_a), veh/h	260	1072	1032	260	1072	1116	758	0	863	671	0	835
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.8	14.8	14.8	27.5	15.7	15.7	21.9	0.0	17.6	20.7	0.0	16.8
Incr Delay (d2), s/veh	2.2	0.5	0.5	2.0	1.4	1.3	1.1	0.0	0.5	0.2	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.6	2.6	0.9	5.2	5.4	3.1	0.0	1.8	0.7	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	31.1	15.3	15.3	29.5	17.1	17.0	23.0	0.0	18.1	20.9	0.0	17.1
LnGrp LOS	C	B	B	C	B	B	C		B	C		B
Approach Vol, veh/h		584			1066			386			150	
Approach Delay, s/veh		16.1			17.8			21.0			18.6	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	23.5	10.6	29.0	23.5	8.7	30.9
Change Period (Y+Rc), s	* 5.1	5.4	5.4	5.1	5.4	5.4
Max Green Setting (Gmax), s	* 35	9.6	39.6	34.9	9.6	39.6
Max Q Clear Time (g_c+I1), s	15.5	4.1	9.9	9.7	3.1	17.2
Green Ext Time (p_c), s	1.8	0.0	3.4	0.8	0.0	6.4

Intersection Summary	
HCM 7th Control Delay, s/veh	18.0
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



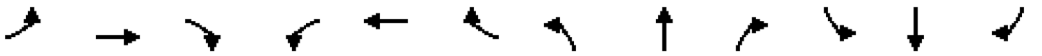
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	305	95	100	620	575	195	340	90	260	385	200
Future Volume (veh/h)	105	305	95	100	620	575	195	340	90	260	385	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	127	367	114	120	747	693	235	410	108	313	464	241
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	251	1089	333	143	740	642	240	695	181	364	503	259
Arrive On Green	0.07	0.42	0.42	0.08	0.42	0.42	0.14	0.25	0.25	0.11	0.23	0.23
Sat Flow, veh/h	3401	2622	802	1753	1749	1519	1753	2736	713	3401	2217	1143
Grp Volume(v), veh/h	127	243	238	120	747	693	235	260	258	313	365	340
Grp Sat Flow(s),veh/h/ln	1700	1749	1675	1753	1749	1519	1753	1749	1700	1700	1749	1611
Q Serve(g_s), s	5.3	14.0	14.3	10.0	62.6	62.6	19.8	19.3	19.7	13.4	30.2	30.6
Cycle Q Clear(g_c), s	5.3	14.0	14.3	10.0	62.6	62.6	19.8	19.3	19.7	13.4	30.2	30.6
Prop In Lane	1.00		0.48	1.00		1.00	1.00		0.42	1.00		0.71
Lane Grp Cap(c), veh/h	251	726	696	143	740	642	240	445	432	364	397	366
V/C Ratio(X)	0.51	0.33	0.34	0.84	1.01	1.08	0.98	0.59	0.60	0.86	0.92	0.93
Avail Cap(c_a), veh/h	267	726	696	232	740	642	240	445	432	457	412	380
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.9	29.4	29.5	67.0	42.7	42.7	63.6	48.4	48.5	65.0	55.9	56.1
Incr Delay (d2), s/veh	1.6	0.3	0.3	13.6	35.6	58.7	51.5	2.0	2.2	12.7	25.3	28.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	5.9	5.8	5.0	33.4	33.2	12.3	8.7	8.7	6.4	16.0	15.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	67.5	29.6	29.8	80.6	78.3	101.4	115.2	50.4	50.7	77.7	81.2	84.6
LnGrp LOS	E	C	C	F	F	F	F	D	D	E	F	F
Approach Vol, veh/h		608			1560			753			1018	
Approach Delay, s/veh		37.6			88.8			70.7			81.2	
Approach LOS		D			F			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	42.7	17.5	66.9	25.0	38.7	16.3	68.0
Change Period (Y+Rc), s	5.1	* 5.1	5.4	5.4	4.7	5.1	5.4	5.4
Max Green Setting (Gmax), s	19.9	* 35	19.6	54.6	20.3	34.9	11.6	62.6
Max Q Clear Time (g_c+I1), s	15.4	21.7	12.0	16.3	21.8	32.6	7.3	64.6
Green Ext Time (p_c), s	0.5	2.7	0.1	3.0	0.0	1.0	0.1	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	75.5
HCM 7th LOS	E

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	480	45	10	980	5	125	5	5	25	5	240
Future Volume (veh/h)	45	480	45	10	980	5	125	5	5	25	5	240
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	56	600	56	12	1225	6	156	6	6	31	6	300
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	129	1520	142	41	1505	7	299	12	8	79	26	423
Arrive On Green	0.07	0.48	0.48	0.02	0.43	0.43	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	1739	3195	298	1739	3539	17	703	40	28	89	90	1451
Grp Volume(v), veh/h	56	325	331	12	600	631	168	0	0	337	0	0
Grp Sat Flow(s),veh/h/ln	1739	1735	1758	1739	1735	1822	770	0	0	1630	0	0
Q Serve(g_s), s	2.3	8.9	8.9	0.5	22.4	22.4	3.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.3	8.9	8.9	0.5	22.4	22.4	16.9	0.0	0.0	13.6	0.0	0.0
Prop In Lane	1.00		0.17	1.00		0.01	0.93		0.04	0.09		0.89
Lane Grp Cap(c), veh/h	129	825	837	41	738	775	319	0	0	528	0	0
V/C Ratio(X)	0.43	0.39	0.40	0.29	0.81	0.81	0.53	0.00	0.00	0.64	0.00	0.00
Avail Cap(c_a), veh/h	227	933	946	227	933	980	522	0	0	813	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	32.6	12.4	12.5	35.3	18.6	18.6	25.2	0.0	0.0	23.5	0.0	0.0
Incr Delay (d2), s/veh	2.3	0.3	0.3	3.9	4.5	4.3	1.4	0.0	0.0	1.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	3.0	3.1	0.2	8.6	9.0	2.8	0.0	0.0	5.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	34.9	12.8	12.8	39.2	23.0	22.8	26.6	0.0	0.0	24.8	0.0	0.0
LnGrp LOS	C	B	B	D	C	C	C			C		
Approach Vol, veh/h		712			1243			168			337	
Approach Delay, s/veh		14.5			23.1			26.6			24.8	
Approach LOS		B			C			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		26.0	7.1	40.4		26.0	10.9	36.7				
Change Period (Y+Rc), s		4.6	5.4	5.4		4.6	5.4	5.4				
Max Green Setting (Gmax), s		35.4	9.6	39.6		35.4	9.6	39.6				
Max Q Clear Time (g_c+I1), s		18.9	2.5	10.9		15.6	4.3	24.4				
Green Ext Time (p_c), s		1.0	0.0	4.0		2.3	0.0	6.9				

Intersection Summary	
HCM 7th Control Delay, s/veh	21.1
HCM 7th LOS	C

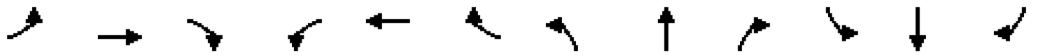
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	5	445	0	0	0	0	690	395	610	745	0
Future Volume (veh/h)	190	5	445	0	0	0	0	690	395	610	745	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	211	6	494				0	767	439	678	828	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	497	5	438				0	975	429	949	2151	0
Arrive On Green	0.28	0.28	0.28				0.00	0.28	0.28	0.09	0.20	0.00
Sat Flow, veh/h	1767	19	1556				0	3618	1549	3428	3618	0
Grp Volume(v), veh/h	211	0	500				0	767	439	678	828	0
Grp Sat Flow(s),veh/h/ln	1767	0	1575				0	1763	1549	1714	1763	0
Q Serve(g_s), s	8.8	0.0	25.3				0.0	18.1	24.9	17.3	18.3	0.0
Cycle Q Clear(g_c), s	8.8	0.0	25.3				0.0	18.1	24.9	17.3	18.3	0.0
Prop In Lane	1.00		0.99				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	497	0	443				0	975	429	949	2151	0
V/C Ratio(X)	0.42	0.00	1.13				0.00	0.79	1.02	0.71	0.39	0.00
Avail Cap(c_a), veh/h	497	0	443				0	975	429	949	2151	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.76	0.76	0.64	0.64	0.00
Uniform Delay (d), s/veh	26.4	0.0	32.4				0.0	30.1	32.5	37.4	21.3	0.0
Incr Delay (d2), s/veh	0.6	0.0	83.0				0.0	4.9	44.1	1.7	0.3	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	19.5				0.0	8.0	14.1	8.1	8.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	27.0	0.0	115.3				0.0	35.0	76.7	39.1	21.7	0.0
LnGrp LOS	C		F					D	F	D	C	
Approach Vol, veh/h		711						1206			1506	
Approach Delay, s/veh		89.1						50.2			29.5	
Approach LOS		F						D			C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	30.0	30.0		30.0		60.0
Change Period (Y+Rc), s	5.1	5.1		4.7		5.1
Max Green Setting (Gmax), s	24.9	24.9		25.3		54.9
Max Q Clear Time (g_c+I1), s	19.3	26.9		27.3		20.3
Green Ext Time (p_c), s	1.4	0.0		0.0		6.5

Intersection Summary	
HCM 7th Control Delay, s/veh	49.2
HCM 7th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

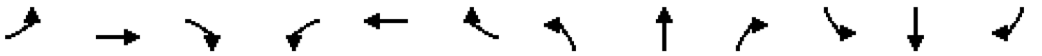


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	440	20	345	305	575	0	0	915	455
Future Volume (veh/h)	0	0	0	440	20	345	305	575	0	0	915	455
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1856	1856	1856	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				617	0	263	339	639	0	0	1017	506
Peak Hour Factor				0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %				3	3	3	3	3	0	0	3	3
Cap, veh/h				757	0	337	607	2386	0	0	1401	435
Arrive On Green				0.21	0.00	0.21	0.34	0.68	0.00	0.00	0.28	0.28
Sat Flow, veh/h				3534	0	1572	1767	3618	0	0	5233	1572
Grp Volume(v), veh/h				617	0	263	339	639	0	0	1017	506
Grp Sat Flow(s),veh/h/ln				1767	0	1572	1767	1763	0	0	1689	1572
Q Serve(g_s), s				15.0	0.0	14.2	14.0	6.4	0.0	0.0	16.4	24.9
Cycle Q Clear(g_c), s				15.0	0.0	14.2	14.0	6.4	0.0	0.0	16.4	24.9
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				757	0	337	607	2386	0	0	1401	435
V/C Ratio(X)				0.81	0.00	0.78	0.56	0.27	0.00	0.00	0.73	1.16
Avail Cap(c_a), veh/h				994	0	442	607	2386	0	0	1401	435
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.61	0.61	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.7	0.0	33.4	24.0	5.7	0.0	0.0	29.5	32.5
Incr Delay (d2), s/veh				4.1	0.0	6.5	0.7	0.2	0.0	0.0	3.3	95.9
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.7	0.0	5.9	5.7	2.0	0.0	0.0	6.8	20.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				37.7	0.0	39.9	24.7	5.9	0.0	0.0	32.8	128.5
LnGrp LOS				D		D	C	A			C	F
Approach Vol, veh/h					880			978			1523	
Approach Delay, s/veh					38.4			12.4			64.6	
Approach LOS					D			B			E	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	66.0		36.0	30.0		24.0						
Change Period (Y+Rc), s	5.1		5.1	5.1		4.7						
Max Green Setting (Gmax), s	54.9		24.9	24.9		25.3						
Max Q Clear Time (g_c+I1), s	8.4		16.0	26.9		17.0						
Green Ext Time (p_c), s	4.9		0.7	0.0		2.3						

Intersection Summary	
HCM 7th Control Delay, s/veh	42.7
HCM 7th LOS	D

Notes
User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	295	100	60	445	265	100	160	45	355	380	595
Future Volume (veh/h)	220	295	100	60	445	265	100	160	45	355	380	595
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1781	1781	1781	1781	1781	1781	1781	1781	1781	1781	1781	1781
Adj Flow Rate, veh/h	244	328	111	67	494	294	111	178	50	394	422	661
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	8	8	8	8	8	8	8	8	8	8	8	8
Cap, veh/h	343	905	395	138	790	557	186	842	229	465	1197	679
Arrive On Green	0.10	0.27	0.27	0.08	0.23	0.23	0.11	0.32	0.32	0.14	0.35	0.35
Sat Flow, veh/h	3291	3385	1477	1697	3385	1473	1697	2616	712	3291	3385	1474
Grp Volume(v), veh/h	244	328	111	67	494	294	111	113	115	394	422	661
Grp Sat Flow(s),veh/h/ln	1646	1692	1477	1697	1692	1473	1697	1692	1636	1646	1692	1474
Q Serve(g_s), s	7.6	8.3	6.3	4.0	13.8	16.4	6.6	5.1	5.4	12.3	9.7	37.3
Cycle Q Clear(g_c), s	7.6	8.3	6.3	4.0	13.8	16.4	6.6	5.1	5.4	12.3	9.7	37.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.44	1.00		1.00
Lane Grp Cap(c), veh/h	343	905	395	138	790	557	186	545	527	465	1197	679
V/C Ratio(X)	0.71	0.36	0.28	0.48	0.63	0.53	0.60	0.21	0.22	0.85	0.35	0.97
Avail Cap(c_a), veh/h	443	1098	479	248	1136	708	214	545	527	571	1197	679
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.7	31.3	30.6	46.3	36.3	25.8	44.7	26.0	26.1	44.2	25.1	28.1
Incr Delay (d2), s/veh	3.7	0.2	0.4	2.6	0.8	0.8	3.5	0.2	0.2	9.7	0.2	28.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	3.3	2.3	1.8	5.8	5.9	2.9	2.1	2.1	5.6	3.9	21.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	49.4	31.6	31.0	48.9	37.1	26.5	48.2	26.2	26.3	53.9	25.3	56.0
LnGrp LOS	D	C	C	D	D	C	D	C	C	D	C	E
Approach Vol, veh/h		683			855			339			1477	
Approach Delay, s/veh		37.8			34.4			33.4			46.7	
Approach LOS		D			C			C			D	

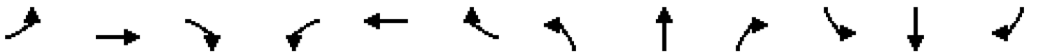
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.6	38.6	13.2	34.0	16.2	42.0	16.8	30.4
Change Period (Y+Rc), s	4.7	4.7	4.6	5.8	4.7	4.7	5.8	* 5.8
Max Green Setting (Gmax), s	18.3	32.3	15.4	34.2	13.3	37.3	14.2	* 35
Max Q Clear Time (g_c+I1), s	14.3	7.4	6.0	10.3	8.6	39.3	9.6	18.4
Green Ext Time (p_c), s	0.6	1.3	0.1	2.3	0.1	0.0	0.3	4.3

Intersection Summary	
HCM 7th Control Delay, s/veh	40.4
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

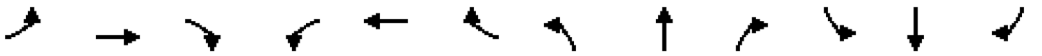
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	5	295	0	0	0	0	480	475	440	1185	0
Future Volume (veh/h)	125	5	295	0	0	0	0	480	475	440	1185	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1811	1811	1811				0	1811	1811	1811	1811	0
Adj Flow Rate, veh/h	129	5	304				0	495	490	454	1222	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	6	6	6				0	6	6	6	6	0
Cap, veh/h	393	15	363				0	1265	553	582	2118	0
Arrive On Green	0.24	0.24	0.24				0.00	0.37	0.37	0.17	0.62	0.00
Sat Flow, veh/h	1663	64	1535				0	3532	1504	3346	3532	0
Grp Volume(v), veh/h	134	0	304				0	495	490	454	1222	0
Grp Sat Flow(s),veh/h/ln	1728	0	1535				0	1721	1504	1673	1721	0
Q Serve(g_s), s	4.1	0.0	12.0				0.0	6.7	19.4	8.2	13.4	0.0
Cycle Q Clear(g_c), s	4.1	0.0	12.0				0.0	6.7	19.4	8.2	13.4	0.0
Prop In Lane	0.96		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	408	0	363				0	1265	553	582	2118	0
V/C Ratio(X)	0.33	0.00	0.84				0.00	0.39	0.89	0.78	0.58	0.00
Avail Cap(c_a), veh/h	553	0	491				0	1371	600	806	2455	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	20.1	0.0	23.1				0.0	14.8	18.8	25.1	7.3	0.0
Incr Delay (d2), s/veh	0.5	0.0	9.2				0.0	0.2	14.2	3.3	0.3	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	4.9				0.0	2.4	8.2	3.3	3.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	20.5	0.0	32.3				0.0	15.0	33.0	28.4	7.5	0.0
LnGrp LOS	C		C					B	C	C	A	
Approach Vol, veh/h		438						985			1676	
Approach Delay, s/veh		28.7						24.0			13.2	
Approach LOS		C						C			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	15.7	28.0		19.7		43.8
Change Period (Y+Rc), s	4.7	4.7		4.7		4.7
Max Green Setting (Gmax), s	15.3	25.3		20.3		45.3
Max Q Clear Time (g_c+I1), s	10.2	21.4		14.0		15.4
Green Ext Time (p_c), s	0.8	1.9		1.0		11.2

Intersection Summary			
HCM 7th Control Delay, s/veh		18.8	
HCM 7th LOS		B	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	470	0	135	0	695	520	0	0	0	0	125	930
Future Volume (veh/h)	470	0	135	0	695	520	0	0	0	0	125	930
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1826	0	1826	0	1826	1826				0	1826	1826
Adj Flow Rate, veh/h	495	0	0	0	732	547				0	132	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	5	0	5	0	5	5				0	5	5
Cap, veh/h	727	0		0	1002	849				0	0	
Arrive On Green	0.22	0.00	0.00	0.00	0.55	0.55				0.00	0.00	0.00
Sat Flow, veh/h	3374	495		0	1826	1547					0	
Grp Volume(v), veh/h	495	15.5		0	732	547					0.0	
Grp Sat Flow(s),veh/h/ln	1687	B		0	1826	1547						
Q Serve(g_s), s	5.4			0.0	12.0	9.8						
Cycle Q Clear(g_c), s	5.4			0.0	12.0	9.8						
Prop In Lane	1.00			0.00		1.00						
Lane Grp Cap(c), veh/h	727			0	1002	849						
V/C Ratio(X)	0.68			0.00	0.73	0.64						
Avail Cap(c_a), veh/h	1294			0	1616	1370						
HCM Platoon Ratio	1.00			1.00	1.00	1.00						
Upstream Filter(I)	1.00			0.00	1.00	1.00						
Uniform Delay (d), s/veh	14.4			0.0	6.8	6.3						
Incr Delay (d2), s/veh	1.1			0.0	1.0	0.8						
Initial Q Delay(d3), s/veh	0.0			0.0	0.0	0.0						
%ile BackOfQ(50%),veh/ln	1.8			0.0	2.9	2.0						
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.5			0.0	7.8	7.1						
LnGrp LOS	B				A	A						
Approach Vol, veh/h					1279							
Approach Delay, s/veh					7.5							
Approach LOS					A							

Timer - Assigned Phs			7	8
Phs Duration (G+Y+Rc), s			13.3	26.6
Change Period (Y+Rc), s			4.7	4.7
Max Green Setting (Gmax), s			15.3	35.3
Max Q Clear Time (g_c+I1), s			7.4	14.0
Green Ext Time (p_c), s			1.2	7.8

Intersection Summary	
HCM 7th Control Delay, s/veh	9.7
HCM 7th LOS	A

Notes

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.3

Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Vol, veh/h	10	55	480	1060	15	5	45
Future Vol, veh/h	10	55	480	1060	15	5	45
Conflicting Peds, #/hr	0	10	0	0	10	1	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	-	140	-	-	-	0	-
Veh in Median Storage, #	-	-	0	0	-	0	-
Grade, %	-	-	0	0	-	0	-
Peak Hour Factor	96	83	83	83	83	83	83
Heavy Vehicles, %	3	6	6	6	6	6	6
Mvmt Flow	10	66	578	1277	18	6	54

Major/Minor	Major1		Major2		Minor2		
Conflicting Flow All	1295	1305	0	-	0	1740	658
Stage 1	-	-	-	-	-	1296	-
Stage 2	-	-	-	-	-	444	-
Critical Hdwy	6.46	4.22	-	-	-	6.92	7.02
Critical Hdwy Stg 1	-	-	-	-	-	5.92	-
Critical Hdwy Stg 2	-	-	-	-	-	5.92	-
Follow-up Hdwy	2.53	2.26	-	-	-	3.56	3.36
Pot Cap-1 Maneuver	212	505	-	-	-	75	398
Stage 1	-	-	-	-	-	213	-
Stage 2	-	-	-	-	-	602	-
Platoon blocked, %			-	-	-		
Mov Cap-1 Maneuver	405	405	-	-	-	60	394
Mov Cap-2 Maneuver	-	-	-	-	-	60	-
Stage 1	-	-	-	-	-	171	-
Stage 2	-	-	-	-	-	602	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	1.87	0	23.61
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	405	-	-	-	253
HCM Lane V/C Ratio	0.189	-	-	-	0.238
HCM Ctrl Dly (s/v)	16	-	-	-	23.6
HCM Lane LOS	C	-	-	-	C
HCM 95th %tile Q(veh)	0.7	-	-	-	0.9

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	80	20	0	295	260	0
Future Vol, veh/h	80	20	0	295	260	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	300	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	7	7	7	7	7	7
Mvmt Flow	98	24	0	360	317	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	677	317	-	0	-	0
Stage 1	317	-	-	-	-	-
Stage 2	360	-	-	-	-	-
Critical Hdwy	6.47	6.27	-	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.363	-	-	-	-
Pot Cap-1 Maneuver	411	712	0	-	-	0
Stage 1	727	-	0	-	-	0
Stage 2	695	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	411	712	-	-	-	-
Mov Cap-2 Maneuver	411	-	-	-	-	-
Stage 1	727	-	-	-	-	-
Stage 2	695	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	15.23	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	-	411	712	-
HCM Lane V/C Ratio	-	0.238	0.034	-
HCM Ctrl Dly (s/v)	-	16.5	10.2	-
HCM Lane LOS	-	C	B	-
HCM 95th %tile Q(veh)	-	0.9	0.1	-

Intersection	
Int Delay, s/veh	3.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	75	85	5	45	80
Future Vol, veh/h	5	75	85	5	45	80
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	6	84	96	6	51	90

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	290	99	0	0	102	0
Stage 1	99	-	-	-	-	-
Stage 2	191	-	-	-	-	-
Critical Hdwy	6.45	6.25	-	-	4.15	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	694	948	-	-	1471	-
Stage 1	917	-	-	-	-	-
Stage 2	834	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	668	947	-	-	1470	-
Mov Cap-2 Maneuver	668	-	-	-	-	-
Stage 1	916	-	-	-	-	-
Stage 2	804	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.24	0	2.71
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	940	648	-
HCM Lane V/C Ratio	-	-	0.096	0.034	-
HCM Ctrl Dly (s/v)	-	-	9.2	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

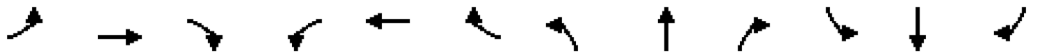
Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	125	5	5	5	5	30	5	355	10	65	65	45
Future Vol, veh/h	125	5	5	5	5	30	5	355	10	65	65	45
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	2	2	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	17	17	17	17	17	17	17	17	17	17	17	17
Mvmt Flow	144	6	6	6	6	34	6	408	11	75	75	52

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	673	684	102	654	704	416	127	0	0	422	0	0
Stage 1	251	251	-	427	427	-	-	-	-	-	-	-
Stage 2	422	433	-	227	277	-	-	-	-	-	-	-
Critical Hdwy	7.27	6.67	6.37	7.27	6.67	6.37	4.27	-	-	4.27	-	-
Critical Hdwy Stg 1	6.27	5.67	-	6.27	5.67	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.27	5.67	-	6.27	5.67	-	-	-	-	-	-	-
Follow-up Hdwy	3.653	4.153	3.453	3.653	4.153	3.453	2.353	-	-	2.353	-	-
Pot Cap-1 Maneuver	349	353	914	360	343	606	1371	-	-	1062	-	-
Stage 1	721	672	-	577	560	-	-	-	-	-	-	-
Stage 2	581	557	-	743	655	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	297	323	913	322	315	605	1370	-	-	1060	-	-
Mov Cap-2 Maneuver	297	323	-	322	315	-	-	-	-	-	-	-
Stage 1	665	620	-	573	556	-	-	-	-	-	-	-
Stage 2	539	553	-	676	604	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	28.32	13.04	0.1	3.21
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	24	-	-	306	494	618	-	-
HCM Lane V/C Ratio	0.004	-	-	0.508	0.093	0.071	-	-
HCM Ctrl Dly (s/v)	7.6	0	-	28.3	13	8.7	0	-
HCM Lane LOS	A	A	-	D	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	2.7	0.3	0.2	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	915	250	100	595	45	125	10	80	35	15	50
Future Volume (veh/h)	35	915	250	100	595	45	125	10	80	35	15	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	38	984	269	108	640	48	134	11	86	38	16	54
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	106	1291	351	179	1716	129	307	34	267	282	69	234
Arrive On Green	0.06	0.48	0.48	0.10	0.52	0.52	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1767	2708	737	1767	3313	248	1315	178	1394	1284	363	1225
Grp Volume(v), veh/h	38	639	614	108	340	348	134	0	97	38	0	70
Grp Sat Flow(s),veh/h/ln	1767	1763	1682	1767	1763	1799	1315	0	1573	1284	0	1588
Q Serve(g_s), s	1.4	20.5	20.8	4.0	7.9	8.0	6.6	0.0	3.7	1.8	0.0	2.6
Cycle Q Clear(g_c), s	1.4	20.5	20.8	4.0	7.9	8.0	9.2	0.0	3.7	5.5	0.0	2.6
Prop In Lane	1.00		0.44	1.00		0.14	1.00		0.89	1.00		0.77
Lane Grp Cap(c), veh/h	106	840	802	179	913	932	307	0	301	282	0	304
V/C Ratio(X)	0.36	0.76	0.77	0.60	0.37	0.37	0.44	0.00	0.32	0.13	0.00	0.23
Avail Cap(c_a), veh/h	374	1396	1332	374	1396	1424	729	0	805	686	0	804
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.1	14.8	14.9	29.6	9.9	9.9	27.5	0.0	24.0	26.4	0.0	23.6
Incr Delay (d2), s/veh	2.0	1.4	1.6	3.2	0.3	0.2	1.0	0.0	0.6	0.2	0.0	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	7.0	6.8	1.8	2.5	2.6	2.1	0.0	1.4	0.6	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	33.2	16.3	16.4	32.9	10.2	10.2	28.4	0.0	24.6	26.6	0.0	24.0
LnGrp LOS	C	B	B	C	B	B	C		C	C		C
Approach Vol, veh/h		1291			796			231			108	
Approach Delay, s/veh		16.8			13.3			26.8			24.9	
Approach LOS		B			B			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		18.3	12.4	38.3		18.3	9.5	41.1				
Change Period (Y+Rc), s		* 5.1	5.4	5.4		5.1	5.4	5.4				
Max Green Setting (Gmax), s		* 35	14.6	54.6		34.9	14.6	54.6				
Max Q Clear Time (g_c+I1), s		11.2	6.0	22.8		7.5	3.4	10.0				
Green Ext Time (p_c), s		1.0	0.1	10.1		0.5	0.0	4.4				

Intersection Summary	
HCM 7th Control Delay, s/veh	17.0
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	825	165	50	410	360	135	305	145	620	355	145
Future Volume (veh/h)	210	825	165	50	410	360	135	305	145	620	355	145
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	221	868	174	53	432	379	142	321	153	653	374	153
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	321	1009	202	137	583	507	171	433	201	747	757	305
Arrive On Green	0.09	0.34	0.34	0.08	0.33	0.33	0.10	0.19	0.19	0.22	0.31	0.31
Sat Flow, veh/h	3456	2931	587	1781	1777	1546	1781	2333	1085	3456	2452	986
Grp Volume(v), veh/h	221	526	516	53	432	379	142	243	231	653	269	258
Grp Sat Flow(s),veh/h/ln	1728	1777	1742	1781	1777	1546	1781	1777	1641	1728	1777	1661
Q Serve(g_s), s	7.3	32.7	32.7	3.4	25.6	25.8	9.3	15.2	15.8	21.6	14.6	15.0
Cycle Q Clear(g_c), s	7.3	32.7	32.7	3.4	25.6	25.8	9.3	15.2	15.8	21.6	14.6	15.0
Prop In Lane	1.00		0.34	1.00		1.00	1.00		0.66	1.00		0.59
Lane Grp Cap(c), veh/h	321	612	600	137	583	507	171	330	304	747	549	513
V/C Ratio(X)	0.69	0.86	0.86	0.39	0.74	0.75	0.83	0.74	0.76	0.87	0.49	0.50
Avail Cap(c_a), veh/h	397	774	759	190	759	661	305	455	420	1018	674	630
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.1	36.2	36.2	52.0	35.3	35.4	52.6	45.5	45.7	44.9	33.3	33.5
Incr Delay (d2), s/veh	3.7	8.0	8.1	1.8	2.8	3.4	9.8	4.0	5.3	6.6	0.7	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	15.0	14.7	1.5	11.2	9.9	4.6	7.1	6.9	9.8	6.3	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	55.7	44.1	44.3	53.8	38.1	38.8	62.3	49.4	51.0	51.4	34.0	34.2
LnGrp LOS	E	D	D	D	D	D	E	D	D	D	C	C
Approach Vol, veh/h		1263			864			616			1180	
Approach Delay, s/veh		46.2			39.4			53.0			43.7	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.7	27.1	14.5	46.2	16.1	41.7	16.4	44.3
Change Period (Y+Rc), s	5.1	* 5.1	5.4	5.4	4.7	5.1	5.4	5.4
Max Green Setting (Gmax), s	34.9	* 30	12.6	51.6	20.3	44.9	13.6	50.6
Max Q Clear Time (g_c+I1), s	23.6	17.8	5.4	34.7	11.3	17.0	9.3	27.8
Green Ext Time (p_c), s	2.0	2.3	0.0	6.1	0.2	3.3	0.3	5.2

Intersection Summary	
HCM 7th Control Delay, s/veh	45.0
HCM 7th LOS	D

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	1365	100	35	535	15	45	5	25	10	5	175
Future Volume (veh/h)	160	1365	100	35	535	15	45	5	25	10	5	175
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	165	1407	103	36	552	15	46	5	26	10	5	180
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	210	1857	135	102	1743	47	196	35	76	60	15	250
Arrive On Green	0.12	0.55	0.55	0.06	0.49	0.49	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1781	3351	244	1781	3531	96	675	203	448	35	87	1466
Grp Volume(v), veh/h	165	743	767	36	277	290	77	0	0	195	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1819	1781	1777	1850	1326	0	0	1588	0	0
Q Serve(g_s), s	6.4	22.6	23.0	1.4	6.6	6.6	0.0	0.0	0.0	1.3	0.0	0.0
Cycle Q Clear(g_c), s	6.4	22.6	23.0	1.4	6.6	6.6	3.3	0.0	0.0	8.2	0.0	0.0
Prop In Lane	1.00		0.13	1.00		0.05	0.60		0.34	0.05		0.92
Lane Grp Cap(c), veh/h	210	985	1008	102	877	913	307	0	0	324	0	0
V/C Ratio(X)	0.79	0.75	0.76	0.35	0.32	0.32	0.25	0.00	0.00	0.60	0.00	0.00
Avail Cap(c_a), veh/h	495	1626	1665	242	1375	1431	654	0	0	734	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	30.3	12.1	12.1	32.0	10.7	10.7	25.5	0.0	0.0	27.7	0.0	0.0
Incr Delay (d2), s/veh	6.4	1.2	1.2	2.1	0.2	0.2	0.4	0.0	0.0	1.8	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	7.2	7.5	0.6	2.2	2.3	1.1	0.0	0.0	3.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	36.7	13.3	13.3	34.1	10.9	10.9	26.0	0.0	0.0	29.5	0.0	0.0
LnGrp LOS	D	B	B	C	B	B	C			C		
Approach Vol, veh/h		1675			603			77			195	
Approach Delay, s/veh		15.6			12.3			26.0			29.5	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	16.6	9.5	44.5	16.6	13.7	40.2
Change Period (Y+Rc), s	4.6	5.4	5.4	4.6	5.4	5.4
Max Green Setting (Gmax), s	30.4	9.6	64.6	30.4	19.6	54.6
Max Q Clear Time (g_c+I1), s	5.3	3.4	25.0	10.2	8.4	8.6
Green Ext Time (p_c), s	0.4	0.0	14.2	1.2	0.3	3.5

Intersection Summary	
HCM 7th Control Delay, s/veh	16.2
HCM 7th LOS	B

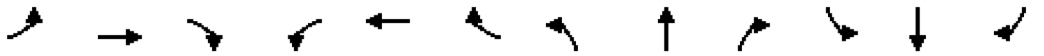
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	420	5	600	0	0	0	0	785	470	485	545	0
Future Volume (veh/h)	420	5	600	0	0	0	0	785	470	485	545	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885				0	1885	1885	1885	1885	0
Adj Flow Rate, veh/h	442	5	632				0	826	495	511	574	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1				0	1	1	1	1	0
Cap, veh/h	604	4	534				0	1071	470	693	1986	0
Arrive On Green	0.34	0.34	0.34				0.00	0.30	0.30	0.40	1.00	0.00
Sat Flow, veh/h	1795	13	1587				0	3676	1572	3483	3676	0
Grp Volume(v), veh/h	442	0	637				0	826	495	511	574	0
Grp Sat Flow(s),veh/h/ln	1795	0	1600				0	1791	1572	1742	1791	0
Q Serve(g_s), s	19.5	0.0	30.3				0.0	18.9	26.9	11.3	0.0	0.0
Cycle Q Clear(g_c), s	19.5	0.0	30.3				0.0	18.9	26.9	11.3	0.0	0.0
Prop In Lane	1.00		0.99				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	604	0	539				0	1071	470	693	1986	0
V/C Ratio(X)	0.73	0.00	1.18				0.00	0.77	1.05	0.74	0.29	0.00
Avail Cap(c_a), veh/h	604	0	539				0	1071	470	693	1986	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.64	0.64	0.77	0.77	0.00
Uniform Delay (d), s/veh	26.3	0.0	29.9				0.0	28.8	31.5	25.1	0.0	0.0
Incr Delay (d2), s/veh	4.5	0.0	100.1				0.0	3.5	48.1	3.2	0.3	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	0.0	26.1				0.0	8.3	15.9	4.0	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	30.8	0.0	129.9				0.0	32.3	79.6	28.3	0.3	0.0
LnGrp LOS	C		F					C	F	C	A	
Approach Vol, veh/h		1079						1321			1085	
Approach Delay, s/veh		89.3						50.0			13.5	
Approach LOS		F						D			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	23.0	32.0		35.0		55.0
Change Period (Y+Rc), s	5.1	5.1		4.7		5.1
Max Green Setting (Gmax), s	17.9	26.9		30.3		49.9
Max Q Clear Time (g_c+I1), s	13.3	28.9		32.3		2.0
Green Ext Time (p_c), s	0.9	0.0		0.0		4.3

Intersection Summary	
HCM 7th Control Delay, s/veh	50.8
HCM 7th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

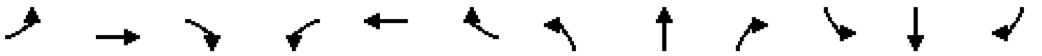


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	260	15	575	345	860	0	0	770	355
Future Volume (veh/h)	0	0	0	260	15	575	345	860	0	0	770	355
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1885	1885	1885	1885	1885	0	0	1885	1885
Adj Flow Rate, veh/h				190	0	716	367	915	0	0	819	378
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				1	1	1	1	1	0	0	1	1
Cap, veh/h				405	0	721	612	2384	0	0	1380	423
Arrive On Green				0.23	0.00	0.23	0.68	1.00	0.00	0.00	0.27	0.27
Sat Flow, veh/h				1795	0	3195	1795	3676	0	0	5316	1577
Grp Volume(v), veh/h				190	0	716	367	915	0	0	819	378
Grp Sat Flow(s),veh/h/ln				1795	0	1598	1795	1791	0	0	1716	1577
Q Serve(g_s), s				8.2	0.0	20.1	9.9	0.0	0.0	0.0	12.5	20.8
Cycle Q Clear(g_c), s				8.2	0.0	20.1	9.9	0.0	0.0	0.0	12.5	20.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				405	0	721	612	2384	0	0	1380	423
V/C Ratio(X)				0.47	0.00	0.99	0.60	0.38	0.00	0.00	0.59	0.89
Avail Cap(c_a), veh/h				405	0	721	612	2384	0	0	1424	436
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.58	0.58	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				30.2	0.0	34.8	11.0	0.0	0.0	0.0	28.7	31.7
Incr Delay (d2), s/veh				0.8	0.0	31.8	0.9	0.3	0.0	0.0	1.9	23.9
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.6	0.0	10.8	2.8	0.1	0.0	0.0	5.2	10.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				31.0	0.0	66.6	12.0	0.3	0.0	0.0	30.5	55.6
LnGrp LOS				C		E	B	A			C	E
Approach Vol, veh/h					906			1282			1197	
Approach Delay, s/veh					59.1			3.6			38.4	
Approach LOS					E			A			D	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	65.0		35.8	29.2		25.0						
Change Period (Y+Rc), s	5.1		5.1	5.1		4.7						
Max Green Setting (Gmax), s	59.9		29.9	24.9		20.3						
Max Q Clear Time (g_c+I1), s	2.0		11.9	22.8		22.1						
Green Ext Time (p_c), s	7.9		1.0	1.4		0.0						

Intersection Summary	
HCM 7th Control Delay, s/veh	30.8
HCM 7th LOS	C

Notes
User approved volume balancing among the lanes for turning movement.



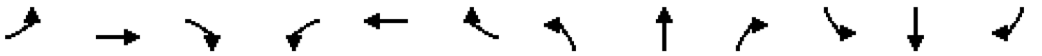
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	395	710	140	75	515	560	160	565	100	420	200	225
Future Volume (veh/h)	395	710	140	75	515	560	160	565	100	420	200	225
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	425	763	151	81	554	602	172	608	108	452	215	242
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	496	1288	555	134	1011	678	202	721	128	534	1002	659
Arrive On Green	0.14	0.37	0.37	0.08	0.29	0.29	0.11	0.24	0.24	0.16	0.28	0.28
Sat Flow, veh/h	3428	3526	1520	1767	3526	1510	1767	2974	527	3428	3526	1518
Grp Volume(v), veh/h	425	763	151	81	554	602	172	360	356	452	215	242
Grp Sat Flow(s),veh/h/ln	1714	1763	1520	1767	1763	1510	1767	1763	1738	1714	1763	1518
Q Serve(g_s), s	14.9	21.6	8.6	5.5	16.4	35.4	11.8	24.0	24.1	15.8	5.7	13.4
Cycle Q Clear(g_c), s	14.9	21.6	8.6	5.5	16.4	35.4	11.8	24.0	24.1	15.8	5.7	13.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.30	1.00		1.00
Lane Grp Cap(c), veh/h	496	1288	555	134	1011	678	202	427	421	534	1002	659
V/C Ratio(X)	0.86	0.59	0.27	0.60	0.55	0.89	0.85	0.84	0.85	0.85	0.21	0.37
Avail Cap(c_a), veh/h	672	1288	555	221	1011	678	362	561	554	870	1294	785
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.5	31.7	27.6	55.2	37.2	31.8	53.6	44.5	44.5	50.6	33.7	24.0
Incr Delay (d2), s/veh	8.2	0.7	0.3	4.3	0.6	13.6	9.7	8.7	9.1	4.3	0.1	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	9.0	3.2	2.6	7.2	19.0	5.8	11.5	11.4	7.1	2.5	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	59.7	32.5	27.9	59.5	37.8	45.5	63.4	53.2	53.6	55.0	33.8	24.3
LnGrp LOS	E	C	C	E	D	D	E	D	D	D	C	C
Approach Vol, veh/h		1339			1237			888			909	
Approach Delay, s/veh		40.6			43.0			55.3			41.8	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.9	34.6	14.0	50.9	18.8	39.8	23.6	41.2
Change Period (Y+Rc), s	4.7	4.7	4.6	5.8	4.7	4.7	5.8	* 5.8
Max Green Setting (Gmax), s	31.3	39.3	15.4	44.2	25.3	45.3	24.2	* 35
Max Q Clear Time (g_c+I1), s	17.8	26.1	7.5	23.6	13.8	15.4	16.9	37.4
Green Ext Time (p_c), s	1.4	3.8	0.1	5.3	0.3	2.3	0.9	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	44.5
HCM 7th LOS	D

Notes

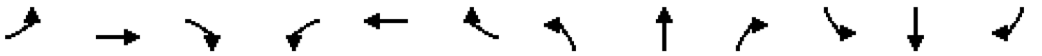
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	15	225	0	0	0	0	705	1180	290	835	0
Future Volume (veh/h)	180	15	225	0	0	0	0	705	1180	290	835	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	189	16	237				0	742	1242	305	879	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	208	18	200				0	2200	967	380	2762	0
Arrive On Green	0.13	0.13	0.13				0.00	0.62	0.62	0.11	0.78	0.00
Sat Flow, veh/h	1648	140	1585				0	3647	1562	3456	3647	0
Grp Volume(v), veh/h	205	0	237				0	742	1242	305	879	0
Grp Sat Flow(s),veh/h/ln	1788	0	1585				0	1777	1562	1728	1777	0
Q Serve(g_s), s	11.0	0.0	12.3				0.0	9.8	60.3	8.4	7.1	0.0
Cycle Q Clear(g_c), s	11.0	0.0	12.3				0.0	9.8	60.3	8.4	7.1	0.0
Prop In Lane	0.92		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	226	0	200				0	2200	967	380	2762	0
V/C Ratio(X)	0.91	0.00	1.18				0.00	0.34	1.28	0.80	0.32	0.00
Avail Cap(c_a), veh/h	226	0	200				0	2200	967	472	2857	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	42.0	0.0	42.6				0.0	8.9	18.6	42.3	3.2	0.0
Incr Delay (d2), s/veh	36.0	0.0	122.1				0.0	0.1	135.9	7.9	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	0.0	11.5				0.0	3.5	55.4	4.0	1.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	78.0	0.0	164.6				0.0	9.0	154.4	50.2	3.3	0.0
LnGrp LOS	E		F					A	F	D	A	
Approach Vol, veh/h		442						1984			1184	
Approach Delay, s/veh		124.5						100.1			15.4	
Approach LOS		F						F			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	15.4	65.0		17.0		80.4
Change Period (Y+Rc), s	4.7	4.7		4.7		4.7
Max Green Setting (Gmax), s	13.3	60.3		12.3		78.3
Max Q Clear Time (g_c+I1), s	10.4	62.3		14.3		9.1
Green Ext Time (p_c), s	0.3	0.0		0.0		7.9

Intersection Summary			
HCM 7th Control Delay, s/veh		75.3	
HCM 7th LOS		E	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	590	0	295	0	465	455	0	0	0	0	265	660
Future Volume (veh/h)	590	0	295	0	465	455	0	0	0	0	265	660
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1856	0	1856	0	1856	1856				0	1856	1856
Adj Flow Rate, veh/h	648	0	0	0	511	500				0	291	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91				0.91	0.91	0.91
Percent Heavy Veh, %	3	0	3	0	3	3				0	3	3
Cap, veh/h	974	0		0	854	724				0	0	
Arrive On Green	0.28	0.00	0.00	0.00	0.46	0.46				0.00	0.00	0.00
Sat Flow, veh/h	3428	648		0	1856	1572					0	
Grp Volume(v), veh/h	648	12.4		0	511	500					0.0	
Grp Sat Flow(s),veh/h/ln	1714	B		0	1856	1572						
Q Serve(g_s), s	6.1			0.0	7.5	9.3						
Cycle Q Clear(g_c), s	6.1			0.0	7.5	9.3						
Prop In Lane	1.00			0.00		1.00						
Lane Grp Cap(c), veh/h	974			0	854	724						
V/C Ratio(X)	0.67			0.00	0.60	0.69						
Avail Cap(c_a), veh/h	2358			0	1831	1552						
HCM Platoon Ratio	1.00			1.00	1.00	1.00						
Upstream Filter(I)	1.00			0.00	1.00	1.00						
Uniform Delay (d), s/veh	11.6			0.0	7.4	7.9						
Incr Delay (d2), s/veh	0.8			0.0	0.7	1.2						
Initial Q Delay(d3), s/veh	0.0			0.0	0.0	0.0						
%ile BackOfQ(50%),veh/ln	1.9			0.0	2.0	2.2						
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	12.4			0.0	8.1	9.0						
LnGrp LOS	B				A	A						
Approach Vol, veh/h					1011							
Approach Delay, s/veh					8.6							
Approach LOS					A							

Timer - Assigned Phs			7	8
Phs Duration (G+Y+Rc), s			15.2	21.6
Change Period (Y+Rc), s			4.7	4.7
Max Green Setting (Gmax), s			25.3	36.3
Max Q Clear Time (g_c+I1), s			8.1	11.3
Green Ext Time (p_c), s			2.3	5.7

Intersection Summary	
HCM 7th Control Delay, s/veh	10.1
HCM 7th LOS	B

Notes
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0.7

Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Vol, veh/h	45	15	1190	760	10	10	10
Future Vol, veh/h	45	15	1190	760	10	10	10
Conflicting Peds, #/hr	0	5	0	0	5	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	-	140	-	-	-	0	-
Veh in Median Storage, #	-	-	0	0	-	0	-
Grade, %	-	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96
Heavy Vehicles, %	3	3	3	3	3	3	3
Mvmt Flow	47	16	1240	792	10	10	10

Major/Minor	Major1		Major2		Minor2		
Conflicting Flow All	802	807	0	-	0	1547	406
Stage 1	-	-	-	-	-	802	-
Stage 2	-	-	-	-	-	745	-
Critical Hdwy	6.46	4.16	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	-	5.86	-
Follow-up Hdwy	2.53	2.23	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	441	807	-	-	-	104	591
Stage 1	-	-	-	-	-	399	-
Stage 2	-	-	-	-	-	428	-
Platoon blocked, %			-	-	-		
Mov Cap-1 Maneuver	490	490	-	-	-	90	589
Mov Cap-2 Maneuver	-	-	-	-	-	90	-
Stage 1	-	-	-	-	-	347	-
Stage 2	-	-	-	-	-	428	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.64	0	31.49
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	490	-	-	-	157
HCM Lane V/C Ratio	0.128	-	-	-	0.133
HCM Ctrl Dly (s/v)	13.4	-	-	-	31.5
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	0.4	-	-	-	0.4

Intersection	
Int Delay, s/veh	9.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	250	45	0	315	275	0
Future Vol, veh/h	250	45	0	315	275	0
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	300	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	291	52	0	366	320	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	686	320	-	0	-	0
Stage 1	320	-	-	-	-	-
Stage 2	366	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	413	721	0	-	-	0
Stage 1	736	-	0	-	-	0
Stage 2	701	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	413	721	-	-	-	-
Mov Cap-2 Maneuver	413	-	-	-	-	-
Stage 1	736	-	-	-	-	-
Stage 2	701	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	28.63	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	-	413	721	-
HCM Lane V/C Ratio	-	0.704	0.073	-
HCM Ctrl Dly (s/v)	-	31.9	10.4	-
HCM Lane LOS	-	D	B	-
HCM 95th %tile Q(veh)	-	5.3	0.2	-

Intersection	
Int Delay, s/veh	4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	75	110	5	100	85
Future Vol, veh/h	5	75	110	5	100	85
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	6	84	124	6	112	96

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	447	126	0	0	129	0
Stage 1	126	-	-	-	-	-
Stage 2	320	-	-	-	-	-
Critical Hdwy	6.44	6.24	-	-	4.14	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	-	-	2.236	-
Pot Cap-1 Maneuver	566	919	-	-	1444	-
Stage 1	894	-	-	-	-	-
Stage 2	731	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	519	919	-	-	1444	-
Mov Cap-2 Maneuver	519	-	-	-	-	-
Stage 1	894	-	-	-	-	-
Stage 2	671	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.47	0	4.16
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	895	973	-
HCM Lane V/C Ratio	-	-	0.1	0.078	-
HCM Ctrl Dly (s/v)	-	-	9.5	7.7	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.3	-

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	70	5	10	15	5	55	10	150	5	30	320	145
Future Vol, veh/h	70	5	10	15	5	55	10	150	5	30	320	145
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	3	3	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	7	7	7	7	7	7	7	7	7	7	7	7
Mvmt Flow	88	6	13	19	6	69	13	188	6	38	400	181

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	781	787	491	697	875	194	581	0	0	197	0	0
Stage 1	566	566	-	219	219	-	-	-	-	-	-	-
Stage 2	216	222	-	478	656	-	-	-	-	-	-	-
Critical Hdwy	7.17	6.57	6.27	7.17	6.57	6.27	4.17	-	-	4.17	-	-
Critical Hdwy Stg 1	6.17	5.57	-	6.17	5.57	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.17	5.57	-	6.17	5.57	-	-	-	-	-	-	-
Follow-up Hdwy	3.563	4.063	3.363	3.563	4.063	3.363	2.263	-	-	2.263	-	-
Pot Cap-1 Maneuver	306	318	568	349	282	835	969	-	-	1347	-	-
Stage 1	500	500	-	772	713	-	-	-	-	-	-	-
Stage 2	775	711	-	559	454	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	259	299	568	315	266	833	969	-	-	1343	-	-
Mov Cap-2 Maneuver	259	299	-	315	266	-	-	-	-	-	-	-
Stage 1	479	478	-	759	701	-	-	-	-	-	-	-
Stage 2	695	698	-	516	435	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	25.61	12.62	0.53	0.47
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	108	-	-	279	566	103	-	-
HCM Lane V/C Ratio	0.013	-	-	0.381	0.166	0.028	-	-
HCM Ctrl Dly (s/v)	8.8	0	-	25.6	12.6	7.8	0	-
HCM Lane LOS	A	A	-	D	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.7	0.6	0.1	-	-

ATTACHMENT A.7

TECHNICAL MEMORANDUM: CATHEDRAL OAKS ROAD OPERATIONS ANALYSIS

CATHEDRAL OAKS ROAD TRAFFIC ASSESSMENT

DATE: January 31, 2026

TO: Liz "Nina" Buelna | Public Works Director, City of Goleta

FROM: Jim Damkowitch | DKS Associates
Sean Carney, TE | DKS Associates
Joel Rabinovitz, PE | DKS Associates
Marcus Reyes, EIT | DKS Associates

SUBJECT: Goleta Model and DIF Update - Cathedral Oaks Road Assessment Project #24675-003

INTRODUCTION

This Traffic Assessment evaluates existing and future traffic conditions along Cathedral Oaks Road in the northwestern portion of the City of Goleta. The study corridor serves residential neighborhoods, Dos Pueblos High School, and currently undeveloped land to the north, including the Glen Annie Golf Course, which is proposed for future residential development. The analysis examines baseline conditions, future conditions with approved and pending development, and future conditions with the proposed residential projects north of Cathedral Oaks Road. The findings are intended to support City staff in making informed decisions related to future development, traffic operations, and potential transportation improvements within the study area.

PROJECT DESCRIPTION

The Traffic Assessment focuses on a 0.8-mile segment of Cathedral Oaks Road in the northwestern portion of the City of Goleta between Glen Annie Road and Evergreen Drive/Northgate Drive. Directly north of the study segment is Glen Annie golf course and south of the segment are single family residential neighborhoods and Dos Pueblos High School. The study includes six intersections as shown in **Figure 1**. The intersections and their control type are listed below:

1) Cathedral Oaks Road / Glen Annie Road (Signalized)
2) Cathedral Oaks Road / Alameda Avenue (Signalized)
3) Cathedral Oaks Road / Placer Drive (Side-street stop-controlled)
4) Cathedral Oaks Road / King Daniel Lane (Side-street stop-controlled)
5) Cathedral Oaks Road / Royal Linda Drive (Side-street stop-controlled)

6) Cathedral Oaks Road / Evergreen Drive-Northgate Drive (Side-street stop-controlled)
7) Cathedral Oaks Road / School Driveway (Side-street stop-controlled)

This study considers the baseline and future year conditions to provide information necessary for City staff to make informed decisions on how development in the north part of the City may affect the operations of the surrounding areas.

Source: Google Earth

FIGURE 1: PROJECT LOCATION

BACKGROUND

Cathedral Oaks Road is an east-west roadway running parallel to and north of US 101. It provides access to much of the northern Goleta, Eastern Goleta Valley, and the City of Santa Barbara. The study segment is classified as a minor arterial by the Goleta General Plan/Costal Land Use Plan.

Cathedral Oaks Road has one travel lane in each direction and a Class II buffered bike lane on both sides of the roadway. A Class I multi-use path runs parallel to and north of Cathedral Oaks Road through most of the study segment. Sidewalk is continuous on the south side of the roadway. Pedestrian crossings occur at Northgate Drive/Evergreen Drive and the two signalized intersections. Intersection lane configuration and control type are shown in **Figure 2** below.

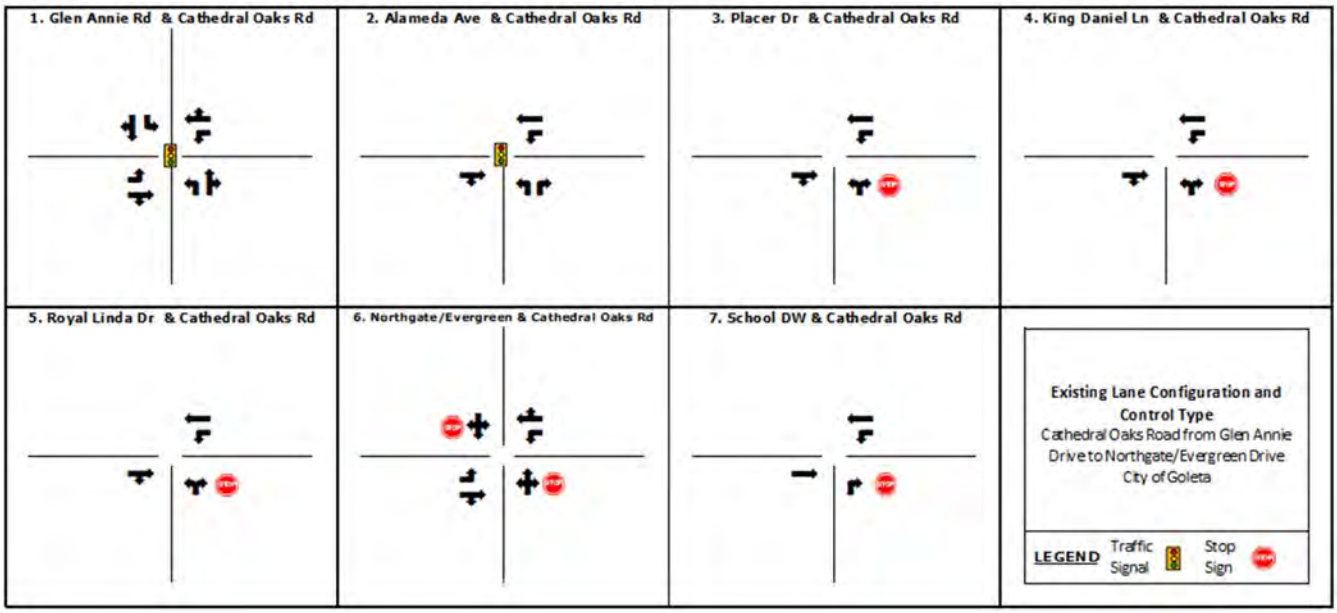


FIGURE 2: LANE CONFIGURATION AND CONTROL TYPE

PURPOSE AND NEED

The purpose of this project is to provide an assessment of future conditions and impacts of development in the north part of the City of Goleta and provide improvement recommendations, if necessary, to the City staff as future developments are constructed.

METHODOLOGY

INTERSECTION LEVEL OF SERVICE AND OPERATIONS

Traffic operations were analyzed for the weekday AM and PM peak hours under the existing, future no-development, and future development conditions. This analysis was conducted using the Synchro (v12) software. The operational analysis examines intersection delay and level of service as well as the 95th percentile queue lengths. The detailed Synchro LOS and queuing reports for all alternatives and conditions can be found in **Appendix A through Appendix D**.

The quality of operations of roadway facilities is described in terms of level of service (LOS). LOS is a qualitative description of traffic flow based on factors such as speed, travel time, delay, and freedom to maneuver. Six service levels are defined, ranging from LOS A, the best operating conditions, to LOS F, the worst operating conditions. LOS E corresponds to "at or near capacity" operations. When demand exceeds capacity, stop-and-go conditions result, and operations are designated LOS F. The delay thresholds and corresponding LOS values for intersections are presented in **Table 1**. LOS analysis is included for consistency with the City of Goleta General Plan. The Circulation policy provides the standard for acceptable levels of service within the City. LOS C is used as the LOS standard for this for both signalized and unsignalized intersections.

For signalized intersection analyses, LOS is based on the average control delay per vehicle for all vehicles entering an intersection. The minimum green time, yellow and all-red intervals, and pedestrian timings for the signal timing operations of the two signalized intersections were assumed using the tables and formulas found in the *California Manual on Uniform Traffic Control Devices* (CA MUTCD), 2014 Edition. Cycle lengths and phase splits were optimized for both baseline and future conditions. For side-street stop-controlled, the LOS is based on the worst movement's average control delay. Control delay includes the initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

TABLE 1: INTERSECTION LEVEL OF SERVICE CRITERIA

LEVEL OF SERVICE (LOS)	CONTROL DELAY PER VEHICLE (SECONDS/VEHICLE)	
	UNSIGNALIZED INTERSECTION	SIGNALIZED INTERSECTION
A	$\leq$ 10	$\leq$ 10
B	> 10 – 15	> 10 – 20
C	> 15 – 25	> 20 – 35
D	> 25 – 35	> 35 – 55
E	> 35 – 50	> 55 – 80
F	> 50	> 80

Source: HCM 7th Edition, Transportation Research Board

TRAVEL DEMAND MODEL AND FORCASTING

The City of Goleta uses PTV VISUM for their travel model. The Goleta Travel Model was recently updated in August 2025 including updating the baseline land use from 2013 to 2024. In addition, the Existing Plus Approved and Pending (EPAP) land uses are reflected in the Model's GPU Land Use file forecasted to 2050.

Future traffic conditions were forecasted using the difference (delta) method, consistent the NCHRP *Report 765, Analytical Travel Forecasting Approaches for Project-Level Planning and Design, 2014*, was used to forecast future conditions. This method uses the difference between the 2024 baseline year and 2050 future year to the existing turning movement counts gathered recently for this study.

Two housing developments are planned north of Cathedral Oaks Road: A 60-unit single-family housing development between Evergreen Drive/Northgate Drive and King Daniel Lane, and a 1,000-unit single-family housing development to replace the current Glen Annie Golf Course. Together, these developments generate a combined 716 and 844 trips during the a.m. and p.m. peak hours, respectively (using the fitted curve provided in the *ITE Trip Generation Manual*, 12th Edition, Vol. 3, Land Use Code 210). The trips generated and trip distribution derived from the Goleta Travel Model were generally similar to the ITE Trip Generation Manual, although the model produced higher trips. Therefore, to be conservative, the model-based volumes were used for the future analysis.

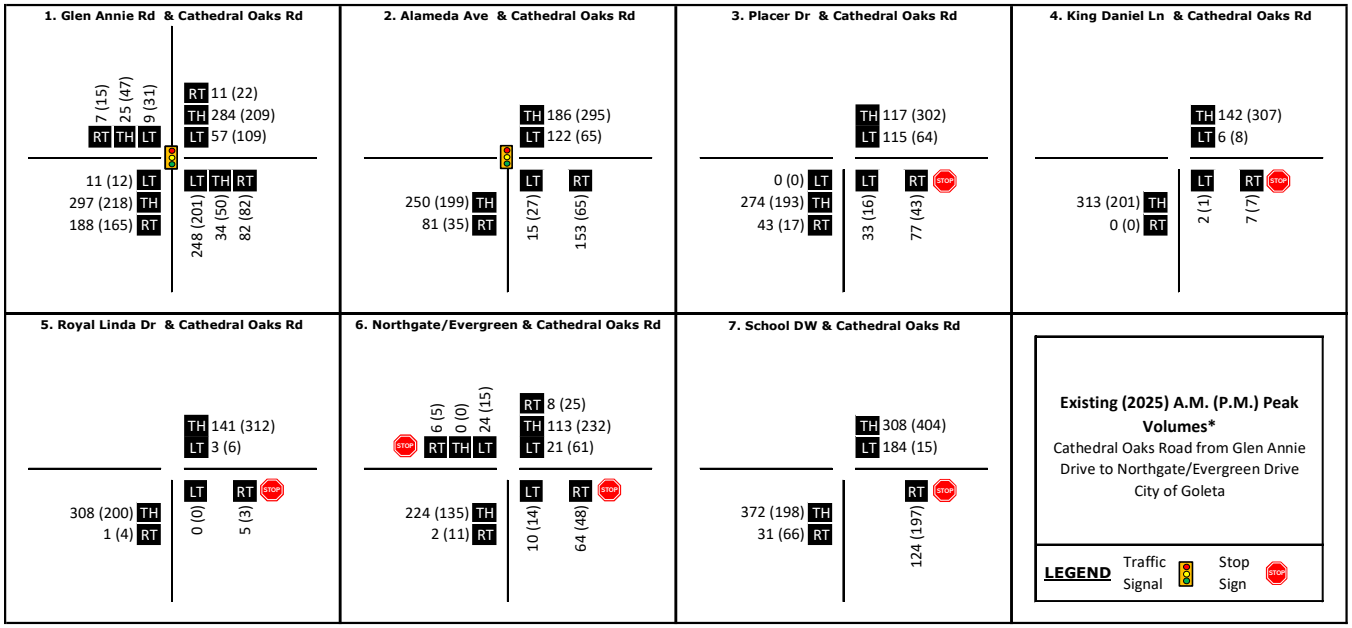
The potential developments north of Cathedral Oaks Road add north legs to two intersections: 1) Cathedral Oaks Road / Alameda Avenue and 2) Cathedral Oaks Road / King Daniel Lane.

EXISTING CONDITIONS

DATA OVERVIEW

Turning movement counts were collected during the a.m. (7-9 a.m.) and p.m. (4-6 p.m.) peak period of a typical weekday (Tuesday, Wednesday, or Thursday) to assess the existing conditions in the study area. Data collection for the intersections at Glen Annie Road and Alameda Avenue were conducted in May 2024 through previous data collection efforts and were balanced with the remaining intersection counts. The remaining five intersection counts were collected in December 2025. **Figure 3** below shows the a.m. peak hour and p.m. peak hour turning movement volumes for the study segment.

In addition to turning movement counts, a 24-hour count was conducted over three consecutive weekdays in May 2024 is shown in **Figure 4**. Three peaks are observed: 8 a.m. (AM Peak), 12 p.m. (Lunch), and 3 p.m. (PM Peak). The average daily traffic (ADT) recorded at the study segment is approximately 9,000 vehicles per day, with traffic distributed evenly in both directions.



*Volumes for Glen Annie Rd and Alameda Ave were recorded Spring of 2024

FIGURE 3: EXISTING (2025) A.M. AND P.M. PEAK VOLUMES

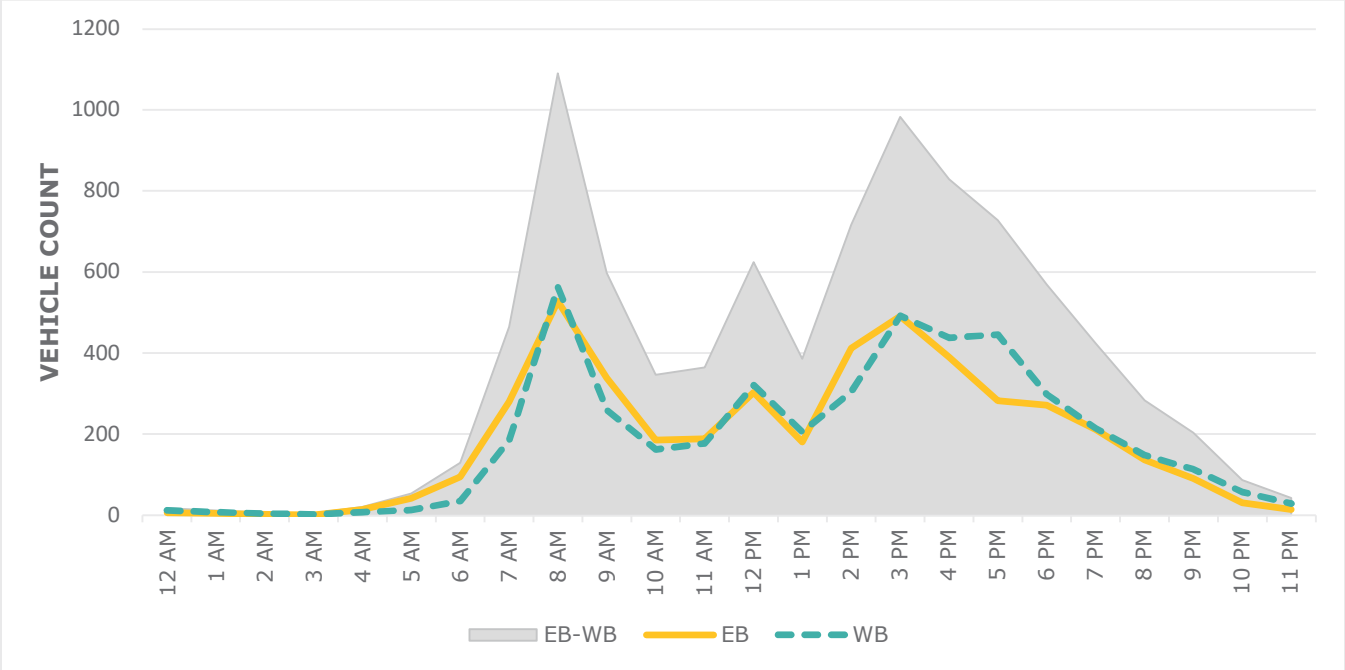


FIGURE 4: 24-HOUR VEHICLE COUNT FOR CATHEDRAL OAKS

EXISTING CONDITIONS ANALYSIS

Table 2 summarizes the level of service (LOS) and average vehicle delay for the existing a.m. and p.m. peak hours. Based on the results, all study intersections meet the City of Goleta's standard of LOS C or better for signalized and unsignalized intersections established on their 2006 General Plan. **Table 3** summarizes the 95th percentile queue at signalized intersections. As shown, the northbound left (NBL) at Glen Annie Road exceeds available storage during the a.m. and p.m. peaks with the a.m. peak experiencing longer queueing. 95th percentile queue values shown in the table are rounded to the nearest five foot.

TABLE 2: EXISTING (2025) INTERSECTION LEVEL OF SERVICE SUMMARY

INTERSECTION	AM PEAK		PM PEAK	
	LOS [A]	DELAY (SEC)	LOS [A]	DELAY (SEC)
1) GLEN ANNIE DRIVE & CATHEDRAL OAKS ROAD	C	28.2	B	16.7
2) ALAMEDA AVENUE & CATHEDRAL OAKS ROAD	B	14.5	A	7.7
3) PLACER DRIVE & CATHEDRAL OAKS ROAD	B [NB]	12.9	B [NB]	11.1
4) KING DANIEL LANE & CATHEDRAL OAKS ROAD	B [NB]	10.5	A [NB]	9.7
5) RIO LINDA DRIVE & CATHEDRAL OAKS ROAD	B [NB]	10.3	A [NB]	9.4
6) NORTHGATE/EVERGREEN DRIVE & CATHEDRAL OAKS ROAD	B [SB]	12.3	B [SB]	13.4
7) SCHOOL DRIVEWAY & CATHEDRAL OAKS ROAD	B [NB]	12.2	B [NB]	11.3

Note:

A. For signalized intersections, the LOS is reported for the overall intersection. For unsignalized intersections, the LOS reported is for the worst movement/approach.

TABLE 3: EXISTING (2025) 95TH PERCENTILE INTERSECTION QUEUE RESULTS

INTERSECTION	TURNING MOVEMENT	STORAGE LENGTH (FT)	95TH PERCENTILE QUEUE (FT) [A]	
			AM PEAK	PM PEAK
1) GLEN ANNIE DRIVE & CATHEDRAL OAKS ROAD	EBL	290	25	25
	WBL	200	75	120
	NBL	80	**240**	**175**
	SBL	60	15	35
2) ALAMEDA AVENUE & CATHEDRAL OAKS ROAD	WBL	260	90	40

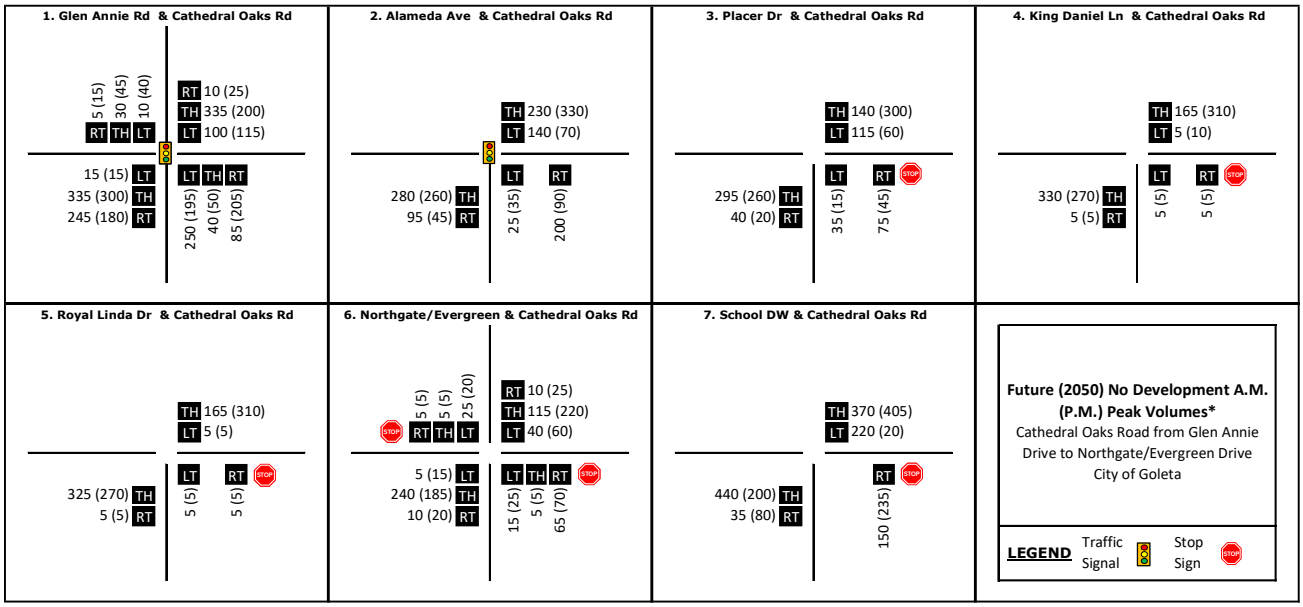
Note:

A. **Red** indicates 95th percentile queue exceeds storage.

The Synchro 12 HCM reports for the existing conditions can be found in **Appendix A.**

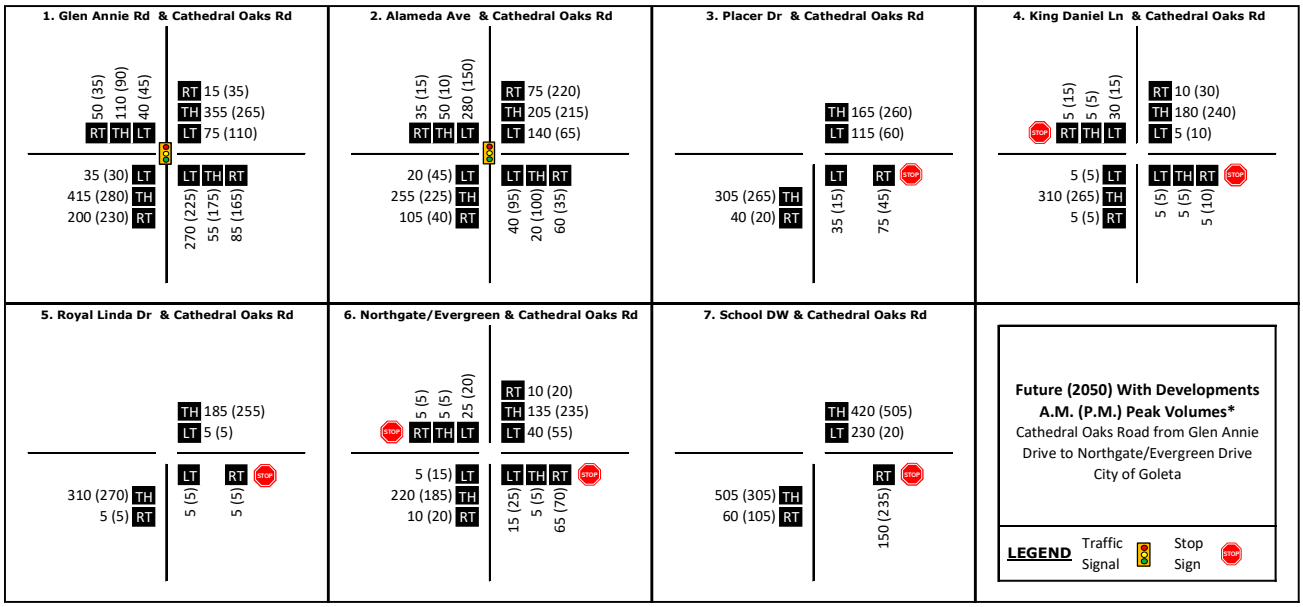
FUTURE FORCASTING

Using the methodology discussed in the earlier section, **Figure 5** and **Figure 6** below summarizes the forecasted volumes without and with the developments on Cathedral Oaks Road.



*Forecast volumes were rounded to the nearest non-zero multiple of 5.

FIGURE 5: FUTURE (2050) NO DEVELOPMENT A.M. AND P.M. PEAK VOLUMES



*Forecast volumes were rounded to the nearest non-zero multiple of 5.

FIGURE 6: FUTURE (2050) WITH DEVELOPMENTS A.M. AND P.M. PEAK VOLUMES

FUTURE CONDITION ANALYSIS

Future conditions were analyzed without and with the two planned developments to evaluate their potential impacts on traffic operations along Cathedral Oaks Road.

FUTURE CONDITIONS (2050)

Table 4 summarizes the LOS and average delays for the a.m. and p.m. peak hours for each intersection and the school driveway. The LOS at all study intersections remains consistent with Existing conditions, with minor increases in delay. However, the LOS of Northgate Drive/Evergreen Drive increased from LOS B to LOS C for the southbound approach during the p.m. peak hour, and it is within the City of Goleta's mobility standard.

The 95th percentile queue is summarized in **Table 5**. As in the Existing conditions, the NBL queue exceeds available storage at Glen Annie Road and has longer queues in the future. The 95th percentile queue values shown in the table are rounded to the nearest five foot.

TABLE 4: FUTURE (2050) NO DEVELOPMENT INTERSECTION LEVEL OF SERVICE SUMMARY

INTERSECTION	PEAK PERIOD	EXISTING (2025)		FUTURE (2050) NO DEVELOPMENT	
		LOS[A]	Delay (sec)	LOS[A]	Delay (sec)
1) GLEN ANNIE DRIVE & CATHEDRAL OAKS ROAD	AM	C	28.2	C	21.9
	PM	B	16.7	B	18.7
2) ALAMEDA AVENUE & CATHEDRAL OAKS ROAD	AM	B	14.5	B	17.3
	PM	A	7.7	A	8.8
3) PLACER DRIVE & CATHEDRAL OAKS ROAD	AM	B [NB]	12.9	B [NB]	13.4
	PM	B [NB]	11.1	B [NB]	11.6
4) KING DANIEL LANE & CATHEDRAL OAKS ROAD	AM	B [NB]	10.5	B [NB]	10.9
	PM	A [NB]	9.7	B [NB]	11.0
5) RIO LINDA DRIVE & CATHEDRAL OAKS ROAD	AM	B [NB]	10.3	B [NB]	11.1
	PM	A [NB]	9.4	B [NB]	10.9
6) NORTHGATE/EVERGREEN DRIVE & CATHEDRAL OAKS ROAD	AM	B [SB]	12.3	B [SB]	13.3
	PM	B [SB]	13.4	C [SB]	15.3
7) SCHOOL DRIVEWAY & CATHEDRAL OAKS ROAD	AM	B [NB]	12.2	B [NB]	13.8
	PM	B [NB]	11.3	B [NB]	13.1

Note:

A. For signalized intersections, the LOS is reported for the overall intersection. For unsignalized intersections, the LOS reported is for the worst movement/approach.

TABLE 5: FUTURE (2050) NO DEVELOPMENT 95TH PERCENTILE QUEUE RESULTS

INTERSECTION	TURNING MOVEMENT	STORAGE LENGTH (FT)	95TH PERCENTILE QUEUE (FT)[A]			
			EXISTING (2025) CONDITIONS		FUTURE (2050) NO DEVELOPMENT	
			AM PEAK	PM PEAK	AM PEAK	PM PEAK
1) GLEN ANNIE DRIVE & CATHEDRAL OAKS ROAD	EBL	290	25	25	35	30
	WBL	200	75	120	130	140
	NBL	80	**240**	**175**	**260**	**200**
	SBL	60	15	35	20	50
2) ALAMEDA AVENUE & CATHEDRAL OAKS ROAD	WBL	260	90	40	100	50

Note:

A. **Red** indicates 95th percentile queue exceeds storage.

The Synchro 12 HCM reports for the future conditions without development can be found in **Appendix B.**

FUTURE CONDITIONS (2050) WITH CATHEDRAL OAKS DEVELOPMENTS

The Synchro model was modified to be consistent with the Goleta Travel Model GPU 2050 turning movement volume outputs. This modification included the addition of northern legs at the intersections of Alameda Avenue and King Daniel Lane to provide access to future development. Signal operations at Alameda Avenue are coded for split-phased operation since it is not apparent if the current geometry can accommodate concurrent left turn operations. The results of the intersection performance are summarized in **Table 6**. With the addition of the housing developments north of Cathedral Oaks Road, both signalized intersections are expected to suffer in performance based on LOS if no improvements are implemented. However, all study intersections are within the City's standard. In addition, operations at the school driveway along the south side of Cathedral Oaks Road decline from LOS B to LOS C during the a.m. peak.

Due to the increased demand at the intersection at Alameda Avenue, the 95th percentile queue lengths have increased and potentially long queues in the southbound left if adequate queue management is not provided. The northbound left queue at Glen Annie Road has increased by 100 ft during the a.m. compared to a no development scenario. A summary of the 95th percentile queue can be seen in **Table 7**.

TABLE 6: INTERSECTION LEVEL OF SERVICE SUMMARY FOR FUTURE (2050) WITH CATHEDRAL OAKS DEVELOPMENTS

INTERSECTION	PEAK PERIOD	FUTURE (2050)			
		NO DEVELOPMENT		DEVELOPMENT	
		LOS[A]	Delay (sec)	LOS[A]	Delay (sec)
1) GLEN ANNIE DRIVE & CATHEDRAL OAKS ROAD	AM	C	21.9	C	31.4
	PM	B	18.7	C	23.8
2) ALAMEDA AVENUE & CATHEDRAL OAKS ROAD	AM	B	17.3	C	31.5
	PM	A	8.8	C	22.0
3) PLACER DRIVE & CATHEDRAL OAKS ROAD	AM	B [NB]	13.7	B [NB]	13.5
	PM	B [NB]	11.6	B [NB]	11.6
4) KING DANIEL LANE & CATHEDRAL OAKS ROAD	AM	B [NB]	10.9	B [SB]	14.0
	PM	B [NB]	11.0	B [SB]	12.9
5) RIO LINDA DRIVE & CATHEDRAL OAKS ROAD	AM	B [NB]	11.1	B [NB]	11.0
	PM	B [NB]	10.9	B [NB]	10.7
6) NORTHGATE/EVERGREEN DRIVE & CATHEDRAL OAKS ROAD	AM	B [SB]	13.3	B [SB]	13.8
	PM	C [SB]	15.3	B [SB]	14.0
7) SCHOOL DRIVEWAY & CATHEDRAL OAKS ROAD	AM	B [NB]	13.8	C [NB]	15.3
	PM	B [NB]	13.1	B [NB]	13.9

Note:

A. For signalized intersections, the LOS is reported for the overall intersection. For unsignalized intersections, the LOS reported is for the worst movement/approach.

TABLE 7: 95TH PERCENTILE QUEUE FOR FUTURE (2050) CONDITIONS WITH CATHEDRAL OAKS DEVELOPMENTS

INTERSECTION	TURNING MOVEMENT	STORAGE LENGTH (FT)	95TH PERCENTILE QUEUE (FT)[A]			
			FUTURE NO DEVELOPMENTS		FUTURE WITH DEVELOPMENTS	
			AM PEAK	PM PEAK	AM PEAK	PM PEAK
1) GLEN ANNIE DRIVE & CATHEDRAL OAKS ROAD	EBL	290	35	30	75	50
	WBL	200	130	140	135	130
	NBL	80	**260**	**200**	**360**	**230**
	SBL	60	20	50	60	60
2) ALAMEDA AVENUE & CATHEDRAL OAKS ROAD	EBL	80	N/A	N/A	40	70
	WBL	260	100	50	160	90
	NBL	80	N/A	N/A	60	**115**
	SBL	250	N/A	N/A	**280**	170

Note:

A. **Red** indicates 95th percentile queue exceeds storage.

The Synchro 12 HCM reports for the future conditions with development can be found in **Appendix C.**

SUMMARY

Based on the results of the Goleta Travel Model and the Synchro 12 software, existing and future conditions without and with developments meet the City's LOS standard. However, development north of Cathedral Oaks Road is still expected to negatively impact performance of how both signalized intersections manage queues and minor impacts at the remaining study intersections if no other improvements are implemented.

POTENTIAL INTERSECTION IMPROVEMENTS

Improvements are needed with the addition of the two developments north of Cathedral Oaks Road. While all intersections are operating within the City of Goleta's LOS standard, the intersections cannot accommodate queues. These improvements address queue management, increased performance, and safety concerns due to the influx of vehicles in the area. Improvements are suggested below.

Glen Annie Road & Cathedral Oaks Road

- Due to the high volume of eastbound right turning vehicles, a right turn pocket of at least 200 ft is suggested to provide an opportunity for right-turning vehicles to bypass the through queue at the intersection. Results have shown that the shared eastbound-through-right movement is nearing capacity.
- The northbound left turn lane pocket should be extended to at least 250 ft due to the influx of left turning vehicles. Increasing the storage length will help the efficiency of the intersection by reducing spillback at the mainline.

Alameda Avenue & Cathedral Oaks Road

- At its current configuration, adding a fourth leg at Alameda Avenue & Cathedral Oaks Road would not appear to accommodate concurrent left turn operations. When development is built in the north side, developers should be responsible for the necessary intersection improvements to accommodate concurrent lefts.

School Driveway East of Alameda Avenue

- The driveway directly east of Alameda Avenue is currently performing within the City's standards. However, with the increase in both vehicular and pedestrian activity north of Cathedral Oaks Road and the proximity to a signalized intersection, a signal warrant should be performed.

An analysis of the potential effects of these improvements is shown below. Intersection performance and 95th percentile queue summaries for intersection improvements are found in **Table 8** and **Table 9** respectively. The improvements have the potential to decrease the LOS at Glen Annie Road back to the future without development conditions and signalizing the school driveway increases efficiency. LOS did not decrease at Alameda Avenue, but the queue lengths have been managed.

TABLE 8: INTERSECTION LEVEL OF SERVICE SUMMARY FOR FUTURE (2050) CONDITIONS WITH CATHEDRAL OAKS DEVELOPMENTS AND PROPOSED INTERSECTION IMPROVEMENTS

INTERSECTION	PEAK PERIOD	FUTURE (2050)					
		NO DEVELOPMENT		DEVELOPMENT		DEVELOPMET WITH IMPROVEMENTS	
		LOS[A]	Delay (sec)	LOS[A]	Delay (sec)	LOS[A]	Delay (sec)
1) GLEN ANNIE DRIVE & CATHEDRAL OAKS ROAD	AM	C	21.9	C	31.4	C	20.5
	PM	B	18.7	C	23.8	B	17.2
2) ALAMEDA AVENUE & CATHEDRAL OAKS ROAD	AM	B	17.3	C	31.5	C	32.1
	PM	A	8.8	C	22.0	C	21.9
3) PLACER DRIVE & CATHEDRAL OAKS ROAD	AM	B [NB]	13.7	B [NB]	13.5	B [NB]	13.5
	PM	B [NB]	11.6	B [NB]	11.6	B [NB]	11.6
4) KING DANIEL LANE & CATHEDRAL OAKS ROAD	AM	B [NB]	10.9	B [SB]	14.0	B [SB]	14.0
	PM	B [NB]	11.0	B [SB]	12.9	B [SB]	12.9
5) RIO LINDA DRIVE & CATHEDRAL OAKS ROAD	AM	B [NB]	11.1	B [NB]	11.0	B [NB]	11.0
	PM	B [NB]	10.9	B [NB]	10.7	B [NB]	10.7
6) NORTHGATE/EVERGREEN DRIVE & CATHEDRAL OAKS ROAD	AM	B [SB]	13.3	B [SB]	13.8	B [SB]	13.8
	PM	C [SB]	15.3	B [SB]	14.0	B [SB]	14.0
7) SCHOOL DRIVEWAY & CATHEDRAL OAKS ROAD	AM	B [NB]	13.8	C [NB]	15.3	B	12.2
	PM	B [NB]	13.1	B [NB]	13.9	A	7.2

Note:

A. For signalized intersections, the LOS is reported for the overall intersection. For unsignalized intersections, the LOS reported is for the worst movement/approach.

TABLE 9: 95TH PERCENTILE QUEUE FOR FUTURE (2050) CONDITIONS WITH CATHEDRAL OAKS DEVELOPMENTS AND POTENTIAL INTERSECTION IMPROVEMENTS

INTERSECTION	TURNING MOVEMENT	STORAGE LENGTH (FT)	FUTURE (2050) 95TH PERCENTILE QUEUE (FT)[A]					
			NO DEVELOPMENT		DEVELOPMENT		DEVEOPMENT WITH IMPROVEMENTS	
			AM PEAK	PM PEAK	AM PEAK	PM PEAK	AM PEAK	PM PEAK
1) GLEN ANNIE DRIVE & CATHEDRAL OAKS ROAD	EBL	290	35	30	75	50	60	50
	EBR[B]	200	N/A	N/A	N/A	N/A	50	40
	WBL	200	130	140	135	130	101	125
	NBL	80/250[C]	**260**	**200**	**360**	**230**	250	200
	SBL	60	20	50	60	60	40	50
2) ALAMEDA AVENUE & CATHEDRAL OAKS ROAD	EBL	80	N/A	N/A	40	70	30	60
	WBL	260	100	50	160	90	150	80
	NBL	80/100[D]	N/A	N/A	60	**115**	55	100
	SBL	250	N/A	N/A	**280**	170	**265**	150
7) SCHOOL DRIVEWAY & CATHEDRAL OAKS ROAD	WBL	200	N/A	N/A	N/A	N/A	135	19

Note:

A. **Red** indicates 95th percentile queue exceeds storage.
B. Potential Addition of an EBR turn pocket at Glen Annie Drive.
C. Potential extension of NBL turn pocket.
D. Potential increase in storage with intersection expansion.

The Synchro 12 HCM reports for the future conditions with developments and potential improvements can be found in **Appendix D.**

APPENDIX

CONTENTS

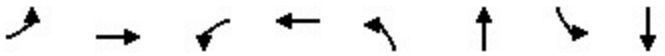
APPENDIX A: SYNCHRO 12 HCM 7 REPORTS – EXISTING CONDITIONS

APPENDIX B: SYNCHRO 12 HCM 7 REPORTS – FUTURE NO DEVELOPMENT

APPENDIX B: SYNCHRO 12 HCM 7 REPORTS – FUTURE WITH DEVELOPMENT

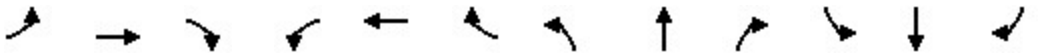
APPENDIX D: SYNCHRO 12 HCM 7 REPORTS - FUTURE WITH DEVELOPMENT + IMPROVEMENTS

APPENDIX A: SYNCHRO 12 HCM 7 REPORTS – EXISTING CONDITIONS



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	16	713	84	434	365	171	13	47
v/c Ratio	0.11	0.89	0.45	0.45	0.85	0.28	0.04	0.08
Control Delay (s/veh)	47.2	38.8	51.8	17.1	51.5	11.0	25.9	21.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	47.2	38.8	51.8	17.1	51.5	11.0	25.9	21.8
Queue Length 50th (ft)	10	409	54	144	228	24	6	17
Queue Length 95th (ft)	24	366	77	195	239	40	16	33
Internal Link Dist (ft)		1258		1351		748		569
Turn Bay Length (ft)	290		200		80		60	
Base Capacity (vph)	231	985	240	1134	530	726	445	704
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.72	0.35	0.38	0.69	0.24	0.03	0.07

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	297	188	57	284	11	248	34	82	9	25	7
Future Volume (veh/h)	11	297	188	57	284	11	248	34	82	9	25	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	16	437	276	84	418	16	365	50	0	13	37	10
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	46	483	305	109	861	33	483	583		481	442	119
Arrive On Green	0.03	0.45	0.45	0.06	0.48	0.48	0.31	0.31	0.00	0.31	0.31	0.31
Sat Flow, veh/h	1795	1080	682	1795	1804	69	1369	1885	0	1366	1429	386
Grp Volume(v), veh/h	16	0	713	84	0	434	365	50	0	13	0	47
Grp Sat Flow(s),veh/h/ln	1795	0	1762	1795	0	1873	1369	1885	0	1366	0	1816
Q Serve(g_s), s	0.7	0.0	32.0	3.9	0.0	13.5	22.0	1.6	0.0	0.6	0.0	1.6
Cycle Q Clear(g_c), s	0.7	0.0	32.0	3.9	0.0	13.5	23.5	1.6	0.0	2.2	0.0	1.6
Prop In Lane	1.00		0.39	1.00		0.04	1.00		0.00	1.00		0.21
Lane Grp Cap(c), veh/h	46	0	788	109	0	894	483	583		481	0	562
V/C Ratio(X)	0.34	0.00	0.90	0.77	0.00	0.49	0.76	0.09		0.03	0.00	0.08
Avail Cap(c_a), veh/h	229	0	948	238	0	1017	583	721		574	0	685
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.8	0.0	21.9	39.5	0.0	15.2	29.2	20.9	0.0	21.7	0.0	20.9
Incr Delay (d2), s/veh	4.3	0.0	10.6	10.8	0.0	0.4	4.6	0.1	0.0	0.0	0.0	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	14.6	2.0	0.0	5.1	7.3	0.7	0.0	0.2	0.0	0.6
Unsig. Movement Delay, s/veh									20.60			
LnGrp Delay(d), s/veh	45.2	0.0	32.5	50.3	0.0	15.6	33.8	21.0	20.6	21.7	0.0	21.0
LnGrp LOS	D		C	D		B	C	C	C	C		C
Approach Vol, veh/h		729			518			536			60	
Approach Delay, s/veh		32.8			21.2			29.6			21.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.9	43.2		32.2	7.3	45.8		32.2				
Change Period (Y+Rc), s	4.7	5.1		5.8	5.1	* 5.1		* 5.8				
Max Green Setting (Gmax), s	11.3	45.9		32.2	10.9	* 46		* 33				
Max Q Clear Time (g_c+I1), s	5.9	34.0		4.2	2.7	15.5		25.5				
Green Ext Time (p_c), s	0.1	4.1		0.2	0.0	2.5		0.8				

Intersection Summary		
HCM 7th Control Delay, s/veh	28.2	
HCM 7th LOS	C	

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [NBR] is included in calculations of the approach delay and intersection delay.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	480	167	255	48	210
v/c Ratio	0.70	0.47	0.20	0.20	0.26
Control Delay (s/veh)	18.8	25.5	3.6	23.5	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	18.8	25.5	3.6	23.5	3.2
Queue Length 50th (ft)	111	45	22	13	0
Queue Length 95th (ft)	149	91	36	35	18
Internal Link Dist (ft)	660		399	500	
Turn Bay Length (ft)		260			120
Base Capacity (vph)	1674	353	1845	872	883
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.29	0.47	0.14	0.06	0.24

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	250	101	122	186	35	153
Future Volume (veh/h)	250	101	122	186	35	153
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	342	138	167	255	48	210
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	456	184	241	1120	319	284
Arrive On Green	0.36	0.36	0.14	0.60	0.18	0.18
Sat Flow, veh/h	1257	507	1767	1856	1767	1572
Grp Volume(v), veh/h	0	480	167	255	48	210
Grp Sat Flow(s),veh/h/ln	0	1764	1767	1856	1767	1572
Q Serve(g_s), s	0.0	10.7	4.0	2.8	1.0	5.7
Cycle Q Clear(g_c), s	0.0	10.7	4.0	2.8	1.0	5.7
Prop In Lane		0.29	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	639	241	1120	319	284
V/C Ratio(X)	0.00	0.75	0.69	0.23	0.15	0.74
Avail Cap(c_a), veh/h	0	1960	405	2698	999	889
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	12.5	18.5	4.1	15.5	17.4
Incr Delay (d2), s/veh	0.0	1.8	3.5	0.1	0.2	3.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.7	1.7	0.6	0.4	2.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	0.0	14.3	22.0	4.2	15.7	21.2
LnGrp LOS		B	C	A	B	C
Approach Vol, veh/h	480			422	258	
Approach Delay, s/veh	14.3			11.3	20.2	
Approach LOS	B			B	C	

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	10.8	21.4			32.2	12.7
Change Period (Y+Rc), s	4.7	5.1			* 5.1	4.6
Max Green Setting (Gmax), s	10.3	49.9			* 65	25.4
Max Q Clear Time (g_c+I1), s	6.0	12.7			4.8	7.7
Green Ext Time (p_c), s	0.2	3.6			1.7	0.8

Intersection Summary	
HCM 7th Control Delay, s/veh	14.5
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	3.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	274	46	115	117	33	77
Future Vol, veh/h	274	46	115	117	33	77
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	160	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	80	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	326	58	137	139	39	92

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	384	0	768	355
Stage 1	-	-	-	-	355	-
Stage 2	-	-	-	-	413	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1175	-	370	689
Stage 1	-	-	-	-	710	-
Stage 2	-	-	-	-	668	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1175	-	327	689
Mov Cap-2 Maneuver	-	-	-	-	441	-
Stage 1	-	-	-	-	710	-
Stage 2	-	-	-	-	590	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	4.2	12.85
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	589	-	-	1175	-
HCM Lane V/C Ratio	0.222	-	-	0.117	-
HCM Ctrl Dly (s/v)	12.8	-	-	8.5	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.8	-	-	0.4	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	313	0	8	142	2	7
Future Vol, veh/h	313	0	8	142	2	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	60	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	348	0	9	158	2	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	348	0	523	348
Stage 1	-	-	-	-	348	-
Stage 2	-	-	-	-	176	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1206	-	512	693
Stage 1	-	-	-	-	713	-
Stage 2	-	-	-	-	853	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1206	-	509	693
Mov Cap-2 Maneuver	-	-	-	-	580	-
Stage 1	-	-	-	-	713	-
Stage 2	-	-	-	-	846	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.43	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	664	-	-	1206	-
HCM Lane V/C Ratio	0.015	-	-	0.007	-
HCM Ctrl Dly (s/v)	10.5	-	-	8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	308	1	3	141	0	5
Future Vol, veh/h	308	1	3	141	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	354	1	3	162	0	6

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	355	0	524	355
Stage 1	-	-	-	-	355	-
Stage 2	-	-	-	-	169	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1204	-	514	689
Stage 1	-	-	-	-	710	-
Stage 2	-	-	-	-	861	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1204	-	512	689
Mov Cap-2 Maneuver	-	-	-	-	583	-
Stage 1	-	-	-	-	710	-
Stage 2	-	-	-	-	858	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.17	10.27
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	689	-	-	1204	-
HCM Lane V/C Ratio	0.008	-	-	0.003	-
HCM Ctrl Dly (s/v)	10.3	-	-	8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	221	2	20	113	8	10	0	64	24	0	6
Future Vol, veh/h	3	221	2	20	113	8	10	0	64	24	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	160	-	-	80	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	248	2	22	127	9	11	0	72	27	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	136	0	0	251	0	0	428	437	249	431	434	131
Stage 1	-	-	-	-	-	-	256	256	-	176	176	-
Stage 2	-	-	-	-	-	-	172	181	-	255	257	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1448	-	-	1315	-	-	537	513	789	534	515	918
Stage 1	-	-	-	-	-	-	748	696	-	825	753	-
Stage 2	-	-	-	-	-	-	830	750	-	749	695	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1448	-	-	1315	-	-	523	503	789	476	505	918
Mov Cap-2 Maneuver	-	-	-	-	-	-	523	503	-	476	505	-
Stage 1	-	-	-	-	-	-	747	694	-	811	740	-
Stage 2	-	-	-	-	-	-	810	737	-	680	693	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.1	1.1	10.49	12.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	738	1448	-	-	1315	-	-	527
HCM Lane V/C Ratio	0.113	0.002	-	-	0.017	-	-	0.064
HCM Ctrl Dly (s/v)	10.5	7.5	-	-	7.8	-	-	12.3
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.2

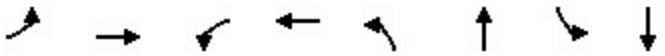
Intersection	
Int Delay, s/veh	3.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	372	31	184	308	0	124
Future Vol, veh/h	372	31	184	308	0	124
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	200	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	404	34	200	335	0	135

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	438	0	-	421
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.12	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.218	-	-	3.318
Pot Cap-1 Maneuver	-	-	1122	-	0	632
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1122	-	-	632
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

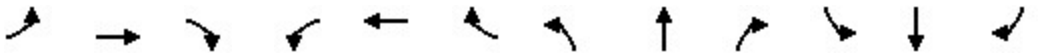
Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	3.33	12.23
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	632	-	-	1122	-
HCM Lane V/C Ratio	0.213	-	-	0.178	-
HCM Ctrl Dly (s/v)	12.2	-	-	8.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.8	-	-	0.6	-



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	14	441	125	258	231	151	36	71
v/c Ratio	0.06	0.69	0.43	0.28	0.61	0.28	0.11	0.14
Control Delay (s/veh)	33.8	23.5	34.6	11.0	29.9	10.8	21.0	16.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.8	23.5	34.6	11.0	29.9	10.8	21.0	16.8
Queue Length 50th (ft)	5	126	43	41	76	16	10	15
Queue Length 95th (ft)	25	265	121	144	175	63	36	50
Internal Link Dist (ft)		1258		1351		748		569
Turn Bay Length (ft)	290		200		80		60	
Base Capacity (vph)	265	1116	379	1254	719	960	658	969
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.40	0.33	0.21	0.32	0.16	0.05	0.07

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	218	165	109	203	22	201	50	82	31	47	15
Future Volume (veh/h)	12	218	165	109	203	22	201	50	82	31	47	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	14	251	190	125	233	25	231	57	0	36	54	17
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	45	327	247	181	662	71	443	473		457	345	109
Arrive On Green	0.02	0.33	0.33	0.10	0.40	0.40	0.25	0.25	0.00	0.25	0.25	0.25
Sat Flow, veh/h	1795	996	754	1795	1673	180	1340	1885	0	1357	1375	433
Grp Volume(v), veh/h	14	0	441	125	0	258	231	57	0	36	0	71
Grp Sat Flow(s),veh/h/ln	1795	0	1750	1795	0	1853	1340	1885	0	1357	0	1807
Q Serve(g_s), s	0.4	0.0	11.0	3.3	0.0	4.8	7.9	1.1	0.0	1.0	0.0	1.5
Cycle Q Clear(g_c), s	0.4	0.0	11.0	3.3	0.0	4.8	9.4	1.1	0.0	2.2	0.0	1.5
Prop In Lane	1.00		0.43	1.00		0.10	1.00		0.00	1.00		0.24
Lane Grp Cap(c), veh/h	45	0	574	181	0	733	443	473		457	0	453
V/C Ratio(X)	0.31	0.00	0.77	0.69	0.00	0.35	0.52	0.12		0.08	0.00	0.16
Avail Cap(c_a), veh/h	292	0	1255	417	0	1459	895	1109		903	0	1048
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.3	0.0	14.7	21.1	0.0	10.3	17.9	14.1	0.0	14.9	0.0	14.2
Incr Delay (d2), s/veh	4.0	0.0	2.2	4.7	0.0	0.3	1.0	0.1	0.0	0.1	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	4.0	1.4	0.0	1.4	2.1	0.4	0.0	0.3	0.0	0.5
Unsig. Movement Delay, s/veh									17.30			
LnGrp Delay(d), s/veh	27.3	0.0	16.9	25.8	0.0	10.6	18.8	14.2	17.3	15.0	0.0	14.4
LnGrp LOS	C		B	C		B	B	B	B	B		B
Approach Vol, veh/h		455			383			382			107	
Approach Delay, s/veh		17.2			15.6			17.8			14.6	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.6	21.0		18.0	6.3	24.3		18.0				
Change Period (Y+Rc), s	4.7	5.1		5.8	5.1	* 5.1		* 5.8				
Max Green Setting (Gmax), s	11.3	34.9		28.2	7.9	* 38		* 29				
Max Q Clear Time (g_c+I1), s	5.3	13.0		4.2	2.4	6.8		11.4				
Green Ext Time (p_c), s	0.1	2.9		0.4	0.0	1.4		0.9				

Intersection Summary	
HCM 7th Control Delay, s/veh	16.7
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [NBR] is included in calculations of the approach delay and intersection delay.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	254	70	365	29	70
v/c Ratio	0.28	0.21	0.26	0.10	0.11
Control Delay (s/veh)	10.8	16.5	3.8	15.6	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	10.8	16.5	3.8	15.6	2.9
Queue Length 50th (ft)	42	14	31	6	0
Queue Length 95th (ft)	93	42	66	22	15
Internal Link Dist (ft)	660		399	500	
Turn Bay Length (ft)		260			120
Base Capacity (vph)	1362	349	1820	1214	1104
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.19	0.20	0.20	0.02	0.06

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	199	37	65	339	27	65
Future Volume (veh/h)	199	37	65	339	27	65
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	214	40	70	365	29	70
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	380	71	187	980	205	183
Arrive On Green	0.25	0.25	0.11	0.53	0.12	0.12
Sat Flow, veh/h	1520	284	1767	1856	1767	1572
Grp Volume(v), veh/h	0	254	70	365	29	70
Grp Sat Flow(s),veh/h/ln	0	1804	1767	1856	1767	1572
Q Serve(g_s), s	0.0	3.3	1.0	3.2	0.4	1.1
Cycle Q Clear(g_c), s	0.0	3.3	1.0	3.2	0.4	1.1
Prop In Lane		0.16	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	451	187	980	205	183
V/C Ratio(X)	0.00	0.56	0.37	0.37	0.14	0.38
Avail Cap(c_a), veh/h	0	1847	473	2744	1647	1465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	8.9	11.3	3.8	10.8	11.1
Incr Delay (d2), s/veh	0.0	1.1	1.2	0.2	0.3	1.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.0	0.3	0.4	0.1	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	0.0	10.0	12.6	4.0	11.1	12.5
LnGrp LOS		B	B	A	B	B
Approach Vol, veh/h	254			435	99	
Approach Delay, s/veh	10.0			5.4	12.1	
Approach LOS	B			A	B	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	7.6	11.9				19.5	7.8
Change Period (Y+Rc), s	4.7	5.1				* 5.1	4.6
Max Green Setting (Gmax), s	7.3	27.9				* 40	25.4
Max Q Clear Time (g_c+I1), s	3.0	5.3				5.2	3.1
Green Ext Time (p_c), s	0.0	1.5				2.4	0.3

Intersection Summary	
HCM 7th Control Delay, s/veh	7.7
HCM 7th LOS	A

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	193	17	64	302	16	43
Future Vol, veh/h	193	17	64	302	16	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	160	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	80	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	230	21	76	360	19	51

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	251	0	752	240
Stage 1	-	-	-	-	240	-
Stage 2	-	-	-	-	512	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1314	-	378	798
Stage 1	-	-	-	-	800	-
Stage 2	-	-	-	-	602	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1314	-	356	798
Mov Cap-2 Maneuver	-	-	-	-	455	-
Stage 1	-	-	-	-	800	-
Stage 2	-	-	-	-	567	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.38	11.07
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	663	-	-	1314	-
HCM Lane V/C Ratio	0.106	-	-	0.058	-
HCM Ctrl Dly (s/v)	11.1	-	-	7.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.2	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	203	0	8	310	1	7
Future Vol, veh/h	203	0	8	310	1	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	60	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	226	0	9	344	1	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	226	0	588	226
Stage 1	-	-	-	-	226	-
Stage 2	-	-	-	-	362	-
Critical Hdwy	-	-	4.11	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	1349	-	473	816
Stage 1	-	-	-	-	814	-
Stage 2	-	-	-	-	707	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1349	-	470	816
Mov Cap-2 Maneuver	-	-	-	-	556	-
Stage 1	-	-	-	-	814	-
Stage 2	-	-	-	-	702	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.19	9.72
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	771	-	-	1349	-
HCM Lane V/C Ratio	0.012	-	-	0.007	-
HCM Ctrl Dly (s/v)	9.7	-	-	7.7	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	200	4	6	305	0	3
Future Vol, veh/h	200	4	6	305	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	217	4	7	332	0	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	222	0	564	220
Stage 1	-	-	-	-	220	-
Stage 2	-	-	-	-	345	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1347	-	487	820
Stage 1	-	-	-	-	817	-
Stage 2	-	-	-	-	717	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1347	-	484	820
Mov Cap-2 Maneuver	-	-	-	-	566	-
Stage 1	-	-	-	-	817	-
Stage 2	-	-	-	-	714	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.15	9.41
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	820	-	-	1347	-
HCM Lane V/C Ratio	0.004	-	-	0.005	-
HCM Ctrl Dly (s/v)	9.4	-	-	7.7	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	141	11	61	219	25	14	0	48	15	0	5
Future Vol, veh/h	10	141	11	61	219	25	14	0	48	15	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	160	-	-	80	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	152	12	66	235	27	15	0	52	16	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	262	0	0	163	0	0	546	573	158	553	565	249
Stage 1	-	-	-	-	-	-	179	179	-	380	380	-
Stage 2	-	-	-	-	-	-	367	394	-	173	185	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1302	-	-	1415	-	-	449	430	888	444	434	790
Stage 1	-	-	-	-	-	-	823	751	-	642	614	-
Stage 2	-	-	-	-	-	-	653	606	-	829	747	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1302	-	-	1415	-	-	421	407	888	395	411	790
Mov Cap-2 Maneuver	-	-	-	-	-	-	421	407	-	395	411	-
Stage 1	-	-	-	-	-	-	816	745	-	612	585	-
Stage 2	-	-	-	-	-	-	618	577	-	774	741	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.48	1.53	10.59	13.37
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	710	1302	-	-	1415	-	-	452
HCM Lane V/C Ratio	0.094	0.008	-	-	0.046	-	-	0.048
HCM Ctrl Dly (s/v)	10.6	7.8	-	-	7.7	-	-	13.4
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0.1

Intersection	
Int Delay, s/veh	2.7

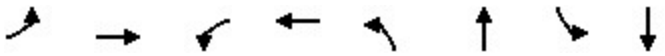
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	198	66	15	404	0	197
Future Vol, veh/h	198	66	15	404	0	197
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	200	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	215	72	16	439	0	214

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	287	0	-	251
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.12	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.218	-	-	3.318
Pot Cap-1 Maneuver	-	-	1275	-	0	788
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1275	-	-	788
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.28	11.27
HCM LOS			B

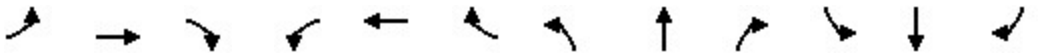
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	788	-	-	1275	-
HCM Lane V/C Ratio	0.272	-	-	0.013	-
HCM Ctrl Dly (s/v)	11.3	-	-	7.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	1.1	-	-	0	-

APPENDIX B: SYNCHRO 12 HCM 7 REPORTS – FUTURE NO DEVELOPMENT



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	17	659	114	397	284	142	11	45
v/c Ratio	0.10	0.82	0.51	0.40	0.74	0.26	0.03	0.09
Control Delay (s/veh)	45.2	30.7	49.5	14.7	43.1	12.1	26.5	21.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	45.2	30.7	49.5	14.7	43.1	12.1	26.5	21.6
Queue Length 50th (ft)	9	303	61	99	148	19	5	14
Queue Length 95th (ft)	33	498	131	245	259	66	19	43
Internal Link Dist (ft)		1258		1351		748		569
Turn Bay Length (ft)	290		200		80		60	
Base Capacity (vph)	241	1103	275	1223	591	784	533	778
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.60	0.41	0.32	0.48	0.18	0.02	0.06

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	335	245	100	340	10	250	40	85	10	30	10
Future Volume (veh/h)	15	335	245	100	340	10	250	40	85	10	30	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	17	381	278	114	386	11	284	45	0	11	34	11
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	51	443	323	148	886	25	431	487		432	353	114
Arrive On Green	0.03	0.44	0.44	0.08	0.49	0.49	0.26	0.26	0.00	0.26	0.26	0.26
Sat Flow, veh/h	1795	1013	739	1795	1824	52	1372	1885	0	1372	1364	441
Grp Volume(v), veh/h	17	0	659	114	0	397	284	45	0	11	0	45
Grp Sat Flow(s),veh/h/ln	1795	0	1752	1795	0	1876	1372	1885	0	1372	0	1806
Q Serve(g_s), s	0.7	0.0	23.8	4.4	0.0	9.7	13.9	1.3	0.0	0.4	0.0	1.3
Cycle Q Clear(g_c), s	0.7	0.0	23.8	4.4	0.0	9.7	15.3	1.3	0.0	1.7	0.0	1.3
Prop In Lane	1.00		0.42	1.00		0.03	1.00		0.00	1.00		0.24
Lane Grp Cap(c), veh/h	51	0	766	148	0	911	431	487		432	0	467
V/C Ratio(X)	0.34	0.00	0.86	0.77	0.00	0.44	0.66	0.09		0.03	0.00	0.10
Avail Cap(c_a), veh/h	253	0	1170	289	0	1290	694	848		687	0	802
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.5	0.0	17.8	31.6	0.0	11.8	25.6	19.8	0.0	20.4	0.0	19.8
Incr Delay (d2), s/veh	3.9	0.0	4.3	8.3	0.0	0.3	1.7	0.1	0.0	0.0	0.0	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	9.5	2.2	0.0	3.7	4.3	0.5	0.0	0.1	0.0	0.5
Unsig. Movement Delay, s/veh									22.50			
LnGrp Delay(d), s/veh	37.4	0.0	22.1	39.9	0.0	12.1	27.3	19.9	22.5	20.5	0.0	19.9
LnGrp LOS	D		C	D		B	C	B	C	C		B
Approach Vol, veh/h		676			511			426			56	
Approach Delay, s/veh		22.5			18.3			25.4			20.0	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.5	35.8		24.0	7.1	39.2		24.0				
Change Period (Y+Rc), s	4.7	5.1		5.8	5.1	* 5.1		* 5.8				
Max Green Setting (Gmax), s	11.3	46.9		31.2	9.9	* 48		* 32				
Max Q Clear Time (g_c+I1), s	6.4	25.8		3.7	2.7	11.7		17.3				
Green Ext Time (p_c), s	0.1	4.9		0.2	0.0	2.7		0.9				

Intersection Summary		
HCM 7th Control Delay, s/veh	21.9	
HCM 7th LOS	C	

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR] is included in calculations of the approach delay and intersection delay.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	514	192	315	34	274
v/c Ratio	0.72	0.54	0.25	0.14	0.34
Control Delay (s/veh)	20.9	27.5	3.9	24.4	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	20.9	27.5	3.9	24.4	4.2
Queue Length 50th (ft)	130	59	27	11	9
Queue Length 95th (ft)	191	101	51	27	27
Internal Link Dist (ft)	660		399	500	
Turn Bay Length (ft)		260			120
Base Capacity (vph)	872	434	1511	862	898
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.59	0.44	0.21	0.04	0.31

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	280	95	140	230	25	200
Future Volume (veh/h)	280	95	140	230	25	200
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	384	130	192	315	34	274
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	469	159	247	1089	389	346
Arrive On Green	0.35	0.35	0.14	0.59	0.22	0.22
Sat Flow, veh/h	1326	449	1767	1856	1767	1572
Grp Volume(v), veh/h	0	514	192	315	34	274
Grp Sat Flow(s),veh/h/ln	0	1775	1767	1856	1767	1572
Q Serve(g_s), s	0.0	13.2	5.3	4.2	0.8	8.3
Cycle Q Clear(g_c), s	0.0	13.2	5.3	4.2	0.8	8.3
Prop In Lane		0.25	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	628	247	1089	389	346
V/C Ratio(X)	0.00	0.82	0.78	0.29	0.09	0.79
Avail Cap(c_a), veh/h	0	915	468	1637	929	827
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	14.8	20.9	5.2	15.6	18.5
Incr Delay (d2), s/veh	0.0	3.9	5.3	0.1	0.1	4.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.1	2.3	1.1	0.3	3.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	0.0	18.6	26.1	5.3	15.7	22.6
LnGrp LOS		B	C	A	B	C
Approach Vol, veh/h	514			507	308	
Approach Delay, s/veh	18.6			13.2	21.8	
Approach LOS	B			B	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	11.7	22.9				34.6	15.7
Change Period (Y+Rc), s	4.7	5.1				* 5.1	4.6
Max Green Setting (Gmax), s	13.3	25.9				* 44	26.4
Max Q Clear Time (g_c+I1), s	7.3	15.2				6.2	10.3
Green Ext Time (p_c), s	0.3	2.5				2.1	0.9

Intersection Summary	
HCM 7th Control Delay, s/veh	17.3
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	3.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	300	40	115	140	35	75
Future Vol, veh/h	300	40	115	140	35	75
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	160	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	80	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	357	50	137	167	42	89

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	407	0	823	382
Stage 1	-	-	-	-	382	-
Stage 2	-	-	-	-	440	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1152	-	343	665
Stage 1	-	-	-	-	690	-
Stage 2	-	-	-	-	649	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1152	-	303	665
Mov Cap-2 Maneuver	-	-	-	-	421	-
Stage 1	-	-	-	-	690	-
Stage 2	-	-	-	-	572	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	3.85	13.35
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	562	-	-	1152	-
HCM Lane V/C Ratio	0.233	-	-	0.119	-
HCM Ctrl Dly (s/v)	13.3	-	-	8.5	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.9	-	-	0.4	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	330	5	5	165	5	10
Future Vol, veh/h	330	5	5	165	5	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	60	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	367	6	6	183	6	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	372	0	564	369
Stage 1	-	-	-	-	369	-
Stage 2	-	-	-	-	194	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1181	-	485	674
Stage 1	-	-	-	-	697	-
Stage 2	-	-	-	-	836	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1181	-	483	674
Mov Cap-2 Maneuver	-	-	-	-	562	-
Stage 1	-	-	-	-	697	-
Stage 2	-	-	-	-	832	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.24	10.85
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	632	-	-	1181	-
HCM Lane V/C Ratio	0.026	-	-	0.005	-
HCM Ctrl Dly (s/v)	10.9	-	-	8.1	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	330	5	5	165	5	5
Future Vol, veh/h	330	5	5	165	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	379	6	6	190	6	6

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	385	0	583	382
Stage 1	-	-	-	-	382	-
Stage 2	-	-	-	-	201	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1173	-	474	665
Stage 1	-	-	-	-	690	-
Stage 2	-	-	-	-	833	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1173	-	472	665
Mov Cap-2 Maneuver	-	-	-	-	554	-
Stage 1	-	-	-	-	690	-
Stage 2	-	-	-	-	829	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.24	11.07
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	605	-	-	1173	-
HCM Lane V/C Ratio	0.019	-	-	0.005	-
HCM Ctrl Dly (s/v)	11.1	-	-	8.1	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	240	10	40	115	10	15	5	65	25	5	10
Future Vol, veh/h	5	240	10	40	115	10	15	5	65	25	5	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	160	-	-	80	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	270	11	45	129	11	17	6	73	28	6	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	140	0	0	281	0	0	508	517	275	508	517	135
Stage 1	-	-	-	-	-	-	287	287	-	225	225	-
Stage 2	-	-	-	-	-	-	222	230	-	284	292	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1443	-	-	1282	-	-	475	462	763	475	462	914
Stage 1	-	-	-	-	-	-	721	675	-	778	718	-
Stage 2	-	-	-	-	-	-	781	714	-	723	671	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1443	-	-	1282	-	-	446	444	763	408	444	914
Mov Cap-2 Maneuver	-	-	-	-	-	-	446	444	-	408	444	-
Stage 1	-	-	-	-	-	-	718	672	-	751	693	-
Stage 2	-	-	-	-	-	-	738	689	-	646	668	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.15	1.92	11.45	13.29
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	654	1443	-	-	1282	-	-	479
HCM Lane V/C Ratio	0.146	0.004	-	-	0.035	-	-	0.094
HCM Ctrl Dly (s/v)	11.4	7.5	-	-	7.9	-	-	13.3
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.5	0	-	-	0.1	-	-	0.3

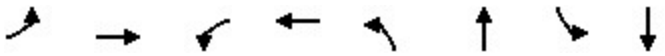
Intersection	
Int Delay, s/veh	3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	440	40	220	370	0	150
Future Vol, veh/h	440	40	220	370	0	150
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	200	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	478	43	239	402	0	163

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	522	0	-	500
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.12	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.218	-	-	3.318
Pot Cap-1 Maneuver	-	-	1045	-	0	571
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1045	-	-	571
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

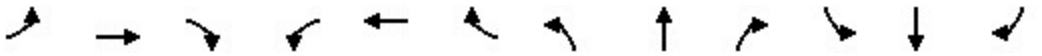
Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	3.53	13.81
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	571	-	-	1045	-
HCM Lane V/C Ratio	0.286	-	-	0.229	-
HCM Ctrl Dly (s/v)	13.8	-	-	9.5	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	1.2	-	-	0.9	-



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	17	552	132	259	230	63	46	69
v/c Ratio	0.08	0.74	0.49	0.25	0.66	0.13	0.13	0.14
Control Delay (s/veh)	39.7	25.6	41.2	10.3	36.4	22.7	25.1	19.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	39.7	25.6	41.2	10.3	36.4	22.7	25.1	19.9
Queue Length 50th (ft)	7	198	55	45	93	20	16	18
Queue Length 95th (ft)	31	372	138	144	199	57	48	55
Internal Link Dist (ft)		1258		1351		748		569
Turn Bay Length (ft)	290		200		80		60	
Base Capacity (vph)	223	1165	347	1307	627	871	622	846
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.47	0.38	0.20	0.37	0.07	0.07	0.08

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	300	180	115	200	25	200	50	5	40	45	15
Future Volume (veh/h)	15	300	180	115	200	25	200	50	5	40	45	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	17	345	207	132	230	29	230	57	0	46	52	17
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	52	426	256	172	731	92	413	458		425	330	108
Arrive On Green	0.03	0.39	0.39	0.10	0.45	0.45	0.24	0.24	0.00	0.24	0.24	0.24
Sat Flow, veh/h	1795	1104	662	1795	1641	207	1342	1885	0	1357	1360	445
Grp Volume(v), veh/h	17	0	552	132	0	259	230	57	0	46	0	69
Grp Sat Flow(s),veh/h/ln	1795	0	1766	1795	0	1848	1342	1885	0	1357	0	1805
Q Serve(g_s), s	0.5	0.0	15.8	4.1	0.0	5.1	9.2	1.3	0.0	1.6	0.0	1.7
Cycle Q Clear(g_c), s	0.5	0.0	15.8	4.1	0.0	5.1	10.9	1.3	0.0	2.9	0.0	1.7
Prop In Lane	1.00		0.38	1.00		0.11	1.00		0.00	1.00		0.25
Lane Grp Cap(c), veh/h	52	0	681	172	0	823	413	458		425	0	438
V/C Ratio(X)	0.33	0.00	0.81	0.77	0.00	0.31	0.56	0.12		0.11	0.00	0.16
Avail Cap(c_a), veh/h	251	0	1338	390	0	1544	789	986		795	0	931
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.9	0.0	15.5	25.0	0.0	10.1	21.2	16.7	0.0	17.9	0.0	16.9
Incr Delay (d2), s/veh	3.6	0.0	2.4	7.0	0.0	0.2	1.2	0.1	0.0	0.1	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	5.9	1.8	0.0	1.6	2.6	0.5	0.0	0.4	0.0	0.6
Unsig. Movement Delay, s/veh									19.30			
LnGrp Delay(d), s/veh	30.5	0.0	17.9	31.9	0.0	10.3	22.4	16.9	19.3	18.0	0.0	17.0
LnGrp LOS	C		B	C		B	C	B	B	B		B
Approach Vol, veh/h		569			391			293			115	
Approach Delay, s/veh		18.3			17.6			21.2			17.4	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.1	26.9		19.5	6.7	30.3		19.5				
Change Period (Y+Rc), s	4.7	5.1		5.8	5.1	* 5.1		* 5.8				
Max Green Setting (Gmax), s	12.3	42.9		29.2	7.9	* 47		* 30				
Max Q Clear Time (g_c+I1), s	6.1	17.8		4.9	2.5	7.1		12.9				
Green Ext Time (p_c), s	0.1	4.0		0.4	0.0	1.4		0.9				

Intersection Summary		
HCM 7th Control Delay, s/veh		18.7
HCM 7th LOS		B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [NBR] is included in calculations of the approach delay and intersection delay.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	328	75	355	38	97
v/c Ratio	0.38	0.22	0.27	0.13	0.14
Control Delay (s/veh)	12.5	18.3	4.1	18.2	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	12.5	18.3	4.1	18.2	3.0
Queue Length 50th (ft)	60	15	30	8	0
Queue Length 95th (ft)	131	49	66	31	20
Internal Link Dist (ft)	660		399	500	
Turn Bay Length (ft)		260			120
Base Capacity (vph)	1189	412	1693	1126	1038
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.28	0.18	0.21	0.03	0.09

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	260	45	70	330	35	90
Future Volume (veh/h)	260	45	70	330	35	90
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	280	48	75	355	38	97
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	441	76	191	1016	237	211
Arrive On Green	0.29	0.29	0.11	0.55	0.13	0.13
Sat Flow, veh/h	1543	265	1767	1856	1767	1572
Grp Volume(v), veh/h	0	328	75	355	38	97
Grp Sat Flow(s),veh/h/ln	0	1808	1767	1856	1767	1572
Q Serve(g_s), s	0.0	4.8	1.2	3.3	0.6	1.7
Cycle Q Clear(g_c), s	0.0	4.8	1.2	3.3	0.6	1.7
Prop In Lane		0.15	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	516	191	1016	237	211
V/C Ratio(X)	0.00	0.64	0.39	0.35	0.16	0.46
Avail Cap(c_a), veh/h	0	1536	539	2453	1472	1310
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	9.5	12.7	3.9	11.7	12.2
Incr Delay (d2), s/veh	0.0	1.3	1.3	0.2	0.3	1.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.5	0.4	0.5	0.2	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	0.0	10.8	14.0	4.1	12.0	13.7
LnGrp LOS		B	B	A	B	B
Approach Vol, veh/h	328			430	135	
Approach Delay, s/veh	10.8			5.8	13.2	
Approach LOS	B			A	B	

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	8.0	13.8			21.8	8.7
Change Period (Y+Rc), s	4.7	5.1			* 5.1	4.6
Max Green Setting (Gmax), s	9.3	25.9			* 40	25.4
Max Q Clear Time (g_c+I1), s	3.2	6.8			5.3	3.7
Green Ext Time (p_c), s	0.1	1.9			2.3	0.4

Intersection Summary	
HCM 7th Control Delay, s/veh	8.8
HCM 7th LOS	A

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	260	20	60	300	15	45
Future Vol, veh/h	260	20	60	300	15	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	160	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	80	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	310	25	71	357	18	54

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	335	0	822	322
Stage 1	-	-	-	-	322	-
Stage 2	-	-	-	-	500	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1225	-	344	719
Stage 1	-	-	-	-	735	-
Stage 2	-	-	-	-	609	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1225	-	324	719
Mov Cap-2 Maneuver	-	-	-	-	437	-
Stage 1	-	-	-	-	735	-
Stage 2	-	-	-	-	574	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.35	11.57
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	619	-	-	1225	-
HCM Lane V/C Ratio	0.115	-	-	0.058	-
HCM Ctrl Dly (s/v)	11.6	-	-	8.1	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.2	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	275	5	10	310	5	5
Future Vol, veh/h	275	5	10	310	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	60	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	306	6	11	344	6	6

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	311	0	675	308
Stage 1	-	-	-	-	308	-
Stage 2	-	-	-	-	367	-
Critical Hdwy	-	-	4.11	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	1255	-	421	734
Stage 1	-	-	-	-	747	-
Stage 2	-	-	-	-	703	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1255	-	417	734
Mov Cap-2 Maneuver	-	-	-	-	519	-
Stage 1	-	-	-	-	747	-
Stage 2	-	-	-	-	697	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.25	11.03
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	608	-	-	1255	-
HCM Lane V/C Ratio	0.018	-	-	0.009	-
HCM Ctrl Dly (s/v)	11	-	-	7.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	270	5	5	305	5	5
Future Vol, veh/h	270	5	5	305	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	293	5	5	332	5	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	299	0	639	296
Stage 1	-	-	-	-	296	-
Stage 2	-	-	-	-	342	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1262	-	440	743
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	719	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1262	-	439	743
Mov Cap-2 Maneuver	-	-	-	-	535	-
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	716	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.13	10.89
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	622	-	-	1262	-
HCM Lane V/C Ratio	0.017	-	-	0.004	-
HCM Ctrl Dly (s/v)	10.9	-	-	7.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	185	20	60	220	25	25	5	70	20	5	5
Future Vol, veh/h	15	185	20	60	220	25	25	5	70	20	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	160	-	-	80	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	199	22	65	237	27	27	5	75	22	5	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	263	0	0	220	0	0	610	634	210	613	632	250
Stage 1	-	-	-	-	-	-	242	242	-	379	379	-
Stage 2	-	-	-	-	-	-	368	392	-	234	253	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1301	-	-	1349	-	-	406	396	831	405	398	789
Stage 1	-	-	-	-	-	-	762	706	-	643	614	-
Stage 2	-	-	-	-	-	-	651	606	-	769	698	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1301	-	-	1349	-	-	374	373	831	341	374	789
Mov Cap-2 Maneuver	-	-	-	-	-	-	374	373	-	341	374	-
Stage 1	-	-	-	-	-	-	752	697	-	612	585	-
Stage 2	-	-	-	-	-	-	610	577	-	685	689	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.53	1.54	12.19	15.26
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	608	1301	-	-	1349	-	-	383
HCM Lane V/C Ratio	0.177	0.012	-	-	0.048	-	-	0.084
HCM Ctrl Dly (s/v)	12.2	7.8	-	-	7.8	-	-	15.3
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.6	0	-	-	0.2	-	-	0.3

Intersection	
Int Delay, s/veh	3.3

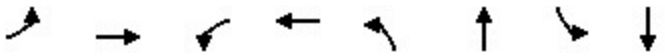
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	270	80	20	400	0	240
Future Vol, veh/h	270	80	20	400	0	240
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	200	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	293	87	22	435	0	261

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	380	0	-	337
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.12	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.218	-	-	3.318
Pot Cap-1 Maneuver	-	-	1178	-	0	705
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1178	-	-	705
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.39	13.07
HCM LOS			B

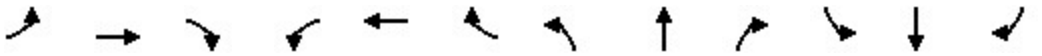
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	705	-	-	1178	-
HCM Lane V/C Ratio	0.37	-	-	0.018	-
HCM Ctrl Dly (s/v)	13.1	-	-	8.1	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	1.7	-	-	0.1	-

APPENDIX B: SYNCHRO 12 HCM 7 REPORTS – FUTURE WITH DEVELOPMENT



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	40	699	85	415	307	160	45	182
v/c Ratio	0.27	0.86	0.51	0.45	0.80	0.26	0.11	0.29
Control Delay (s/veh)	63.0	40.6	68.8	23.3	52.3	19.6	30.0	28.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	63.0	40.6	68.8	23.3	52.3	19.6	30.0	28.2
Queue Length 50th (ft)	30	470	64	214	218	54	24	94
Queue Length 95th (ft)	74	715	133	351	361	113	56	165
Internal Link Dist (ft)		1258		1351		748		569
Turn Bay Length (ft)	290		200		80		60	
Base Capacity (vph)	195	1112	202	1162	572	898	590	911
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.63	0.42	0.36	0.54	0.18	0.08	0.20

Intersection Summary



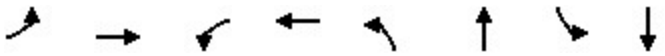
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	415	200	75	350	15	270	55	85	40	110	50
Future Volume (veh/h)	35	415	200	75	350	15	270	55	85	40	110	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	40	472	227	85	398	17	307	63	0	45	125	57
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	83	525	252	109	802	34	406	661		513	430	196
Arrive On Green	0.05	0.44	0.44	0.06	0.45	0.45	0.35	0.35	0.00	0.35	0.35	0.35
Sat Flow, veh/h	1795	1203	578	1795	1795	77	1211	1885	0	1350	1226	559
Grp Volume(v), veh/h	40	0	699	85	0	415	307	63	0	45	0	182
Grp Sat Flow(s),veh/h/ln	1795	0	1781	1795	0	1871	1211	1885	0	1350	0	1785
Q Serve(g_s), s	2.2	0.0	37.4	4.8	0.0	16.2	25.2	2.3	0.0	2.4	0.0	7.6
Cycle Q Clear(g_c), s	2.2	0.0	37.4	4.8	0.0	16.2	32.8	2.3	0.0	4.7	0.0	7.6
Prop In Lane	1.00		0.32	1.00		0.04	1.00		0.00	1.00		0.31
Lane Grp Cap(c), veh/h	83	0	777	109	0	836	406	661		513	0	626
V/C Ratio(X)	0.48	0.00	0.90	0.78	0.00	0.50	0.76	0.10		0.09	0.00	0.29
Avail Cap(c_a), veh/h	191	0	1091	198	0	1153	578	929		700	0	872
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	47.8	0.0	26.8	47.5	0.0	20.2	35.9	22.4	0.0	24.0	0.0	24.1
Incr Delay (d2), s/veh	4.2	0.0	7.7	11.3	0.0	0.5	3.5	0.1	0.0	0.1	0.0	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	16.8	2.4	0.0	6.6	7.5	1.0	0.0	0.7	0.0	3.1
Unsig. Movement Delay, s/veh									19.40			
LnGrp Delay(d), s/veh	52.0	0.0	34.6	58.8	0.0	20.6	39.5	22.4	19.4	24.0	0.0	24.4
LnGrp LOS	D		C	E		C	D	C	B	C		C
Approach Vol, veh/h		739			500			467			227	
Approach Delay, s/veh		35.5			27.1			33.0			24.3	
Approach LOS		D			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.9	49.9		41.8	9.9	51.0		41.8				
Change Period (Y+Rc), s	4.7	5.1		5.8	5.1	* 5.1		* 5.8				
Max Green Setting (Gmax), s	11.3	62.9		50.2	10.9	* 63		* 51				
Max Q Clear Time (g_c+I1), s	6.8	39.4		9.6	4.2	18.2		34.8				
Green Ext Time (p_c), s	0.1	5.4		1.1	0.0	2.5		1.3				

Intersection Summary		
HCM 7th Control Delay, s/veh	31.4	
HCM 7th LOS	C	

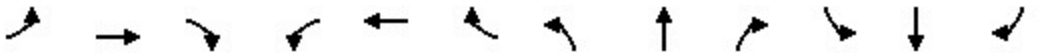
Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [NBR] is included in calculations of the approach delay and intersection delay.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	22	493	192	319	55	104	304	92
v/c Ratio	0.16	0.84	0.72	0.36	0.35	0.47	0.77	0.22
Control Delay (s/veh)	45.6	44.9	54.8	19.3	47.4	21.4	47.7	22.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	45.6	44.9	54.8	19.3	47.4	21.4	47.7	22.9
Queue Length 50th (ft)	13	274	112	103	32	13	173	31
Queue Length 95th (ft)	39	329	157	182	58	64	278	74
Internal Link Dist (ft)		660		399		500		318
Turn Bay Length (ft)	80		260		80		250	
Base Capacity (vph)	152	584	291	878	483	509	488	502
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.84	0.66	0.36	0.11	0.20	0.62	0.18

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	255	105	140	205	35	40	20	60	280	50	35
Future Volume (veh/h)	20	255	105	140	205	35	40	20	60	280	50	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1856	1856	1856	1856	1870	1856	1870	1856	1870	1870	1870
Adj Flow Rate, veh/h	22	349	144	192	281	38	55	22	82	304	54	38
Peak Hour Factor	0.92	0.73	0.73	0.73	0.73	0.92	0.73	0.92	0.73	0.92	0.92	0.92
Percent Heavy Veh, %	2	3	3	3	3	2	3	2	3	2	2	2
Cap, veh/h	61	396	163	235	657	89	165	32	121	366	210	148
Arrive On Green	0.03	0.32	0.32	0.13	0.41	0.41	0.09	0.09	0.09	0.21	0.21	0.21
Sat Flow, veh/h	1781	1248	515	1767	1600	216	1767	346	1291	1781	1022	719
Grp Volume(v), veh/h	22	0	493	192	0	319	55	0	104	304	0	92
Grp Sat Flow(s),veh/h/ln	1781	0	1763	1767	0	1817	1767	0	1638	1781	0	1741
Q Serve(g_s), s	0.9	0.0	20.1	8.0	0.0	9.5	2.2	0.0	4.7	12.4	0.0	3.4
Cycle Q Clear(g_c), s	0.9	0.0	20.1	8.0	0.0	9.5	2.2	0.0	4.7	12.4	0.0	3.4
Prop In Lane	1.00		0.29	1.00		0.12	1.00		0.79	1.00		0.41
Lane Grp Cap(c), veh/h	61	0	560	235	0	746	165	0	153	366	0	357
V/C Ratio(X)	0.36	0.00	0.88	0.82	0.00	0.43	0.33	0.00	0.68	0.83	0.00	0.26
Avail Cap(c_a), veh/h	186	0	696	357	0	895	593	0	550	598	0	584
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.7	0.0	24.5	31.9	0.0	15.9	32.1	0.0	33.2	28.8	0.0	25.2
Incr Delay (d2), s/veh	3.6	0.0	10.7	8.6	0.0	0.4	1.2	0.0	5.2	5.2	0.0	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	9.5	3.9	0.0	3.7	1.0	0.0	2.0	5.7	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	39.3	0.0	35.2	40.5	0.0	16.3	33.3	0.0	38.4	34.0	0.0	25.6
LnGrp LOS	D		D	D		B	C		D	C		C
Approach Vol, veh/h		515			511			159			396	
Approach Delay, s/veh		35.4			25.4			36.6			32.1	
Approach LOS		D			C			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.8	29.1		20.1	7.7	36.2		11.7				
Change Period (Y+Rc), s	4.7	5.1		4.6	5.1	* 5.1		4.6				
Max Green Setting (Gmax), s	15.3	29.9		25.4	7.9	* 37		25.4				
Max Q Clear Time (g_c+I1), s	10.0	22.1		14.4	2.9	11.5		6.7				
Green Ext Time (p_c), s	0.2	2.0		1.2	0.0	2.0		0.7				

Intersection Summary		
HCM 7th Control Delay, s/veh	31.5	
HCM 7th LOS	C	

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	305	40	115	165	35	75
Future Vol, veh/h	305	40	115	165	35	75
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	160	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	80	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	363	50	137	196	42	89

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	413	0	858	388
Stage 1	-	-	-	-	388	-
Stage 2	-	-	-	-	470	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1146	-	327	660
Stage 1	-	-	-	-	685	-
Stage 2	-	-	-	-	629	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1146	-	288	660
Mov Cap-2 Maneuver	-	-	-	-	408	-
Stage 1	-	-	-	-	685	-
Stage 2	-	-	-	-	554	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	3.52	13.54
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	552	-	-	1146	-
HCM Lane V/C Ratio	0.237	-	-	0.119	-
HCM Ctrl Dly (s/v)	13.5	-	-	8.6	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.9	-	-	0.4	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	310	5	5	180	10	5	5	5	30	5	5
Future Vol, veh/h	5	310	5	5	180	10	5	5	5	30	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	-	60	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	90	90	90	90	92	90	92	90	92	92	92
Heavy Vehicles, %	2	3	3	3	3	2	3	2	3	2	2	2
Mvmt Flow	5	344	6	6	200	11	6	5	6	33	5	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	211	0	0	350	0	0	572	580	347	575	577	205
Stage 1	-	-	-	-	-	-	358	358	-	217	217	-
Stage 2	-	-	-	-	-	-	214	222	-	358	361	-
Critical Hdwy	4.12	-	-	4.13	-	-	7.13	6.52	6.23	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.227	-	-	3.527	4.018	3.327	3.518	4.018	3.318
Pot Cap-1 Maneuver	1360	-	-	1203	-	-	430	426	694	429	427	835
Stage 1	-	-	-	-	-	-	658	628	-	786	724	-
Stage 2	-	-	-	-	-	-	786	720	-	660	626	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1360	-	-	1203	-	-	418	422	694	417	423	835
Mov Cap-2 Maneuver	-	-	-	-	-	-	418	422	-	417	423	-
Stage 1	-	-	-	-	-	-	655	625	-	782	720	-
Stage 2	-	-	-	-	-	-	771	716	-	646	623	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.12	0.21	12.7	13.95
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	484	1360	-	-	1203	-	-	446
HCM Lane V/C Ratio	0.034	0.004	-	-	0.005	-	-	0.098
HCM Ctrl Dly (s/v)	12.7	7.7	-	-	8	-	-	14
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	310	5	5	185	5	5
Future Vol, veh/h	310	5	5	185	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	356	6	6	213	6	6

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	362	0	583	359
Stage 1	-	-	-	-	359	-
Stage 2	-	-	-	-	224	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1197	-	474	685
Stage 1	-	-	-	-	707	-
Stage 2	-	-	-	-	813	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1197	-	472	685
Mov Cap-2 Maneuver	-	-	-	-	557	-
Stage 1	-	-	-	-	707	-
Stage 2	-	-	-	-	809	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.21	10.97
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	615	-	-	1197	-
HCM Lane V/C Ratio	0.019	-	-	0.005	-
HCM Ctrl Dly (s/v)	11	-	-	8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	220	10	40	135	10	15	5	65	25	5	5
Future Vol, veh/h	5	220	10	40	135	10	15	5	65	25	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	160	-	-	80	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	247	11	45	152	11	17	6	73	28	6	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	163	0	0	258	0	0	508	517	253	508	517	157
Stage 1	-	-	-	-	-	-	264	264	-	247	247	-
Stage 2	-	-	-	-	-	-	244	253	-	261	270	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1416	-	-	1306	-	-	475	462	786	475	462	888
Stage 1	-	-	-	-	-	-	741	690	-	757	702	-
Stage 2	-	-	-	-	-	-	759	698	-	744	686	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1416	-	-	1306	-	-	448	445	786	409	445	888
Mov Cap-2 Maneuver	-	-	-	-	-	-	448	445	-	409	445	-
Stage 1	-	-	-	-	-	-	738	687	-	731	678	-
Stage 2	-	-	-	-	-	-	722	674	-	666	683	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.16	1.7	11.3	13.78
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	667	1416	-	-	1306	-	-	449
HCM Lane V/C Ratio	0.143	0.004	-	-	0.034	-	-	0.088
HCM Ctrl Dly (s/v)	11.3	7.6	-	-	7.9	-	-	13.8
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.5	0	-	-	0.1	-	-	0.3

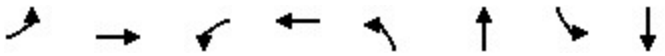
Intersection	
Int Delay, s/veh	3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	505	60	230	420	0	150
Future Vol, veh/h	505	60	230	420	0	150
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	200	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	549	65	250	457	0	163

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	614	0	-	582
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.12	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.218	-	-	3.318
Pot Cap-1 Maneuver	-	-	965	-	0	513
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	965	-	-	513
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

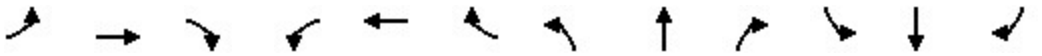
Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	3.55	15.25
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	513	-	-	965	-
HCM Lane V/C Ratio	0.318	-	-	0.259	-
HCM Ctrl Dly (s/v)	15.2	-	-	10	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	1.4	-	-	1	-



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	34	586	126	350	264	391	52	143
v/c Ratio	0.18	0.81	0.48	0.39	0.71	0.71	0.33	0.27
Control Delay (s/veh)	43.5	31.5	43.9	16.4	40.2	32.1	32.7	23.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	43.5	31.5	43.9	16.4	40.2	32.1	32.7	23.4
Queue Length 50th (ft)	17	252	63	120	126	164	22	50
Queue Length 95th (ft)	50	426	130	203	232	286	59	105
Internal Link Dist (ft)		1258		1351		748		569
Turn Bay Length (ft)	290		200		80		60	
Base Capacity (vph)	203	1020	368	1167	553	797	239	796
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.57	0.34	0.30	0.48	0.49	0.22	0.18

Intersection Summary



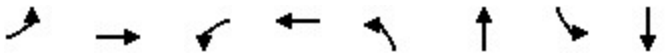
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	280	230	110	270	35	230	175	165	45	90	35
Future Volume (veh/h)	30	280	230	110	270	35	230	175	165	45	90	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	34	322	264	126	310	40	264	201	0	52	103	40
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	86	372	305	163	696	90	409	579		366	397	154
Arrive On Green	0.05	0.39	0.39	0.09	0.43	0.43	0.31	0.31	0.00	0.31	0.31	0.31
Sat Flow, veh/h	1795	958	786	1795	1636	211	1255	1885	0	1191	1293	502
Grp Volume(v), veh/h	34	0	586	126	0	350	264	201	0	52	0	143
Grp Sat Flow(s),veh/h/ln	1795	0	1744	1795	0	1847	1255	1885	0	1191	0	1795
Q Serve(g_s), s	1.3	0.0	22.6	5.0	0.0	9.8	14.6	6.0	0.0	2.6	0.0	4.4
Cycle Q Clear(g_c), s	1.3	0.0	22.6	5.0	0.0	9.8	19.0	6.0	0.0	8.6	0.0	4.4
Prop In Lane	1.00		0.45	1.00		0.11	1.00		0.00	1.00		0.28
Lane Grp Cap(c), veh/h	86	0	676	163	0	785	409	579		366	0	552
V/C Ratio(X)	0.40	0.00	0.87	0.77	0.00	0.45	0.64	0.35		0.14	0.00	0.26
Avail Cap(c_a), veh/h	195	0	956	353	0	1175	551	792		494	0	745
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.6	0.0	20.5	32.4	0.0	14.8	26.1	19.6	0.0	22.9	0.0	19.0
Incr Delay (d2), s/veh	2.9	0.0	6.2	7.6	0.0	0.4	1.7	0.4	0.0	0.2	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	9.5	2.4	0.0	3.9	4.2	2.5	0.0	0.7	0.0	1.7
Unsig. Movement Delay, s/veh									20.00			
LnGrp Delay(d), s/veh	36.6	0.0	26.7	40.0	0.0	15.2	27.8	19.9	20.0	23.1	0.0	19.2
LnGrp LOS	D		C	D		B	C	B	B	C		B
Approach Vol, veh/h		620			476			655			195	
Approach Delay, s/veh		27.3			21.8			23.1			20.2	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.3	33.3		28.2	8.6	36.1		28.2				
Change Period (Y+Rc), s	4.7	5.1		5.8	5.1	* 5.1		* 5.8				
Max Green Setting (Gmax), s	14.3	39.9		30.2	7.9	* 46		* 31				
Max Q Clear Time (g_c+I1), s	7.0	24.6		10.6	3.3	11.8		21.0				
Green Ext Time (p_c), s	0.2	3.7		0.8	0.0	2.3		1.4				

Intersection Summary	
HCM 7th Control Delay, s/veh	23.8
HCM 7th LOS	C

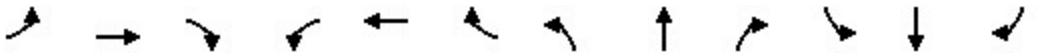
Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [NBR] is included in calculations of the approach delay and intersection delay.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	49	285	70	470	102	147	163	27
v/c Ratio	0.25	0.52	0.31	0.72	0.36	0.49	0.51	0.08
Control Delay (s/veh)	43.3	26.8	41.2	27.8	37.5	37.5	39.1	21.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	43.3	26.8	41.2	27.8	37.5	37.5	39.1	21.1
Queue Length 50th (ft)	23	110	33	189	47	62	75	5
Queue Length 95th (ft)	72	230	91	366	115	148	169	31
Internal Link Dist (ft)		660		399		500		325
Turn Bay Length (ft)	80		260		80		250	
Base Capacity (vph)	208	968	321	1048	690	711	697	677
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.29	0.22	0.45	0.15	0.21	0.23	0.04

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	225	40	65	215	220	95	100	35	150	10	15
Future Volume (veh/h)	45	225	40	65	215	220	95	100	35	150	10	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1856	1856	1856	1856	1870	1856	1870	1856	1870	1870	1870
Adj Flow Rate, veh/h	49	242	43	70	231	239	102	109	38	163	11	16
Peak Hour Factor	0.92	0.93	0.93	0.93	0.93	0.92	0.93	0.92	0.93	0.92	0.92	0.92
Percent Heavy Veh, %	2	3	3	3	3	2	3	2	3	2	2	2
Cap, veh/h	118	512	91	145	286	296	228	171	60	225	87	126
Arrive On Green	0.07	0.33	0.33	0.08	0.34	0.34	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	1781	1534	273	1767	836	864	1767	1325	462	1781	689	1002
Grp Volume(v), veh/h	49	0	285	70	0	470	102	0	147	163	0	27
Grp Sat Flow(s),veh/h/ln	1781	0	1806	1767	0	1700	1767	0	1787	1781	0	1690
Q Serve(g_s), s	1.5	0.0	7.2	2.2	0.0	14.5	3.1	0.0	4.5	5.1	0.0	0.8
Cycle Q Clear(g_c), s	1.5	0.0	7.2	2.2	0.0	14.5	3.1	0.0	4.5	5.1	0.0	0.8
Prop In Lane	1.00		0.15	1.00		0.51	1.00		0.26	1.00		0.59
Lane Grp Cap(c), veh/h	118	0	603	145	0	583	228	0	231	225	0	213
V/C Ratio(X)	0.42	0.00	0.47	0.48	0.00	0.81	0.45	0.00	0.64	0.73	0.00	0.13
Avail Cap(c_a), veh/h	244	0	1123	376	0	1187	808	0	817	814	0	773
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.9	0.0	15.2	25.3	0.0	17.2	23.2	0.0	23.9	24.3	0.0	22.4
Incr Delay (d2), s/veh	2.3	0.0	0.6	2.5	0.0	2.7	1.4	0.0	2.9	4.4	0.0	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	2.7	1.0	0.0	5.4	1.3	0.0	2.0	2.3	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	28.2	0.0	15.8	27.8	0.0	19.9	24.6	0.0	26.8	28.7	0.0	22.7
LnGrp LOS	C		B	C		B	C		C	C		C
Approach Vol, veh/h		334			540			249			190	
Approach Delay, s/veh		17.6			21.0			25.9			27.8	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.4	24.4		11.9	8.9	24.9		12.1				
Change Period (Y+Rc), s	4.7	5.1		4.6	5.1	* 5.1		4.6				
Max Green Setting (Gmax), s	12.3	35.9		26.4	7.9	* 40		26.4				
Max Q Clear Time (g_c+I1), s	4.2	9.2		7.1	3.5	16.5		6.5				
Green Ext Time (p_c), s	0.1	1.8		0.6	0.0	3.3		1.1				

Intersection Summary	
HCM 7th Control Delay, s/veh	22.0
HCM 7th LOS	C

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	270	20	60	260	15	40
Future Vol, veh/h	270	20	60	260	15	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	160	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	80	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	321	25	71	310	18	48

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	346	0	786	334
Stage 1	-	-	-	-	334	-
Stage 2	-	-	-	-	452	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1212	-	361	708
Stage 1	-	-	-	-	725	-
Stage 2	-	-	-	-	641	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1212	-	340	708
Mov Cap-2 Maneuver	-	-	-	-	453	-
Stage 1	-	-	-	-	725	-
Stage 2	-	-	-	-	603	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.53	11.57
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	614	-	-	1212	-
HCM Lane V/C Ratio	0.107	-	-	0.059	-
HCM Ctrl Dly (s/v)	11.6	-	-	8.2	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.2	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	265	5	10	240	30	5	5	10	15	5	15
Future Vol, veh/h	5	265	5	10	240	30	5	5	10	15	5	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	-	60	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	90	90	90	90	92	90	92	90	92	92	92
Heavy Vehicles, %	2	1	1	1	1	2	1	2	1	2	2	2
Mvmt Flow	5	294	6	11	267	33	6	5	11	16	5	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	299	0	0	300	0	0	600	630	297	613	616	283
Stage 1	-	-	-	-	-	-	308	308	-	305	305	-
Stage 2	-	-	-	-	-	-	292	321	-	308	311	-
Critical Hdwy	4.12	-	-	4.11	-	-	7.11	6.52	6.21	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	3.509	4.018	3.309	3.518	4.018	3.318
Pot Cap-1 Maneuver	1262	-	-	1267	-	-	414	399	745	405	406	756
Stage 1	-	-	-	-	-	-	704	660	-	704	662	-
Stage 2	-	-	-	-	-	-	719	651	-	702	658	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1262	-	-	1267	-	-	395	394	745	388	401	756
Mov Cap-2 Maneuver	-	-	-	-	-	-	395	394	-	388	401	-
Stage 1	-	-	-	-	-	-	701	657	-	698	656	-
Stage 2	-	-	-	-	-	-	691	646	-	683	655	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.14	0.28	12.28	12.91
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	516	1262	-	-	1267	-	-	493
HCM Lane V/C Ratio	0.043	0.004	-	-	0.009	-	-	0.077
HCM Ctrl Dly (s/v)	12.3	7.9	-	-	7.9	-	-	12.9
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	270	5	5	255	5	5
Future Vol, veh/h	270	5	5	255	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	293	5	5	277	5	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	299	0	584	296
Stage 1	-	-	-	-	296	-
Stage 2	-	-	-	-	288	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1262	-	474	743
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	761	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1262	-	472	743
Mov Cap-2 Maneuver	-	-	-	-	560	-
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	758	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.15	10.73
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	639	-	-	1262	-
HCM Lane V/C Ratio	0.017	-	-	0.004	-
HCM Ctrl Dly (s/v)	10.7	-	-	7.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	180	20	55	175	20	25	5	70	20	0	5
Future Vol, veh/h	15	180	20	55	175	20	25	5	70	20	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	160	-	-	80	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	194	22	59	188	22	27	5	75	22	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	210	0	0	215	0	0	543	565	204	546	565	199
Stage 1	-	-	-	-	-	-	237	237	-	317	317	-
Stage 2	-	-	-	-	-	-	306	328	-	228	247	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1361	-	-	1355	-	-	451	434	836	449	434	842
Stage 1	-	-	-	-	-	-	767	709	-	694	654	-
Stage 2	-	-	-	-	-	-	703	647	-	774	702	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1361	-	-	1355	-	-	423	411	836	381	411	842
Mov Cap-2 Maneuver	-	-	-	-	-	-	423	411	-	381	411	-
Stage 1	-	-	-	-	-	-	758	701	-	664	626	-
Stage 2	-	-	-	-	-	-	668	619	-	691	693	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.54	1.71	11.69	13.98
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	645	1361	-	-	1355	-	-	428
HCM Lane V/C Ratio	0.167	0.012	-	-	0.044	-	-	0.063
HCM Ctrl Dly (s/v)	11.7	7.7	-	-	7.8	-	-	14
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.6	0	-	-	0.1	-	-	0.2

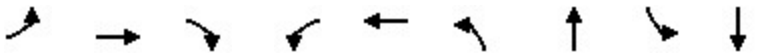
Intersection	
Int Delay, s/veh	2.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	305	105	20	500	0	235
Future Vol, veh/h	305	105	20	500	0	235
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	200	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	332	114	22	543	0	255

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	446	0	-	389
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.12	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.218	-	-	3.318
Pot Cap-1 Maneuver	-	-	1115	-	0	660
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1115	-	-	660
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

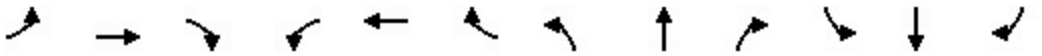
Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.32	13.86
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	660	-	-	1115	-
HCM Lane V/C Ratio	0.387	-	-	0.02	-
HCM Ctrl Dly (s/v)	13.9	-	-	8.3	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	1.8	-	-	0.1	-



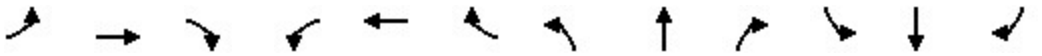
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	40	472	227	85	415	307	160	45	182
v/c Ratio	0.19	0.74	0.33	0.36	0.56	0.72	0.24	0.11	0.28
Control Delay (s/veh)	42.0	32.8	5.3	42.5	24.2	34.2	10.9	20.1	18.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	42.0	32.8	5.3	42.5	24.2	34.2	10.9	20.1	18.6
Queue Length 50th (ft)	19	200	2	39	160	130	23	15	54
Queue Length 95th (ft)	58	394	50	101	325	253	69	42	116
Internal Link Dist (ft)		1258			1351		748		569
Turn Bay Length (ft)	290		200	200		250		60	
Base Capacity (vph)	278	1014	964	346	1053	742	1084	753	1104
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.47	0.24	0.25	0.39	0.41	0.15	0.06	0.16

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	415	200	75	350	15	270	55	85	40	110	50
Future Volume (vph)	35	415	200	75	350	15	270	55	85	40	110	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1	5.1	4.7	4.7		5.4	5.4		5.8	5.8	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.91		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	1881	1599	1787	1870		1787	1710		1787	1793	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.64	1.00		0.66	1.00	
Satd. Flow (perm)	1787	1881	1599	1787	1870		1209	1710		1233	1793	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	40	472	227	85	398	17	307	63	97	45	125	57
RTOR Reduction (vph)	0	0	143	0	1	0	0	58	0	0	17	0
Lane Group Flow (vph)	40	472	84	85	414	0	307	102	0	45	165	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	4.2	26.9	26.9	7.2	29.9		26.5	26.5		26.1	26.1	
Effective Green, g (s)	4.2	26.9	26.9	7.2	29.9		26.5	26.5		26.1	26.1	
Actuated g/C Ratio	0.06	0.35	0.35	0.09	0.39		0.35	0.35		0.34	0.34	
Clearance Time (s)	5.1	5.1	5.1	4.7	4.7		5.4	5.4		5.8	5.8	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	99	667	567	169	737		422	597		424	617	
v/s Ratio Prot	0.02	c0.25		c0.05	c0.22			0.06			0.09	
v/s Ratio Perm			0.05				c0.25			0.04		
v/c Ratio	0.40	0.71	0.15	0.50	0.56		0.73	0.17		0.11	0.27	
Uniform Delay, d1	34.6	21.1	16.6	32.6	17.9		21.5	17.1		16.9	17.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.7	3.4	0.1	2.3	1.0		6.2	0.1		0.1	0.2	
Delay (s)	37.3	24.5	16.8	34.9	18.8		27.7	17.2		17.0	18.2	
Level of Service	D	C	B	C	B		C	B		B	B	
Approach Delay (s/veh)		22.8			21.6			24.1			18.0	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	75.8	Sum of lost time (s)	15.6
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	415	200	75	350	15	270	55	85	40	110	50
Future Volume (veh/h)	35	415	200	75	350	15	270	55	85	40	110	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	40	472	227	85	398	17	307	63	0	45	125	57
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	100	597	506	132	589	25	468	688		576	447	204
Arrive On Green	0.06	0.32	0.32	0.07	0.33	0.33	0.36	0.36	0.00	0.36	0.36	0.36
Sat Flow, veh/h	1795	1885	1598	1795	1795	77	1211	1885	0	1350	1226	559
Grp Volume(v), veh/h	40	472	227	85	0	415	307	63	0	45	0	182
Grp Sat Flow(s),veh/h/ln	1795	1885	1598	1795	0	1871	1211	1885	0	1350	0	1785
Q Serve(g_s), s	1.4	14.5	7.2	2.9	0.0	12.2	15.3	1.4	0.0	1.4	0.0	4.6
Cycle Q Clear(g_c), s	1.4	14.5	7.2	2.9	0.0	12.2	19.9	1.4	0.0	2.8	0.0	4.6
Prop In Lane	1.00		1.00	1.00		0.04	1.00		0.00	1.00		0.31
Lane Grp Cap(c), veh/h	100	597	506	132	0	614	468	688		576	0	651
V/C Ratio(X)	0.40	0.79	0.45	0.65	0.00	0.68	0.66	0.09		0.08	0.00	0.28
Avail Cap(c_a), veh/h	279	1033	875	347	0	1096	836	1261		977	0	1182
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.1	19.8	17.3	28.7	0.0	18.5	21.3	13.3	0.0	14.2	0.0	14.3
Incr Delay (d2), s/veh	2.6	2.4	0.6	5.2	0.0	1.3	1.6	0.1	0.0	0.1	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	6.2	2.5	1.3	0.0	4.7	4.0	0.5	0.0	0.4	0.0	1.6
Unsig. Movement Delay, s/veh									15.30			
LnGrp Delay(d), s/veh	31.6	22.2	17.9	34.0	0.0	19.8	22.9	13.3	15.3	14.3	0.0	14.5
LnGrp LOS	C	C	B	C		B	C	B	B	B		B
Approach Vol, veh/h		739			500			467			227	
Approach Delay, s/veh		21.4			22.2			20.0			14.5	
Approach LOS		C			C			C			B	

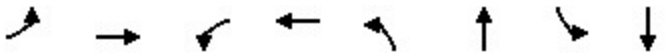
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.4	25.3		29.1	8.7	26.0		29.1				
Change Period (Y+Rc), s	4.7	5.1		5.8	5.1	* 5.1		* 5.8				
Max Green Setting (Gmax), s	12.3	34.9		42.2	9.9	* 37		* 43				
Max Q Clear Time (g_c+I1), s	4.9	16.5		6.6	3.4	14.2		21.9				
Green Ext Time (p_c), s	0.1	3.7		1.1	0.0	2.3		1.4				

Intersection Summary		
HCM 7th Control Delay, s/veh	20.5	
HCM 7th LOS	C	

Notes

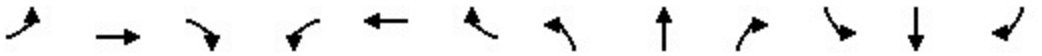
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [NBR] is included in calculations of the approach delay and intersection delay.

APPENDIX D: SYNCHRO 12 HCM 7 REPORTS - FUTURE WITH DEVELOPMENT + IMPROVEMENTS



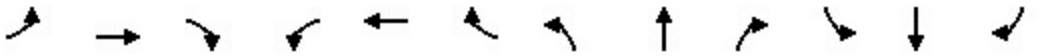
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	22	493	192	319	55	104	304	92
v/c Ratio	0.14	0.83	0.71	0.36	0.32	0.47	0.74	0.22
Control Delay (s/veh)	42.0	41.8	53.0	19.0	43.5	21.3	43.1	20.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	42.0	41.8	53.0	19.0	43.5	21.3	43.1	20.5
Queue Length 50th (ft)	12	250	105	95	30	12	158	26
Queue Length 95th (ft)	37	315	153	181	56	62	264	68
Internal Link Dist (ft)		660		399		500		318
Turn Bay Length (ft)	80		260		100		250	
Base Capacity (vph)	207	594	275	892	298	547	511	752
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.83	0.70	0.36	0.18	0.19	0.59	0.12

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	255	105	140	205	35	40	20	60	280	50	35
Future Volume (vph)	20	255	105	140	205	35	40	20	60	280	50	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1		4.7	4.7		4.6	4.6		4.6	4.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.98		1.00	0.88		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1764		1752	1814		1752	1630		1770	1747	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1764		1752	1814		1752	1630		1770	1747	
Peak-hour factor, PHF	0.92	0.73	0.73	0.73	0.73	0.92	0.73	0.92	0.73	0.92	0.92	0.92
Adj. Flow (vph)	22	349	144	192	281	38	55	22	82	304	54	38
RTOR Reduction (vph)	0	12	0	0	3	0	0	76	0	0	27	0
Lane Group Flow (vph)	22	481	0	192	316	0	55	28	0	304	65	0
Heavy Vehicles (%)	2%	3%	3%	3%	3%	2%	3%	2%	3%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	2.8	31.6		13.2	42.0		6.8	6.1		19.9	19.2	
Effective Green, g (s)	2.8	31.6		13.2	42.0		6.8	6.1		19.9	19.2	
Actuated g/C Ratio	0.03	0.35		0.15	0.47		0.08	0.07		0.22	0.21	
Clearance Time (s)	5.1	5.1		4.7	4.7		4.6	4.6		4.6	4.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	55	620		257	848		132	110		392	373	
v/s Ratio Prot	0.01	c0.27		c0.11	0.17		0.03	c0.02		c0.17	0.04	
v/s Ratio Perm												
v/c Ratio	0.40	0.78		0.75	0.37		0.42	0.25		0.78	0.17	
Uniform Delay, d1	42.7	25.9		36.7	15.4		39.6	39.7		32.9	28.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.7	6.1		11.2	0.3		2.1	1.2		9.3	0.2	
Delay (s)	47.4	32.0		47.9	15.7		41.7	40.9		42.1	29.1	
Level of Service	D	C		D	B		D	D		D	C	
Approach Delay (s/veh)		32.7			27.8			41.2			39.1	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	33.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	89.8	Sum of lost time (s)	19.0
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	255	105	140	205	35	40	20	60	280	50	35
Future Volume (veh/h)	20	255	105	140	205	35	40	20	60	280	50	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1856	1856	1856	1856	1870	1856	1870	1856	1870	1870	1870
Adj Flow Rate, veh/h	22	349	144	192	281	38	55	22	82	304	54	38
Peak Hour Factor	0.92	0.73	0.73	0.73	0.73	0.92	0.73	0.92	0.73	0.92	0.92	0.92
Percent Heavy Veh, %	2	3	3	3	3	2	3	2	3	2	2	2
Cap, veh/h	61	394	162	234	653	88	113	33	122	357	236	166
Arrive On Green	0.03	0.32	0.32	0.13	0.41	0.41	0.06	0.09	0.09	0.20	0.23	0.23
Sat Flow, veh/h	1781	1248	515	1767	1600	216	1767	346	1291	1781	1022	719
Grp Volume(v), veh/h	22	0	493	192	0	319	55	0	104	304	0	92
Grp Sat Flow(s),veh/h/ln	1781	0	1763	1767	0	1817	1767	0	1638	1781	0	1741
Q Serve(g_s), s	0.9	0.0	19.7	7.8	0.0	9.3	2.2	0.0	4.5	12.2	0.0	3.2
Cycle Q Clear(g_c), s	0.9	0.0	19.7	7.8	0.0	9.3	2.2	0.0	4.5	12.2	0.0	3.2
Prop In Lane	1.00		0.29	1.00		0.12	1.00		0.79	1.00		0.41
Lane Grp Cap(c), veh/h	61	0	556	234	0	741	113	0	155	357	0	402
V/C Ratio(X)	0.36	0.00	0.89	0.82	0.00	0.43	0.49	0.00	0.67	0.85	0.00	0.23
Avail Cap(c_a), veh/h	238	0	665	318	0	769	344	0	563	588	0	833
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.9	0.0	24.1	31.2	0.0	15.7	33.4	0.0	32.4	28.5	0.0	23.1
Incr Delay (d2), s/veh	3.5	0.0	12.1	11.6	0.0	0.4	3.2	0.0	4.9	6.4	0.0	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	9.5	4.0	0.0	3.7	1.0	0.0	2.0	5.7	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	38.4	0.0	36.2	42.9	0.0	16.1	36.6	0.0	37.3	34.9	0.0	23.4
LnGrp LOS	D		D	D		B	D		D	C		C
Approach Vol, veh/h		515			511			159			396	
Approach Delay, s/veh		36.3			26.2			37.1			32.2	
Approach LOS		D			C			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.5	28.4	9.3	21.7	7.6	35.3	19.4	11.6
Change Period (Y+Rc), s	4.7	5.1	4.6	4.6	5.1	* 5.1	4.6	4.6
Max Green Setting (Gmax), s	13.3	27.9	14.4	35.4	9.9	* 31	24.4	25.4
Max Q Clear Time (g_c+I1), s	9.8	21.7	4.2	5.2	2.9	11.3	14.2	6.5
Green Ext Time (p_c), s	0.2	1.7	0.1	0.5	0.0	1.8	0.7	0.5

Intersection Summary	
HCM 7th Control Delay, s/veh	32.1
HCM 7th LOS	C

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	305	40	115	165	35	75
Future Vol, veh/h	305	40	115	165	35	75
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	160	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	80	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	363	50	137	196	42	89

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	413	0	858	388
Stage 1	-	-	-	-	388	-
Stage 2	-	-	-	-	470	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1146	-	327	660
Stage 1	-	-	-	-	685	-
Stage 2	-	-	-	-	629	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1146	-	288	660
Mov Cap-2 Maneuver	-	-	-	-	408	-
Stage 1	-	-	-	-	685	-
Stage 2	-	-	-	-	554	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	3.52	13.54
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	552	-	-	1146	-
HCM Lane V/C Ratio	0.237	-	-	0.119	-
HCM Ctrl Dly (s/v)	13.5	-	-	8.6	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.9	-	-	0.4	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	310	5	5	180	10	5	5	5	30	5	5
Future Vol, veh/h	5	310	5	5	180	10	5	5	5	30	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	-	60	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	90	90	90	90	92	90	92	90	92	92	92
Heavy Vehicles, %	2	3	3	3	3	2	3	2	3	2	2	2
Mvmt Flow	5	344	6	6	200	11	6	5	6	33	5	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	211	0	0	350	0	0	572	580	347	575	577	205
Stage 1	-	-	-	-	-	-	358	358	-	217	217	-
Stage 2	-	-	-	-	-	-	214	222	-	358	361	-
Critical Hdwy	4.12	-	-	4.13	-	-	7.13	6.52	6.23	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.227	-	-	3.527	4.018	3.327	3.518	4.018	3.318
Pot Cap-1 Maneuver	1360	-	-	1203	-	-	430	426	694	429	427	835
Stage 1	-	-	-	-	-	-	658	628	-	786	724	-
Stage 2	-	-	-	-	-	-	786	720	-	660	626	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1360	-	-	1203	-	-	418	422	694	417	423	835
Mov Cap-2 Maneuver	-	-	-	-	-	-	418	422	-	417	423	-
Stage 1	-	-	-	-	-	-	655	625	-	782	720	-
Stage 2	-	-	-	-	-	-	771	716	-	646	623	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.12	0.21	12.7	13.95
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	484	1360	-	-	1203	-	-	446
HCM Lane V/C Ratio	0.034	0.004	-	-	0.005	-	-	0.098
HCM Ctrl Dly (s/v)	12.7	7.7	-	-	8	-	-	14
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	310	5	5	185	5	5
Future Vol, veh/h	310	5	5	185	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	356	6	6	213	6	6

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	362	0	583	359
Stage 1	-	-	-	-	359	-
Stage 2	-	-	-	-	224	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1197	-	474	685
Stage 1	-	-	-	-	707	-
Stage 2	-	-	-	-	813	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1197	-	472	685
Mov Cap-2 Maneuver	-	-	-	-	557	-
Stage 1	-	-	-	-	707	-
Stage 2	-	-	-	-	809	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.21	10.97
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	615	-	-	1197	-
HCM Lane V/C Ratio	0.019	-	-	0.005	-
HCM Ctrl Dly (s/v)	11	-	-	8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	220	10	40	135	10	15	5	65	25	5	5
Future Vol, veh/h	5	220	10	40	135	10	15	5	65	25	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	160	-	-	80	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	247	11	45	152	11	17	6	73	28	6	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	163	0	0	258	0	0	508	517	253	508	517	157
Stage 1	-	-	-	-	-	-	264	264	-	247	247	-
Stage 2	-	-	-	-	-	-	244	253	-	261	270	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1416	-	-	1306	-	-	475	462	786	475	462	888
Stage 1	-	-	-	-	-	-	741	690	-	757	702	-
Stage 2	-	-	-	-	-	-	759	698	-	744	686	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1416	-	-	1306	-	-	448	445	786	409	445	888
Mov Cap-2 Maneuver	-	-	-	-	-	-	448	445	-	409	445	-
Stage 1	-	-	-	-	-	-	738	687	-	731	678	-
Stage 2	-	-	-	-	-	-	722	674	-	666	683	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.16	1.7	11.3	13.78
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	667	1416	-	-	1306	-	-	449
HCM Lane V/C Ratio	0.143	0.004	-	-	0.034	-	-	0.088
HCM Ctrl Dly (s/v)	11.3	7.6	-	-	7.9	-	-	13.8
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.5	0	-	-	0.1	-	-	0.3

Lane Group	EBT	WBL	WBT	NBR
Lane Group Flow (vph)	614	250	457	163
v/c Ratio	0.69	0.57	0.51	0.28
Control Delay (s/veh)	15.0	22.3	11.7	2.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	15.0	22.3	11.7	2.0
Queue Length 50th (ft)	121	64	82	0
Queue Length 95th (ft)	267	133	180	12
Internal Link Dist (ft)	399		1258	
Turn Bay Length (ft)		200		
Base Capacity (vph)	1115	677	1125	769
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.55	0.37	0.41	0.21

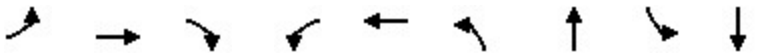
Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	505	60	230	420	0	150
Future Volume (vph)	505	60	230	420	0	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.1		4.7	8.1		4.7
Lane Util. Factor	1.00		1.00	1.00		1.00
Frt	0.99		1.00	1.00		0.87
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	1836		1770	1863		1611
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	1836		1770	1863		1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	549	65	250	457	0	163
RTOR Reduction (vph)	7	0	0	0	0	122
Lane Group Flow (vph)	607	0	250	457	0	41
Turn Type	NA		Prot	NA		Over
Protected Phases	2		1	2		1
Permitted Phases						
Actuated Green, G (s)	23.7		12.3	23.7		12.3
Effective Green, g (s)	23.7		12.3	23.7		12.3
Actuated g/C Ratio	0.49		0.25	0.49		0.25
Clearance Time (s)	8.1		4.7	8.1		4.7
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	891		446	904		406
v/s Ratio Prot	c0.33		c0.14	0.25		0.03
v/s Ratio Perm						
v/c Ratio	0.68		0.56	0.51		0.10
Uniform Delay, d1	9.6		15.9	8.6		14.0
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	2.2		1.6	0.4		0.1
Delay (s)	11.8		17.5	9.0		14.1
Level of Service	B		B	A		B
Approach Delay (s/veh)	11.8			12.0	14.1	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	48.8	Sum of lost time (s)	12.8
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		

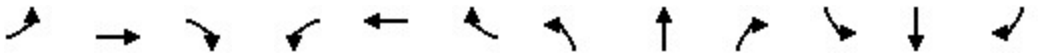
c Critical Lane Group

HCM 7th Edition methodology does not support Non-NEMA phasing.



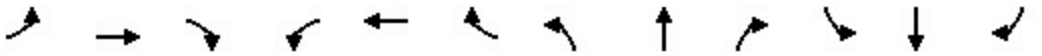
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	34	322	264	126	350	264	391	52	143
v/c Ratio	0.15	0.58	0.40	0.42	0.45	0.63	0.63	0.24	0.24
Control Delay (s/veh)	36.1	26.9	5.3	35.4	17.9	27.9	22.4	21.9	17.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	36.1	26.9	5.3	35.4	17.9	27.9	22.4	21.9	17.0
Queue Length 50th (ft)	12	109	0	45	73	88	112	15	35
Queue Length 95th (ft)	48	235	48	125	232	196	240	49	88
Internal Link Dist (ft)		1258			1351		748		569
Turn Bay Length (ft)	290		200	200		250		60	
Base Capacity (vph)	253	1172	1096	426	1269	891	1256	474	1280
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.27	0.24	0.30	0.28	0.30	0.31	0.11	0.11

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	280	230	110	270	35	230	175	165	45	90	35
Future Volume (vph)	30	280	230	110	270	35	230	175	165	45	90	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1	5.1	4.7	4.7		5.4	5.4		5.8	5.8	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.93		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	1881	1599	1787	1849		1787	1744		1787	1802	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.67	1.00		0.36	1.00	
Satd. Flow (perm)	1787	1881	1599	1787	1849		1253	1744		670	1802	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	34	322	264	126	310	40	264	201	190	52	103	40
RTOR Reduction (vph)	0	0	179	0	4	0	0	35	0	0	14	0
Lane Group Flow (vph)	34	322	85	126	346	0	264	356	0	52	129	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	2.4	21.5	21.5	8.0	27.1		21.7	21.7		21.3	21.3	
Effective Green, g (s)	2.4	21.5	21.5	8.0	27.1		21.7	21.7		21.3	21.3	
Actuated g/C Ratio	0.04	0.32	0.32	0.12	0.41		0.33	0.33		0.32	0.32	
Clearance Time (s)	5.1	5.1	5.1	4.7	4.7		5.4	5.4		5.8	5.8	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	64	609	517	215	754		409	569		214	578	
v/s Ratio Prot	0.02	c0.17		c0.07	0.19			0.20			0.07	
v/s Ratio Perm			0.05				c0.21			0.08		
v/c Ratio	0.53	0.53	0.17	0.59	0.46		0.65	0.63		0.24	0.22	
Uniform Delay, d1	31.4	18.3	16.0	27.6	14.3		19.1	18.9		16.6	16.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.2	0.8	0.2	4.0	0.4		3.5	2.2		0.6	0.2	
Delay (s)	39.7	19.1	16.2	31.7	14.8		22.5	21.1		17.2	16.7	
Level of Service	D	B	B	C	B		C	C		B	B	
Approach Delay (s/veh)		19.0			19.2			21.7			16.8	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	66.4	Sum of lost time (s)	15.6
Intersection Capacity Utilization	64.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



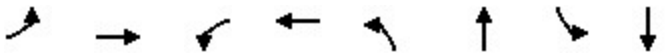
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	280	230	110	270	35	230	175	165	45	90	35
Future Volume (veh/h)	30	280	230	110	270	35	230	175	165	45	90	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	34	322	264	126	310	40	264	201	0	52	103	40
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	95	479	406	179	479	62	489	626		445	429	167
Arrive On Green	0.05	0.25	0.25	0.10	0.29	0.29	0.33	0.33	0.00	0.33	0.33	0.33
Sat Flow, veh/h	1795	1885	1598	1795	1636	211	1255	1885	0	1191	1293	502
Grp Volume(v), veh/h	34	322	264	126	0	350	264	201	0	52	0	143
Grp Sat Flow(s),veh/h/ln	1795	1885	1598	1795	0	1847	1255	1885	0	1191	0	1795
Q Serve(g_s), s	0.9	7.6	7.3	3.4	0.0	8.2	9.6	4.0	0.0	1.7	0.0	2.9
Cycle Q Clear(g_c), s	0.9	7.6	7.3	3.4	0.0	8.2	12.5	4.0	0.0	5.7	0.0	2.9
Prop In Lane	1.00		1.00	1.00		0.11	1.00		0.00	1.00		0.28
Lane Grp Cap(c), veh/h	95	479	406	179	0	541	489	626		445	0	596
V/C Ratio(X)	0.36	0.67	0.65	0.70	0.00	0.65	0.54	0.32		0.12	0.00	0.24
Avail Cap(c_a), veh/h	286	1402	1188	481	0	1574	1201	1694		1111	0	1598
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.7	16.7	16.5	21.6	0.0	15.3	16.6	12.4	0.0	14.5	0.0	12.0
Incr Delay (d2), s/veh	2.3	1.6	1.8	5.0	0.0	1.3	0.9	0.3	0.0	0.1	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	3.1	2.5	1.4	0.0	2.9	2.4	1.4	0.0	0.4	0.0	0.9
Unsig. Movement Delay, s/veh									15.70			
LnGrp Delay(d), s/veh	25.0	18.3	18.3	26.6	0.0	16.6	17.5	12.7	15.7	14.6	0.0	12.2
LnGrp LOS	C	B	B	C		B	B	B	B	B		B
Approach Vol, veh/h		620			476			655			195	
Approach Delay, s/veh		18.7			19.3			15.5			12.9	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.6	17.7		22.3	7.7	19.6		22.3				
Change Period (Y+Rc), s	4.7	5.1		5.8	5.1	* 5.1		* 5.8				
Max Green Setting (Gmax), s	13.3	36.9		44.2	7.9	* 42		* 45				
Max Q Clear Time (g_c+I1), s	5.4	9.6		7.7	2.9	10.2		14.5				
Green Ext Time (p_c), s	0.2	3.0		0.9	0.0	2.0		2.0				

Intersection Summary		
HCM 7th Control Delay, s/veh	17.2	
HCM 7th LOS	B	

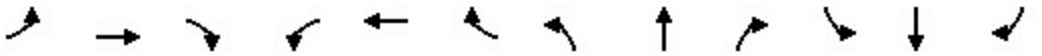
Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [NBR] is included in calculations of the approach delay and intersection delay.



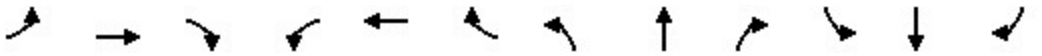
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	49	285	70	470	102	147	163	27
v/c Ratio	0.22	0.44	0.28	0.69	0.22	0.46	0.51	0.10
Control Delay (s/veh)	37.4	22.3	35.9	24.6	29.3	32.2	37.0	20.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	37.4	22.3	35.9	24.6	29.3	32.2	37.0	20.0
Queue Length 50th (ft)	22	106	32	178	32	58	72	5
Queue Length 95th (ft)	62	203	79	320	106	125	154	27
Internal Link Dist (ft)		660		399		500		325
Turn Bay Length (ft)	80		260		100		250	
Base Capacity (vph)	244	915	346	992	514	802	417	792
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.31	0.20	0.47	0.20	0.18	0.39	0.03

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	225	40	65	215	220	95	100	35	150	10	15
Future Volume (vph)	45	225	40	65	215	220	95	100	35	150	10	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1		4.7	4.7		5.1	4.6		4.5	4.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.92		1.00	0.96		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1803		1752	1712		1752	1786		1770	1697	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1803		1752	1712		1752	1786		1770	1697	
Peak-hour factor, PHF	0.92	0.93	0.93	0.93	0.93	0.92	0.93	0.92	0.93	0.92	0.92	0.92
Adj. Flow (vph)	49	242	43	70	231	239	102	109	38	163	11	16
RTOR Reduction (vph)	0	6	0	0	37	0	0	14	0	0	14	0
Lane Group Flow (vph)	49	279	0	70	433	0	102	133	0	163	13	0
Heavy Vehicles (%)	2%	3%	3%	3%	3%	2%	3%	2%	3%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	3.7	23.9		4.7	24.9		14.6	11.0		11.9	7.7	
Effective Green, g (s)	3.7	23.9		4.7	24.9		14.6	11.0		11.9	7.7	
Actuated g/C Ratio	0.05	0.34		0.07	0.35		0.21	0.16		0.17	0.11	
Clearance Time (s)	5.1	5.1		4.7	4.7		5.1	4.6		4.5	4.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	93	612		116	605		363	279		299	185	
v/s Ratio Prot	0.03	0.15		c0.04	c0.25		0.06	c0.07		c0.09	0.01	
v/s Ratio Perm												
v/c Ratio	0.53	0.46		0.60	0.72		0.28	0.48		0.55	0.07	
Uniform Delay, d1	32.5	18.2		31.9	19.7		23.5	27.1		26.8	28.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.3	0.5		8.6	4.0		0.4	1.3		2.0	0.2	
Delay (s)	37.8	18.7		40.5	23.7		23.9	28.4		28.8	28.3	
Level of Service	D	B		D	C		C	C		C	C	
Approach Delay (s/veh)		21.5			25.9			26.5			28.7	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	25.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	70.4	Sum of lost time (s)	19.5
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	225	40	65	215	220	95	100	35	150	10	15
Future Volume (veh/h)	45	225	40	65	215	220	95	100	35	150	10	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1856	1856	1856	1856	1870	1856	1870	1856	1870	1870	1870
Adj Flow Rate, veh/h	49	242	43	70	231	239	102	109	38	163	11	16
Peak Hour Factor	0.92	0.93	0.93	0.93	0.93	0.92	0.93	0.92	0.93	0.92	0.92	0.92
Percent Heavy Veh, %	2	3	3	3	3	2	3	2	3	2	2	2
Cap, veh/h	119	508	90	147	284	294	177	167	58	211	92	134
Arrive On Green	0.07	0.33	0.33	0.08	0.34	0.34	0.10	0.13	0.13	0.12	0.13	0.13
Sat Flow, veh/h	1781	1534	273	1767	836	864	1767	1325	462	1781	689	1002
Grp Volume(v), veh/h	49	0	285	70	0	470	102	0	147	163	0	27
Grp Sat Flow(s),veh/h/ln	1781	0	1806	1767	0	1700	1767	0	1787	1781	0	1690
Q Serve(g_s), s	1.5	0.0	6.9	2.1	0.0	14.0	3.1	0.0	4.3	4.9	0.0	0.8
Cycle Q Clear(g_c), s	1.5	0.0	6.9	2.1	0.0	14.0	3.1	0.0	4.3	4.9	0.0	0.8
Prop In Lane	1.00		0.15	1.00		0.51	1.00		0.26	1.00		0.59
Lane Grp Cap(c), veh/h	119	0	598	147	0	578	177	0	225	211	0	226
V/C Ratio(X)	0.41	0.00	0.48	0.48	0.00	0.81	0.58	0.00	0.65	0.77	0.00	0.12
Avail Cap(c_a), veh/h	254	0	942	360	0	991	380	0	819	434	0	805
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.8	0.0	14.7	24.2	0.0	16.7	23.8	0.0	23.1	23.7	0.0	21.1
Incr Delay (d2), s/veh	2.3	0.0	0.6	2.4	0.0	2.8	3.0	0.0	3.2	5.9	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	2.6	0.9	0.0	5.2	1.4	0.0	1.9	2.3	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	27.1	0.0	15.3	26.6	0.0	19.5	26.8	0.0	26.2	29.6	0.0	21.4
LnGrp LOS	C		B	C		B	C		C	C		C
Approach Vol, veh/h		334			540			249			190	
Approach Delay, s/veh		17.0			20.4			26.5			28.4	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	23.4	10.6	12.0	8.8	24.0	11.1	11.6
Change Period (Y+Rc), s	4.7	5.1	5.1	4.6	5.1	* 5.1	4.5	4.6
Max Green Setting (Gmax), s	11.3	28.9	11.9	26.4	7.9	* 32	13.5	25.4
Max Q Clear Time (g_c+I1), s	4.1	8.9	5.1	2.8	3.5	16.0	6.9	6.3
Green Ext Time (p_c), s	0.1	1.6	0.1	0.1	0.0	2.9	0.2	0.7

Intersection Summary	
HCM 7th Control Delay, s/veh	21.9
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	270	20	60	260	15	40
Future Vol, veh/h	270	20	60	260	15	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	160	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	80	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	321	25	71	310	18	48

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	346	0	786	334
Stage 1	-	-	-	-	334	-
Stage 2	-	-	-	-	452	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1212	-	361	708
Stage 1	-	-	-	-	725	-
Stage 2	-	-	-	-	641	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1212	-	340	708
Mov Cap-2 Maneuver	-	-	-	-	453	-
Stage 1	-	-	-	-	725	-
Stage 2	-	-	-	-	603	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.53	11.57
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	614	-	-	1212	-
HCM Lane V/C Ratio	0.107	-	-	0.059	-
HCM Ctrl Dly (s/v)	11.6	-	-	8.2	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.2	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	265	5	10	240	30	5	5	10	15	5	15
Future Vol, veh/h	5	265	5	10	240	30	5	5	10	15	5	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	-	60	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	90	90	90	90	92	90	92	90	92	92	92
Heavy Vehicles, %	2	1	1	1	1	2	1	2	1	2	2	2
Mvmt Flow	5	294	6	11	267	33	6	5	11	16	5	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	299	0	0	300	0	0	600	630	297	613	616	283
Stage 1	-	-	-	-	-	-	308	308	-	305	305	-
Stage 2	-	-	-	-	-	-	292	321	-	308	311	-
Critical Hdwy	4.12	-	-	4.11	-	-	7.11	6.52	6.21	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	3.509	4.018	3.309	3.518	4.018	3.318
Pot Cap-1 Maneuver	1262	-	-	1267	-	-	414	399	745	405	406	756
Stage 1	-	-	-	-	-	-	704	660	-	704	662	-
Stage 2	-	-	-	-	-	-	719	651	-	702	658	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1262	-	-	1267	-	-	395	394	745	388	401	756
Mov Cap-2 Maneuver	-	-	-	-	-	-	395	394	-	388	401	-
Stage 1	-	-	-	-	-	-	701	657	-	698	656	-
Stage 2	-	-	-	-	-	-	691	646	-	683	655	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.14	0.28	12.28	12.91
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	516	1262	-	-	1267	-	-	493
HCM Lane V/C Ratio	0.043	0.004	-	-	0.009	-	-	0.077
HCM Ctrl Dly (s/v)	12.3	7.9	-	-	7.9	-	-	12.9
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	270	5	5	255	5	5
Future Vol, veh/h	270	5	5	255	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	293	5	5	277	5	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	299	0	584	296
Stage 1	-	-	-	-	296	-
Stage 2	-	-	-	-	288	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1262	-	474	743
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	761	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1262	-	472	743
Mov Cap-2 Maneuver	-	-	-	-	560	-
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	758	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.15	10.73
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	639	-	-	1262	-
HCM Lane V/C Ratio	0.017	-	-	0.004	-
HCM Ctrl Dly (s/v)	10.7	-	-	7.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	180	20	55	175	20	25	5	70	20	0	5
Future Vol, veh/h	15	180	20	55	175	20	25	5	70	20	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	160	-	-	80	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	194	22	59	188	22	27	5	75	22	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	210	0	0	215	0	0	543	565	204	546	565	199
Stage 1	-	-	-	-	-	-	237	237	-	317	317	-
Stage 2	-	-	-	-	-	-	306	328	-	228	247	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1361	-	-	1355	-	-	451	434	836	449	434	842
Stage 1	-	-	-	-	-	-	767	709	-	694	654	-
Stage 2	-	-	-	-	-	-	703	647	-	774	702	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1361	-	-	1355	-	-	423	411	836	381	411	842
Mov Cap-2 Maneuver	-	-	-	-	-	-	423	411	-	381	411	-
Stage 1	-	-	-	-	-	-	758	701	-	664	626	-
Stage 2	-	-	-	-	-	-	668	619	-	691	693	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.54	1.71	11.69	13.98
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	645	1361	-	-	1355	-	-	428
HCM Lane V/C Ratio	0.167	0.012	-	-	0.044	-	-	0.063
HCM Ctrl Dly (s/v)	11.7	7.7	-	-	7.8	-	-	14
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.6	0	-	-	0.1	-	-	0.2

Lane Group	EBT	WBL	WBT	NBR
Lane Group Flow (vph)	446	22	543	255
v/c Ratio	0.44	0.07	0.52	0.38
Control Delay (s/veh)	5.9	14.9	7.4	1.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	5.9	14.9	7.4	1.6
Queue Length 50th (ft)	39	3	58	0
Queue Length 95th (ft)	76	19	107	0
Internal Link Dist (ft)	399		1258	
Turn Bay Length (ft)		200		
Base Capacity (vph)	1296	864	1330	1019
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.34	0.03	0.41	0.25

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	305	105	20	500	0	235
Future Volume (vph)	305	105	20	500	0	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1		4.6	5.1		4.6
Lane Util. Factor	1.00		1.00	1.00		1.00
Frt	0.97		1.00	1.00		0.87
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	1798		1770	1863		1611
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	1798		1770	1863		1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	332	114	22	543	0	255
RTOR Reduction (vph)	19	0	0	0	0	207
Lane Group Flow (vph)	427	0	22	543	0	48
Turn Type	NA		Prot	NA		Over
Protected Phases	2		1	2		1
Permitted Phases						
Actuated Green, G (s)	21.2		7.1	21.2		7.1
Effective Green, g (s)	21.2		7.1	21.2		7.1
Actuated g/C Ratio	0.56		0.19	0.56		0.19
Clearance Time (s)	5.1		4.6	5.1		4.6
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	1003		330	1039		301
v/s Ratio Prot	0.24		0.01	c0.29		c0.03
v/s Ratio Perm						
v/c Ratio	0.43		0.07	0.52		0.16
Uniform Delay, d1	4.9		12.7	5.2		12.9
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	0.3		0.1	0.5		0.2
Delay (s)	5.2		12.8	5.7		13.2
Level of Service	A		B	A		B
Approach Delay (s/veh)	5.2			6.0	13.2	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	38.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Edition methodology does not support Non-NEMA phasing.

ATTACHMENT A.8

TECHNICAL MEMORANDUM: SOUTH FAIRVIEW ROAD OPERATIONS ANALYSIS

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Dowling Associates, Inc.

Memorandum

Date: July 23, 2009

To: Rosemarie Gaglione

cc: Project File

From: Jim Damkowitch and Chirag Safi

Reference #: GTIP

Subject: Improvement Justification

Per the City's request, Dowling Associates has prepared this technical memorandum describing additional operational analyses performed for the South Fairview Avenue Project (R14) proposed in GTIP currently under development by the City of Goleta.

The operational analyses are described below. LOS and left turn storage and 95th percentile queue analyses worksheets are provided in **Attachment 1**.

South Fairview Avenue Project (R14)

In order to evaluate feasibility for the extension of two-way left-turn lane (TWLTL) on Fairview Avenue, left-turn storage (based on Highway Design Manual) and 95th percentile queue (based on Highway Capacity Manual 2000) calculations were performed at the future intersection of Ekwill Street and Fairview Avenue.

Forecasted 2030 traffic volumes developed as part of Ekwill-Fowler Circulation Improvement Project were used for this analysis. Both left-turn storage requirements and 95th percentile queue lengths for the southbound left-turn movement during the AM and PM peak hours have been shown in following table.

Intersection	SBL Movement		
	Traffic Volumes (vph)	Storage (ft)	95th Percentile Queues (ft)
Ekwill St/Fairview Ave			
AM Peak	306	255	30
PM Peak	126	105	25
Daly St/Fairview Ave			
AM Peak	79	66	25
PM Peak	90	75	25

Distance from the point where TWLTL is dropped to Ekwill Street = ~425 ft.
Distance between Ekwill Street and Airport Plaza north of Ekwill intersection = ~635 ft.
Distance between Ekwill Street and Daly Street south of Ekwill intersection = ~120 ft.

A Left-turn storage requirement of 255 ft would fall short of existing TWLTL by just 170 ft. Therefore, a TWLTL can be justified to provide continuity between the point where the existing TWLTL is dropped and Ekwill Street.

No potential spill-back conditions are projected between the intersection at Daly and Ekwill. Left turn storage requirements at Daly will be adequate to accommodate all left turns within the 120 foot distance between these two intersections. However, given how closely spaced streets/driveways (about 200 ft) are south of Ekwill (i.e., Daly Street, Matthews Street and Olney Street) the City should consider extending the share left turn lane extend south to Olney street – tapering to one lane 250 feet south. TWLTL on Fairview Avenue south of Ekwill Street will facilitate safe and efficient ingress movement of traffic to the local driveways. It should be noted that the intersection of Fowler Street and Fairview Avenue is planned to be designed as a roundabout, and therefore, TWLTL can not be justified south of Ekwill Street up to Fowler Street.

Based on 95th percentile queues and SimTraffic simulation results the above results are not as evident. These results estimate the left-turn storage of 100 ft to be sufficient. However, these simulation runs were based on a non-validated simulation analysis and therefore, reliability of this output would be questionable.

CIP Implications

The nexus analysis for this improvement states the following: *Improvement identified by City*. This technical memorandum provides the only operational assessment supporting the future need for this project. Based on this analysis – the project limits should be more clearly defined to begin at the terminus of the existing share left turn lane – extending south approximately 250 feet south of Olney Street.

It should be noted that static or simulation operational analyses do not indicate future queue spill-back conditions anywhere within the project limits. However, storage requirements do appear long enough to extend a share left turn lane to the limits just described for purposes of lane continuity and driver perception. Analysis of accident data (SWITRS) may provide more compelling justification for this project.

Given that the need for the project is more closely tied to future construction of the Ekwill-Fowler improvement project – it is recommended that the South Fairview improvement be combined with the Ekwill-Fowler improvement for purposes of the CIP. One potential issue with doing this is that the extension of the share left turn lane on South Fairview was not identified as a needed mitigation as part of the Ekwill Fowler Circulation Improvement Project Traffic Impact Analysis (July 30, 2008, RBF).

Attachment 1

LOS and Signal Warrant Analysis Worksheets

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	35	101	217	34	306	242
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	110	236	37	333	263
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1183	254			273	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1183	254			273	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	76	86			74	
cM capacity (veh/h)	155	784			1290	

Direction, Lane #	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	38	110	273	333	263
Volume Left	38	0	0	333	0
Volume Right	0	110	37	0	0
cSH	155	784	1700	1290	1700
Volume to Capacity	0.24	0.14	0.16	0.26	0.15
Queue Length 95th (ft)	23	12	0	26	0
Control Delay (s)	35.5	10.3	0.0	8.8	0.0
Lane LOS	E	B		A	
Approach Delay (s)	16.8		0.0	4.9	
Approach LOS	C				

Intersection Summary			
Average Delay	5.3		
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	31	90	161	9	79	198
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	34	98	175	10	86	215
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	567	180			185	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	567	180			185	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	89			94	
cM capacity (veh/h)	455	863			1390	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	132	185	301
Volume Left	34	0	86
Volume Right	98	10	0
cSH	702	1700	1390
Volume to Capacity	0.19	0.11	0.06
Queue Length 95th (ft)	17	0	5
Control Delay (s)	11.3	0.0	2.6
Lane LOS	B		A
Approach Delay (s)	11.3	0.0	2.6
Approach LOS	B		

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	43	383	303	44	126	271
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	47	416	329	48	137	295
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	922	353			377	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	922	353			377	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	82	40			88	
cM capacity (veh/h)	265	690			1181	

Direction, Lane #	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	47	416	377	137	295
Volume Left	47	0	0	137	0
Volume Right	0	416	48	0	0
cSH	265	690	1700	1181	1700
Volume to Capacity	0.18	0.60	0.22	0.12	0.17
Queue Length 95th (ft)	16	102	0	10	0
Control Delay (s)	21.5	17.8	0.0	8.4	0.0
Lane LOS	C	C		A	
Approach Delay (s)	18.2		0.0	2.7	
Approach LOS	C				

Intersection Summary			
Average Delay	7.5		
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	9	79	268	31	90	224
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	86	291	34	98	243
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	747	308			325	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	747	308			325	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	88			92	
cM capacity (veh/h)	350	732			1235	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	96	325	341
Volume Left	10	0	98
Volume Right	86	34	0
cSH	658	1700	1235
Volume to Capacity	0.15	0.19	0.08
Queue Length 95th (ft)	13	0	6
Control Delay (s)	11.4	0.0	2.9
Lane LOS	B		A
Approach Delay (s)	11.4	0.0	2.9
Approach LOS	B		

Intersection Summary			
Average Delay		2.7	
Intersection Capacity Utilization		48.1%	ICU Level of Service
Analysis Period (min)		15	

ATTACHMENT A.9

TECHNICAL MEMORANDUM: GOLETA FREEWAY CROSSING AND PHELPS ROAD EXTENSION BENEFITS

DKS 428 J STREET, SUITE 340 • SACRAMENTO, CA 95814 • 916.368.2000 • DKSASSOCIATES.COM

GOLETA FREEWAY CROSSING AND PHELPS ROAD EXTENSION BENEFITS

DATE: April 9, 2026

TO: Nina Buelna | Director Public Works | City of Goleta

FROM: Jim Damkowitch | Principal DKS Associates

SUBJECT: Goleta DIF Update

KEY FINDINGS

The purpose of this section is to analyze the mode shift benefits of a pedestrian/bicycle only grade separated crossing of US 101 (called the Goleta Freeway Crossing) and the diversion benefits of the connecting Phelps Road Extension (connecting with Henry Wang Drive). Locations of these improvements are shown in **Figure 1**.

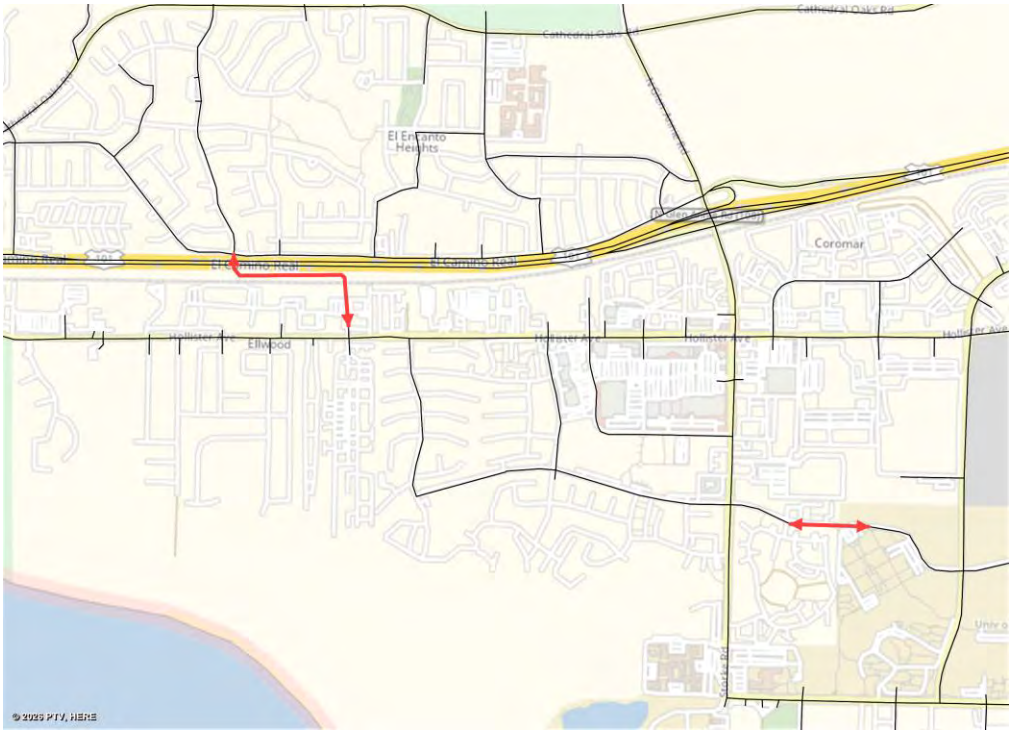


FIGURE 1. GOLETA FREEWAY CROSSING AND PHELPS ROAD EXTENSION LOCATIONS

GOLETA FREEWAY CROSSING

CONNECTIVITY ANALYSIS

For the purpose of this analysis, the Goleta Freeway Crossing was input into the Goleta Citywide Level of Traffic Stress (LTS) model. This model is based on the methodologies described in the Mineta Transportation Institute's Report 11-19 Low-stress Bicycling and Network Connectivity (2012). Level of Traffic Stress (LTS) quantifies the stress level of a given roadway segment by considering a variety of criteria. These criteria include street width (number of lanes), speed limit or prevailing speed, presence and width of bike lanes, buffer width, and sidewalk width and condition. The primary measure of effectiveness of the LTS model is "Percent Connected" which computes the percentage of all low-stress network connections between all points of interest in the city. Without the Goleta Freeway Crossing, the City's "Percent Connected" is 9.4%. Inputting the Goleta Freeway Crossing increases the city's connectivity to 11.4% (i.e., a 20 percent improvement in Percent Connected).

NCHRP 552 ANALYSIS

To estimate the degree of mode shift from vehicle to bicycling resulting from crossing, the National Cooperative Highway Research Program (NCHRP) "*Guidelines for Analysis of Investments in Bicycle Facilities*" was applied. NCHRP 552 applies empirically-based elasticities to better understand the benefits, mode shift, and induced demand from creating new bicycle facilities. These guidelines were utilized to analyze the proposed bicycle infrastructure of the Goleta Freeway Crossing, to determine trip reductions of the project within the City of Goleta.

Three alternative alignments of the Goleta Freeway Crossing have been considered, although are all similar, this analysis was conducted using the Alternative A6, as shown in **Figure 2**.

DATA

- DIF Dwelling Unit and Population Estimates
- ACS 5-Year Estimates (2024) for Population by Age
- ACS 5-Year Estimates (2024) for Commute to Work Mode Share
- Road Centerline Feature Class (SBCAG Open Data)

ANALYSIS PROCEDURE

The NCHRP 552 analysis guidelines were applied in GIS using ArcGIS Pro 3.3.1 and Microsoft Excel. A multi-step process in ArcGIS Pro 3.3.1 was used to determine the local population within three distance ranges to each project: ¼ mile, ½ mile, and 1 mile. The analysis process is outlined in this section including entering the project extents into Geographic Information Software (GIS), determining project areas of influence, calculating induced demand, and VMT reduction.

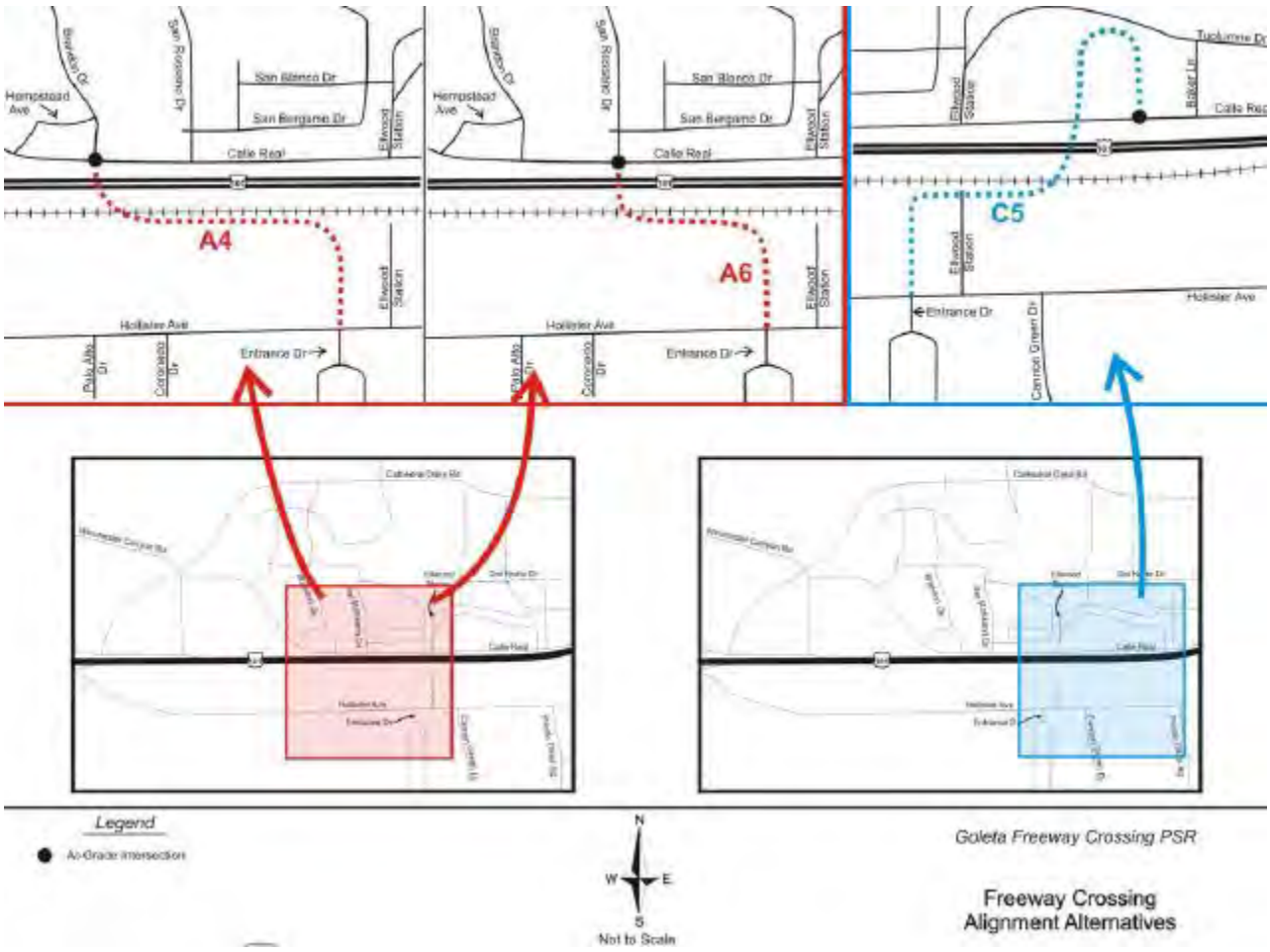


FIGURE 2. GOLETA FREEWAY CROSSING ALTERNATIVES

Project Areas of Influence

In ArcGIS Pro, there is a series of steps that outlines the process for creating network buffers at ¼ mile, ½ mile, and 1-mile distances. The buffers follow the road network and are used to calculate the number of people that can access the facility at each distance.

The resulting network buffers are shown in the following map figures. A ¼ mile, ½ mile, and 1-mile network buffer has been created for the project extent to determine the population that can access the facility.

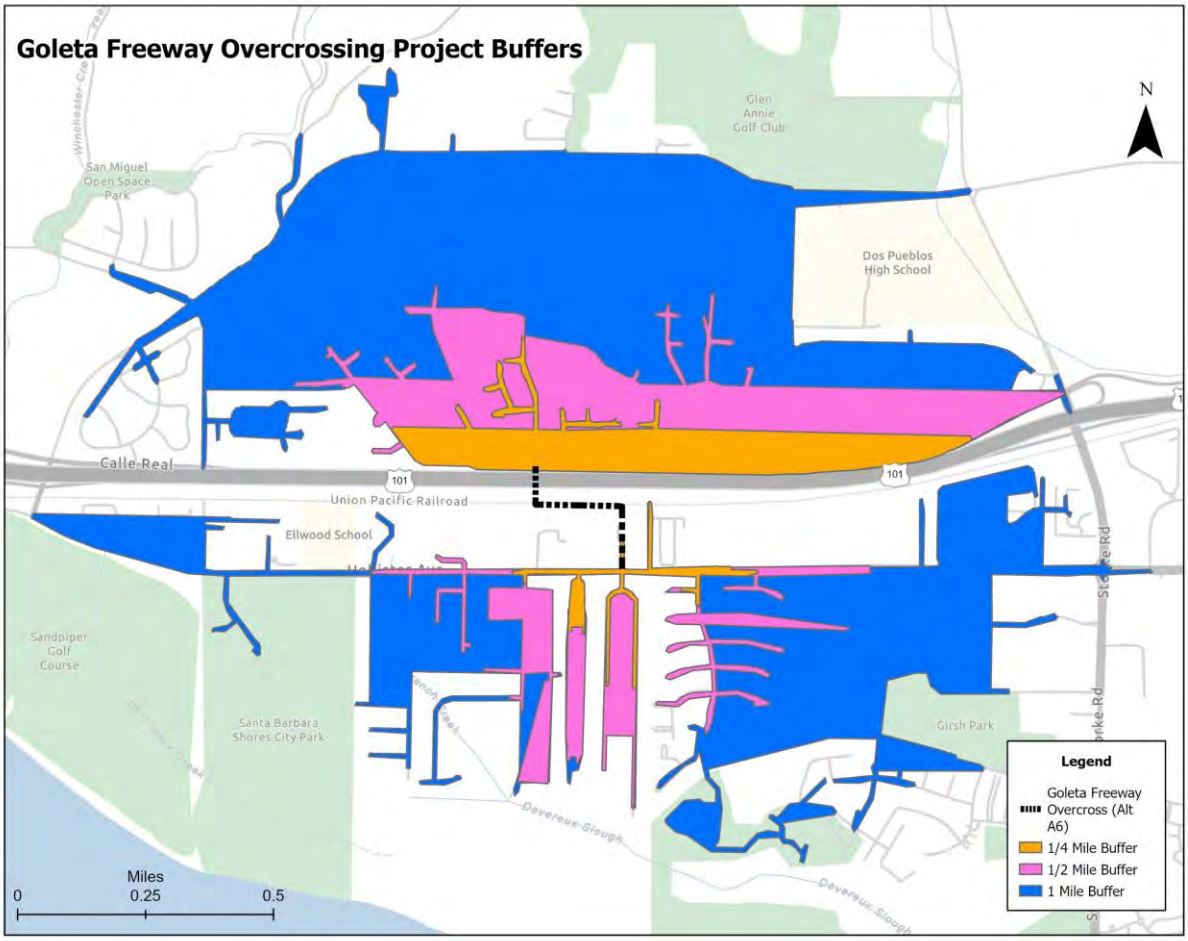


FIGURE 3. GOLETA FREEWAY CROSSING PROJECT BUFFERS

Note: The Alternative A6 is not illustrated to scale nor is it the final design, actual project configuration may differ. Alternative A6 is illustrated for the purpose of this analysis only.

Project TAZ Populations

The Goleta Travel Demand Model does not include population per TAZ for baseline or future conditions. Therefore, TAZ population had to be estimated using Dwelling Units (DU) in the model land use file. Estimated TAZ population was determined as follows:

- To determine the total population per TAZ, the total City population established in Table E.1 of the DIF Nexus was multiplied by the total number of DU in the City (Figure 3). This process yielded an average person per household of 2.5.
- Once the average person per household was established, it was then multiplied by the number of DU in the affected buffer TAZs to yield a population estimate of the affected TAZ.
- Next, the population that is accessible to each project facility is calculated as a proportion of the total roadway network length within a TAZ and the percentage of each TAZ road network a project buffer covers. This method was used to account for the uneven distribution of population across TAZs. This process was repeated for each set of buffer distances and for the future buildout year.

The affected project populations are shown in **Table 1**.

Table E.1: Goleta Growth Forecast, 2025-Buildout

Land Use	Existing (2025)	Buildout	Growth	(% Buildout)
Residential (residents & dwelling units)				
Residents	32,417	40,169	7,752	*19%*
Single Family Detached	5,533	6,511	978	*15%*
All Other Residential	7,622	9,973	2,351	*24%*
Total Dwelling Units	13,155	16,484	3,329	*20%*
Non-residential (workers & 1,000 bldg. sq. ft.)				
Workers	25,540	35,380	9,840	*28%*
Retail / Commercial	3,353	4,621	1,268	*27%*
Office & Medical	3,187	5,058	1,871	*37%*
Industrial	6,684	7,572	888	*12%*
Total Bldg. Sq. Ft. *(1,000s)*	38,764	52,631	13,867	*26%*

Sources: Tables 2.1 and 2.3.

FIGURE 4. CITY OF GOLETA GROWTH FORECAST

Source: City of Goleta Development Impact Fee Update, 2026.

TABLE 1. GOLETA FREEWAY CROSSING POPULATION PER BUFFER DISTANCE

PROJECT NAME	YEAR	¼ MILE POPULATION	½ MILE POPULATION	1 MILE POPULATION
GOLETA OVERCROSSING	Baseline	2,018.44	4,955.39	10,959.82
	Future	2,189.78	5,864.51	13,397.25

Project Induced Demand

The induced demand from each project facility is calculated for people living at ¼ mile, ½ mile, and 1-mile distances from a given bike facility. The populations for each buffer distance were calculated using the previous steps in the ArcGIS Pro Methodology and then adjusted based on:

- Bicycle Commute Mode Share (2024 ACS 5-year Estimates).
- Adult Population Percentage (2024 ACS 5-year estimates).
- Children Bicycle Commute Percentage (National Household Travel Survey, 2017[1])
- Distance-based likelihood multiplier for cycling uptake for each distance: 15% (1 mile), 44% (1/2 mile), 51% (1/4 Mile).

[1] https://nhts.ornl.gov/assets/FHWA_NHTS_%20Brief_Traveltoschool_032519.pdf

TABLE 2. GOLETA FREEWAY CROSSING INDUCED DEMAND

BASELINE DEMAND	BASELINE	FUTURE
BIKE COMMUTE MODE SHARE	2.5%	2.5%
POPULATION UNDER 18	6,192[2]	7,610[3]
DAILY COMMUTERS	197	233
DAILY RECREATIONAL RIDERS	319	375

RESULTS

The main drivers in VMT reduction through the NCHRP 552 methodology are project location and size. Large infrastructure investments in dense urban areas have the highest potential for VMT and trip reduction due to the proximate population. The Goleta Overcrossing resulted in the following trip reduction per scenario.

Justification for the City to utilize the High scenario includes: the previously cited improvement in "Percent Connected" from the City's LTS model; the area served by the improvement is not characterized by grade differences; and, the area is typically not burdened by inclement weather. Therefore, this analysis is solely focusing on future conditions, therefore the total estimated trip reduction benefits from the Goleta Freeway Crossing is 94.47 (95 vehicle trips).

TABLE 3. GOLETA FREEWAY CROSSING ESTIMATED TRIP REDUCTION BENEFIT

	NUMBER OF NEW CYCLISTS PER SCENARIO		ESTIMATED TRIP REDUCTION	
	Baseline	Future	Baseline	Future
TOTAL NEW CYCLISTS HIGH	535.65	629.78	80.35	**94.47**
TOTAL NEW CYCLISTS MEDIUM	350.74	412.38	52.61	61.86
TOTAL NEW CYCLISTS LOW	315.33	370.75	47.30	55.61

[2] Approximately 19% of total City population

[3] Estimated based on 19% of future population

MODEL VOLUMES WITH PROJECT

To determine the trip distribution characteristics of the reduced 95 vehicle trips, the project was coded into the Goleta Travel Demand Model as an open-to-traffic facility. This slight of hand provides the trip distribution of vehicle trips that would choose to use the crossing. Given that the Hollister/Storke intersection is only shown to go deficient in the PM peak hour, this exercise was only applied for the PM peak hour. As shown in the volume difference plot – increases in traffic (denoted by red) that use the crossing will no longer need to traverse the Hollister/Storke intersection which experiences a decrease in traffic (shown by green). Based on the model distribution, the 95 vehicle trip reduction estimated by the NCHRP 552 procedure was applied to the appropriate Hollister/Storke intersection legs and turn movements.

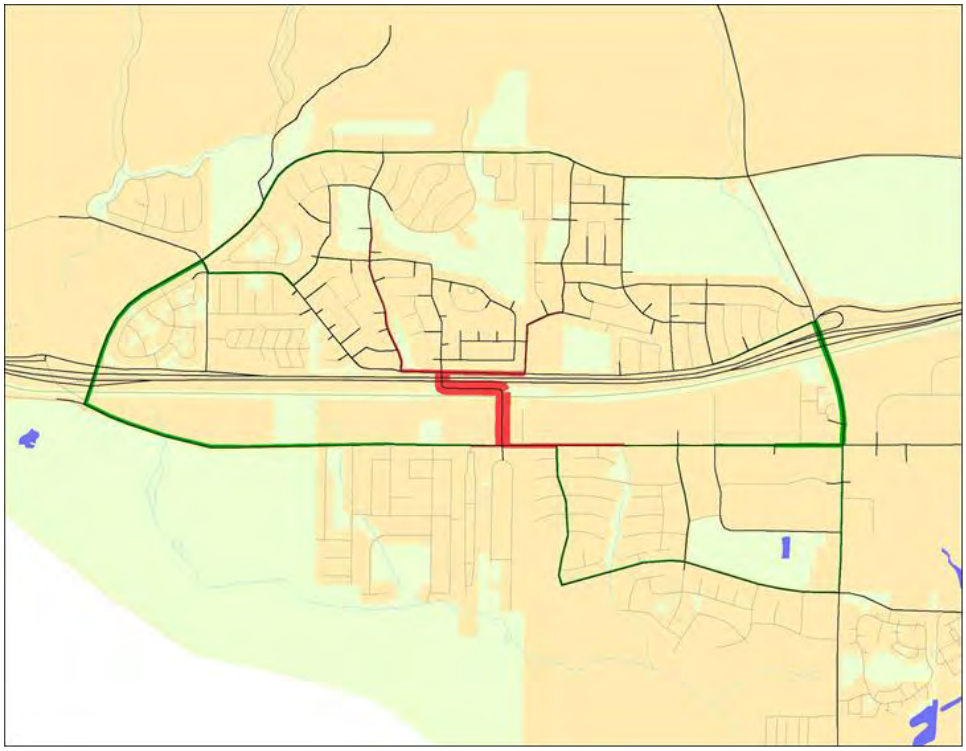


FIGURE 4. TRIP DIVERSION OF GOLETA FREEWAY CROSSING (ALT A6)

PHELPS ROAD IMPROVEMENT

The Phelps Road Improvement includes the connection of Phelps Road and Henry T. Wang Drive, as shown in **Figure 5**. The proposed connection of Phelps Road and Henry T. Wang Drive would allow Phelps Road to provide parallel capacity for Hollister Avenue. Consequently, this would allow Phelps Road to divert traffic off of Hollister Avenue and alleviate traffic at the Hollister/Storke intersection. Applying the updated Goleta Traffic Model, the volume reduction benefits as shown in **Figure 5**. As shown, PM peak hour volumes decrease on all approaches (most significantly on the westbound approach) with a slight increase on the northbound approach leg.

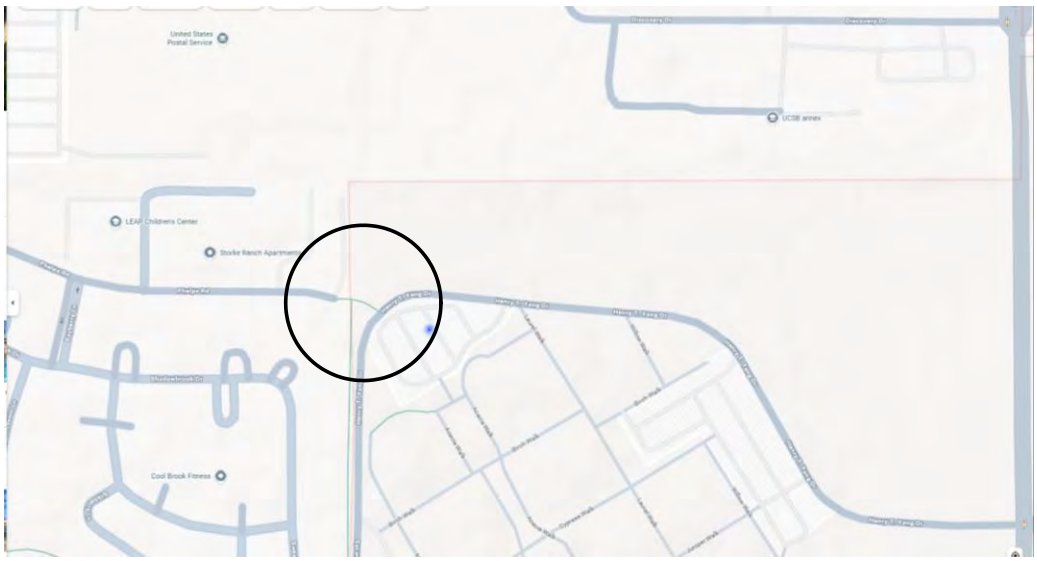


FIGURE 5. PHELPS ROAD EXTENSION LOCATION

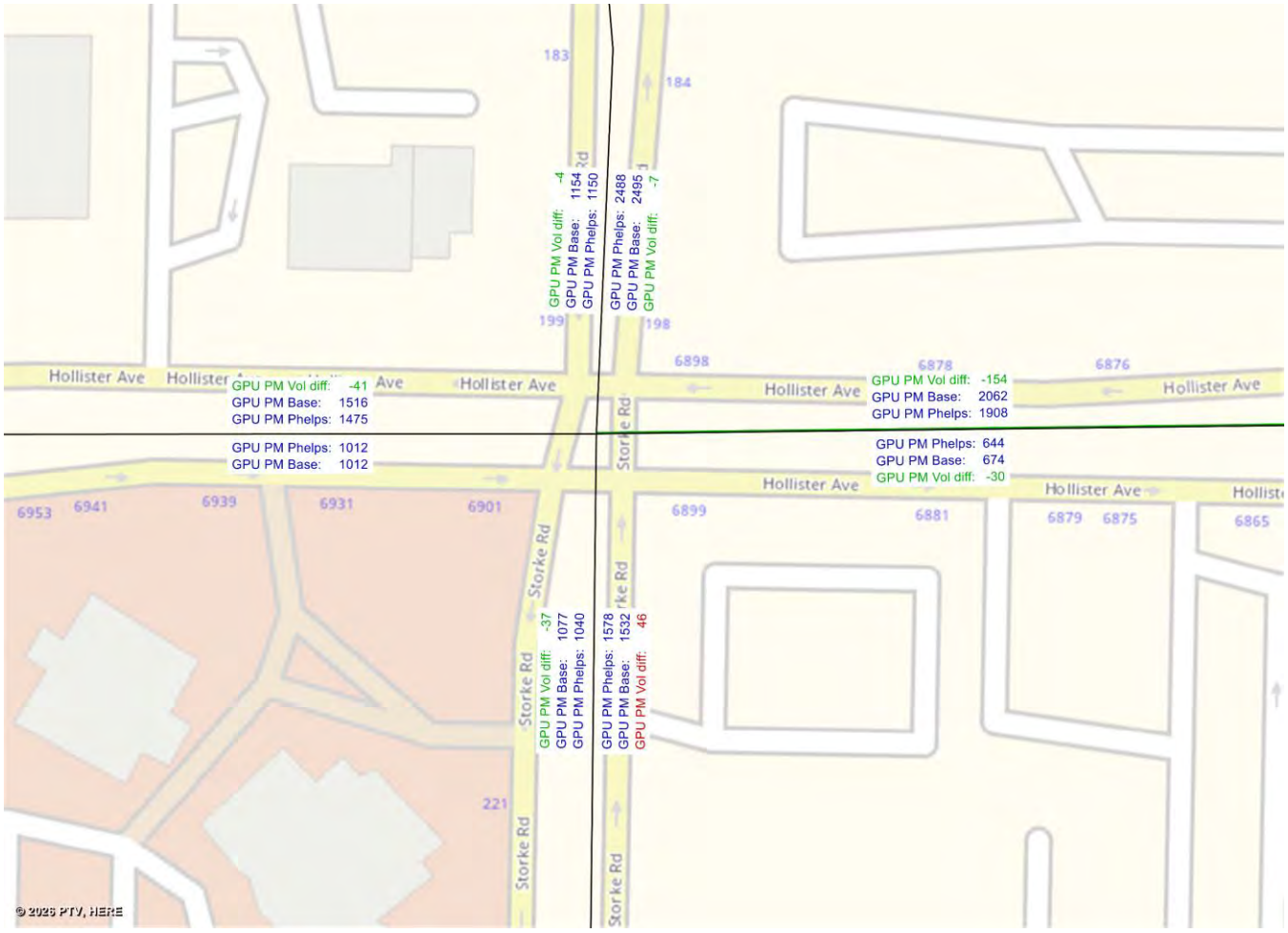
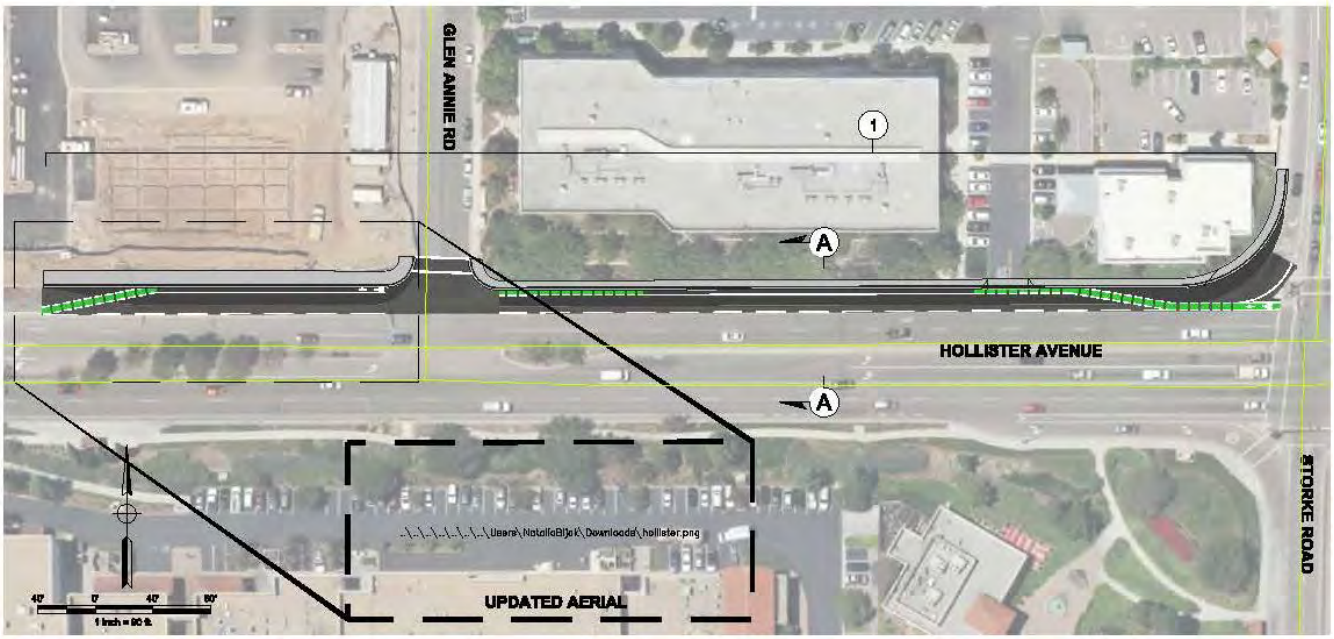


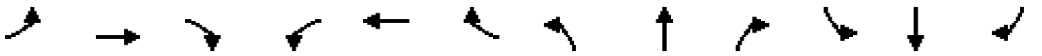
FIGURE 6. HOLLISTER AVE/STORKE RD VOLUME DIFFERENCE WITH PHELPS ROAD EXTENSION (PM)

FINDINGS

Both the Goleta Freeway Crossing and the Phelps Road Extension in conjunction with the DIF improvement illustrated below will serve to improve operations at the Hollister/Storke intersection under future 2050 baseline conditions in the peak hour. Based on the HCM 7th Edition Operational Methodology total PM peak hour delay will be reduced from 77.36 vehicle hours of delay to 74.68 vehicle hours of delay (see attached SYNCHRO worksheets). The Goleta Freeway Crossing combined with the Phelps Road Extension will bring the intersection to within 4 seconds of average control delay of meeting the LOS threshold of D. With the identified DIF CIP improvement illustrated below which extends the westbound distributor lane on Hollister Avenue to west of Glen Annie Road, total combined improvement should allow the Hollister/Storke intersection to operate within standard (i.e., LOS D) during the PM peak hour under future 2050 baseline conditions.



Source: MNS Engineers



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	660	455	85	325	720	640	160	855	195	170	485	455
Future Volume (veh/h)	660	455	85	325	720	640	160	855	195	170	485	455
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	702	484	28	346	766	493	170	910	178	181	516	78
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	756	1064	460	803	1130	500	482	1093	213	247	651	290
Arrive On Green	0.07	0.10	0.10	0.23	0.32	0.32	0.14	0.26	0.26	0.07	0.18	0.18
Sat Flow, veh/h	3456	3554	1536	3456	3554	1573	3456	4265	830	3456	3554	1585
Grp Volume(v), veh/h	702	484	28	346	766	493	170	725	363	181	516	78
Grp Sat Flow(s),veh/h/ln	1728	1777	1536	1728	1777	1573	1728	1702	1691	1728	1777	1585
Q Serve(g_s), s	28.3	18.0	2.3	12.0	26.2	43.6	6.2	28.2	28.4	7.2	19.4	3.8
Cycle Q Clear(g_c), s	28.3	18.0	2.3	12.0	26.2	43.6	6.2	28.2	28.4	7.2	19.4	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.49	1.00		1.00
Lane Grp Cap(c), veh/h	756	1064	460	803	1130	500	482	872	433	247	651	290
V/C Ratio(X)	0.93	0.46	0.06	0.43	0.68	0.99	0.35	0.83	0.84	0.73	0.79	0.27
Avail Cap(c_a), veh/h	854	1064	460	803	1130	500	482	970	482	459	1013	452
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.9	52.3	45.2	45.8	41.5	47.4	54.5	49.2	49.3	63.7	54.7	20.7
Incr Delay (d2), s/veh	13.8	1.3	0.2	0.1	3.3	36.8	0.2	5.9	11.7	1.6	2.8	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.6	8.8	0.9	5.1	11.8	22.1	2.7	12.7	13.4	3.2	9.0	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	77.6	53.6	45.5	46.0	44.8	84.2	54.7	55.2	61.0	65.3	57.5	21.3
LnGrp LOS	E	D	D	D	D	F	D	E	E	E	E	C
Approach Vol, veh/h		1214			1605			1258			775	
Approach Delay, s/veh		67.3			57.1			56.8			55.7	
Approach LOS		E			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	37.6	47.0	24.6	30.7	35.0	49.6	14.4	41.0
Change Period (Y+Rc), s	5.1	* 5.1	5.1	* 5.1	4.4	5.1	4.4	5.1
Max Green Setting (Gmax), s	20.6	* 42	18.6	* 40	34.6	27.9	18.6	39.9
Max Q Clear Time (g_c+I1), s	14.0	20.0	8.2	21.4	30.3	45.6	9.2	30.4
Green Ext Time (p_c), s	0.2	3.8	0.1	4.2	0.3	0.0	0.1	5.4

Intersection Summary	
HCM 7th Control Delay, s/veh	59.4
HCM 7th LOS	E

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	660	457	84	297	649	591	161	882	196	162	472	365
Future Volume (veh/h)	660	457	84	297	649	591	161	882	196	162	472	365
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	702	486	27	316	690	441	171	938	181	172	502	58
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	756	1064	460	789	1116	494	513	1113	214	247	634	283
Arrive On Green	0.07	0.10	0.10	0.23	0.31	0.31	0.15	0.26	0.26	0.07	0.18	0.18
Sat Flow, veh/h	3456	3554	1536	3456	3554	1573	3456	4276	822	3456	3554	1585
Grp Volume(v), veh/h	702	486	27	316	690	441	171	746	373	172	502	58
Grp Sat Flow(s),veh/h/ln	1728	1777	1536	1728	1777	1573	1728	1702	1694	1728	1777	1585
Q Serve(g_s), s	28.3	18.1	2.2	10.9	23.1	37.4	6.2	29.1	29.3	6.8	18.9	2.8
Cycle Q Clear(g_c), s	28.3	18.1	2.2	10.9	23.1	37.4	6.2	29.1	29.3	6.8	18.9	2.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.49	1.00		1.00
Lane Grp Cap(c), veh/h	756	1064	460	789	1116	494	513	886	441	247	634	283
V/C Ratio(X)	0.93	0.46	0.06	0.40	0.62	0.89	0.33	0.84	0.85	0.70	0.79	0.21
Avail Cap(c_a), veh/h	854	1064	460	789	1116	494	513	970	483	459	1013	452
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.9	52.3	45.2	45.9	40.9	45.8	53.4	49.0	49.1	63.5	55.0	20.8
Incr Delay (d2), s/veh	13.8	1.3	0.2	0.1	2.6	21.1	0.1	6.5	12.6	1.3	2.7	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.6	8.9	0.9	4.6	10.4	17.5	2.7	13.2	13.9	3.1	8.7	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	77.6	53.7	45.4	46.0	43.5	66.9	53.6	55.6	61.7	64.9	57.8	21.2
LnGrp LOS	E	D	D	D	D	E	D	E	E	E	E	C
Approach Vol, veh/h		1215			1447			1290			732	
Approach Delay, s/veh		67.3			51.2			57.1			56.5	
Approach LOS		E			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	37.1	47.0	25.9	30.1	35.0	49.1	14.4	41.5
Change Period (Y+Rc), s	5.1	* 5.1	5.1	* 5.1	4.4	5.1	4.4	5.1
Max Green Setting (Gmax), s	20.6	* 42	18.6	* 40	34.6	27.9	18.6	39.9
Max Q Clear Time (g_c+I1), s	12.9	20.1	8.2	20.9	30.3	39.4	8.8	31.3
Green Ext Time (p_c), s	0.2	3.8	0.1	4.0	0.3	0.0	0.1	5.2

Intersection Summary	
HCM 7th Control Delay, s/veh	57.8
HCM 7th LOS	E

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

2026 Development Impact Fee Program Update

APPENDIX B

TRANSPORTATION IMPROVEMENT PROJECTS COST ESTIMATES

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-01 Fairview Avenue at Calle Real Traffic Signal

Description:
- Construct second through lane on Calle Real EB by adding separate right turn pocket.
- Construct left turn lane on Fairview Avenue NB to accommodate double left turn lanes.
- Widen south side of Calle Real to accommodate additional through lane.
- Construct additional left turn lane on Fairview Avenue NB to accommodate double left turn lanes.
- Widen east side of Fairview Avenue to accommodate additional lane.
- Construct Class II bike lanes in both directions on Fairview Avenue and Class IV on west leg.
- Remove sidewalk from west side of Fairview Avenue.

Scope: Demolition; pavement widening; traffic signal modification; pavement delineation with slurry seal; drainage modifications; right of way.

Limits: Intersection and Calle Real west leg and Fairview Avenue south leg.

Estimate Type: Planning (City) Estimate Date: 20-Jan-26

Working Days: 160

		Current Year Costs		Section	
Earthwork	$	191,600	+	1	
Pavement Structural Section	$	328,900	+	2	
Drainage	$	34,900	+	3	
Specialty Items	$	-	+	4	
Environmental	$	15,000	+	5	
Traffic Items	$	840,000	+	6	
Minor Items	$	282,100	+	7	
Roadway Mobilization	$	169,300	+	8	
Roadway Contingency	$	372,400	+	9	
TOTAL ROADWAY COST	$	2,234,200	=		
TOTAL STRUCTURES COST	$	-	+	10	
TOTAL CONSTRUCTION COST	**$**	**2,234,000**	=		
TOTAL RIGHT OF WAY COST	**$**	**3,947,000**	=	11	
Management Support	$	223,400	+	10%	of Construction Costs
PA&ED Support	$	223,400	+	10%	
PS&E Support	$	335,100	+	15%	
Right of Way Support	$	44,700	+	2%	
Construction Support	$	357,500	+	16%	
Support Contingency	$	236,900	+	20%	of Support Costs
TOTAL SUPPORT COST	**$**	**1,421,000**	=		

Total Estimated Project Costs: $ 7,650,000 ✗ Check Status

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-01 Fairview Avenue at Calle Real Traffic Signal

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	885	x	160.00	= $	141,600	1
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY		x		= $	-	
Structure Excavation (Retaining Wall)	CY		x		= $	-	
Structure Backfill (Retaining Wall)	CY		x		= $	-	
Clearing & Grubbing	LS	1	x	50,000	= $	50,000	
				TOTAL EARTHWORK SECTION ITEMS		**$**	**191,600**

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN	316	x	418.28	= $	132,176	2
Class 2 Aggregate Base	CY	242	x	295.45	= $	71,499	3
Slurry Seal	TN	7	x	3,507.95	= $	24,556	4
Minor Concrete (Miscellaneous Construction)	CY	83	x	1,212.77	= $	100,660	5
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$**	**328,900**

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY	2	x	2,900.00	= $	5,800	7
Reinforced Concrete Pipe	LF	60	x	485.00	= $	29,100	8
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$**	**34,900**

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF		x		= $	-	
Chain Link Fence	LF		x		= $	-	
Midwest Guardrail System (Wood Post)	LF		x		= $	-	
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF		x		= $	-	
Structural Concrete, Retaining Wall	CY		x		= $	-	
				TOTAL SPECIALTY ITEMS		**$**	**-**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-01 Fairview Avenue at Calle Real Traffic Signal

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS		x		= $	-	
Highway Planting	LS		x		= $	-	
Irrigation System	LS		x		= $	-	
Plant Establishment Work	LS		x		= $	-	
Implement Erosion Control	LS		x		= $	-	
Prepare and Implement SWPPP / WPCP	LS	1	x	15,000	= $	15,000	
				TOTAL ENVIRONMENTAL		**$**	**15,000**

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS		x		= $	-	
Signal and Lighting	LS	1	x	700,000	= $	700,000	11
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS	1	x	100,000	= $	100,000	
Furnish and Install Sign Structure	LS		x		= $	-	
CIDH Pile (Sign Foundation)	LS		x		= $	-	
Remove Sign Structure	LS		x		= $	-	
Permanent Pavement Delineation	LS	1	x	40,000	= $	40,000	12
				TOTAL TRAFFIC ITEMS		**$**	**840,000**

SECTION 7: MINOR ITEMS							Notes
Traffic Management Plan and Detours				5.0%	$	70,520	
Stage Construction and Traffic Handling				5.0%	$	70,520	
ADA Items				5.0%	$	70,520	
Other Minor Items				5.0%	$	70,520	
Total of Section 1-6	$	1,410,400	x	20.0%	= $	282,080	
				TOTAL MINOR ITEMS		**$**	**282,100**

SECTIONS 8: MOBILIZATION							
Total Section 1-7	$	1,692,500	x	10%	= $	169,250	
				TOTAL MOBILIZATION		**$**	**169,300**

SECTION 9: ROADWAY CONTINGENCY							
Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)							
Total Section 1-8	$	1,861,800	x	20%	= $	372,360	
				TOTAL CONTINGENCY		**$**	**372,400**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-01 Fairview Avenue at Calle Real Traffic Signal

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF	6,525	x	250.00	=	$	1,631,153	9
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	LS	1	x	1,000,000	=	$	1,000,000	10
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	50%	x	2,631,153	=	$	1,315,576	
TOTAL RIGHT OF WAY ESTIMATE							**$**	**3,946,700**

I-01 Fairview Avenue at Calle Real Traffic Signal

NOTES AND CALCULATIONS

NOTE NO. 1

Roadway excavation area (from CAD)

6532	SF	Widenings
2583	SF	Sidewalks
5215	SF	Remove sidewalk

Depth

1.67 feet

Volume = (Sum of Areas) * Depth

23884 CF

885 CY

RESULT NO. 1 **885**

NOTE NO. 2

AC pavement area (from CAD)

Area (from CAD)

6532 SF

Depth

0.67 feet

Tonnage = Area * Depth * 145 lbs/CF / 2000lbs/ton

316 ton

RESULT NO. 2 **316**

NOTE NO. 3

Aggregate base

Area (from CAD)

6532 SF

Depth

1.00 feet

Volume = area * depth

6532 CF

242 CY

RESULT NO. 3 **242**

NOTE NO. 4

Slurry seal

Area	11231.24	feet
Tonnage = area / 1500SF/TN	7.487493	TN

RESULT NO. 4 **7**

NOTE NO. 5

Concrete Sidewalks

Sidewalks Area (from CAD)

2583 SF

Depth

0.33 feet

Volume = Area * Depth

861 CF

32 CY

Concrete Curb and Gutter Type A2-6 per Caltrans

Volume / foot

0.06 CY/foot

Length

566 feet (West)

297 feet (East)

Volume = Volume / foot * (Sum of length)

51 CY

RESULT NO. 5 **83**

I-01 Fairview Avenue at Calle Real Traffic Signal

NOTES AND CALCULATIONS

NOTE NO. 6

Drainage Impacts

Red Remove curb inlet located on east side of Fairview
Remove pipe connecting this structure to the curb inlet on the south side of Calle Real

Blue New curb inlet on east side of widened Fairview
New pipe connecting new structure and the existing structure on the south side of Calle Real

RESULT NO. 6 **Notes 7&8 Info**

NOTE NO. 7

Drainage System Needed (shown in Note 6)

Curb Inlets Type OS (H=6'), cast in place per Caltrans standard plans:

Concrete / Structure

1.53	CY	for H = 3'
0.278	CY	per each additional foot
2.364	CY	EA

RESULT NO. 7 **2**

NOTE NO. 8

Assumed Drainage System Needed shown in Note 6.

Reinforced Concrete Pipe Length 60 feet

RESULT NO. 8 **60**

NOTE NO. 9

Acquisition - Commercial Property

Row to add Class IV lanes on west leg

Length

300 LF

Width

16 FT

Total

4800 SF

RoW Take East of Fairview

661 SF

RoW Take South of Calle Real

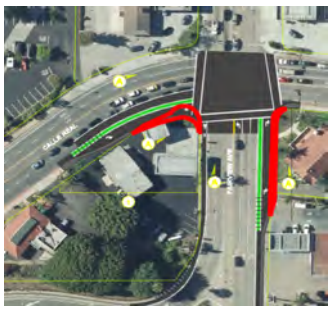
763 SF

RoW for SD

300 SF

Total

1725 SF



High value due to nature of business.

RESULT NO. 9 **6,525**

I-01 Fairview Avenue at Calle Real Traffic Signal

NOTES AND CALCULATIONS

NOTE NO. 10

Clearance/ Demo Area
650 SF

Remove gas filling station island and canopy.

High cost due to nature of structure.

RESULT NO. 10 **650**

NOTE NO. 11

Signal and Lighting

Scale:	Major
Legs:	4
Cost:	$700,000

RESULT NO. 11 **$700,000**

NOTE NO. 12

Permanent Pavement Delineation

Cost $40,000

RESULT NO. 12 **$40,000**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-01 Fairview Avenue at Calle Real (Roundabout)

Description: • Construct two lane roundabout to improve congestion at one of the busiest intersections in the City.

Scope: Demolition; pavement structural section reconstruction; concrete curb, gutter, sidewalk, truck apron, etc.; drainage modifications; landscaping; right of way.

Limits: Intersection and each leg of Fairview Avenue and Calle Real.

Estimate Type: Planning (City) Estimate Date: 20-Jan-26

Working Days: 240

		Current Year Costs		Section
Earthwork	$	1,141,700	+	1
Pavement Structural Section	$	1,722,300	+	2
Drainage	$	362,100	+	3
Specialty Items	$	-	+	4
Environmental	$	650,000	+	5
Traffic Items	$	825,000	+	6
Minor Items	$	1,128,300	+	7
Roadway Mobilization	$	583,000	+	8
Roadway Contingency	$	1,282,500	+	9
TOTAL ROADWAY COST	$	7,694,900	=	
TOTAL STRUCTURES COST	$	-	+	10
TOTAL CONSTRUCTION COST	**$**	**7,695,000**	=	
TOTAL RIGHT OF WAY COST	**$**	**27,500,000**	=	11

Management Support	$	769,500	+	10%	of Construction Costs
PA&ED Support	$	769,500	+	10%	
PS&E Support	$	1,154,300	+	15%	
Right of Way Support	$	153,900	+	2%	
Construction Support	$	1,231,200	+	16%	
Support Contingency	$	815,700	+	20%	of Support Costs
TOTAL SUPPORT COST	**$**	**4,895,000**	=		

Total Estimated Project Costs: $ 40,100,000 ✗ Check Status

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-01 Fairview Avenue at Calle Real (Roundabout)

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	5,833	x	110.00	= $	641,630	1
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY		x		= $	-	
Structure Excavation (Retaining Wall)	CY		x		= $	-	
Structure Backfill (Retaining Wall)	CY		x		= $	-	
Clearing & Grubbing	LS	1	x	500,000	= $	500,000	
				TOTAL EARTHWORK SECTION ITEMS		**$**	**1,141,700**

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN	2,855	x	237.97	= $	679,404	2
Class 2 Aggregate Base	CY	2,917	x	134.30	= $	391,753	3
Slurry Seal	TN	28	x	2,700.00	= $	75,600	4
Minor Concrete (Miscellaneous Construction)	CY	404	x	1,424.58	= $	575,530	5,6,7,8
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$**	**1,722,300**

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY	24	x	2,900.00	= $	69,600	9
Reinforced Concrete Pipe	LF	1,500	x	195.00	= $	292,500	10
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$**	**362,100**

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF		x		= $	-	
Chain Link Fence	LF		x		= $	-	
Midwest Guardrail System (Wood Post)	LF		x		= $	-	
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF		x		= $	-	
Structural Concrete, Retaining Wall	CY		x		= $	-	
				TOTAL SPECIALTY ITEMS		**$**	**-**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-01 Fairview Avenue at Calle Real (Roundabout)

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS		x		= $	-	
Highway Planting	LS	1	x	400,000	= $	400,000	
Irrigation System	LS	1	x	125,000	= $	125,000	
Plant Establishment Work	LS	1	x	65,000	= $	65,000	
Implement Erosion Control	LS	1	x	25,000	= $	25,000	
Prepare and Implement SWPPP / WPCP	LS	1	x	35,000	= $	35,000	
				TOTAL ENVIRONMENTAL			**$ 650,000**

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS	1	x	725,000	= $	725,000	11
Signal and Lighting	LS		x		= $	-	
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS		x		= $	-	
Furnish and Install Sign Structure	LS		x		= $	-	
CIDH Pile (Sign Foundation)	LS		x		= $	-	
Remove Sign Structure	LS		x		= $	-	
Permanent Pavement Delineation	LS	1	x	100,000	= $	100,000	
				TOTAL TRAFFIC ITEMS			**$ 825,000**

SECTION 7: MINOR ITEMS							Notes
Traffic Management Plan and Detours				6.0%	$	282,066	
Stage Construction and Traffic Handling				8.0%	$	376,088	
ADA Items				4.0%	$	188,044	
Other Minor Items				6.0%	$	282,066	
Total of Section 1-6	$	4,701,100	x	24.0%	= $	1,128,264	
				TOTAL MINOR ITEMS			**$ 1,128,300**

SECTIONS 8: MOBILIZATION							
Total Section 1-7	$	5,829,400	x	10%	= $	582,940	
				TOTAL MOBILIZATION			**$ 583,000**

SECTION 9: ROADWAY CONTINGENCY

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total Section 1-8	$	6,412,400	x	20%	= $	1,282,480	
				TOTAL CONTINGENCY			**$ 1,282,500**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-01 Fairview Avenue at Calle Real (Roundabout)

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx
Structure Type	--Select Bridge Type--	--Select Bridge Type--	--Select Bridge Type--
Width (Feet) [out to out]	0 LF	0 LF	0 LF
Total Bridge Length	0 LF	0 LF	0 LF
Total Area (Square Feet)	0 SQFT	0 SQFT	0 SQFT
Complexity	5	5	5
Unusual Features	0	0	0
Cost Per Square Foot	$0	$0	$0
COST OF EACH BRIDGE	$ -	$ -	$ -

Name / ID	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx
Structure Type	--Select Bridge Type--	--Select Bridge Type--	--Select Bridge Type--
Width (Feet) [out to out]	0 LF	0 LF	0 LF
Total Bridge Length	0 LF	0 LF	0 LF
Total Area (Square Feet)	0 SQFT	0 SQFT	0 SQFT
Complexity	5	5	5
Unusual Features	0	0	0
Cost Per Square Foot	$0	$0	$0
COST OF EACH BRIDGE	$ -	$ -	$ -

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF	17,500	x	250.00	=	$	4,375,000	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS	1	x	500,000	=	$	500,000	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF	1	x	2,000,000	=	$	2,000,000	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	300%	x	6,875,000	=	$	20,625,000	
TOTAL RIGHT OF WAY ESTIMATE						**$**		**27,500,000**

I-01 Fairview Avenue at Calle Real (Roundabout)

NOTES AND CALCULATIONS

NOTE NO. 1

Roadway excavation area (from CAD)
52,500 SF
Depth of AC
0.75 feet
Depth of base
2.25 feet
Roadway excavation = width * length * depth
157,500 CF
5,833 CY **RESULT NO. 1** **5,833**

NOTE NO. 2

AC pavement area (from CAD)
52,500 SF
Depth of AC
0.75 feet
Roadway excavation = width * length * depth
39,375 CF * 145 pounds/CF / 2,000 pounds/ton
2,855 TN **RESULT NO. 2** **2,855**

NOTE NO. 3

Aggregate base area (from CAD)
52,500 SF
Depth of base
1.50 feet
Roadway excavation = width * length * depth
78,750 CF
2,917 CY **RESULT NO. 3** **2,917**

NOTE NO. 4

Approaches to project
Length along:
150 feet northerly Fairview
150 feet easterly Calle Real
50 feet southerly Fairview
150 feet westerly Calle Real
Width
86 feet northerly Fairview
72 feet easterly Calle Real
56 feet southerly Fairview
102 feet westerly Calle Real
Area
41,800 feet
Coverage rate
1,500 SF/TN
28 CY **RESULT NO. 4** **28**

I-01 Fairview Avenue at Calle Real (Roundabout)

NOTES AND CALCULATIONS

NOTE NO. 5

New sidewalk length

225	feet	Fairview NW
100	feet	Fairview NE
420	feet	Calle Real NE
100	feet	Calle Real SE
100	feet	Fairview SE
110	feet	Fairview SW
200	feet	Calle Real SW
225	feet	Calle Real NW
1480	feet	TOTAL

Sidewalk width (most of it is multi-use path)

10 feet

Sidewalk thickness

4 inches

Volume = Minor Concrete (Miscellaneous Construction)

4933 CF

183 CY **RESULT NO. 5** **183**

NOTE NO. 6

New Caltrans A2-6 curb and gutter length

240	feet	Fairview NW
115	feet	Fairview NE
450	feet	Calle Real NE
110	feet	Calle Real SE
110	feet	Fairview SE
120	feet	Fairview SW
225	feet	Calle Real SW
240	feet	Calle Real NW
1610	feet	TOTAL

Volume / foot

0.06 CY/foot

Volume = Minor Concrete (Miscellaneous Construction)

95 CY **RESULT NO. 6** **95**

NOTE NO. 7

Driveways and truck apron

4	each	
25	feet	length
100	feet	TOTAL

Driveway width

20 feet

Driveway area

2000 SF

Truck apron (CAD)

2500 SF

Concrete thickness

6 inches

Volume = Minor Concrete (Miscellaneous Construction)

2250 CF

83 CY **RESULT NO. 7** **83**

I-01 Fairview Avenue at Calle Real (Roundabout)

NOTES AND CALCULATIONS

NOTE NO. 8

New Caltrans A1-6 curb length

500	feet	northerly Fairview
500	feet	easterly Calle Real
225	feet	southerly Fairview
450	feet	westerly Calle Real
1,675	feet	TOTAL

Volume / foot

0.03 CY/foot

Volume = Minor Concrete (Miscellaneous Construction)

43 CY **RESULT NO. 8** **43**

NOTE NO. 9

New drop inlets - assumed one each side of the road on each leg

8 each

Depth of drop inlets

5 feet

Drop inlet volume - Caltrans OL-10

Volume / foot

2.39 CY (3 feet deep)

0.28 CY/each additional foot of depth up to 8 feet

Volume = Minor Concrete (Miscellaneous Construction)

24 CY **RESULT NO. 9** **24**

NOTE NO. 10

Estimated length of RCP

1,500 feet **RESULT NO. 10** **1,500**

NOTE NO. 11

New street lights

20 each

Cost per street light

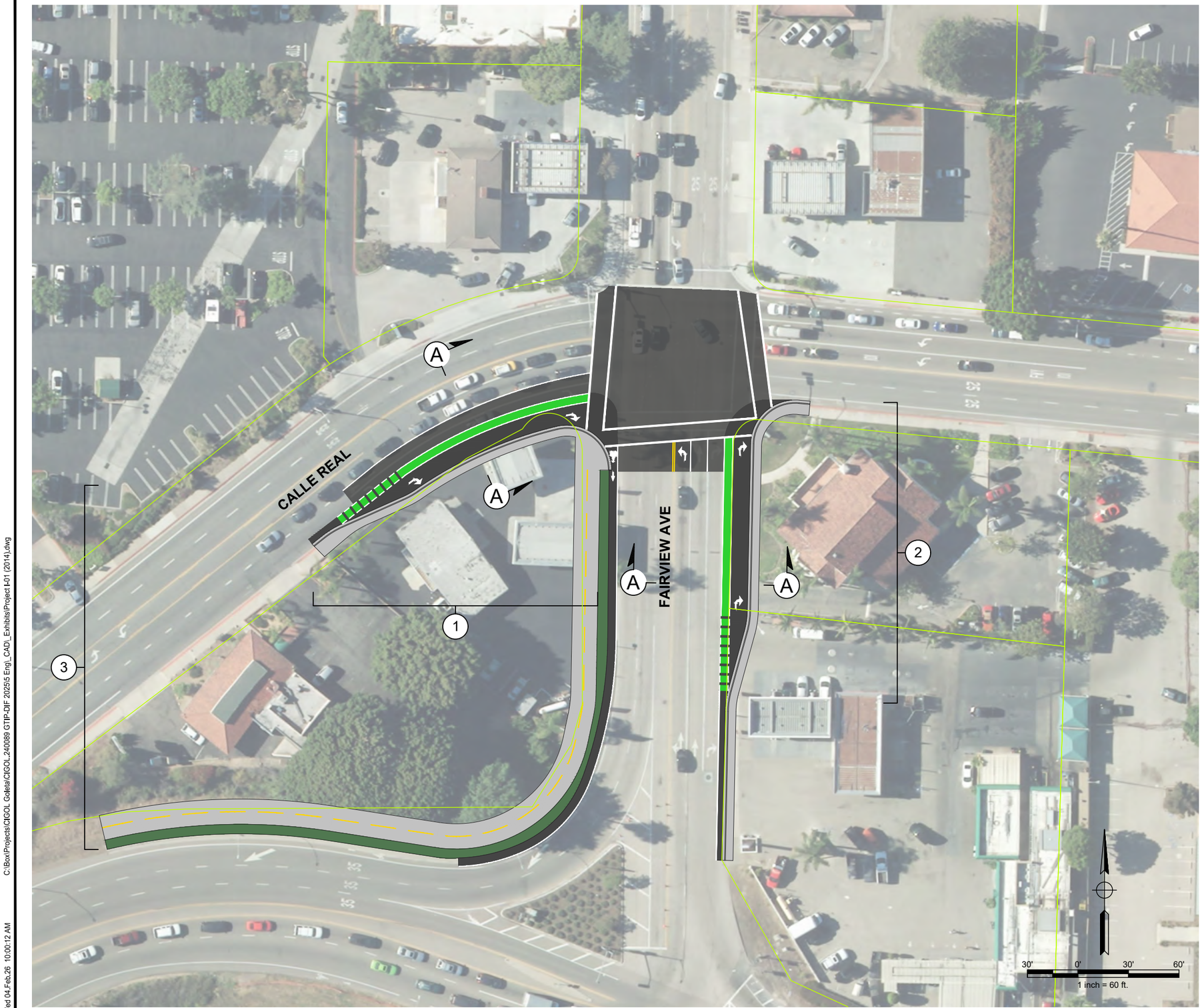
$ 35,000

Total lights

$ 700,000

Connection

$ 25,000 **RESULT NO. 11** **$ 725,000**



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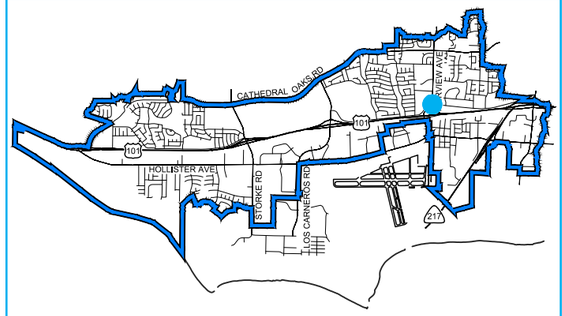
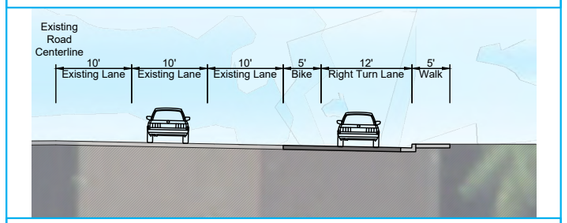
GOLETA TRANSPORTATION IMPROVEMENTS PROGRAM

Project I-01: Fairview Avenue and Calle Real



Notes

1. Widen Calle Real to the south to construct a right turn lane onto southbound Fairview Ave. See cross section A-A.
2. Widen Fairview Ave to the east to construct right turn lane onto eastbound Calle Real. See cross section A-A.
3. Add Class I path on west and bicycle lanes on both sides of Fairview Ave. Remove sidewalk on west side of Fairview Ave south of Calle Real.



Cross Section A-A

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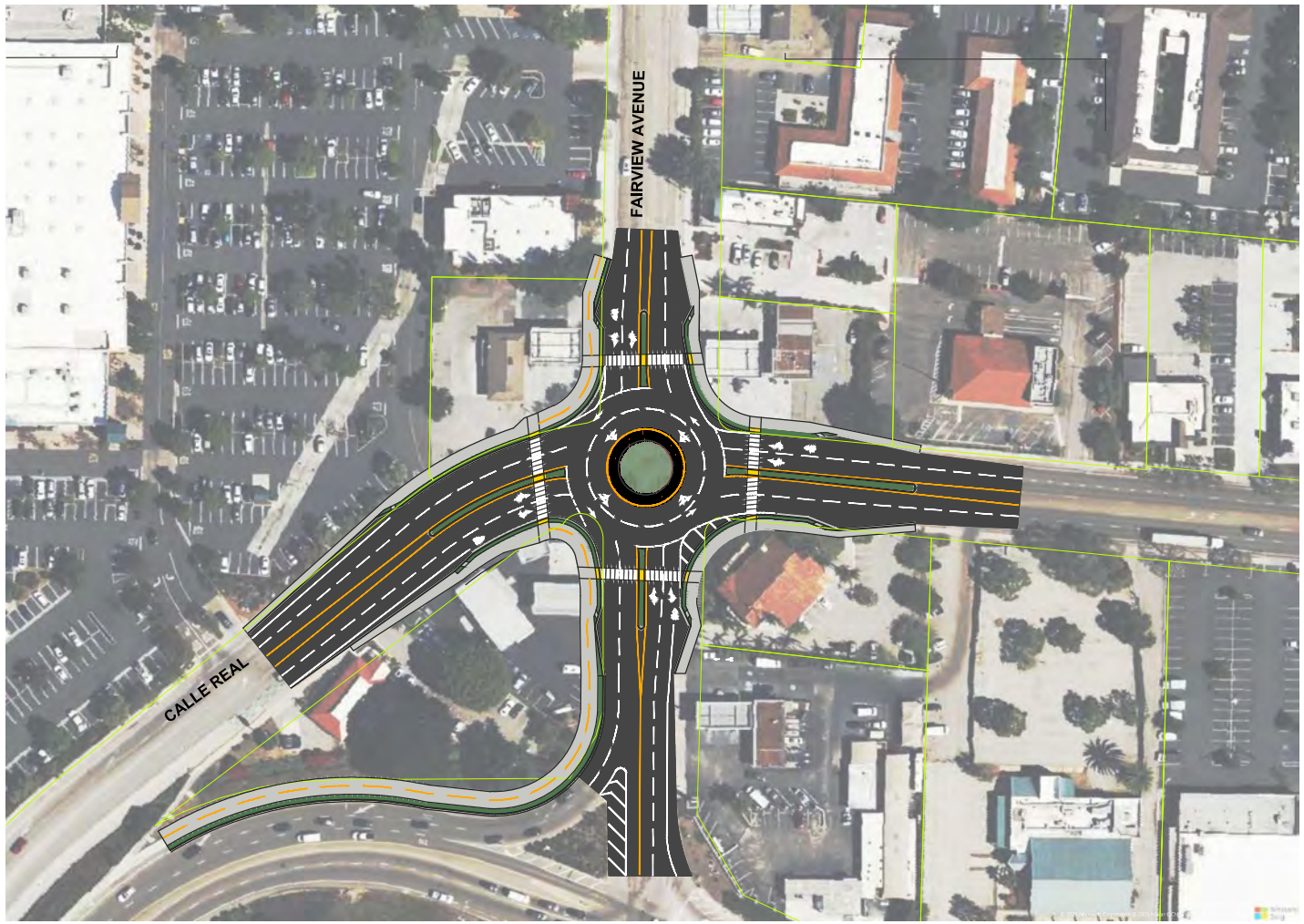

50' 0' 50' 100'
1 inch = 100 ft.

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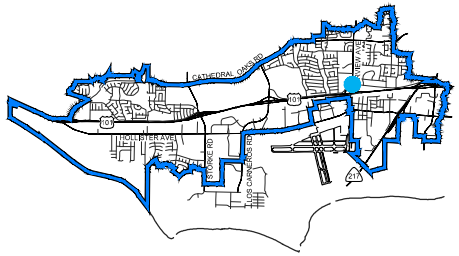
GOLETA TRANSPORTATION IMPROVEMENTS PROGRAM

Project I-01: Fairview Avenue and Calle Real Roundabout



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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-02 Fairview Avenue at US 101 Southbound Ramps

Description: Construct additional right-turn lane from Fairview Avenue NB to US 101 SB on-ramp.
- Construct pork chop island with pedestrian/bike activated signal at the SB on-ramp.
- Widen US 101 SB on-ramp to three lanes to allow free right onto on-ramp.
- Provide Class I facility on west side of roadway/bridge from Hollister to ramps.
- Existing Class II bike lane NB will remain on the east shoulder of Fairview Avenue.

Scope: Demolition; pavement widening; pavement delineation and slurry seal; railroad overhead widening (bridge); retaining wall; guard railing; traffic signal modifications, railroad coordination.

Limits: Intersection, Fairview Avenue south leg and US 101 on-ramp.

Estimate Type: Planning (Caltrans) Estimate Date: 20-Jan-26

Working Days: 240

		Current Year Costs		Section		
Earthwork	$	847,600	+	1		
Pavement Structural Section	$	659,400	+	2		
Drainage	$	-	+	3		
Specialty Items	$	2,132,700	+	4		
Environmental	$	200,000	+	5		
Traffic Items	$	920,000	+	6		
Minor Items	$	761,600	+	7		
Roadway Mobilization	$	552,200	+	8		
Roadway Contingency	$	1,822,100	+	9		
TOTAL ROADWAY COST	$	7,895,600	=			
TOTAL STRUCTURES COST	$	6,205,100	+	10		
TOTAL CONSTRUCTION COST	**$**	**14,101,000**	=			
TOTAL RIGHT OF WAY COST	**$**	**4,950,000**	=	11		
Management Support	$	1,410,100	+	10%		
PA&ED Support	$	1,410,100	+	10%		
PS&E Support	$	2,115,200	+	15%		of Construction Costs
Right of Way Support	$	282,100	+	2%		
Construction Support	$	2,256,200	+	16%		
Support Contingency	$	2,242,200	+	30%		of Support Costs
TOTAL SUPPORT COST	**$**	**9,716,000**	=			

Total Estimated Project Costs: $ 28,800,000 ✗ **Check Status**

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-02 Fairview Avenue at US 101 Southbound Ramps

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	443	x	228.81	= $	101,363	1
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY	919	x	40.00	= $	36,760	3
Structure Excavation (Retaining Wall)	CY	1,087	x	300.00	= $	326,100	4
Structure Backfill (Retaining Wall)	CY	795	x	325.00	= $	258,375	5
Clearing & Grubbing	LS	1	x	125,000	= $	125,000	
				TOTAL EARTHWORK SECTION ITEMS		**$**	**847,600**

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN	347	x	418.28	= $	145,143	6
Class 2 Aggregate Base	CY	266	x	295.45	= $	78,590	7
Slurry Seal	TN	19	x	3,507.95	= $	66,651	8
Minor Concrete (Miscellaneous Construction)	CY	259	x	1,424.58	= $	368,966	15
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$**	**659,400**

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY		x		= $	-	
Reinforced Concrete Pipe	LF		x		= $	-	
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$**	**-**

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF	652	x	22.04	= $	14,370	9
Chain Link Fence	LF	248	x	75.00	= $	18,600	10
Midwest Guardrail System (Wood Post)	LF		x		= $	-	
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF	900	x	214.48	= $	193,032	11
Structural Concrete, Retaining Wall	CY	1,700	x	1,121.58	= $	1,906,686	12
				TOTAL SPECIALTY ITEMS		**$**	**2,132,700**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-02 Fairview Avenue at US 101 Southbound Ramps

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS		x		= $	-	
Highway Planting	LS	1	x	80,000	= $	80,000	
Irrigation System	LS	1	x	40,000	= $	40,000	
Plant Establishment Work	LS	1	x	30,000	= $	30,000	
Implement Erosion Control	LS	1	x	25,000	= $	25,000	
Prepare and Implement SWPPP / WPCP	LS	1	x	25,000	= $	25,000	
				TOTAL ENVIRONMENTAL		**$ 200,000**	

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS		x		= $	-	
Signal and Lighting	LS	1	x	900,000	= $	900,000	13
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS		x		= $	-	
Furnish and Install Sign Structure	LS		x		= $	-	
CIDH Pile (Sign Foundation)	LS		x		= $	-	
Remove Sign Structure	LS		x		= $	-	
Permanent Pavement Delineation	LS	1	x	20,000	= $	20,000	
				TOTAL TRAFFIC ITEMS		**$ 920,000**	

SECTION 7: MINOR ITEMS							Notes
Traffic Management Plan and Detours				5.0%	$	237,985	
Stage Construction and Traffic Handling				5.0%	$	237,985	
ADA Items				1.0%	$	47,597	
Other Minor Items				5.0%	$	237,985	
Total of Section 1-6	$	4,759,700	x	16.0%	= $	761,552	
				TOTAL MINOR ITEMS		**$ 761,600**	

SECTIONS 8: MOBILIZATION							
Total Section 1-7	$	5,521,300	x	10%	= $	552,130	
				TOTAL MOBILIZATION		**$ 552,200**	

SECTION 9: ROADWAY CONTINGENCY							
Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)							
Total Section 1-8	$	6,073,500	x	30%	= $	1,822,050	
				TOTAL CONTINGENCY		**$ 1,822,100**	

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-02 Fairview Avenue at US 101 Southbound Ramps

SECTION 10: STRUCTURES ITEMS

Name / ID	UPRR OH	xxxxxxxxx	xxxxxxxxx
Structure Type	PC/PS I	--Select Bridge Type--	--Select Bridge Type--
Width (Feet) [out to out]	32 LF	0 LF	0 LF
Total Bridge Length	113 LF	0 LF	0 LF
Total Area (Square Feet)	3616 SQFT	0 SQFT	0 SQFT
Complexity	7	5	5
Unusual Features	6	0	0
Cost Per Square Foot	$1,200	$0	$0
COST OF EACH BRIDGE	$ 4,339,200	$ -	$ -

Name / ID	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx
Structure Type	--Select Bridge Type--	--Select Bridge Type--	--Select Bridge Type--
Width (Feet) [out to out]	0 LF	0 LF	0 LF
Total Bridge Length	0 LF	0 LF	0 LF
Total Area (Square Feet)	0 SQFT	0 SQFT	0 SQFT
Complexity	5	5	5
Unusual Features	0	0	0
Cost Per Square Foot	$0	$0	$0
COST OF EACH BRIDGE	$ -	$ -	$ -

TOTAL COST OF BRIDGES		$	4,339,200
Structures Mobilization Percentage	10%	$	433,920
Structures Contingency Percentage	30%	$	1,431,936
TOTAL COST OF STRUCTURES		**$**	**6,205,100**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF	9,000	x	250.00	=	$	2,250,000	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS	1	x	750,000	=	$	750,000	14
Railroad - Flaggers	LS	1	x	300,000	=	$	300,000	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	50%	x	3,300,000	=	$	1,650,000	
TOTAL RIGHT OF WAY ESTIMATE						**$**	**4,950,000**	

I-02 Fairview Avenue at US 101 Southbound Ramps

NOTES AND CALCULATIONS

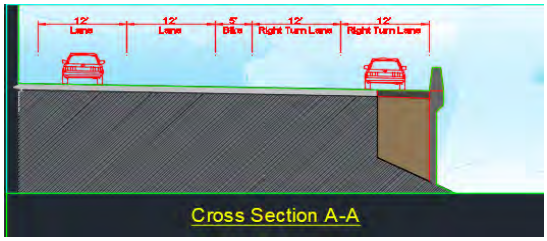
NOTE NO. 1

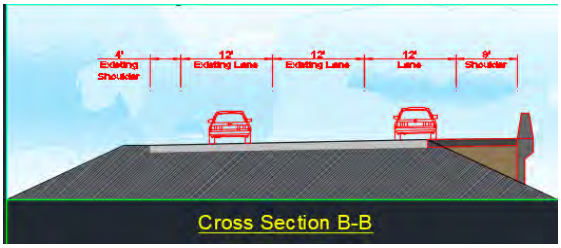
Roadway excavation area (from CAD)
7183 SF Widenings
Depth
1.67 feet
Volume = (Sum of Areas) * Depth
11972 CF
443 CY

RESULT NO. 1 **443**

NOTE NO. 2

Images show worst case. This case is carried out along entire wall length.





Length	115	feet	Length	652	feet
Structure Excavation	38	SF	Structure Excavation	38	SF
Structure Backfill	28	SF	Structure Backfill	28	SF
Import Borrow	74	SF	Import Borrow	25	SF
Retaining Wall	43.54	SF	Retaining Wall	36.41	SF

RESULT NO. 2 **Information Only**

NOTE NO. 3

Import borrow (See note 2)

Cross Section A-A
74 SF
Length
115 feet
Volume = area * length
8,510 CF
315 CY

Cross Section B-B
25 SF
Length
652 feet
Volume = area * length
16,300 CF
604 CY

RESULT NO. 3 **919**

NOTE NO. 4

Structure Ex (See note 2)

Cross Section A-A		Cross Section B-B			
38	SF	38	SF		
Length		Length			
115	feet	652	feet		
Volume = area * length		Volume = area * length			
4,399	CF	24,939	CF		
163	CY	924	CY	**RESULT NO. 4**	**1,087**

NOTE NO. 5

Structure Backfill (See note 2)

Cross Section A-A		Cross Section B-B			
28	SF	28	SF		
Length		Length			
115	feet	652	feet		
Volume = area * length		Volume = area * length			
3,220	CF	18,256	CF		
119	CY	676	CY	**RESULT NO. 5**	**795**

NOTE NO. 6

AC Pavement

Widening Area (from CAD)

7183 SF

Depth

0.67 feet

Tonnage = Area * Depth * 145lbs/CF / 2000lbs/ton

347 ton **RESULT NO. 6** **347**

NOTE NO. 7

Aggregate base

Area (from CAD)

7183 SF Widenings

Depth

1.00 feet

Volume = (Sum of Areas) * Depth

7183 CF

266 CY **RESULT NO. 7** **266**

NOTE NO. 8

Slurry seal

Area (from CAD) 28643.43 SF

Tonnage = area / 1500SF/TN 19.1 TN **RESULT NO. 8** **19**

NOTE NO. 9

Remove guard rail along ramp. Length equal to wall in Cross Section B-B (See Note 2)

RESULT NO. 9 **652**

NOTE NO. 10

Chain Link Fence along Fairview

On Structure 133 ft

On Wall A-A 115 ft **RESULT NO. 10** **248**

NOTE NO. 11

Concrete Barrier on Walls and Structure

On Structure	133	ft
On Wall A-A	115	ft
On Wall B-B	652	ft

RESULT NO. 11 **900**

NOTE NO. 12

Structural Concrete

Cross Section A-A		Cross Section B-B	
47	SF	36	SF
Length		Length	
115	feet	652	feet
Volume = area * length		Volume = area * length	
5,352	CF	23,739	CF
198	CY	879	CY

Wall on westside for bike path widening

Cross Section		
28	SF	
Length		
600	feet	
Volume = area * length		
16,800	CF	
622	CY	

TOTAL

1,700 CY

RESULT NO. 12 **1,700**

NOTE NO. 13

Traffic signal

2 x $450,000 Modifications

RESULT NO. 13 **$ 900,000**

NOTE NO. 14

UPRR TCE components

Engineering, permitting, fees, miscellaneous items

$250,000

TCE acquisition costs

$250,000

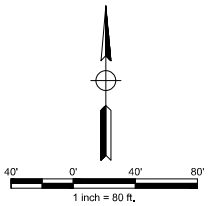
RESULT NO. 14 **$ 500,000**

NOTE NO. 15

Bike Path Pavement

Width		
14	FT	
Length		
1,000	FT	
Depth		
0.50	FT	
Volume		
7000	CF	
259	CY	

RESULT NO. 15 **$ 259**



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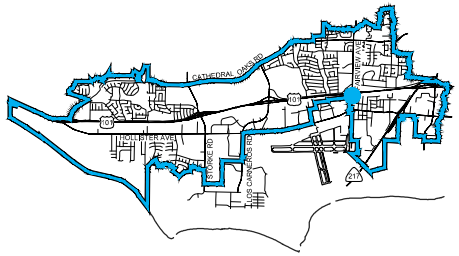
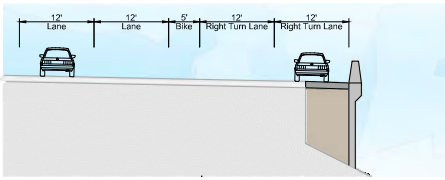
GOLETA TRANSPORTATION IMPROVEMENTS PROGRAM

Project I-02: Fairview Ave & SB Hwy 101 Operational Improvements

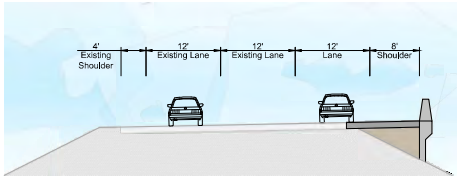


NOTES

1. Widen Fairview Ave to the east to include an additional right turn lane onto southbound on-ramp. See cross section A-A.
2. Widen railroad over crossing to accommodate additional turning lane.
3. Widen southbound on-ramp to receive additional turning lane.



Cross Section A-A



Cross Section B-B

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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-07 Hollister Avenue at Storke Road and Glen Annie Road

Description: • Widen Hollister Avenue to the north and install a new lane between Storke and Glenn Annie to allow a free right from Storke Road SB onto Hollister Avenue WB.

Scope: Demolition; pavement widening; concrete curb, gutter, sidewalk, etc.; pavement delineation; right of way.

Limits: North side of Hollister Avenue between Storke Road and Glen Annie Road.

Estimate Type: Planning (City) Estimate Date: 15-Jan-26

Working Days: 50

		Current Year Costs		Section	
Earthwork	$	228,000	+	1	
Pavement Structural Section	$	447,800	+	2	
Drainage	$	245,300	+	3	
Specialty Items	$	-	+	4	
Environmental	$	100,000	+	5	
Traffic Items	$	30,000	+	6	
Minor Items	$	126,200	+	7	
Roadway Mobilization	$	117,800	+	8	
Roadway Contingency	$	259,100	+	9	
TOTAL ROADWAY COST	$	1,554,200	=		
TOTAL STRUCTURES COST	$	-	+	10	
TOTAL CONSTRUCTION COST	**$**	**1,554,000**	=		
TOTAL RIGHT OF WAY COST	**$**	**1,071,000**	=	11	
Management Support	$	155,400	+	10%	of Construction Costs
PA&ED Support	$	155,400	+	10%	
PS&E Support	$	233,100	+	15%	
Right of Way Support	$	31,100	+	2%	
Construction Support	$	248,700	+	16%	
Support Contingency	$	164,800	+	20%	of Support Costs
TOTAL SUPPORT COST	**$**	**989,000**	=		

Total Estimated Project Costs: $ 3,620,000 ✗ Check Status

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-07 Hollister Avenue at Storke Road and Glen Annie Road

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	956	x	160.00	= $	152,960	1
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY		x		= $	-	
Structure Excavation (Retaining Wall)	CY		x		= $	-	
Structure Backfill (Retaining Wall)	CY		x		= $	-	
Clearing & Grubbing	LS	1	x	75,000	= $	75,000	
				TOTAL EARTHWORK SECTION ITEMS		**$**	**228,000**

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN	400	x	418.28	= $	167,312	2
Class 2 Aggregate Base	CY	307	x	295.45	= $	90,703	3
Slurry Seal	TN	5	x	3,507.95	= $	17,540	8
Minor Concrete (Miscellaneous Construction)	CY	142	x	1,212.77	= $	172,213	4
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$**	**447,800**

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY	7	x	2,900.00	= $	20,300	5
Reinforced Concrete Pipe	LF	600	x	375.00	= $	225,000	6
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$**	**245,300**

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF		x		= $	-	
Chain Link Fence	LF		x		= $	-	
Midwest Guardrail System (Wood Post)	LF		x		= $	-	
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF		x		= $	-	
Structural Concrete, Retaining Wall	CY		x		= $	-	
				TOTAL SPECIALTY ITEMS		**$**	**-**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-07 Hollister Avenue at Storke Road and Glen Annie Road

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS		x		= $	-	
Highway Planting	LS	1	x	40,000	= $	40,000	
Irrigation System	LS	1	x	15,000	= $	15,000	
Plant Establishment Work	LS	1	x	10,000	= $	10,000	
Implement Erosion Control	LS	1	x	15,000	= $	15,000	
Prepare and Implement SWPPP / WPCP	LS	1	x	20,000	= $	20,000	
				TOTAL ENVIRONMENTAL		**$ 100,000**	

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS		x		= $	-	
Signal and Lighting	LS		x		= $	-	
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS		x		= $	-	
Furnish and Install Sign Structure	LS		x		= $	-	
CIDH Pile (Sign Foundation)	LS		x		= $	-	
Remove Sign Structure	LS		x		= $	-	
Permanent Pavement Delineation	LS	1	x	30,000	= $	30,000	
				TOTAL TRAFFIC ITEMS		**$ 30,000**	

SECTION 7: MINOR ITEMS							Notes
Traffic Management Plan and Detours				10.0%	$	105,110	
Stage Construction and Traffic Handling					$	-	
ADA Items				2.0%	$	21,022	
Other Minor Items					$	-	
Total of Section 1-6	$	1,051,100	x	12.0%	= $	126,132	
				TOTAL MINOR ITEMS		**$ 126,200**	

SECTIONS 8: MOBILIZATION							
Total Section 1-7	$	1,177,300	x	10%	= $	117,730	
				TOTAL MOBILIZATION		**$ 117,800**	

SECTION 9: ROADWAY CONTINGENCY

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total Section 1-8	$	1,295,100	x	20%	= $	259,020	
				TOTAL CONTINGENCY		**$ 259,100**	

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-07 Hollister Avenue at Storke Road and Glen Annie Road

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF	3,250	x	250.00	=	$	812,500	7
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS	1	x	80,000.00	=	$	80,000	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	20%	x	892,500	=	$	178,500	
		TOTAL RIGHT OF WAY ESTIMATE					**$**	**1,071,000**

I-07 Hollister Avenue at Storke Road and Glen Annie Road

NOTES AND CALCULATIONS

NOTE NO. 1

Roadway excavation area (from CAD)

8280	SF	Widening
7210	SF	Sidewalks

Depth

1.67	feet

Volume = (Sum of Areas) * Depth

25817	CF
956	CY

RESULT NO. 1 **956**

NOTE NO. 2

AC Pavement area (from CAD)

8280	SF

Depth

0.67	feet

Tonnage = Area * Depth * 145lbs/CF / 2000lbs/ton

400	ton

RESULT NO. 2 **400**

NOTE NO. 3

Aggregate base area (from CAD)

8280	SF	Widenings

Depth

1.00	feet

Volume = (Sum of Areas) * Depth

8280	CF
307	CY

RESULT NO. 3 **307**

NOTE NO. 4

Minor concrete (miscellaneous construction)

Concrete Sidewalks

Sidewalk area (from CAD)

7210	SF

Depth

0.33	feet

Volume = Area * Depth

2403	CF
89	CY

Concrete Curb and Gutter Type A2-6 per Caltrans

Volume / foot

0.05903	CY/foot

Length

895	feet

Volume = length * volume / foot

53	CY

RESULT NO. 4 **142**

NOTE NO. 5

Minor concrete (minor structure)

5.71	CY for H=3' plus	Per Caltrans Standard Plans OL21 Vol
0.278	CY/foot for each additional foot of height	
7	CY	

RESULT NO. 5 **7**

NOTE NO. 6

Reinforced concrete pipe

600	feet	between Glen Annie and Storke

RESULT NO. 6 **600**

I-07 Hollister Avenue at Storke Road and Glen Annie Road

NOTES AND CALCULATIONS

NOTE NO. 7

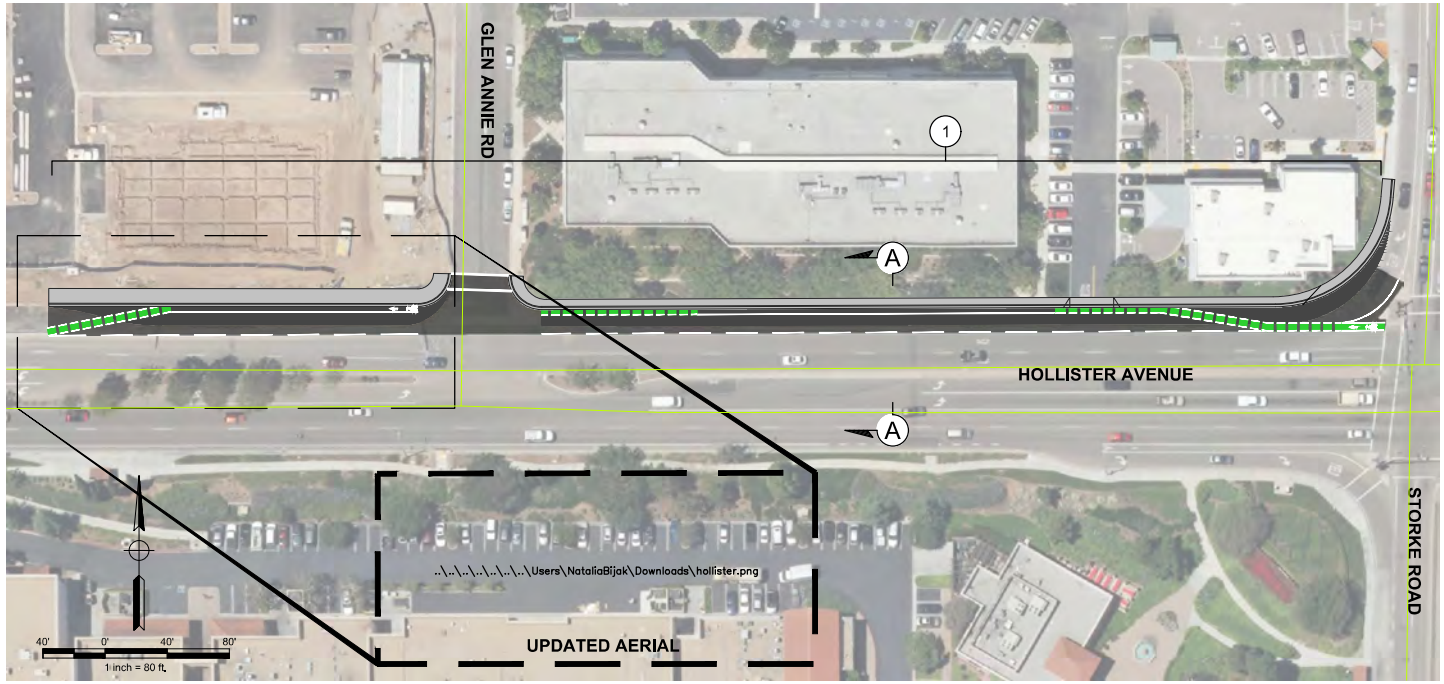
RoW acquisition

Area	3250	SF	strip needed for widening	**RESULT NO. 7**	**3250**

NOTE NO. 8

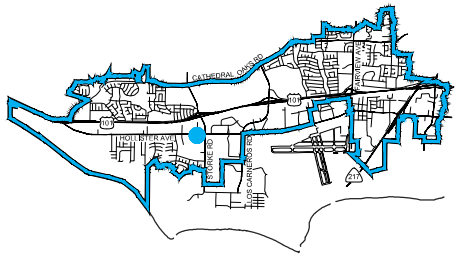
Slurry seal area (CAD)
7820 feet
Coverage rate (Caltrans)
1500 SF/ton
Tonnage = area / coverage rate
5 TN

RESULT NO. 8	**5**



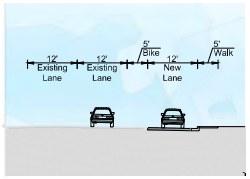
GOLETA TRANSPORTATION IMPROVEMENTS PROGRAM

Project I-07: Hollister Avenue at Storke Road and Glen Annie Road



NOTES

1. Widen Hollister Avenue to accommodate a free right turn lane from southbound Storke Road onto westbound Hollister Avenue. See cross section A-A.



Cross Section A-A

MNS
201 N. Calle Cesar Chavez, Suite 300
Santa Barbara, CA 93103
805-692-6921 | www.mnsengineers.com

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Thu 23,Oct,25 12:13:34 PM

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-08 Patterson Avenue at US 101 Southbound Ramps

Description:
- Add second left turn lane from Patterson Avenue SB to US 101 SB on-ramp.
- Widen US 101 overcrossing on the east side to accommodate the new lane.
- Widen US 101 SB on-ramp as necessary to accommodate three lanes.
- Widen UPRR overhead to accommodate bike lane and SB double left turn lanes.
- Construct pork chop island at the US 101 SB on-ramp.
- Construct pedestrian/bike activated signal at the new pork chop island.
- Widen US 101 SB on-ramp bridge at Atascadero Creek to accommodate new lane.
- Widen shoulder of US 101 NB off ramp to accommodate three lanes.

Scope: Demolition; pavement widening; overcrossing and bridge widening; traffic signals; pavement delineation and slurry seal; railroad coordination.

Limits: Intersection, Patterson Avenue north and south and US 101 on-ramp.

Estimate Type: Planning (Caltrans) Estimate Date: 15-Jan-26

Working Days: 300

		Current Year Costs		Section		
Earthwork	$	1,953,100	+	1		
Pavement Structural Section	$	599,000	+	2		
Drainage	$	-	+	3		
Specialty Items	$	2,371,200	+	4		
Environmental	$	105,000	+	5		
Traffic Items	$	470,000	+	6		
Minor Items	$	659,800	+	7		
Roadway Mobilization	$	615,900	+	8		
Roadway Contingency	$	2,032,200	+	9		
TOTAL ROADWAY COST	$	8,806,200	=			
TOTAL STRUCTURES COST	$	16,713,800	+	10		
TOTAL CONSTRUCTION COST	**$**	**25,520,000**	=			
TOTAL RIGHT OF WAY COST	**$**	**1,300,000**	=	11		
Management Support	$	2,552,000	+	10%		
PA&ED Support	$	2,552,000	+	10%		of Construction Costs
PS&E Support	$	3,828,000	+	15%		
Right of Way Support	$	510,400	+	2%		
Construction Support	$	4,083,200	+	16%		
Support Contingency	$	4,057,700	+	30%		of Support Costs
TOTAL SUPPORT COST	**$**	**17,584,000**	=			

Total Estimated Project Costs: $ 44,450,000 ✗ Check Status

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-08 Patterson Avenue at US 101 Southbound Ramps

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	1,298	x	160.00	= $	207,680	1
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY	1,211	x	40.00	= $	48,440	3
Structure Excavation (Retaining Wall)	CY	1,853	x	300.00	= $	555,900	4
Structure Backfill (Retaining Wall)	CY	1,357	x	325.00	= $	441,025	5
Clearing & Grubbing	LS	1	x	700,000	= $	700,000	12
				TOTAL EARTHWORK SECTION ITEMS		**$ 1,953,100**	

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN	885	x	237.97	= $	210,603	6
Class 2 Aggregate Base	CY	678	x	295.45	= $	200,315	7
Slurry Seal	TN	40	x	2,700.00	= $	108,000	8
Minor Concrete (Miscellaneous Construction)	CY	66	x	1,212.77	= $	80,043	9
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$ 599,000**	

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY		x		= $	-	
Reinforced Concrete Pipe	LF		x		= $	-	
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$ -**	

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF	520	x	162.00	= $	84,240	13
Remove Metal Beam Guard Railing	LF	1,350	x	14.73	= $	19,886	14
Chain Link Fence	LF	850	x	60.00	= $	51,000	15
Midwest Guardrail System (Wood Post)	LF	1,350	x	50.50	= $	68,175	16
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF	520	x	325.82	= $	169,426	17
Structural Concrete, Retaining Wall	CY	1,764	x	1,121.58	= $	1,978,467	10
				TOTAL SPECIALTY ITEMS		**$ 2,371,200**	

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-08 Patterson Avenue at US 101 Southbound Ramps

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS		x		= $	-	
Highway Planting	LS	1	x	40,000	= $	40,000	
Irrigation System	LS	1	x	15,000	= $	15,000	
Plant Establishment Work	LS	1	x	10,000	= $	10,000	
Implement Erosion Control	LS	1	x	15,000	= $	15,000	
Prepare and Implement SWPPP / WPCP	LS	1	x	25,000	= $	25,000	
				TOTAL ENVIRONMENTAL		**$ 105,000**	

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS		x		= $	-	
Signal and Lighting	LS	1	x	350,000	= $	350,000	11
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS	1	x	100,000	= $	100,000	
Furnish and Install Sign Structure	LS		x		= $	-	
CIDH Pile (Sign Foundation)	LS		x		= $	-	
Remove Sign Structure	LS		x		= $	-	
Permanent Pavement Delineation	LS	1	x	20,000	= $	20,000	
				TOTAL TRAFFIC ITEMS		**$ 470,000**	

SECTION 7: MINOR ITEMS							Notes
Traffic Management Plan and Detours				4.0%	$	219,932	
Stage Construction and Traffic Handling				4.0%	$	219,932	
ADA Items				1.0%	$	54,983	
Other Minor Items				3.0%	$	164,949	
Total of Section 1-6	$	5,498,300	x	12.0%	= $	659,796	
				TOTAL MINOR ITEMS		**$ 659,800**	

SECTIONS 8: MOBILIZATION							
Total Section 1-7	$	6,158,100	x	10%	= $	615,810	
				TOTAL MOBILIZATION		**$ 615,900**	

SECTION 9: ROADWAY CONTINGENCY							
Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)							
Total Section 1-8	$	6,774,000	x	30%	= $	2,032,200	
				TOTAL CONTINGENCY		**$ 2,032,200**	

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-08 Patterson Avenue at US 101 Southbound Ramps

SECTION 10: STRUCTURES ITEMS

Name / ID	Overcrossing Widening	Overhead Widening	Creek Widening
Structure Type	CIP/PS Box	PC/PS I	RC Box
Width (Feet) [out to out]	20 LF	25 LF	12 LF
Total Bridge Length	210 LF	140 LF	170 LF
Total Area (Square Feet)	4200 SQFT	3500 SQFT	2040 SQFT
Complexity	7	7	7
Unusual Features	3	3	3
Cost Per Square Foot	$1,200	$1,200	$1,200
COST OF EACH BRIDGE	$ 5,040,000	$ 4,200,000	$ 2,448,000

Name / ID	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx
Structure Type	--Select Bridge Type--	--Select Bridge Type--	--Select Bridge Type--
Width (Feet) [out to out]	0 LF	0 LF	0 LF
Total Bridge Length	0 LF	0 LF	0 LF
Total Area (Square Feet)	0 SQFT	0 SQFT	0 SQFT
Complexity	5	5	5
Unusual Features	0	0	0
Cost Per Square Foot	$0	$0	$0
COST OF EACH BRIDGE	$ -	$ -	$ -

TOTAL COST OF BRIDGES		$	11,688,000
Structures Mobilization Percentage	10%	$	1,168,800
Structures Contingency Percentage	30%	$	3,857,040
TOTAL COST OF STRUCTURES		**$**	**16,713,800**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF		x		=	$	-	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS	1	x	500,000	=	$	500,000	
Railroad - Flaggers	LS	1	x	500,000	=	$	500,000	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	30%	x	1,000,000	=	$	300,000	
TOTAL RIGHT OF WAY ESTIMATE						**$**	**1,300,000**	

I-08 Patterson Avenue at US 101 Southbound Ramps

NOTES AND CALCULATIONS

NOTE NO. 1

Roadway excavation area (from CAD)

18300	SF	Widenings
2730	SF	Sidewalks

Depth

1.67 feet

Volume = (Sum of Areas) * Depth

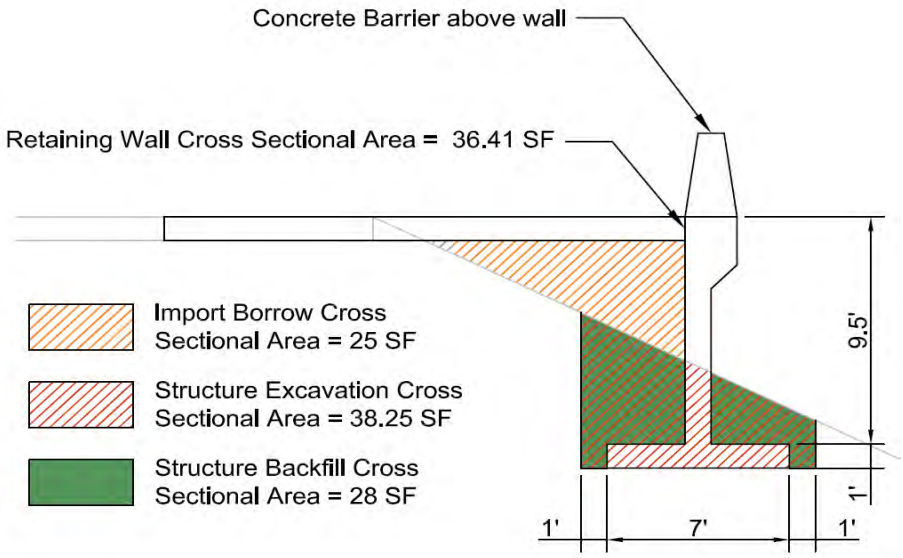
35050	CF
1298	CY

RESULT NO. 1 **1298**

NOTE NO. 2

Retaining Wall

Image shows worst case. This case is carried out along entire wall length.



Total Wall Lengths

North of Overcrossing		
72	feet	
South of Overcrossing		
46	feet	
South of Overhead		
238	feet	
South of ramp		
844	feet	
East of Creek		
109	feet	

Total

1308 feet

RESULT NO. 2 **Information Only**

NOTE NO. 3

Imported Borrow

Area (from CAD)

25 SF

Length

1308 feet

Volume = Area * Length

32703	CF
1211	CY

RESULT NO. 3 **1211**

NOTE NO. 4

Structure Excavation

Area (from CAD)

38 SF

Length of Wall

1308 feet

Volume = Area * Length

50036	CF
1853	CY

RESULT NO. 4 **1853**

I-08 Patterson Avenue at US 101 Southbound Ramps

NOTES AND CALCULATIONS

NOTE NO. 5

Structure Backfill
Cross Sectional Area
28 SF
Length of Wall
1308 feet
Volume = Area * Length
36627 CF
1357 CY

RESULT NO. 5 **1357**

NOTE NO. 6

AC Pavement
Widening Area (from CAD)
18300 SF
Depth
0.67 feet
Tonnage = Area * Depth * 145lbs/CF / 2000lbs/ton
885 ton

RESULT NO. 6 **885**

NOTE NO. 7

Aggregate base
Area (from CAD)
18300 SF Widenings
Depth
1.00 feet
Volume = (Sum of Areas) * Depth
18300 CF
678 CY

RESULT NO. 7 **678**

NOTE NO. 8

Slurry seal

	Ramp	Patterson
Length	1100 feet	600 feet
Width	30 feet	45 feet
Area	33000 SF	27000 SF
Tonnage = area / 1500SF/TN	22 TN	18 TN

RESULT NO. 8 **40**

I-08 Patterson Avenue at US 101 Southbound Ramps

NOTES AND CALCULATIONS

NOTE NO. 9

Concrete Sidewalks

Sidewalks Plan Area (from CAD)
2730 SF

Depth
0.33 feet

Volume = Area * Depth
910 CF
34 CY

Concrete Curb and Gutter Type A2-6 per Caltrans

Volume / foot
0.05903 CY/foot

Length
110 feet North of Overcrossing
46 feet South of Overcrossing
257 feet South of Overhead
54 feet North of Overhead
75 feet Pork chop Island

Volume = length * volume / foot
32 CY

RESULT NO. 9 **66**

NOTE NO. 10

Retaining Wall Cross Sectional Area (from CAD)
36 SF

Length
1308 FT

Volume = Area * Length
47629 CF
1764 CY

RESULT NO. 10 **1764**

NOTE NO. 11

Traffic signal

1	x	$350,000	Modifications	**RESULT NO. 11**	**$ 350,000**

NOTE NO. 12

Clearing and grubbing

1	x	$200,000	General	**RESULT NO. 12**	**$ 700,000**
1	x	$150,000	Overcrossing demolition		
1	x	$200,000	Overhead demolition		
1	x	$150,000	Bridge demolition		

NOTE NO. 13

Remove concrete barrier

140	LF	Overhead		
210	LF	Overcrossing		
170	LF	Bridge	**RESULT NO. 13**	**520**

NOTE NO. 14

Remove MGR

450	feet	US 101 SB on-ramp		
500	feet	US 101 SB on-ramp		
100	feet	Bridge aprroach		
300	feet	Overhead approach	**RESULT NO. 14**	**1350**

NOTE NO. 15

Chain link fence

850 LF **RESULT NO. 15** **850**

I-08 Patterson Avenue at US 101 Southbound Ramps

NOTES AND CALCULATIONS

NOTE NO. 16

Midwest Guardrail System (Wood Post)

450	feet	US 101 SB on-ramp		
500	feet	US 101 SB on-ramp		
100	feet	Bridge aprroach		
300	feet	Overhead approach	**RESULT NO. 16**	**1350**

NOTE NO. 17

Concrete barrier

140	LF	Overhead		
210	LF	Overcrossing		
170	LF	Bridge	**RESULT NO. 17**	**520**

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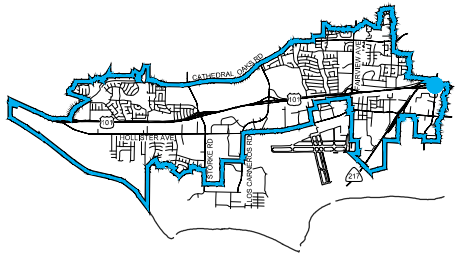
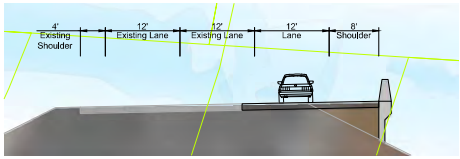
GOLETA TRANSPORTATION IMPROVEMENTS PROGRAM

Project I-08: Patterson Ave at US 101 Southbound Ramps



Notes

1. Widen Patterson Ave to the east to include an additional left turn lane from southbound Patterson Ave onto southbound ramp.
2. Widen freeway over crossing to accommodate additional left turn lane.
3. Widen Patterson Ave to the east to include an additional right turn lane from northbound Patterson onto southbound on-ramp.
4. Widen railroad over crossing to accommodate additional right turn lane.
5. Widen Patterson Ave southbound on-ramp to receive new turning lanes. See cross section A-A.
6. Widen structure over Maria Ygnacio Creek to accommodate ramp widening.



Cross Section A-A

MNS
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Santa Barbara, CA 93103
805-692-6921 | www.mnsengineers.com

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-10 Hollister Avenue at Patterson Avenue

Description:
- Construct Hollister Avenue WB free right turn lane onto Patterson Avenue NB.
- Construct Hollister Avenue EB free right turn lane onto Patterson Avenue SB.
- Widen Hollister Avenue on north side to accommodate the new WB free right turn lane.
- Widen Hollister Avenue on south side to accommodate the new EB free right turn lane.
- Install a new signal at the Hollister Avenue/Patterson Avenue intersection.
- Relocate power lines as needed.

Scope: Demolition; pavement widening; concrete curb, gutter, sidewalk, etc.; drainage system modification; pavement delineation; right of way.

Limits: Hollister Avenue east of intersection.

Estimate Type: Planning (City) Estimate Date: 4-Feb-26

Working Days: 100

		Current Year Costs		Section	
Earthwork	$	126,200	+	1	
Pavement Structural Section	$	514,500	+	2	
Drainage	$	34,900	+	3	
Specialty Items	$	-	+	4	
Environmental	$	50,000	+	5	
Traffic Items	$	465,000	+	6	
Minor Items	$	166,700	+	7	
Roadway Mobilization	$	135,800	+	8	
Roadway Contingency	$	298,700	+	9	
TOTAL ROADWAY COST	$	1,791,800	=		
TOTAL STRUCTURES COST	$	-	+	10	
TOTAL CONSTRUCTION COST	**$**	**1,792,000**	=		
TOTAL RIGHT OF WAY COST	**$**	**660,000**	=	11	
Management Support	$	179,200	+	10%	of Construction Costs
PA&ED Support	$	179,200	+	10%	
PS&E Support	$	268,800	+	15%	
Right of Way Support	$	35,900	+	2%	
Construction Support	$	286,800	+	16%	
Support Contingency	$	190,000	+	20%	of Support Costs
TOTAL SUPPORT COST	**$**	**1,140,000**	=		

Total Estimated Project Costs: $ 3,600,000 ✗ **Check Status**

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-10 Hollister Avenue at Patterson Avenue

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	420	x	228.81	= $	96,100	1
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY		x		= $	-	
Structure Excavation (Retaining Wall)	CY		x		= $	-	
Structure Backfill (Retaining Wall)	CY		x		= $	-	
Clearing & Grubbing	LS	1	x	30,000	= $	30,000	
				TOTAL EARTHWORK SECTION ITEMS		**$**	**126,200**

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN	222	x	418.28	= $	92,858	2
Class 2 Aggregate Base	CY	170	x	295.45	= $	50,227	3
Slurry Seal	TN	85	x	2,700.00	= $	229,500	9
Minor Concrete (Miscellaneous Construction)	CY	117	x	1,212.77	= $	141,894	4
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$**	**514,500**

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY	2	x	2,900.00	= $	5,800	6
Reinforced Concrete Pipe	LF	60	x	485.00	= $	29,100	7
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$**	**34,900**

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF		x		= $	-	
Chain Link Fence	LF		x		= $	-	
Midwest Guardrail System (Wood Post)	LF		x		= $	-	
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF		x		= $	-	
Structural Concrete, Retaining Wall	CY		x		= $	-	
				TOTAL SPECIALTY ITEMS		**$**	**-**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-10 Hollister Avenue at Patterson Avenue

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS		x		= $	-	
Highway Planting	LS	1	x	20,000	= $	20,000	
Irrigation System	LS	1	x	10,000	= $	10,000	
Plant Establishment Work	LS	1	x	5,000	= $	5,000	
Implement Erosion Control	LS	1	x	5,000	= $	5,000	
Prepare and Implement SWPPP / WPCP	LS	1	x	10,000	= $	10,000	
				TOTAL ENVIRONMENTAL		**$ 50,000**	

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS		x		= $	-	
Signal and Lighting	LS	1	x	350,000	= $	350,000	10
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS	1	x	100,000	= $	100,000	
Furnish and Install Sign Structure	LS		x		= $	-	
CIDH Pile (Sign Foundation)	LS		x		= $	-	
Remove Sign Structure	LS		x		= $	-	
Permanent Pavement Delineation	LS	1	x	15,000	= $	15,000	
				TOTAL TRAFFIC ITEMS		**$ 465,000**	

SECTION 7: MINOR ITEMS							Notes
Traffic Management Plan and Detours				7.0%	$	83,342	
Stage Construction and Traffic Handling					$	-	
ADA Items				2.0%	$	23,812	
Other Minor Items				5.0%	$	59,530	
Total of Section 1-6	$	1,190,600	x	14.0%	= $	166,684	
				TOTAL MINOR ITEMS		**$ 166,700**	

SECTIONS 8: MOBILIZATION							
Total Section 1-7	$	1,357,300	x	10%	= $	135,730	
				TOTAL MOBILIZATION		**$ 135,800**	

SECTION 9: ROADWAY CONTINGENCY

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total Section 1-8	$	1,493,100	x	20%	= $	298,620	
				TOTAL CONTINGENCY		**$ 298,700**	

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-10 Hollister Avenue at Patterson Avenue

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF	2,200	x	250.00	=	$	550,000	8
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	20%	x	550,000	=	$	110,000	
TOTAL RIGHT OF WAY ESTIMATE							**$**	**660,000**

I-10 Hollister Avenue at Patterson Avenue

NOTES AND CALCULATIONS

NOTE NO. 1

Roadway excavation area (from CAD)

2300	SF	New Pavement
1100	SF	Sidewalks

Depth

1.67 feet

Volume = (Sum of Areas) * Depth

5667 CF

Scope factor. CAD is for WB/NB only. Double to include EB/SB.

2 x

420 CY **RESULT NO. 1** **420**

NOTE NO. 2

AC Pavement

New Pavement

2300 SF

Depth

0.67 feet

Scope factor. CAD is for WB/NB only. Double to include EB/SB.

2 x

Tonnage = Area * Depth * 145lbs/CF / 2000lbs/ton

222 ton **RESULT NO. 2** **222**

NOTE NO. 3

Aggregate base

Area (from CAD)

2300 SF New Pavement

Depth

1.00 feet

Volume = (Sum of Areas) * Depth

2300 CF

Scope factor. CAD is for WB/NB only. Double to include EB/SB.

2 x

170 CY **RESULT NO. 3** **170**

NOTE NO. 4

<u>Concrete Sidewalks</u>

Sidewalks Plan Area (from CAD)

1100 SF

Depth

0.33 feet

Volume = Area * Depth

367 CF

Scope factor. CAD is for WB/NB only. Double to include EB/SB.

2 x

27 CY

<u>Concrete Curb and Gutter Type A2-6 per Caltrans</u>

Volume / foot

0.05903 CY/foot

Length

210	feet	Northerly curb
555	feet	Median curb

Volume = length * volume / foot

2 x

90 CY

I-10 Hollister Avenue at Patterson Avenue

NOTES AND CALCULATIONS

RESULT NO. 4 **117**

NOTE NO. 5

Drainage Impacts

Red Remove curb inlet located on north side of Hollister
Remove pipe connecting this structure to the curb inlet on the east side of Patterson

Blue New curb inlet on the north side of widened Hollister
New pipe connecting new structure and the existing structure on the east side of Patterson

RESULT NO. 5 **Notes 6&7 Info**

NOTE NO. 6

Drainage System Needed (shown in Note 5)
Curb Inlets Type OS (H=6'), cast in place per Caltrans standard plans:
Concrete / Structure

1.53	CY	for H = 3'
0.278	CY	per each additional foot
2.364	CY	EA

RESULT NO. 6 **2**

NOTE NO. 7

Assumed Drainage System Needed shown in Note 5.
Reinforced Concrete Pipe Length 60 feet

RESULT NO. 7 **60**

NOTE NO. 8

Acquisition - Commercial Property

Scope factor. CAD is for WB/NE

2	x
2200	SF

RESULT NO. 8 **2,200**

NOTE NO. 9

Slurry seal
Area (from CAD)
63600 SF
Coverage rate (Caltrans)

I-10 Hollister Avenue at Patterson Avenue

NOTES AND CALCULATIONS

1500 SF/ton

Scope factor. CAD is for WB/NB only. Double to include EB/SB.

2 x

Tonnage = area / coverage rate

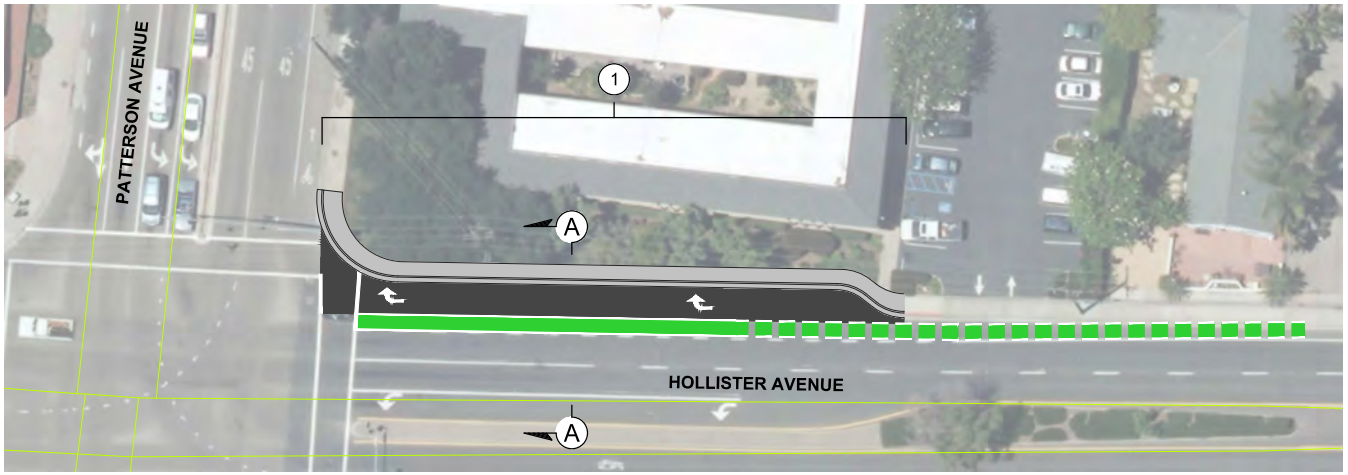
85 TN

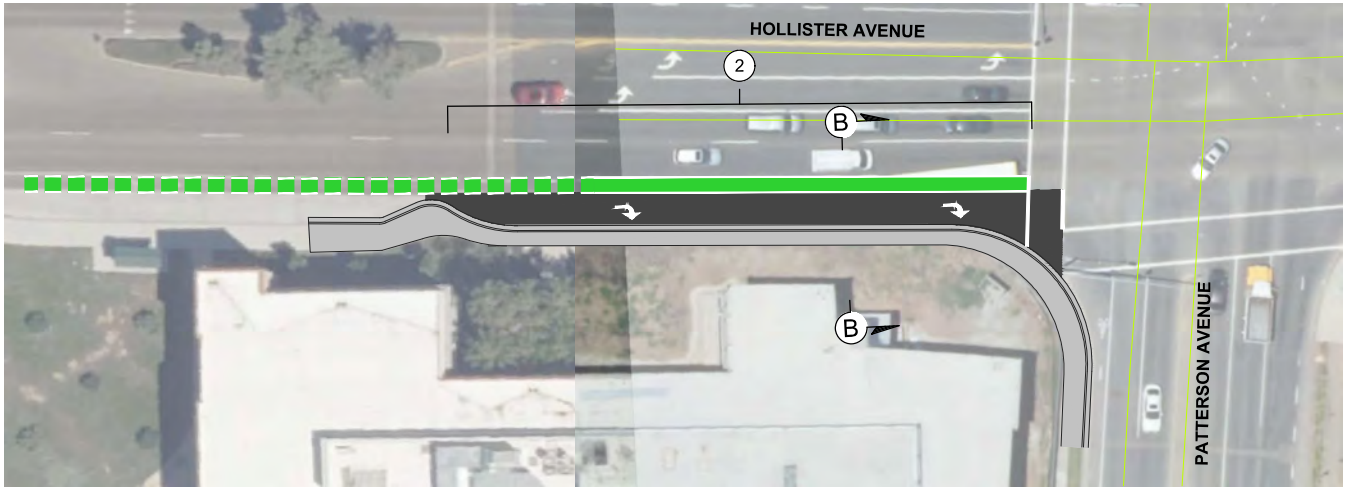
RESULT NO. 9 **85**

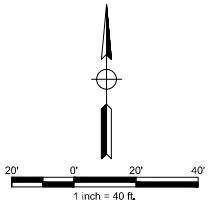
NOTE NO. 10

Traffic signal

1x $350,000 Modifications **RESULT NO. 10** **$ 350,000**

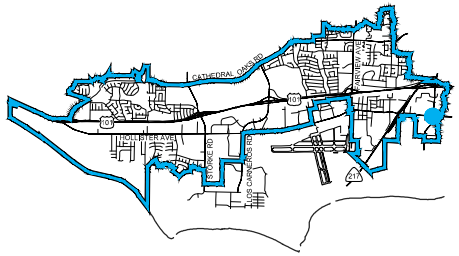






GOLETA TRANSPORTATION IMPROVEMENTS PROGRAM

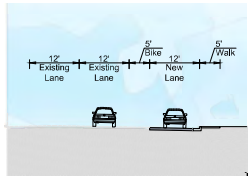
Project I-10: Hollister Avenue at Patterson Avenue



Notes

1. Widen Hollister Ave to the north to accommodate a right turn lane from WB Hollister to NB Patterson.

2. Widen Hollister Ave to the south to accommodate a right turn alne from EB Hollister to SB Patterson.



Cross Section A-A

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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-02 New Intersection Control - Calle Real / Carlo Drive

Description: New traffic signal.

Scope: New traffic signal improvements.

Limits: Intersection of Cathedral Oaks Road and Los Carneros Road

Estimate Type: Planning (City) Estimate Date: 15-Jan-26

Working Days: 60

		Current Year Costs		Section	
Earthwork	$	-	+	1	
Pavement Structural Section	$	-	+	2	
Drainage	$	-	+	3	
Specialty Items	$	-	+	4	
Environmental	$	-	+	5	
Traffic Items	$	561,300	+	6	
Minor Items	$	112,300	+	7	
Roadway Mobilization	$	67,400	+	8	
Roadway Contingency	$	148,200	+	9	
TOTAL ROADWAY COST	$	889,200	=		
TOTAL STRUCTURES COST	$	-	+	10	
TOTAL CONSTRUCTION COST	**$**	**889,000**	=		
TOTAL RIGHT OF WAY COST	**$**	**-**	=	11	
Management Support	$	88,900	+	10%	of Construction Costs
PA&ED Support	$	88,900	+	10%	
PS&E Support	$	133,400	+	15%	
Right of Way Support	$	17,800	+	2%	
Construction Support	$	142,300	+	16%	
Support Contingency	$	94,300	+	20%	of Support Costs
TOTAL SUPPORT COST	**$**	**566,000**	=		

Total Estimated Project Costs: $ 1,460,000 ✗ Check Status

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-02 New Intersection Control - Calle Real / Carlo Drive

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY		x		= $	-	
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY		x		= $	-	
Structure Excavation (Retaining Wall)	CY		x		= $	-	
Structure Backfill (Retaining Wall)	CY		x		= $	-	
Clearing & Grubbing	LS		x		= $	-	
				TOTAL EARTHWORK SECTION ITEMS		**$**	**-**

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN		x		= $	-	
Class 2 Aggregate Base	CY		x		= $	-	
Slurry Seal	TN		x		= $	-	
Minor Concrete (Miscellaneous Construction)	CY		x		= $	-	
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$**	**-**

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY		x		= $	-	
Reinforced Concrete Pipe	LF		x		= $	-	
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$**	**-**

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF		x		= $	-	
Chain Link Fence	LF		x		= $	-	
Midwest Guardrail System (Wood Post)	LF		x		= $	-	
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF		x		= $	-	
Structural Concrete, Retaining Wall	CY		x		= $	-	
				TOTAL SPECIALTY ITEMS		**$**	**-**

I-12-02 New Intersection Control - Calle Real / Carlo Drive

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS		x		= $	-	
Highway Planting	LS		x		= $	-	
Irrigation System	LS		x		= $	-	
Plant Establishment Work	LS		x		= $	-	
Implement Erosion Control	LS		x		= $	-	
Prepare and Implement SWPPP / WPCP	LS		x		= $	-	
					TOTAL ENVIRONMENTAL		**$ -**

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS		x		= $	-	
Signal and Lighting	LS	1	x	431,250	= $	431,250	1
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS	1	x	100,000	= $	100,000	
Furnish and Install Sign Structure	LS		x		= $	-	
CIDH Pile (Sign Foundation)	LS		x		= $	-	
Remove Sign Structure	LS		x		= $	-	
Permanent Pavement Delineation	LS	1	x	30,000	= $	30,000	2
					TOTAL TRAFFIC ITEMS		**$ 561,300**

SECTION 7: MINOR ITEMS							Notes
Traffic Management Plan and Detours				5.0%	$	28,065	
Stage Construction and Traffic Handling				5.0%	$	28,065	
ADA Items				5.0%	$	28,065	
Other Minor Items				5.0%	$	28,065	
Total of Section 1-6	$	561,300	x	20.0%	= $	112,260	
				TOTAL MINOR ITEMS			**$ 112,300**

SECTIONS 8: MOBILIZATION							
Total Section 1-7	$	673,600	x	10%	= $	67,360	
				TOTAL MOBILIZATION			**$ 67,400**

SECTION 9: ROADWAY CONTINGENCY

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total Section 1-8	$	741,000	x	20%	= $	148,200	
				TOTAL CONTINGENCY			**$ 148,200**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-02 New Intersection Control - Calle Real / Carlo Drive

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx		xxxxxxxxx			xxxxxxxxx		
Structure Type	--Select Bridge Type--		--Select Bridge Type--			--Select Bridge Type--		
Width (Feet) [out to out]	0	LF	0	LF		0	LF	
Total Bridge Length	0	LF	0	LF		0	LF	
Total Area (Square Feet)	0	SQFT	0	SQFT		0	SQFT	
Complexity	5		5			5		
Unusual Features	0		0			0		
Cost Per Square Foot	$0		$0			$0		
COST OF EACH BRIDGE	$	-	$	-		$	-	

Name / ID	xxxxxxxxx		xxxxxxxxx			xxxxxxxxx		
Structure Type	--Select Bridge Type--		--Select Bridge Type--			--Select Bridge Type--		
Width (Feet) [out to out]	0	LF	0	LF		0	LF	
Total Bridge Length	0	LF	0	LF		0	LF	
Total Area (Square Feet)	0	SQFT	0	SQFT		0	SQFT	
Complexity	5		5			5		
Unusual Features	0		0			0		
Cost Per Square Foot	$0		$0			$0		
COST OF EACH BRIDGE	$	-	$	-		$	-	

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF		x		=	$	-	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	20%	x	0	=	$	-	
		TOTAL RIGHT OF WAY ESTIMATE					**$**	**-**

I-12-02 New Intersection Control - Calle Real / Carlo Drive

NOTES AND CALCULATIONS

NOTE NO. 1

Signal and Lighting

Scale:	Minor
Legs:	3
Cost:	$431,250

RESULT NO. 1 $431,250

NOTE NO. 2

Permanent Pavement Delineation

Cost	$30,000

RESULT NO. 2 $30,000

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-02 New Intersection Control - Calle Real / Carlo Drive

Description: New simple single-lane roundabout.

Scope: Demolition; pavement structural section reconstruction; concrete curb, gutter, sidewalk, truck apron, etc.; drainage modifications; landscaping; right of way.

Limits: Intersection of Calle Real and Carlo Drive

Estimate Type: Planning (City) Estimate Date: 15-Jan-26

Working Days: 200

		Current Year Costs		Section	
Earthwork	$	769,400	+	1	
Pavement Structural Section	$	889,000	+	2	
Drainage	$	344,700	+	3	
Specialty Items	$	-	+	4	
Environmental	$	185,000	+	5	
Traffic Items	$	310,000	+	6	
Minor Items	$	474,700	+	7	
Roadway Mobilization	$	297,300	+	8	
Roadway Contingency	$	981,100	+	9	
TOTAL ROADWAY COST	$	4,251,200	=		
TOTAL STRUCTURES COST	$	-	+	10	
TOTAL CONSTRUCTION COST	**$**	**4,251,000**	=		
TOTAL RIGHT OF WAY COST	**$**	**1,500,000**	=	11	
Management Support	$	425,100	+	10%	
PA&ED Support	$	425,100	+	10%	
PS&E Support	$	637,700	+	15%	of Construction Costs
Right of Way Support	$	85,100	+	2%	
Construction Support	$	680,200	+	16%	
Support Contingency	$	450,700	+	20%	of Support Costs
TOTAL SUPPORT COST	**$**	**2,704,000**	=		

Total Estimated Project Costs: $ 8,500,000 ✗ Check Status

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-02 New Intersection Control - Calle Real / Carlo Drive

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	2,674	x	160.00	= $	427,840	1
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY	1,037	x	40.00	= $	41,480	2
Structure Excavation (Retaining Wall)	CY		x		= $	-	
Structure Backfill (Retaining Wall)	CY		x		= $	-	
Clearing & Grubbing	LS	1	x	300,000	= $	300,000	
				TOTAL EARTHWORK SECTION ITEMS		**$**	**769,400**

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN	1,278	x	237.97	= $	304,126	3
Class 2 Aggregate Base	CY	194	x	295.45	= $	57,317	4
Slurry Seal	TN	5	x	3,507.95	= $	17,540	6
Minor Concrete (Miscellaneous Construction)	CY	358	x	1,424.58	= $	510,000	7,8,9
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$**	**889,000**

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY	18	x	2,900.00	= $	52,200	10
Reinforced Concrete Pipe	LF	1,500	x	195.00	= $	292,500	11
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$**	**344,700**

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF		x		= $	-	
Chain Link Fence	LF		x		= $	-	
Midwest Guardrail System (Wood Post)	LF		x		= $	-	
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF		x		= $	-	
Structural Concrete, Retaining Wall	CY		x		= $	-	
				TOTAL SPECIALTY ITEMS		**$**	**-**

I-12-02 New Intersection Control - Calle Real / Carlo Drive

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS	1	x		= $	-	
Highway Planting	LS	1	x	100,000	= $	100,000	
Irrigation System	LS	1	x	25,000	= $	25,000	
Plant Establishment Work	LS	1	x	20,000	= $	20,000	
Implement Erosion Control	LS	1	x	20,000	= $	20,000	
Prepare and Implement SWPPP / WPCP	LS	1	x	20,000	= $	20,000	
					TOTAL ENVIRONMENTAL	**$ 185,000**	

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS	1	x	250,000	= $	250,000	12
Signal and Lighting	LS		x		= $	-	
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS		x		= $	-	
Furnish and Install Sign Structure	LS		x		= $	-	
CIDH Pile (Sign Foundation)	LS		x		= $	-	
Remove Sign Structure	LS		x		= $	-	
Permanent Pavement Delineation	LS	1	x	60,000	= $	60,000	13
					TOTAL TRAFFIC ITEMS	**$ 310,000**	

SECTION 7: MINOR ITEMS							Notes
Traffic Management Plan and Detours				5.0%	$	124,905	
Stage Construction and Traffic Handling				6.0%	$	149,886	
ADA Items				2.0%	$	49,962	
Other Minor Items				6.0%	$	149,886	
Total of Section 1-6	$	2,498,100	x	19.0%	= $	474,639	
				TOTAL MINOR ITEMS		**$ 474,700**	

SECTIONS 8: MOBILIZATION							
Total Section 1-7	$	2,972,800	x	10%	= $	297,280	
				TOTAL MOBILIZATION		**$ 297,300**	

SECTION 9: ROADWAY CONTINGENCY							
Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)							
Total Section 1-8	$	3,270,100	x	30%	= $	981,030	
				TOTAL CONTINGENCY		**$ 981,100**	

I-12-02 New Intersection Control - Calle Real / Carlo Drive

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF	5,000	x	250.00	=	$	1,250,000	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	20%	x	1,250,000	=	$	250,000	
		TOTAL RIGHT OF WAY ESTIMATE					**$**	**1,500,000**

I-12-02 New Intersection Control - Calle Real / Carlo Drive

NOTES AND CALCULATIONS

NOTE NO. 1

Number of intersection legs
3 legs
250 feet average approach length
200 feet average splitter island length

NOTE NO. 2

Roadway excavation area (within splitter islands)
26,250
Depth of AC
0.75
Depth of base
2.00
Roadway excavation = width * length * depth
72,188
2,674 **RESULT NO. 2** **2,674**

NOTE NO. 3

Import for landscape areas
14,000 SF
Depth
2.00 feet
Volume = width * length * depth
28,000 CF
1,037 CY **RESULT NO. 3** **1,037**

NOTE NO. 4

AC pavement area
3,500 SF
Depth of AC
0.75 feet
Volume = width * length * depth
2,625 CF

AC pavement area (approaches)
30,000
Depth of AC
0.50
Volume = width * length * depth
15,000 CF

Total
17,625 CF * 145 pounds/CF / 2,000 pounds/ton
1,278 TN **RESULT NO. 4** **1,278**

I-12-02 New Intersection Control - Calle Real / Carlo Drive

NOTES AND CALCULATIONS

NOTE NO. 5

Aggregate base area in RAB
3,500 SF
Depth of base
1.50 feet
Volume = width * length * depth
5,250 CF

Aggregate base area in approaches
30,000 SF
Depth of base
1.00 feet
Volume = width * length * depth
30,000 CF

35,250 CF
194 CY **RESULT NO. 5** **194**

NOTE NO. 6

Approaches to project
Length (typ)
250 feet
Width
30 feet
Area
7,500 feet
Coverage rate
1,500 SF/TN
5 CY **RESULT NO. 6** **5**

NOTE NO. 7

New sidewalk length
150 feet At roundabout
750 feet Approaches
900 feet TOTAL
Sidewalk width (most of it is multi-use path)
10 feet
Sidewalk thickness
4 inches
Volume = Minor Concrete (Miscellaneous Construction)
3000 CF
111 CY **RESULT NO. 7** **111**

I-12-02 New Intersection Control - Calle Real / Carlo Drive

NOTES AND CALCULATIONS

NOTE NO. 8

New Caltrans A1-6 curb at splitter islands
1200 feet Approaches
1200 feet TOTAL
Volume / foot
0.03 CY/foot
Volume = Minor Concrete (Miscellaneous Construction)
31 CY
New Caltrans A2-6 curb and gutter length
400 feet At roundabout
1500 feet Approaches
1900 feet TOTAL
Volume / foot
0.06 CY/foot
Volume = Minor Concrete (Miscellaneous Construction)
112 CY **RESULT NO. 8** **143**

NOTE NO. 9

Truck apron and misc
Truck apron (CAD)
2500 SF
Concrete thickness
9 inches
Volume = Minor Concrete (Miscellaneous Construction)
1875 CF
50% Additional for misc
2813 CF
104 CY **RESULT NO. 9** **104**

NOTE NO. 10

New drop inlets - assumed one each side of the road on each leg
6 each
Depth of drop inlets
5 feet
Drop inlet volume - Caltrans OL-10
Volume / foot
2.39 CY (3 feet deep)
0.28 CY/each additional foot of depth up to 8 feet
Volume = Minor Concrete (Minor Structure)
18 CY **RESULT NO. 10** **18**

NOTE NO. 11

Estimated length of RCP
1,500 feet **RESULT NO. 11** **1,500**

I-12-02 New Intersection Control - Calle Real / Carlo Drive

NOTES AND CALCULATIONS

NOTE NO. 12

New street lights
8 each
Cost per street light
$ 30,000
Landscape lights
12 each
Cost per street light
$ 10,000
Total lights
$ 360,000
Connection
$ 25,000

RESULT NO. 12 **$ 385,000**

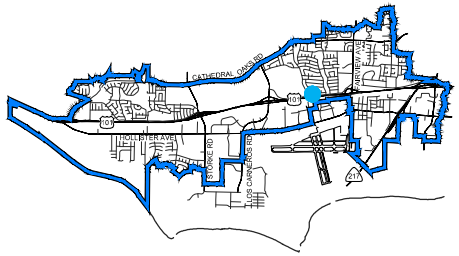
NOTE NO. 13

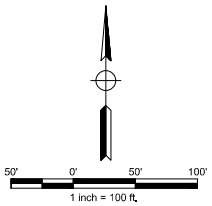
Pavement delineation and marking
$ 60,000

RESULT NO. 13 **60,000**

GOLETA TRANSPORTATION
IMPROVEMENTS PROGRAM

Project I-12-02: Calle Real and Carlo Drive Roundabout





MNS
201 N. Calle Cesar Chavez, Suite 300
Santa Barbara, CA 93103
805-692-6921 | www.mnsengineers.com

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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-02 (I4) New Intersection Control - Cathedral Oaks Rd / Hollister Av / 101 NB Ramps

Description: New traffic signal.

Scope: New traffic signal improvements.

Limits: Intersection of Cathedral Oaks Road, Hollister Avenue and US 101 NB Ramps

Estimate Type: Planning (City) Estimate Date: 16-Jan-26

Working Days: 90

		Current Year Costs		Section	
Earthwork	$	-	+	1	
Pavement Structural Section	$	-	+	2	
Drainage	$	-	+	3	
Specialty Items	$	-	+	4	
Environmental	$	-	+	5	
Traffic Items	$	840,000	+	6	
Minor Items	$	168,000	+	7	
Roadway Mobilization	$	100,800	+	8	
Roadway Contingency	$	221,800	+	9	
TOTAL ROADWAY COST	$	1,330,600	=		
TOTAL STRUCTURES COST	$	-	+	10	
TOTAL CONSTRUCTION COST	**$**	**1,331,000**	=		
TOTAL RIGHT OF WAY COST	**$**	**-**	=	11	
Management Support	$	133,100	+	10%	of Construction Costs
PA&ED Support	$	133,100	+	10%	
PS&E Support	$	199,700	+	15%	
Right of Way Support	$	26,700	+	2%	
Construction Support	$	213,000	+	16%	
Support Contingency	$	141,200	+	20%	of Support Costs
TOTAL SUPPORT COST	**$**	**847,000**	=		

Total Estimated Project Costs: $ 2,180,000 ✗ **Check Status**

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-02 (I4) New Intersection Control - Cathedral Oaks Rd / Hollister Av / 101 NB Ramps

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY		x		= $	-	
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY		x		= $	-	
Structure Excavation (Retaining Wall)	CY		x		= $	-	
Structure Backfill (Retaining Wall)	CY		x		= $	-	
Clearing & Grubbing	LS		x		= $	-	
				TOTAL EARTHWORK SECTION ITEMS			**$ -**

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN		x		= $	-	
Class 2 Aggregate Base	CY		x		= $	-	
Slurry Seal	TN		x		= $	-	
Minor Concrete (Miscellaneous Construction)	CY		x		= $	-	
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS			**$ -**

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY		x		= $	-	
Reinforced Concrete Pipe	LF		x		= $	-	
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS			**$ -**

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF		x		= $	-	
Chain Link Fence	LF		x		= $	-	
Midwest Guardrail System (Wood Post)	LF		x		= $	-	
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF		x		= $	-	
Structural Concrete, Retaining Wall	CY		x		= $	-	
				TOTAL SPECIALTY ITEMS			**$ -**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-02 (I4) New Intersection Control - Cathedral Oaks Rd / Hollister Av / 101 NB Ramps

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS		x		= $	-	
Highway Planting	LS		x		= $	-	
Irrigation System	LS		x		= $	-	
Plant Establishment Work	LS		x		= $	-	
Implement Erosion Control	LS		x		= $	-	
Prepare and Implement SWPPP / WPCP	LS		x		= $	-	
				TOTAL ENVIRONMENTAL			**$ -**

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS		x		= $	-	
Signal and Lighting	LS	1	x	700,000	= $	700,000	1
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS	1	x	100,000	= $	100,000	
Furnish and Install Sign Structure	LS		x		= $	-	
CIDH Pile (Sign Foundation)	LS		x		= $	-	
Remove Sign Structure	LS		x		= $	-	
Permanent Pavement Delineation	LS	1	x	40,000	= $	40,000	2
				TOTAL TRAFFIC ITEMS			**$ 840,000**

SECTION 7: MINOR ITEMS							Notes
Traffic Management Plan and Detours				5.0%	$	42,000	
Stage Construction and Traffic Handling				5.0%	$	42,000	
ADA Items				5.0%	$	42,000	
Other Minor Items				5.0%	$	42,000	
Total of Section 1-6	$	840,000	x	20.0%	= $	168,000	
				TOTAL MINOR ITEMS			**$ 168,000**

SECTIONS 8: MOBILIZATION							
Total Section 1-7	$	1,008,000	x	10%	= $	100,800	
				TOTAL MOBILIZATION			**$ 100,800**

SECTION 9: ROADWAY CONTINGENCY

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total Section 1-8	$	1,108,800	x	20%	= $	221,760	
				TOTAL CONTINGENCY			**$ 221,800**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-02 (I4) New Intersection Control - Cathedral Oaks Rd / Hollister Av / 101 NB Ramps

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF		x		=	$	-	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	20%	x	0	=	$	-	
		TOTAL RIGHT OF WAY ESTIMATE					**$**	**-**

I-12-02 (I4) New Intersection Control - Cathedral Oaks Rd / Hollister Av / 101 NB Ramps

NOTES AND CALCULATIONS

NOTE NO. 1

Signal and Lighting

Scale:	Major
Legs:	4
Cost:	$700,000

RESULT NO. 1 $700,000

NOTE NO. 2

Permanent Pavement Delineation

Cost	$40,000

RESULT NO. 2 $40,000

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-02 (I4) New Intersection Control - Cathedral Oaks Rd / Hollister Av / 101 NB Ramps

Description: New simple single-lane roundabout. Bike Path in NW quadrant.

Scope: Demolition; pavement structural section reconstruction; concrete curb, gutter, sidewalk, truck apron, etc.; drainage modifications; landscaping; right of way.

Limits: Intersection and each leg of Cathedral Oaks Road and Hollister Avenue at 101 NB ramps.

Estimate Type: Planning (City) Estimate Date: 20-Jan-26

Working Days: 200

		Current Year Costs		Section		
Earthwork	$	809,800	+	1		
Pavement Structural Section	$	1,297,100	+	2		
Drainage	$	362,100	+	3		
Specialty Items	$	-	+	4		
Environmental	$	185,000	+	5		
Traffic Items	$	330,000	+	6		
Minor Items	$	567,000	+	7		
Roadway Mobilization	$	355,100	+	8		
Roadway Contingency	$	1,171,900	+	9		
TOTAL ROADWAY COST	$	5,078,000	=			
TOTAL STRUCTURES COST	$	-	+	10		
TOTAL CONSTRUCTION COST	**$**	**5,078,000**	=			
TOTAL RIGHT OF WAY COST	**$**	**750,000**	=	11		
Management Support	$	507,800	+	10%		
PA&ED Support	$	507,800	+	10%		of Construction Costs
PS&E Support	$	761,700	+	15%		
Right of Way Support	$	101,600	+	2%		
Construction Support	$	812,500	+	16%		
Support Contingency	$	538,300	+	20%		of Support Costs
TOTAL SUPPORT COST	**$**	**3,230,000**	=			

Total Estimated Project Costs: $ 9,100,000 ✗ Check Status

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-02 (I4) New Intersection Control - Cathedral Oaks Rd / Hollister Av / 101 NB Ramps

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	4,028	x	110.00	= $	443,080	1
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY	741	x	90.00	= $	66,690	2
Structure Excavation (Retaining Wall)	CY		x		= $	-	
Structure Backfill (Retaining Wall)	CY		x		= $	-	
Clearing & Grubbing	LS	1	x	300,000	= $	300,000	
				TOTAL EARTHWORK SECTION ITEMS		**$ 809,800**	

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN	1,640	x	237.97	= $	390,271	3
Class 2 Aggregate Base	CY	194	x	295.45	= $	57,317	4
Slurry Seal	TN	5	x	3,507.95	= $	17,540	6
Minor Concrete (Miscellaneous Construction)	CY	584	x	1,424.58	= $	831,955	7,8,9
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$ 1,297,100**	

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY	24	x	2,900.00	= $	69,600	10
Reinforced Concrete Pipe	LF	1,500	x	195.00	= $	292,500	11
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$ 362,100**	

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF		x		= $	-	
Chain Link Fence	LF		x		= $	-	
Midwest Guardrail System (Wood Post)	LF		x		= $	-	
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF		x		= $	-	
Structural Concrete, Retaining Wall	CY		x		= $	-	
				TOTAL SPECIALTY ITEMS		**$ -**	

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-02 (I4) New Intersection Control - Cathedral Oaks Rd / Hollister Av / 101 NB Ramps

SECTION 5: ENVIRONMENTAL	Unit	Quantity	Unit Price ($)	Cost	Notes
Biological Mitigation	LS	1	x = $	-	
Highway Planting	LS	1	x 100,000 = $	100,000	
Irrigation System	LS	1	x 25,000 = $	25,000	
Plant Establishment Work	LS	1	x 20,000 = $	20,000	
Implement Erosion Control	LS	1	x 20,000 = $	20,000	
Prepare and Implement SWPPP / WPCP	LS	1	x 20,000 = $	20,000	
			TOTAL ENVIRONMENTAL	**$ 185,000**	

SECTION 6: TRAFFIC ITEMS	Unit	Quantity	Unit Price ($)	Cost	Notes
Lighting and Sign Illumination	LS	1	x 250,000 = $	250,000	12
Signal and Lighting	LS		x = $	-	
Ramp Metering System	LS		x = $	-	
Interconnection Conduit and Cable	LS		x = $	-	
Furnish and Install Sign Structure	LS		x = $	-	
CIDH Pile (Sign Foundation)	LS		x = $	-	
Remove Sign Structure	LS		x = $	-	
Permanent Pavement Delineation	LS	1	x 80,000 = $	80,000	13
			TOTAL TRAFFIC ITEMS	**$ 330,000**	

SECTION 7: MINOR ITEMS				Notes
Traffic Management Plan and Detours		5.0%	$ 149,200	
Stage Construction and Traffic Handling		6.0%	$ 179,040	
ADA Items		2.0%	$ 59,680	
Other Minor Items		6.0%	$ 179,040	
Total of Section 1-6	$ 2,984,000	x 19.0% =	$ 566,960	
		TOTAL MINOR ITEMS	**$ 567,000**	

SECTIONS 8: MOBILIZATION				
Total Section 1-7	$ 3,551,000	x 10% =	$ 355,100	
		TOTAL MOBILIZATION	**$ 355,100**	

SECTION 9: ROADWAY CONTINGENCY				
Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)				
Total Section 1-8	$ 3,906,100	x 30% =	$ 1,171,830	
		TOTAL CONTINGENCY	**$ 1,171,900**	

I-12-02 (I4) New Intersection Control - Cathedral Oaks Rd / Hollister Av / 101 NB Ramps

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx
Structure Type	--Select Bridge Type--	--Select Bridge Type--	--Select Bridge Type--
Width (Feet) [out to out]	0 LF	0 LF	0 LF
Total Bridge Length	0 LF	0 LF	0 LF
Total Area (Square Feet)	0 SQFT	0 SQFT	0 SQFT
Complexity	5	5	5
Unusual Features	0	0	0
Cost Per Square Foot	$0	$0	$0
COST OF EACH BRIDGE	$ -	$ -	$ -

Name / ID	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx
Structure Type	--Select Bridge Type--	--Select Bridge Type--	--Select Bridge Type--
Width (Feet) [out to out]	0 LF	0 LF	0 LF
Total Bridge Length	0 LF	0 LF	0 LF
Total Area (Square Feet)	0 SQFT	0 SQFT	0 SQFT
Complexity	5	5	5
Unusual Features	0	0	0
Cost Per Square Foot	$0	$0	$0
COST OF EACH BRIDGE	$ -	$ -	$ -

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF	2,500	x	250.00	=	$	625,000	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	20%	x	625,000	=	$	125,000	
TOTAL RIGHT OF WAY ESTIMATE						**$**	**750,000**	

I-12-02 (I4) New Intersection Control - Cathedral Oaks Rd / Hollister Av / 101 NB Ramps

NOTES AND CALCULATIONS

NOTE NO. 1

Number of intersection legs
4 legs
250 feet average approach length
200 feet average splitter island length

NOTE NO. 2

Roadway excavation area (within splitter islands)
35,000
Depth of AC
0.75
Depth of base
2.00
Roadway excavation = width * length * depth
96,250 CF

Other Grading
463 CY

4,028 CY **RESULT NO. 2** **4,028**

NOTE NO. 3

Import for landscape areas
10,000 SF
Depth
2.00 feet
Volume = width * length * depth
20,000 CF
741 CY **RESULT NO. 3** **741**

NOTE NO. 4

AC pavement area
3,500 SF
Depth of AC
0.75 feet
Volume = width * length * depth
2,625 CF

AC pavement area (approaches)
40,000
Depth of AC
0.50
Volume = width * length * depth
20,000 CF

Total
22,625 CF * 145 pounds/CF / 2,000 pounds/ton
1,640 TN **RESULT NO. 4** **1,640**

I-12-02 (I4) New Intersection Control - Cathedral Oaks Rd / Hollister Av / 101 NB Ramps

NOTES AND CALCULATIONS

NOTE NO. 5

Aggregate base area in RAB
3,500 SF
Depth of base
1.50 feet
Volume = width * length * depth
5,250 CF

Aggregate base area in approaches
40,000 SF
Depth of base
1.00 feet
Volume = width * length * depth
40,000 CF

45,250 CF
194 CY **RESULT NO. 5** **194**

NOTE NO. 6

Approaches to project
Length (typ)
250 feet
Width
30 feet
Area
7,500 feet
Coverage rate
1,500 SF/TN
5 CY **RESULT NO. 6** **5**

NOTE NO. 7

New sidewalk length

200	feet	At roundabout
300	feet	Bike Path on NW Cathedral Oaks
2000	feet	Approaches
2500	feet	TOTAL

Sidewalk width (most of it is multi-use path)
10 feet
Sidewalk thickness
4 inches
Volume = Minor Concrete (Miscellaneous Construction)
8333 CF
309 CY **RESULT NO. 7** **309**

I-12-02 (I4) New Intersection Control - Cathedral Oaks Rd / Hollister Av / 101 NB Ramps

NOTES AND CALCULATIONS

NOTE NO. 8

New Caltrans A1-6 curb at splitter islands
1600 feet Approaches
1600 feet TOTAL
Volume / foot
0.03 CY/foot
Volume = Minor Concrete (Miscellaneous Construction)
41 CY
New Caltrans A2-6 curb and gutter length
200 feet At roundabout
2000 feet Approaches
2200 feet TOTAL
Volume / foot
0.06 CY/foot
Volume = Minor Concrete (Miscellaneous Construction)
130 CY **RESULT NO. 8** **171**

NOTE NO. 9

Truck apron and misc
Truck apron (CAD)
2500 SF
Concrete thickness
9 inches
Volume = Minor Concrete (Miscellaneous Construction)
1875 CF
50% Additional for misc
2813 CF
104 CY **RESULT NO. 9** **104**

NOTE NO. 10

New drop inlets - assumed one each side of the road on each leg
8 each
Depth of drop inlets
5 feet
Drop inlet volume - Caltrans OL-10
Volume / foot
2.39 CY (3 feet deep)
0.28 CY/each additional foot of depth up to 8 feet
Volume = Minor Concrete (Minor Structure)
24 CY **RESULT NO. 10** **24**

NOTE NO. 11

Estimated length of RCP
1,500 feet **RESULT NO. 11** **1,500**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-02 (I4) New Intersection Control - Cathedral Oaks Rd / Hollister Av / 101 NB Ramps

NOTES AND CALCULATIONS

NOTE NO. 12

New street lights
12 each
Cost per street light
$ 30,000
Landscape lights
12 each
Cost per street light
$ 10,000
Total lights
$ 480,000
Connection
$ 25,000

RESULT NO. 12 **$ 505,000**

NOTE NO. 13

Pavement delineation and marking
$ 80,000

RESULT NO. 13 **80,000**

50' 0' 50' 100'
1 inch = 100 ft.

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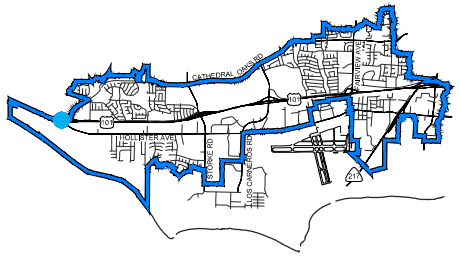
GOLETA TRANSPORTATION IMPROVEMENTS PROGRAM

Project I-12-02 (I4): Cathedral Oaks Road and Calle Real Roundabout



MNS
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Santa Barbara, CA 93103
805-692-6921 | www.mnsengineers.com

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-05 New Intersection Control - Cathedral Oaks Road / Los Carneros Road

Description: New traffic signal.

Scope: New traffic signal improvements.

Limits: Intersection of Cathedral Oaks Road and Los Carneros Road

Estimate Type: Planning (City) Estimate Date: 15-Jan-26

Working Days: 60

		Current Year Costs		Section		
Earthwork	$	-	+	1		
Pavement Structural Section	$	-	+	2		
Drainage	$	-	+	3		
Specialty Items	$	-	+	4		
Environmental	$	-	+	5		
Traffic Items	$	561,300	+	6		
Minor Items	$	112,300	+	7		
Roadway Mobilization	$	67,400	+	8		
Roadway Contingency	$	148,200	+	9		
TOTAL ROADWAY COST	$	889,200	=			
TOTAL STRUCTURES COST	$	-	+	10		
TOTAL CONSTRUCTION COST	**$**	**889,000**	=			
TOTAL RIGHT OF WAY COST	**$**	**-**	=	11		
Management Support	$	88,900	+	10%		
PA&ED Support	$	88,900	+	10%		of Construction Costs
PS&E Support	$	133,400	+	15%		
Right of Way Support	$	17,800	+	2%		
Construction Support	$	142,300	+	16%		
Support Contingency	$	94,300	+	20%		of Support Costs
TOTAL SUPPORT COST	**$**	**566,000**	=			

Total Estimated Project Costs: $ 1,460,000 ✖ **Check Status**

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-05 New Intersection Control - Cathedral Oaks Road / Los Carneros Road

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY		x	= $		-	
Roadway Excavation (ADL)	CY		x	= $		-	
Imported Borrow	CY		x	= $		-	
Structure Excavation (Retaining Wall)	CY		x	= $		-	
Structure Backfill (Retaining Wall)	CY		x	= $		-	
Clearing & Grubbing	LS		x	= $		-	
				TOTAL EARTHWORK SECTION ITEMS		**$**	**-**

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x	= $		-	
Hot Mix Asphalt (Type A)	TN		x	= $		-	
Class 2 Aggregate Base	CY		x	= $		-	
Slurry Seal	TN		x	= $		-	
Minor Concrete (Miscellaneous Construction)	CY		x	= $		-	
Place Hot Mix Asphalt Dike	LF		x	= $		-	
Cold Plane Asphalt Concrete Pavement	SY		x	= $		-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$**	**-**

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x	= $		-	
Minor Concrete (Minor Structure)	CY		x	= $		-	
Reinforced Concrete Pipe	LF		x	= $		-	
Rock Slope Protection	CY		x	= $		-	
Concrete (Ditch/Channel Lining)	CY		x	= $		-	
				TOTAL DRAINAGE ITEMS		**$**	**-**

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x	= $		-	
Remove Concrete Barrier	LF		x	= $		-	
Remove Metal Beam Guard Railing	LF		x	= $		-	
Chain Link Fence	LF		x	= $		-	
Midwest Guardrail System (Wood Post)	LF		x	= $		-	
Thrie Beam Barrier	LF		x	= $		-	
Terminal System or Crash Cushion	EA		x	= $		-	
Concrete Barrier (TYPE 60M)	LF		x	= $		-	
Structural Concrete, Retaining Wall	CY		x	= $		-	
				TOTAL SPECIALTY ITEMS		**$**	**-**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-05 New Intersection Control - Cathedral Oaks Road / Los Carneros Road

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS		x		= $	-	
Highway Planting	LS		x		= $	-	
Irrigation System	LS		x		= $	-	
Plant Establishment Work	LS		x		= $	-	
Implement Erosion Control	LS		x		= $	-	
Prepare and Implement SWPPP / WPCP	LS		x		= $	-	
				TOTAL ENVIRONMENTAL			**$ -**

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS		x		= $	-	
Signal and Lighting	LS	1	x	431,250	= $	431,250	1
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS	1	x	100,000	= $	100,000	
Furnish and Install Sign Structure	LS		x		= $	-	
CIDH Pile (Sign Foundation)	LS		x		= $	-	
Remove Sign Structure	LS		x		= $	-	
Permanent Pavement Delineation	LS	1	x	30,000	= $	30,000	2
				TOTAL TRAFFIC ITEMS			**$ 561,300**

SECTION 7: MINOR ITEMS							Notes
Traffic Management Plan and Detours				5.0%	$	28,065	
Stage Construction and Traffic Handling				5.0%	$	28,065	
ADA Items				5.0%	$	28,065	
Other Minor Items				5.0%	$	28,065	
Total of Section 1-6	$	561,300	x	20.0%	= $	112,260	
				TOTAL MINOR ITEMS			**$ 112,300**

SECTIONS 8: MOBILIZATION							
Total Section 1-7	$	673,600	x	10%	= $	67,360	
				TOTAL MOBILIZATION			**$ 67,400**

SECTION 9: ROADWAY CONTINGENCY							
Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)							
Total Section 1-8	$	741,000	x	20%	= $	148,200	
				TOTAL CONTINGENCY			**$ 148,200**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-05 New Intersection Control - Cathedral Oaks Road / Los Carneros Road

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx
Structure Type	--Select Bridge Type--	--Select Bridge Type--	--Select Bridge Type--
Width (Feet) [out to out]	0 LF	0 LF	0 LF
Total Bridge Length	0 LF	0 LF	0 LF
Total Area (Square Feet)	0 SQFT	0 SQFT	0 SQFT
Complexity	5	5	5
Unusual Features	0	0	0
Cost Per Square Foot	$0	$0	$0
COST OF EACH BRIDGE	$ -	$ -	$ -

Name / ID	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx
Structure Type	--Select Bridge Type--	--Select Bridge Type--	--Select Bridge Type--
Width (Feet) [out to out]	0 LF	0 LF	0 LF
Total Bridge Length	0 LF	0 LF	0 LF
Total Area (Square Feet)	0 SQFT	0 SQFT	0 SQFT
Complexity	5	5	5
Unusual Features	0	0	0
Cost Per Square Foot	$0	$0	$0
COST OF EACH BRIDGE	$ -	$ -	$ -

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF		x		=	$	-	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	20%	x	0	=	$	-	
		TOTAL RIGHT OF WAY ESTIMATE					**$**	**-**

I-12-05 New Intersection Control - Cathedral Oaks Road / Los Carneros Road

NOTES AND CALCULATIONS

NOTE NO. 1

Signal and Lighting

Scale:	Minor
Legs:	3
Cost:	$431,250

RESULT NO. 1 $431,250

NOTE NO. 2

Permanent Pavement Delineation

Cost	$30,000

RESULT NO. 2 $30,000

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-05 New Intersection Control - Cathedral Oaks Road / Los Carneros Road

Description: New simple single-lane roundabout.

Scope: Demolition; pavement structural section reconstruction; concrete curb, gutter, sidewalk, truck apron, etc.; drainage modifications; landscaping; right of way.

Limits: Intersection of Cathedral Oaks Road and Los Carneros Road

Estimate Type: Planning (City) Estimate Date: 15-Jan-26

Working Days: 200

		Current Year Costs		Section	
Earthwork	$	758,900	+	1	
Pavement Structural Section	$	1,200,300	+	2	
Drainage	$	362,100	+	3	
Specialty Items	$	-	+	4	
Environmental	$	185,000	+	5	
Traffic Items	$	330,000	+	6	
Minor Items	$	538,900	+	7	
Roadway Mobilization	$	337,600	+	8	
Roadway Contingency	$	1,113,900	+	9	
TOTAL ROADWAY COST	$	4,826,700	=		
TOTAL STRUCTURES COST	$	-	+	10	
TOTAL CONSTRUCTION COST	**$**	**4,827,000**	=		
TOTAL RIGHT OF WAY COST	**$**	**3,750,000**	=	11	
Management Support	$	482,700	+	10%	of Construction Costs
PA&ED Support	$	482,700	+	10%	
PS&E Support	$	724,100	+	15%	
Right of Way Support	$	96,600	+	2%	
Construction Support	$	772,400	+	16%	
Support Contingency	$	511,700	+	20%	of Support Costs
TOTAL SUPPORT COST	**$**	**3,071,000**	=		

Total Estimated Project Costs: $ 11,650,000 ✗ Check Status

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-05 New Intersection Control - Cathedral Oaks Road / Los Carneros Road

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	3,565	x	110.00	= $	392,150	1
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY	741	x	90.00	= $	66,690	2
Structure Excavation (Retaining Wall)	CY		x		= $	-	
Structure Backfill (Retaining Wall)	CY		x		= $	-	
Clearing & Grubbing	LS	1	x	300,000	= $	300,000	
				TOTAL EARTHWORK SECTION ITEMS		**$ 758,900**	

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN	1,640	x	237.97	= $	390,271	3
Class 2 Aggregate Base	CY	194	x	295.45	= $	57,317	4
Slurry Seal	TN	5	x	3,507.95	= $	17,540	6
Minor Concrete (Miscellaneous Construction)	CY	516	x	1,424.58	= $	735,083	7,8,9
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$ 1,200,300**	

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY	24	x	2,900.00	= $	69,600	10
Reinforced Concrete Pipe	LF	1,500	x	195.00	= $	292,500	11
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$ 362,100**	

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF		x		= $	-	
Chain Link Fence	LF		x		= $	-	
Midwest Guardrail System (Wood Post)	LF		x		= $	-	
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF		x		= $	-	
Structural Concrete, Retaining Wall	CY		x		= $	-	
				TOTAL SPECIALTY ITEMS		**$ -**	

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-05 New Intersection Control - Cathedral Oaks Road / Los Carneros Road

SECTION 5: ENVIRONMENTAL	Unit	Quantity	Unit Price ($)	Cost	Notes
Biological Mitigation	LS	1	x = $	-	
Highway Planting	LS	1	x 100,000 = $	100,000	
Irrigation System	LS	1	x 25,000 = $	25,000	
Plant Establishment Work	LS	1	x 20,000 = $	20,000	
Implement Erosion Control	LS	1	x 20,000 = $	20,000	
Prepare and Implement SWPPP / WPCP	LS	1	x 20,000 = $	20,000	
			TOTAL ENVIRONMENTAL	**$ 185,000**	

SECTION 6: TRAFFIC ITEMS	Unit	Quantity	Unit Price ($)	Cost	Notes
Lighting and Sign Illumination	LS	1	x 250,000 = $	250,000	12
Signal and Lighting	LS		x = $	-	
Ramp Metering System	LS		x = $	-	
Interconnection Conduit and Cable	LS		x = $	-	
Furnish and Install Sign Structure	LS		x = $	-	
CIDH Pile (Sign Foundation)	LS		x = $	-	
Remove Sign Structure	LS		x = $	-	
Permanent Pavement Delineation	LS	1	x 80,000 = $	80,000	13
			TOTAL TRAFFIC ITEMS	**$ 330,000**	

SECTION 7: MINOR ITEMS					Notes
Traffic Management Plan and Detours			5.0%	$ 141,815	
Stage Construction and Traffic Handling			6.0%	$ 170,178	
ADA Items			2.0%	$ 56,726	
Other Minor Items			6.0%	$ 170,178	
Total of Section 1-6	$	2,836,300	x 19.0% =	$ 538,897	
			TOTAL MINOR ITEMS	**$ 538,900**	

SECTIONS 8: MOBILIZATION					
Total Section 1-7	$	3,375,200	x 10% =	$ 337,520	
			TOTAL MOBILIZATION	**$ 337,600**	

SECTION 9: ROADWAY CONTINGENCY					
Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)					
Total Section 1-8	$	3,712,800	x 30% =	$ 1,113,840	
			TOTAL CONTINGENCY	**$ 1,113,900**	

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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-05 New Intersection Control - Cathedral Oaks Road / Los Carneros Road

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF	12,500	x	250.00	=	$	3,125,000	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	20%	x	3,125,000	=	$	625,000	
		TOTAL RIGHT OF WAY ESTIMATE					**$**	**3,750,000**

I-12-05 New Intersection Control - Cathedral Oaks Road / Los Carneros Road

NOTES AND CALCULATIONS

NOTE NO. 1

Number of intersection legs
4 legs
250 feet average approach length
200 feet average splitter island length

NOTE NO. 2

Roadway excavation area (within splitter islands)
35,000
Depth of AC
0.75
Depth of base
2.00
Roadway excavation = width * length * depth
96,250
3,565 **RESULT NO. 2** **3,565**

NOTE NO. 3

Import for landscape areas
10,000 SF
Depth
2.00 feet
Volume = width * length * depth
20,000 CF
741 CY **RESULT NO. 3** **741**

NOTE NO. 4

AC pavement area
3,500 SF
Depth of AC
0.75 feet
Volume = width * length * depth
2,625 CF

AC pavement area (approaches)
40,000
Depth of AC
0.50
Volume = width * length * depth
20,000 CF

Total
22,625 CF * 145 pounds/CF / 2,000 pounds/ton
1,640 TN **RESULT NO. 4** **1,640**

I-12-05 New Intersection Control - Cathedral Oaks Road / Los Carneros Road

NOTES AND CALCULATIONS

NOTE NO. 5

Aggregate base area in RAB
3,500 SF
Depth of base
1.50 feet
Volume = width * length * depth
5,250 CF

Aggregate base area in approaches
40,000 SF
Depth of base
1.00 feet
Volume = width * length * depth
40,000 CF

45,250 CF
194 CY **RESULT NO. 5** **194**

NOTE NO. 6

Approaches to project
Length (typ)
250 feet
Width
30 feet
Area
7,500 feet
Coverage rate
1,500 SF/TN
5 CY **RESULT NO. 6** **5**

NOTE NO. 7

New sidewalk length
200 feet At roundabout
1750 feet Approaches
1950 feet TOTAL
Sidewalk width (most of it is multi-use path)
10 feet
Sidewalk thickness
4 inches
Volume = Minor Concrete (Miscellaneous Construction)
6500 CF
241 CY **RESULT NO. 7** **241**

I-12-05 New Intersection Control - Cathedral Oaks Road / Los Carneros Road

NOTES AND CALCULATIONS

NOTE NO. 8

New Caltrans A1-6 curb at splitter islands
1600 feet Approaches
1600 feet TOTAL
Volume / foot
0.03 CY/foot
Volume = Minor Concrete (Miscellaneous Construction)
41 CY
New Caltrans A2-6 curb and gutter length
200 feet At roundabout
2000 feet Approaches
2200 feet TOTAL
Volume / foot
0.06 CY/foot
Volume = Minor Concrete (Miscellaneous Construction)
130 CY **RESULT NO. 8** **171**

NOTE NO. 9

Truck apron and misc
Truck apron (CAD)
2500 SF
Concrete thickness
9 inches
Volume = Minor Concrete (Miscellaneous Construction)
1875 CF
50% Additional for misc
2813 CF
104 CY **RESULT NO. 9** **104**

NOTE NO. 10

New drop inlets - assumed one each side of the road on each leg
8 each
Depth of drop inlets
5 feet
Drop inlet volume - Caltrans OL-10
Volume / foot
2.39 CY (3 feet deep)
0.28 CY/each additional foot of depth up to 8 feet
Volume = Minor Concrete (Minor Structure)
24 CY **RESULT NO. 10** **24**

NOTE NO. 11

Estimated length of RCP
1,500 feet **RESULT NO. 11** **1,500**

I-12-05 New Intersection Control - Cathedral Oaks Road / Los Carneros Road

NOTES AND CALCULATIONS

NOTE NO. 12

New street lights
12 each
Cost per street light
$ 30,000
Landscape lights
12 each
Cost per street light
$ 10,000
Total lights
$ 480,000
Connection
$ 25,000

RESULT NO. 12 **$ 505,000**

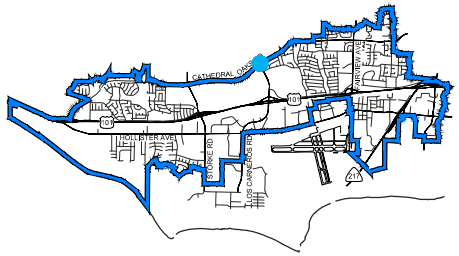
NOTE NO. 13

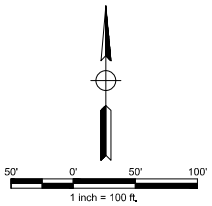
Pavement delineation and marking
$ 80,000

RESULT NO. 13 **80,000**

GOLETA TRANSPORTATION
IMPROVEMENTS PROGRAM

Project I-12-05: Los Carneros Road at Cathedral Oaks Road Roundabout





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MNS
201 N. Calle Cesar Chavez, Suite 300
Santa Barbara, CA 93103
805-692-6921 | www.mnsengineers.com

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-06 New Intersection Control - Cathedral Oaks Road / N La Patera Lane

Description: New traffic signal.

Scope: New traffic signal improvements.

Limits: Intersection of Cathedral Oaks Road and N La Patera Lane

Estimate Type: Planning (City) Estimate Date: 15-Jan-26

Working Days: 60

		Current Year Costs		Section	
Earthwork	$	-	+	1	
Pavement Structural Section	$	-	+	2	
Drainage	$	-	+	3	
Specialty Items	$	-	+	4	
Environmental	$	-	+	5	
Traffic Items	$	715,000	+	6	
Minor Items	$	143,000	+	7	
Roadway Mobilization	$	85,800	+	8	
Roadway Contingency	$	188,800	+	9	
TOTAL ROADWAY COST	$	1,132,600	=		
TOTAL STRUCTURES COST	$	-	+	10	
TOTAL CONSTRUCTION COST	**$**	**1,133,000**	=		
TOTAL RIGHT OF WAY COST	**$**	**-**	=	11	
Management Support	$	113,300	+	10%	of Construction Costs
PA&ED Support	$	113,300	+	10%	
PS&E Support	$	170,000	+	15%	
Right of Way Support	$	22,700	+	2%	
Construction Support	$	181,300	+	16%	
Support Contingency	$	120,200	+	20%	of Support Costs
TOTAL SUPPORT COST	**$**	**721,000**	=		

Total Estimated Project Costs: $ 1,860,000 ✗ Check Status

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-06 New Intersection Control - Cathedral Oaks Road / N La Patera Lane

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY		x	=	$	-	
Roadway Excavation (ADL)	CY		x	=	$	-	
Imported Borrow	CY		x	=	$	-	
Structure Excavation (Retaining Wall)	CY		x	=	$	-	
Structure Backfill (Retaining Wall)	CY		x	=	$	-	
Clearing & Grubbing	LS		x	=	$	-	
				TOTAL EARTHWORK SECTION ITEMS		**$**	**-**

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x	=	$	-	
Hot Mix Asphalt (Type A)	TN		x	=	$	-	
Class 2 Aggregate Base	CY		x	=	$	-	
Slurry Seal	TN		x	=	$	-	
Minor Concrete (Miscellaneous Construction)	CY		x	=	$	-	
Place Hot Mix Asphalt Dike	LF		x	=	$	-	
Cold Plane Asphalt Concrete Pavement	SY		x	=	$	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$**	**-**

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x	=	$	-	
Minor Concrete (Minor Structure)	CY		x	=	$	-	
Reinforced Concrete Pipe	LF		x	=	$	-	
Rock Slope Protection	CY		x	=	$	-	
Concrete (Ditch/Channel Lining)	CY		x	=	$	-	
				TOTAL DRAINAGE ITEMS		**$**	**-**

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x	=	$	-	
Remove Concrete Barrier	LF		x	=	$	-	
Remove Metal Beam Guard Railing	LF		x	=	$	-	
Chain Link Fence	LF		x	=	$	-	
Midwest Guardrail System (Wood Post)	LF		x	=	$	-	
Thrie Beam Barrier	LF		x	=	$	-	
Terminal System or Crash Cushion	EA		x	=	$	-	
Concrete Barrier (TYPE 60M)	LF		x	=	$	-	
Structural Concrete, Retaining Wall	CY		x	=	$	-	
				TOTAL SPECIALTY ITEMS		**$**	**-**

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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-06 New Intersection Control - Cathedral Oaks Road / N La Patera Lane

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS		x		= $	-	
Highway Planting	LS		x		= $	-	
Irrigation System	LS		x		= $	-	
Plant Establishment Work	LS		x		= $	-	
Implement Erosion Control	LS		x		= $	-	
Prepare and Implement SWPPP / WPCP	LS		x		= $	-	
				TOTAL ENVIRONMENTAL		**$**	**-**

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS		x		= $	-	
Signal and Lighting	LS	1	x	575,000	= $	575,000	1
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS	1	x	100,000	= $	100,000	
Furnish and Install Sign Structure	LS		x		= $	-	
CIDH Pile (Sign Foundation)	LS		x		= $	-	
Remove Sign Structure	LS		x		= $	-	
Permanent Pavement Delineation	LS	1	x	40,000	= $	40,000	2
				TOTAL TRAFFIC ITEMS		**$**	**715,000**

SECTION 7: MINOR ITEMS							Notes
Traffic Management Plan and Detours				5.0%	$	35,750	
Stage Construction and Traffic Handling				5.0%	$	35,750	
ADA Items				5.0%	$	35,750	
Other Minor Items				5.0%	$	35,750	
Total of Section 1-6	$	715,000	x	20.0%	= $	143,000	
				TOTAL MINOR ITEMS		**$**	**143,000**

SECTIONS 8: MOBILIZATION							
Total Section 1-7	$	858,000	x	10%	= $	85,800	
				TOTAL MOBILIZATION		**$**	**85,800**

SECTION 9: ROADWAY CONTINGENCY							
Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)							
Total Section 1-8	$	943,800	x	20%	= $	188,760	
				TOTAL CONTINGENCY		**$**	**188,800**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-06 New Intersection Control - Cathedral Oaks Road / N La Patera Lane

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF		x		=	$	-	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	20%	x	0	=	$	-	
		TOTAL RIGHT OF WAY ESTIMATE					**$**	**-**

I-12-06 New Intersection Control - Cathedral Oaks Road / N La Patera Lane

NOTES AND CALCULATIONS

NOTE NO. 1

Signal and Lighting

Scale:	Minor
Legs:	4
Cost:	$575,000

RESULT NO. 1 $575,000

NOTE NO. 2

Permanent Pavement Delineation

Cost	$40,000

RESULT NO. 2 $40,000

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-06 New Intersection Control - Cathedral Oaks Road / N La Patera Lane

Description: New simple single-lane roundabout.

Scope: Demolition; pavement structural section reconstruction; concrete curb, gutter, sidewalk, truck apron, etc.; drainage modifications; landscaping; right of way.

Limits: Intersection of Cathedral Oaks Road and N La Patera Lane

Estimate Type: Planning (City) Estimate Date: 15-Jan-26

Working Days: 200

		Current Year Costs		Section	
Earthwork	$	758,900	+	1	
Pavement Structural Section	$	1,244,400	+	2	
Drainage	$	362,100	+	3	
Specialty Items	$	-	+	4	
Environmental	$	185,000	+	5	
Traffic Items	$	330,000	+	6	
Minor Items	$	547,300	+	7	
Roadway Mobilization	$	342,800	+	8	
Roadway Contingency	$	1,131,200	+	9	
TOTAL ROADWAY COST	$	4,901,700	=		
TOTAL STRUCTURES COST	$	-	+	10	
TOTAL CONSTRUCTION COST	**$**	**4,902,000**	=		
TOTAL RIGHT OF WAY COST	**$**	**4,500,000**	=	11	
Management Support	$	490,200	+	10%	of Construction Costs
PA&ED Support	$	490,200	+	10%	
PS&E Support	$	735,300	+	15%	
Right of Way Support	$	98,100	+	2%	
Construction Support	$	784,400	+	16%	
Support Contingency	$	519,700	+	20%	of Support Costs
TOTAL SUPPORT COST	**$**	**3,118,000**	=		

Total Estimated Project Costs: $ 12,550,000 ✗ Check Status

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-06 New Intersection Control - Cathedral Oaks Road / N La Patera Lane

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	3,565	x	110.00	= $	392,150	1
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY	741	x	90.00	= $	66,690	2
Structure Excavation (Retaining Wall)	CY		x		= $	-	
Structure Backfill (Retaining Wall)	CY		x		= $	-	
Clearing & Grubbing	LS	1	x	300,000	= $	300,000	
				TOTAL EARTHWORK SECTION ITEMS		**$ 758,900**	

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN	1,640	x	237.97	= $	390,271	3
Class 2 Aggregate Base	CY	194	x	295.45	= $	57,317	4
Slurry Seal	TN	5	x	3,507.95	= $	17,540	6
Minor Concrete (Miscellaneous Construction)	CY	547	x	1,424.58	= $	779,245	7,8,9
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$ 1,244,400**	

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY	24	x	2,900.00	= $	69,600	10
Reinforced Concrete Pipe	LF	1,500	x	195.00	= $	292,500	11
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$ 362,100**	

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF		x		= $	-	
Chain Link Fence	LF		x		= $	-	
Midwest Guardrail System (Wood Post)	LF		x		= $	-	
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF		x		= $	-	
Structural Concrete, Retaining Wall	CY		x		= $	-	
				TOTAL SPECIALTY ITEMS		**$ -**	

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-06 New Intersection Control - Cathedral Oaks Road / N La Patera Lane

SECTION 5: ENVIRONMENTAL	Unit	Quantity	Unit Price ($)	Cost	Notes
Biological Mitigation	LS	1	x = $	-	
Highway Planting	LS	1	x 100,000 = $	100,000	
Irrigation System	LS	1	x 25,000 = $	25,000	
Plant Establishment Work	LS	1	x 20,000 = $	20,000	
Implement Erosion Control	LS	1	x 20,000 = $	20,000	
Prepare and Implement SWPPP / WPCP	LS	1	x 20,000 = $	20,000	
			TOTAL ENVIRONMENTAL	**$ 185,000**	

SECTION 6: TRAFFIC ITEMS	Unit	Quantity	Unit Price ($)	Cost	Notes
Lighting and Sign Illumination	LS	1	x 250,000 = $	250,000	12
Signal and Lighting	LS		x = $	-	
Ramp Metering System	LS		x = $	-	
Interconnection Conduit and Cable	LS		x = $	-	
Furnish and Install Sign Structure	LS		x = $	-	
CIDH Pile (Sign Foundation)	LS		x = $	-	
Remove Sign Structure	LS		x = $	-	
Permanent Pavement Delineation	LS	1	x 80,000 = $	80,000	13
			TOTAL TRAFFIC ITEMS	**$ 330,000**	

SECTION 7: MINOR ITEMS				Notes
Traffic Management Plan and Detours	5.0%	$	144,020	
Stage Construction and Traffic Handling	6.0%	$	172,824	
ADA Items	2.0%	$	57,608	
Other Minor Items	6.0%	$	172,824	
Total of Section 1-6 $ 2,880,400 x	19.0% =	$	547,276	
	TOTAL MINOR ITEMS		**$ 547,300**	

SECTIONS 8: MOBILIZATION					
Total Section 1-7	$ 3,427,700	x 10%	= $	342,770	
		TOTAL MOBILIZATION		**$ 342,800**	

SECTION 9: ROADWAY CONTINGENCY					
Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)					
Total Section 1-8	$ 3,770,500	x 30%	= $	1,131,150	
		TOTAL CONTINGENCY		**$ 1,131,200**	

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-06 New Intersection Control - Cathedral Oaks Road / N La Patera Lane

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF	15,000	x	250.00	=	$	3,750,000	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	20%	x	3,750,000	=	$	750,000	
		TOTAL RIGHT OF WAY ESTIMATE					**$**	**4,500,000**

I-12-06 New Intersection Control - Cathedral Oaks Road / N La Patera Lane

NOTES AND CALCULATIONS

NOTE NO. 1

Number of intersection legs
4 legs
250 feet average approach length
200 feet average splitter island length

NOTE NO. 2

Roadway excavation area (within splitter islands)
35,000
Depth of AC
0.75
Depth of base
2.00
Roadway excavation = width * length * depth
96,250
3,565 **RESULT NO. 2** **3,565**

NOTE NO. 3

Import for landscape areas
10,000 SF
Depth
2.00 feet
Volume = width * length * depth
20,000 CF
741 CY **RESULT NO. 3** **741**

NOTE NO. 4

AC pavement area
3,500 SF
Depth of AC
0.75 feet
Volume = width * length * depth
2,625 CF

AC pavement area (approaches)
40,000
Depth of AC
0.50
Volume = width * length * depth
20,000 CF

Total
22,625 CF * 145 pounds/CF / 2,000 pounds/ton
1,640 TN **RESULT NO. 4** **1,640**

I-12-06 New Intersection Control - Cathedral Oaks Road / N La Patera Lane

NOTES AND CALCULATIONS

NOTE NO. 5

Aggregate base area in RAB
3,500 SF
Depth of base
1.50 feet
Volume = width * length * depth
5,250 CF

Aggregate base area in approaches
40,000 SF
Depth of base
1.00 feet
Volume = width * length * depth
40,000 CF

45,250 CF
194 CY **RESULT NO. 5** **194**

NOTE NO. 6

Approaches to project
Length (typ)
250 feet
Width
30 feet
Area
7,500 feet
Coverage rate
1,500 SF/TN
5 CY **RESULT NO. 6** **5**

NOTE NO. 7

New sidewalk length
200 feet At roundabout
2000 feet Approaches
2200 feet TOTAL
Sidewalk width (most of it is multi-use path)
10 feet
Sidewalk thickness
4 inches
Volume = Minor Concrete (Miscellaneous Construction)
7333 CF
272 CY **RESULT NO. 7** **272**

I-12-06 New Intersection Control - Cathedral Oaks Road / N La Patera Lane

NOTES AND CALCULATIONS

NOTE NO. 8

New Caltrans A1-6 curb at splitter islands
1600 feet Approaches
1600 feet TOTAL
Volume / foot
0.03 CY/foot
Volume = Minor Concrete (Miscellaneous Construction)
41 CY
New Caltrans A2-6 curb and gutter length
200 feet At roundabout
2000 feet Approaches
2200 feet TOTAL
Volume / foot
0.06 CY/foot
Volume = Minor Concrete (Miscellaneous Construction)
130 CY **RESULT NO. 8** **171**

NOTE NO. 9

Truck apron and misc
Truck apron (CAD)
2500 SF
Concrete thickness
9 inches
Volume = Minor Concrete (Miscellaneous Construction)
1875 CF
50% Additional for misc
2813 CF
104 CY **RESULT NO. 9** **104**

NOTE NO. 10

New drop inlets - assumed one each side of the road on each leg
8 each
Depth of drop inlets
5 feet
Drop inlet volume - Caltrans OL-10
Volume / foot
2.39 CY (3 feet deep)
0.28 CY/each additional foot of depth up to 8 feet
Volume = Minor Concrete (Minor Structure)
24 CY **RESULT NO. 10** **24**

NOTE NO. 11

Estimated length of RCP
1,500 feet **RESULT NO. 11** **1,500**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-06 New Intersection Control - Cathedral Oaks Road / N La Patera Lane

NOTES AND CALCULATIONS

NOTE NO. 12

New street lights
12 each
Cost per street light
$ 30,000
Landscape lights
12 each
Cost per street light
$ 10,000
Total lights
$ 480,000
Connection
$ 25,000

RESULT NO. 12 **$ 505,000**

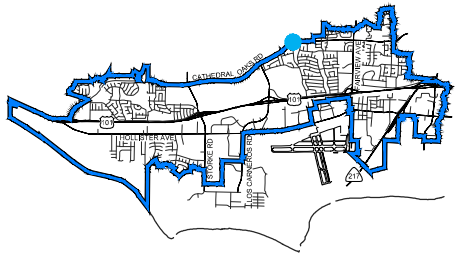
NOTE NO. 13

Pavement delineation and marking
$ 80,000

RESULT NO. 13 **80,000**

GOLETA TRANSPORTATION
IMPROVEMENTS PROGRAM

Project I-12-06: Cathedral Oaks Road and N La Patera Lane Roundabout



50' 0' 50' 100'
1 inch = 100 ft.

MNS
201 N. Calle Cesar Chavez, Suite 300
Santa Barbara, CA 93103
805-692-6921 | www.mnsengineers.com

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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-07 New Intersection Control - Fairview Avenue / Stow Canyon Road

Description: New traffic signal.

Scope: New traffic signal improvements.

Limits: Intersection of Fairview Avenue and Stow Canyon Road

Estimate Type: Planning (City) Estimate Date: 15-Jan-26

Working Days: 60

		Current Year Costs		Section		
Earthwork	$	-	+	1		
Pavement Structural Section	$	-	+	2		
Drainage	$	-	+	3		
Specialty Items	$	-	+	4		
Environmental	$	-	+	5		
Traffic Items	$	840,000	+	6		
Minor Items	$	168,000	+	7		
Roadway Mobilization	$	100,800	+	8		
Roadway Contingency	$	221,800	+	9		
TOTAL ROADWAY COST	$	1,330,600	=			
TOTAL STRUCTURES COST	$	-	+	10		
TOTAL CONSTRUCTION COST	**$**	**1,331,000**	=			
TOTAL RIGHT OF WAY COST	**$**	**-**	=	11		
Management Support	$	133,100	+	10%		
PA&ED Support	$	133,100	+	10%		of Construction Costs
PS&E Support	$	199,700	+	15%		
Right of Way Support	$	26,700	+	2%		
Construction Support	$	213,000	+	16%		
Support Contingency	$	141,200	+	20%		of Support Costs
TOTAL SUPPORT COST	**$**	**847,000**	=			

Total Estimated Project Costs: $ 2,180,000 ✗ Check Status

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-07 New Intersection Control - Fairview Avenue / Stow Canyon Road

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY		x	=	$	-	
Roadway Excavation (ADL)	CY		x	=	$	-	
Imported Borrow	CY		x	=	$	-	
Structure Excavation (Retaining Wall)	CY		x	=	$	-	
Structure Backfill (Retaining Wall)	CY		x	=	$	-	
Clearing & Grubbing	LS		x	=	$	-	
				TOTAL EARTHWORK SECTION ITEMS		**$**	**-**

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x	=	$	-	
Hot Mix Asphalt (Type A)	TN		x	=	$	-	
Class 2 Aggregate Base	CY		x	=	$	-	
Slurry Seal	TN		x	=	$	-	
Minor Concrete (Miscellaneous Construction)	CY		x	=	$	-	
Place Hot Mix Asphalt Dike	LF		x	=	$	-	
Cold Plane Asphalt Concrete Pavement	SY		x	=	$	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$**	**-**

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x	=	$	-	
Minor Concrete (Minor Structure)	CY		x	=	$	-	
Reinforced Concrete Pipe	LF		x	=	$	-	
Rock Slope Protection	CY		x	=	$	-	
Concrete (Ditch/Channel Lining)	CY		x	=	$	-	
				TOTAL DRAINAGE ITEMS		**$**	**-**

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x	=	$	-	
Remove Concrete Barrier	LF		x	=	$	-	
Remove Metal Beam Guard Railing	LF		x	=	$	-	
Chain Link Fence	LF		x	=	$	-	
Midwest Guardrail System (Wood Post)	LF		x	=	$	-	
Thrie Beam Barrier	LF		x	=	$	-	
Terminal System or Crash Cushion	EA		x	=	$	-	
Concrete Barrier (TYPE 60M)	LF		x	=	$	-	
Structural Concrete, Retaining Wall	CY		x	=	$	-	
				TOTAL SPECIALTY ITEMS		**$**	**-**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-07 New Intersection Control - Fairview Avenue / Stow Canyon Road

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS		x		= $	-	
Highway Planting	LS		x		= $	-	
Irrigation System	LS		x		= $	-	
Plant Establishment Work	LS		x		= $	-	
Implement Erosion Control	LS		x		= $	-	
Prepare and Implement SWPPP / WPCP	LS		x		= $	-	
				TOTAL ENVIRONMENTAL			**$ -**

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS		x		= $	-	
Signal and Lighting	LS	1	x	700,000	= $	700,000	1
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS	1	x	100,000	= $	100,000	
Furnish and Install Sign Structure	LS		x		= $	-	
CIDH Pile (Sign Foundation)	LS		x		= $	-	
Remove Sign Structure	LS		x		= $	-	
Permanent Pavement Delineation	LS	1	x	40,000	= $	40,000	2
				TOTAL TRAFFIC ITEMS			**$ 840,000**

SECTION 7: MINOR ITEMS							Notes
Traffic Management Plan and Detours				5.0%	$	42,000	
Stage Construction and Traffic Handling				5.0%	$	42,000	
ADA Items				5.0%	$	42,000	
Other Minor Items				5.0%	$	42,000	
Total of Section 1-6	$	840,000	x	20.0%	= $	168,000	
				TOTAL MINOR ITEMS			**$ 168,000**

SECTIONS 8: MOBILIZATION							
Total Section 1-7	$	1,008,000	x	10%	= $	100,800	
				TOTAL MOBILIZATION			**$ 100,800**

SECTION 9: ROADWAY CONTINGENCY

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total Section 1-8	$	1,108,800	x	20%	= $	221,760	
				TOTAL CONTINGENCY			**$ 221,800**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-07 New Intersection Control - Fairview Avenue / Stow Canyon Road

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF		x		=	$	-	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	20%	x	0	=	$	-	
		TOTAL RIGHT OF WAY ESTIMATE					**$**	**-**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-07 New Intersection Control - Fairview Avenue / Stow Canyon Road

NOTES AND CALCULATIONS

NOTE NO. 1

Signal and Lighting

Scale:	Major		
Legs:	4		
Cost:	$700,000	**RESULT NO. 1**	$700,000

NOTE NO. 2

Permanent Pavement Delineation

Cost	$40,000	**RESULT NO. 2**	$40,000

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-07 New Intersection Control - Fairview Avenue / Stow Canyon Road

Description: New simple single-lane roundabout.

Scope: Demolition; pavement structural section reconstruction; concrete curb, gutter, sidewalk, truck apron, etc.; drainage modifications; landscaping; right of way.

Limits: Intersection of Fairview Avenue and Stow Canyon Road

Estimate Type: Planning (City) Estimate Date: 15-Jan-26

Working Days: 200

		Current Year Costs		Section		
Earthwork	$	758,900	+	1		
Pavement Structural Section	$	1,321,400	+	2		
Drainage	$	362,100	+	3		
Specialty Items	$	-	+	4		
Environmental	$	185,000	+	5		
Traffic Items	$	330,000	+	6		
Minor Items	$	562,000	+	7		
Roadway Mobilization	$	352,000	+	8		
Roadway Contingency	$	1,161,500	+	9		
TOTAL ROADWAY COST	$	5,032,900	=			
TOTAL STRUCTURES COST	$	-	+	10		
TOTAL CONSTRUCTION COST	**$**	**5,033,000**	=			
TOTAL RIGHT OF WAY COST	**$**	**3,600,000**	=	11		
Management Support	$	503,300	+	10%		
PA&ED Support	$	503,300	+	10%		
PS&E Support	$	755,000	+	15%		of Construction Costs
Right of Way Support	$	100,700	+	2%		
Construction Support	$	805,300	+	16%		
Support Contingency	$	533,600	+	20%		of Support Costs
TOTAL SUPPORT COST	**$**	**3,202,000**	=			

Total Estimated Project Costs: $ 11,850,000 ✗ Check Status

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-07 New Intersection Control - Fairview Avenue / Stow Canyon Road

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	3,565	x	110.00	= $	392,150	1
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY	741	x	90.00	= $	66,690	2
Structure Excavation (Retaining Wall)	CY		x		= $	-	
Structure Backfill (Retaining Wall)	CY		x		= $	-	
Clearing & Grubbing	LS	1	x	300,000	= $	300,000	
				TOTAL EARTHWORK SECTION ITEMS		**$ 758,900**	

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN	1,640	x	237.97	= $	390,271	3
Class 2 Aggregate Base	CY	194	x	295.45	= $	57,317	4
Slurry Seal	TN	5	x	3,507.95	= $	17,540	6
Minor Concrete (Miscellaneous Construction)	CY	601	x	1,424.58	= $	856,173	7,8,9
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$ 1,321,400**	

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY	24	x	2,900.00	= $	69,600	10
Reinforced Concrete Pipe	LF	1,500	x	195.00	= $	292,500	11
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$ 362,100**	

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF		x		= $	-	
Chain Link Fence	LF		x		= $	-	
Midwest Guardrail System (Wood Post)	LF		x		= $	-	
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF		x		= $	-	
Structural Concrete, Retaining Wall	CY		x		= $	-	
				TOTAL SPECIALTY ITEMS		**$ -**	

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-07 New Intersection Control - Fairview Avenue / Stow Canyon Road

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS	1	x		= $	-	
Highway Planting	LS	1	x	100,000	= $	100,000	
Irrigation System	LS	1	x	25,000	= $	25,000	
Plant Establishment Work	LS	1	x	20,000	= $	20,000	
Implement Erosion Control	LS	1	x	20,000	= $	20,000	
Prepare and Implement SWPPP / WPCP	LS	1	x	20,000	= $	20,000	
				TOTAL ENVIRONMENTAL		**$ 185,000**	

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS	1	x	250,000	= $	250,000	12
Signal and Lighting	LS		x		= $	-	
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS		x		= $	-	
Furnish and Install Sign Structure	LS		x		= $	-	
CIDH Pile (Sign Foundation)	LS		x		= $	-	
Remove Sign Structure	LS		x		= $	-	
Permanent Pavement Delineation	LS	1	x	80,000	= $	80,000	13
				TOTAL TRAFFIC ITEMS		**$ 330,000**	

SECTION 7: MINOR ITEMS							Notes
Traffic Management Plan and Detours				5.0%	$	147,870	
Stage Construction and Traffic Handling				6.0%	$	177,444	
ADA Items				2.0%	$	59,148	
Other Minor Items				6.0%	$	177,444	
Total of Section 1-6	$	2,957,400	x	19.0%	= $	561,906	
				TOTAL MINOR ITEMS		**$ 562,000**	

SECTIONS 8: MOBILIZATION							
Total Section 1-7	$	3,519,400	x	10%	= $	351,940	
				TOTAL MOBILIZATION		**$ 352,000**	

SECTION 9: ROADWAY CONTINGENCY							
Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)							
Total Section 1-8	$	3,871,400	x	30%	= $	1,161,420	
				TOTAL CONTINGENCY		**$ 1,161,500**	

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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-07 New Intersection Control - Fairview Avenue / Stow Canyon Road

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF	12,000	x	250.00	=	$	3,000,000	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	20%	x	3,000,000	=	$	600,000	
		TOTAL RIGHT OF WAY ESTIMATE					**$**	**3,600,000**

I-12-07 New Intersection Control - Fairview Avenue / Stow Canyon Road

NOTES AND CALCULATIONS

NOTE NO. 1

Number of intersection legs
4 legs
250 feet average approach length
200 feet average splitter island length

NOTE NO. 2

Roadway excavation area (within splitter islands)
35,000
Depth of AC
0.75
Depth of base
2.00
Roadway excavation = width * length * depth
96,250
3,565 **RESULT NO. 2** **3,565**

NOTE NO. 3

Import for landscape areas
10,000 SF
Depth
2.00 feet
Volume = width * length * depth
20,000 CF
741 CY **RESULT NO. 3** **741**

NOTE NO. 4

AC pavement area
3,500 SF
Depth of AC
0.75 feet
Volume = width * length * depth
2,625 CF

AC pavement area (approaches)
40,000
Depth of AC
0.50
Volume = width * length * depth
20,000 CF

Total
22,625 CF * 145 pounds/CF / 2,000 pounds/ton
1,640 TN **RESULT NO. 4** **1,640**

I-12-07 New Intersection Control - Fairview Avenue / Stow Canyon Road

NOTES AND CALCULATIONS

NOTE NO. 5

Aggregate base area in RAB
3,500 SF
Depth of base
1.50 feet
Volume = width * length * depth
5,250 CF

Aggregate base area in approaches
40,000 SF
Depth of base
1.00 feet
Volume = width * length * depth
40,000 CF

45,250 CF
194 CY **RESULT NO. 5** **194**

NOTE NO. 6

Approaches to project
Length (typ)
250 feet
Width
30 feet
Area
7,500 feet
Coverage rate
1,500 SF/TN
5 CY **RESULT NO. 6** **5**

NOTE NO. 7

New sidewalk length
200 feet At roundabout
1600 feet Approaches
1800 feet TOTAL
Sidewalk width (most of it is multi-use path)
10 feet
Sidewalk thickness
4 inches
Volume = Minor Concrete (Miscellaneous Construction)
6000 CF
222 CY

Bike path
400 feet Approaches
400 feet TOTAL
Sidewalk width (most of it is multi-use path)
14 feet
Sidewalk thickness
6 inches
Volume = Minor Concrete (Miscellaneous Construction)

I-12-07 New Intersection Control - Fairview Avenue / Stow Canyon Road

NOTES AND CALCULATIONS

2800 CF
104 CY

326 CY **RESULT NO. 7** **326**

NOTE NO. 8

New Caltrans A1-6 curb at splitter islands
1600 feet Approaches
1600 feet TOTAL
Volume / foot
0.03 CY/foot
Volume = Minor Concrete (Miscellaneous Construction)
41 CY
New Caltrans A2-6 curb and gutter length
200 feet At roundabout
2000 feet Approaches
2200 feet TOTAL
Volume / foot
0.06 CY/foot
Volume = Minor Concrete (Miscellaneous Construction)
130 CY **RESULT NO. 8** **171**

NOTE NO. 9

Truck apron and misc
Truck apron (CAD)
2500 SF
Concrete thickness
9 inches
Volume = Minor Concrete (Miscellaneous Construction)
1875 CF
50% Additional for misc
2813 CF
104 CY **RESULT NO. 9** **104**

NOTE NO. 10

New drop inlets - assumed one each side of the road on each leg
8 each
Depth of drop inlets
5 feet
Drop inlet volume - Caltrans OL-10
Volume / foot
2.39 CY (3 feet deep)
0.28 CY/each additional foot of depth up to 8 feet

I-12-07 New Intersection Control - Fairview Avenue / Stow Canyon Road

NOTES AND CALCULATIONS

Volume = Minor Concrete (Minor Structure)
24 CY — **RESULT NO. 10** — **24**

NOTE NO. 11

Estimated length of RCP
1,500 feet — **RESULT NO. 11** — **1,500**

NOTE NO. 12

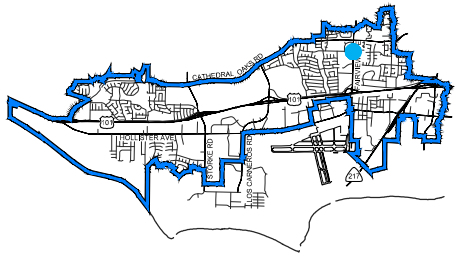
New street lights
12 each
Cost per street light
$ 30,000
Landscape lights
12 each
Cost per street light
$ 10,000
Total lights
$ 480,000
Connection
$ 25,000 — **RESULT NO. 12** — **$ 505,000**

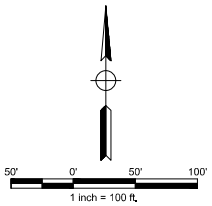
NOTE NO. 13

Pavement delineation and marking
$ 80,000 — **RESULT NO. 13** — **80,000**

GOLETA TRANSPORTATION
IMPROVEMENTS PROGRAM

Project I-12-07: Fairview Avenue and Stow Canyon Road Roundabout





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MNS
201 N. Calle Cesar Chavez, Suite 300
Santa Barbara, CA 93103
805-692-6921 | www.mnsengineers.com

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-10 New Intersection Control - Hollister Avenue / Cannon Green Drive

Description: New traffic signal and median island modifications.

Scope: New traffic signal and median island modifications.

Limits: Intersection of Hollister Avenue and Cannon Green Drive

Estimate Type: Planning (City) Estimate Date: 16-Jan-26

Working Days: 120

		Current Year Costs		Section	
Earthwork	$	85,900	+	1	
Pavement Structural Section	$	38,900	+	2	
Drainage	$	-	+	3	
Specialty Items	$	-	+	4	
Environmental	$	115,000	+	5	
Traffic Items	$	665,000	+	6	
Minor Items	$	181,000	+	7	
Roadway Mobilization	$	108,600	+	8	
Roadway Contingency	$	238,900	+	9	
TOTAL ROADWAY COST	$	1,433,300	=		
TOTAL STRUCTURES COST	$	-	+	10	
TOTAL CONSTRUCTION COST	**$**	**1,433,000**	=		
TOTAL RIGHT OF WAY COST	**$**	**-**	=	11	
Management Support	$	143,300	+	10%	of Construction Costs
PA&ED Support	$	143,300	+	10%	
PS&E Support	$	215,000	+	15%	
Right of Way Support	$	28,700	+	2%	
Construction Support	$	229,300	+	16%	
Support Contingency	$	152,000	+	20%	of Support Costs
TOTAL SUPPORT COST	**$**	**912,000**	=		

Total Estimated Project Costs: $ 2,350,000 ✗ **Check Status**

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-10 New Intersection Control - Hollister Avenue / Cannon Green Drive

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	375	x	228.81	= $	85,804	3
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY		x		= $	-	
Structure Excavation (Retaining Wall)	CY		x		= $	-	
Structure Backfill (Retaining Wall)	CY		x		= $	-	
Clearing & Grubbing	LS		x		= $	-	
				TOTAL EARTHWORK SECTION ITEMS		**$**	**85,900**

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN		x		= $	-	
Class 2 Aggregate Base	CY		x		= $	-	
Slurry Seal	TN		x		= $	-	
Minor Concrete (Miscellaneous Construction)	CY	32	x	1,212.77	= $	38,809	4
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$**	**38,900**

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY		x		= $	-	
Reinforced Concrete Pipe	LF		x		= $	-	
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$**	**-**

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF		x		= $	-	
Chain Link Fence	LF		x		= $	-	
Midwest Guardrail System (Wood Post)	LF		x		= $	-	
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF		x		= $	-	
Structural Concrete, Retaining Wall	CY		x		= $	-	
				TOTAL SPECIALTY ITEMS		**$**	**-**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-10 New Intersection Control - Hollister Avenue / Cannon Green Drive

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS		x		= $	-	
Highway Planting	LS	1	x	50,000	= $	50,000	
Irrigation System	LS	1	x	20,000	= $	20,000	
Plant Establishment Work	LS	1	x	25,000	= $	25,000	
Implement Erosion Control	LS		x		= $	-	
Prepare and Implement SWPPP / WPCP	LS	1	x	20,000	= $	20,000	
				TOTAL ENVIRONMENTAL		**$**	**115,000**

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS		x		= $	-	
Signal and Lighting	LS	1	x	525,000	= $	525,000	1
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS	1	x	100,000	= $	100,000	
Furnish and Install Sign Structure	LS		x		= $	-	
CIDH Pile (Sign Foundation)	LS		x		= $	-	
Remove Sign Structure	LS		x		= $	-	
Permanent Pavement Delineation	LS	1	x	40,000	= $	40,000	2
				TOTAL TRAFFIC ITEMS		**$**	**665,000**

SECTION 7: MINOR ITEMS							Notes
Traffic Management Plan and Detours				5.0%	$	45,240	
Stage Construction and Traffic Handling				5.0%	$	45,240	
ADA Items				5.0%	$	45,240	
Other Minor Items				5.0%	$	45,240	
Total of Section 1-6	$	904,800	x	20.0%	= $	180,960	
				TOTAL MINOR ITEMS		**$**	**181,000**

SECTIONS 8: MOBILIZATION							
Total Section 1-7	$	1,085,800	x	10%	= $	108,580	
				TOTAL MOBILIZATION		**$**	**108,600**

SECTION 9: ROADWAY CONTINGENCY

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total Section 1-8	$	1,194,400	x	20%	= $	238,880	
				TOTAL CONTINGENCY		**$**	**238,900**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-10 New Intersection Control - Hollister Avenue / Cannon Green Drive

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF		x		=	$	-	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	20%	x	0	=	$	-	
		TOTAL RIGHT OF WAY ESTIMATE					**$**	**-**

I-12-10 New Intersection Control - Hollister Avenue / Cannon Green Drive

NOTES AND CALCULATIONS

NOTE NO. 1

Signal and Lighting

Scale:	Major			
Legs:	3			
Cost:	$525,000		**RESULT NO. 1**	$525,000

NOTE NO. 2

Permanent Pavement Delineation

Cost	$30,000		**RESULT NO. 2**	$30,000

NOTE NO. 3

Roadway excavation

Area from CAD				
	4500	SF		
Depth				
	2.25	FT		
Volume				
	10125	CF		
	375	CY	**RESULT NO. 3**	375

NOTE NO. 3

A1-6 Curb

Length				
	1005	LF		
Vol per foot				
	0.02585	CY/LF		
Volume				
	26	CY/LF		

Island paving

Area				
	500	SF		
Depth				
	4	IN		
Volume				
	167	CF		
	6	CY		
TOTAL	32	CY	**RESULT NO. 4**	32

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-10 New Intersection Control - Hollister Avenue / Cannon Green Drive

Description: New simple single-lane roundabout.

Scope: Demolition; pavement structural section reconstruction; concrete curb, gutter, sidewalk, truck apron, etc.; drainage modifications; landscaping; right of way.

Limits: Intersection of Hollister Avenue and Cannon Green Drive

Estimate Type: Planning (City) Estimate Date: 9-Feb-26

Working Days: 200

		Current Year Costs		Section	
Earthwork	$	769,400	+	1	
Pavement Structural Section	$	1,038,600	+	2	
Drainage	$	344,700	+	3	
Specialty Items	$	-	+	4	
Environmental	$	185,000	+	5	
Traffic Items	$	310,000	+	6	
Minor Items	$	503,100	+	7	
Roadway Mobilization	$	315,100	+	8	
Roadway Contingency	$	1,039,800	+	9	
TOTAL ROADWAY COST	$	4,505,700	=		
TOTAL STRUCTURES COST	$	-	+	10	
TOTAL CONSTRUCTION COST	**$**	**4,506,000**	=		
TOTAL RIGHT OF WAY COST	**$**	**2,085,000**	=	11	
Management Support	$	450,600	+	10%	
PA&ED Support	$	450,600	+	10%	
PS&E Support	$	675,900	+	15%	of Construction Costs
Right of Way Support	$	90,200	+	2%	
Construction Support	$	721,000	+	16%	
Support Contingency	$	477,700	+	20%	of Support Costs
TOTAL SUPPORT COST	**$**	**2,866,000**	=		

Total Estimated Project Costs: $ 9,500,000 ✗ Check Status

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-10 New Intersection Control - Hollister Avenue / Cannon Green Drive

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	2,674	x	160.00	= $	427,840	1
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY	1,037	x	40.00	= $	41,480	2
Structure Excavation (Retaining Wall)	CY		x		= $	-	
Structure Backfill (Retaining Wall)	CY		x		= $	-	
Clearing & Grubbing	LS	1	x	300,000	= $	300,000	
				TOTAL EARTHWORK SECTION ITEMS		**$ 769,400**	

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN	1,278	x	237.97	= $	304,126	3
Class 2 Aggregate Base	CY	194	x	295.45	= $	57,317	4
Slurry Seal	TN	5	x	3,507.95	= $	17,540	6
Minor Concrete (Miscellaneous Construction)	CY	463	x	1,424.58	= $	659,581	7,8,9
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$ 1,038,600**	

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY	18	x	2,900.00	= $	52,200	10
Reinforced Concrete Pipe	LF	1,500	x	195.00	= $	292,500	11
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$ 344,700**	

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF		x		= $	-	
Chain Link Fence	LF		x		= $	-	
Midwest Guardrail System (Wood Post)	LF		x		= $	-	
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF		x		= $	-	
Structural Concrete, Retaining Wall	CY		x		= $	-	
				TOTAL SPECIALTY ITEMS		**$ -**	

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-10 New Intersection Control - Hollister Avenue / Cannon Green Drive

SECTION 5: ENVIRONMENTAL	Unit	Quantity	Unit Price ($)	Cost	Notes
Biological Mitigation	LS	1	x = $	-	
Highway Planting	LS	1	x 100,000 = $	100,000	
Irrigation System	LS	1	x 25,000 = $	25,000	
Plant Establishment Work	LS	1	x 20,000 = $	20,000	
Implement Erosion Control	LS	1	x 20,000 = $	20,000	
Prepare and Implement SWPPP / WPCP	LS	1	x 20,000 = $	20,000	
			TOTAL ENVIRONMENTAL	**$ 185,000**	

SECTION 6: TRAFFIC ITEMS	Unit	Quantity	Unit Price ($)	Cost	Notes
Lighting and Sign Illumination	LS	1	x 250,000 = $	250,000	12
Signal and Lighting	LS		x = $	-	
Ramp Metering System	LS		x = $	-	
Interconnection Conduit and Cable	LS		x = $	-	
Furnish and Install Sign Structure	LS		x = $	-	
CIDH Pile (Sign Foundation)	LS		x = $	-	
Remove Sign Structure	LS		x = $	-	
Permanent Pavement Delineation	LS	1	x 60,000 = $	60,000	13
			TOTAL TRAFFIC ITEMS	**$ 310,000**	

SECTION 7: MINOR ITEMS				Notes
Traffic Management Plan and Detours	5.0%	$	132,385	
Stage Construction and Traffic Handling	6.0%	$	158,862	
ADA Items	2.0%	$	52,954	
Other Minor Items	6.0%	$	158,862	
Total of Section 1-6 $ 2,647,700 x	19.0% =	$	503,063	
	TOTAL MINOR ITEMS		**$ 503,100**	

SECTIONS 8: MOBILIZATION				
Total Section 1-7 $ 3,150,800 x	10% =	$	315,080	
	TOTAL MOBILIZATION		**$ 315,100**	

SECTION 9: ROADWAY CONTINGENCY				
Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)				
Total Section 1-8 $ 3,465,900 x	30% =	$	1,039,770	
	TOTAL CONTINGENCY		**$ 1,039,800**	

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-10 New Intersection Control - Hollister Avenue / Cannon Green Drive

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx
Structure Type	--Select Bridge Type--	--Select Bridge Type--	--Select Bridge Type--
Width (Feet) [out to out]	0 LF	0 LF	0 LF
Total Bridge Length	0 LF	0 LF	0 LF
Total Area (Square Feet)	0 SQFT	0 SQFT	0 SQFT
Complexity	5	5	5
Unusual Features	0	0	0
Cost Per Square Foot	$0	$0	$0
COST OF EACH BRIDGE	$ -	$ -	$ -

Name / ID	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx
Structure Type	--Select Bridge Type--	--Select Bridge Type--	--Select Bridge Type--
Width (Feet) [out to out]	0 LF	0 LF	0 LF
Total Bridge Length	0 LF	0 LF	0 LF
Total Area (Square Feet)	0 SQFT	0 SQFT	0 SQFT
Complexity	5	5	5
Unusual Features	0	0	0
Cost Per Square Foot	$0	$0	$0
COST OF EACH BRIDGE	$ -	$ -	$ -

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF	1,000	x	150.00	=	$	150,000	
Acquisition - Commercial Property	SF	5,750	x	250.00	=	$	1,437,500	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS	1	x	150,000	=	$	150,000	
Right of Way Contingency	LS	20%	x	1,737,500	=	$	347,500	
		TOTAL RIGHT OF WAY ESTIMATE					**$ 2,085,000**	

I-12-10 New Intersection Control - Hollister Avenue / Cannon Green Drive

NOTES AND CALCULATIONS

NOTE NO. 1

Number of intersection legs
3 legs
250 feet average approach length
200 feet average splitter island length

NOTE NO. 2

Roadway excavation area (within splitter islands)
26,250
Depth of AC
0.75
Depth of base
2.00
Roadway excavation = width * length * depth
72,188
2,674 **RESULT NO. 2** **2,674**

NOTE NO. 3

Import for landscape areas
14,000 SF
Depth
2.00 feet
Volume = width * length * depth
28,000 CF
1,037 CY **RESULT NO. 3** **1,037**

NOTE NO. 4

AC pavement area
3,500 SF
Depth of AC
0.75 feet
Volume = width * length * depth
2,625 CF

AC pavement area (approaches)
30,000
Depth of AC
0.50
Volume = width * length * depth
15,000 CF

Total
17,625 CF * 145 pounds/CF / 2,000 pounds/ton
1,278 TN **RESULT NO. 4** **1,278**

I-12-10 New Intersection Control - Hollister Avenue / Cannon Green Drive

NOTES AND CALCULATIONS

NOTE NO. 5

Aggregate base area in RAB
3,500 SF
Depth of base
1.50 feet
Volume = width * length * depth
5,250 CF

Aggregate base area in approaches
30,000 SF
Depth of base
1.00 feet
Volume = width * length * depth
30,000 CF

35,250 CF
194 CY **RESULT NO. 5** **194**

NOTE NO. 6

Approaches to project
Length (typ)
250 feet
Width
30 feet
Area
7,500 feet
Coverage rate
1,500 SF/TN
5 CY **RESULT NO. 6** **5**

NOTE NO. 7

New sidewalk length
250 feet At roundabout
1500 feet Approaches
1750 feet TOTAL
Sidewalk width (most of it is multi-use path)
10 feet
Sidewalk thickness
4 inches
Volume = Minor Concrete (Miscellaneous Construction)
5833 CF
216 CY **RESULT NO. 7** **216**

I-12-10 New Intersection Control - Hollister Avenue / Cannon Green Drive

NOTES AND CALCULATIONS

NOTE NO. 8

New Caltrans A1-6 curb at splitter islands
1200 feet Approaches
1200 feet TOTAL
Volume / foot
0.03 CY/foot
Volume = Minor Concrete (Miscellaneous Construction)
31 CY
New Caltrans A2-6 curb and gutter length
400 feet At roundabout
1500 feet Approaches
1900 feet TOTAL
Volume / foot
0.06 CY/foot
Volume = Minor Concrete (Miscellaneous Construction)
112 CY **RESULT NO. 8** **143**

NOTE NO. 9

Truck apron and misc
Truck apron (CAD)
2500 SF
Concrete thickness
9 inches
Volume = Minor Concrete (Miscellaneous Construction)
1875 CF
50% Additional for misc
2813 CF
104 CY **RESULT NO. 9** **104**

NOTE NO. 10

New drop inlets - assumed one each side of the road on each leg
6 each
Depth of drop inlets
5 feet
Drop inlet volume - Caltrans OL-10
Volume / foot
2.39 CY (3 feet deep)
0.28 CY/each additional foot of depth up to 8 feet
Volume = Minor Concrete (Minor Structure)
18 CY **RESULT NO. 10** **18**

NOTE NO. 11

Estimated length of RCP
1,500 feet **RESULT NO. 11** **1,500**

I-12-10 New Intersection Control - Hollister Avenue / Cannon Green Drive

NOTES AND CALCULATIONS

NOTE NO. 12

New street lights
9 each
Cost per street light
$ 30,000
Landscape lights
12 each
Cost per street light
$ 10,000
Total lights
$ 390,000
Connection
$ 25,000

RESULT NO. 12 **$ 415,000**

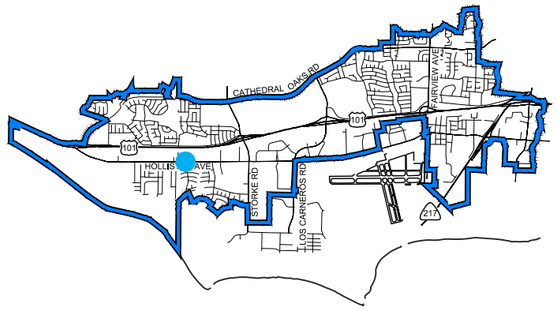
NOTE NO. 13

Pavement delineation and marking
$ 60,000

RESULT NO. 13 **60,000**

GOLETA TRANSPORTATION
IMPROVEMENTS PROGRAM

Project I-12-10: Hollister Avenue and Cannon Green Drive



50' 0' 50' 100'
1 inch = 100 ft.

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201 N. Calle Cesar Chavez, Suite 300
Santa Barbara, CA 93103
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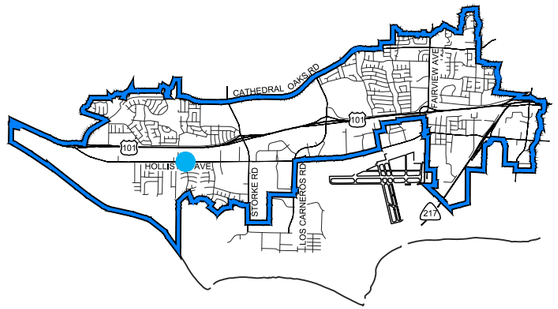
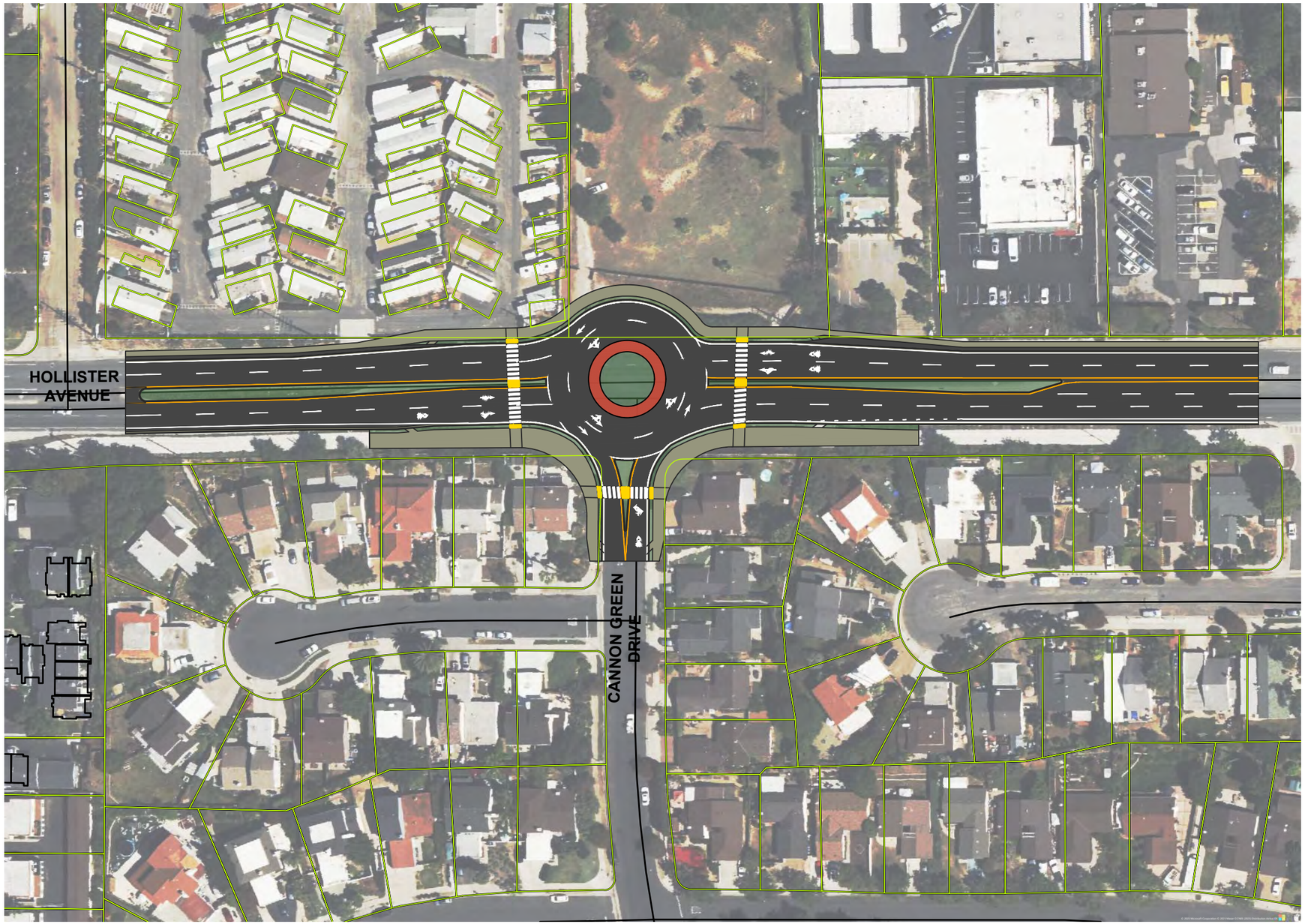
GOLETA TRANSPORTATION
IMPROVEMENTS PROGRAM

Project I-12-10: Hollister Avenue and Cannon Green Drive Roundabout





50' 0' 50' 100'
1 inch = 100 ft.

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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-11 New Intersection Control - Hollister Avenue / Pebble Beach Drive

Description: New traffic signal.

Scope: New traffic signal improvements.

Limits: Intersection of Hollister Avenue and Pebble Beach Drive

Estimate Type: Planning (City) Estimate Date: 15-Jan-26

Working Days: 90

		Current Year Costs		Section	
Earthwork	$	-	+	1	
Pavement Structural Section	$	-	+	2	
Drainage	$	-	+	3	
Specialty Items	$	-	+	4	
Environmental	$	-	+	5	
Traffic Items	$	840,000	+	6	
Minor Items	$	168,000	+	7	
Roadway Mobilization	$	100,800	+	8	
Roadway Contingency	$	221,800	+	9	
TOTAL ROADWAY COST	$	1,330,600	=		
TOTAL STRUCTURES COST	$	-	+	10	
TOTAL CONSTRUCTION COST	**$**	**1,331,000**	=		
TOTAL RIGHT OF WAY COST	**$**	**-**	=	11	
Management Support	$	133,100	+	10%	of Construction Costs
PA&ED Support	$	133,100	+	10%	
PS&E Support	$	199,700	+	15%	
Right of Way Support	$	26,700	+	2%	
Construction Support	$	213,000	+	16%	
Support Contingency	$	141,200	+	20%	of Support Costs
TOTAL SUPPORT COST	**$**	**847,000**	=		

Total Estimated Project Costs: $ 2,180,000 ✗ Check Status

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-11 New Intersection Control - Hollister Avenue / Pebble Beach Drive

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY		x	=	$	-	
Roadway Excavation (ADL)	CY		x	=	$	-	
Imported Borrow	CY		x	=	$	-	
Structure Excavation (Retaining Wall)	CY		x	=	$	-	
Structure Backfill (Retaining Wall)	CY		x	=	$	-	
Clearing & Grubbing	LS		x	=	$	-	
				TOTAL EARTHWORK SECTION ITEMS		**$**	**-**

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x	=	$	-	
Hot Mix Asphalt (Type A)	TN		x	=	$	-	
Class 2 Aggregate Base	CY		x	=	$	-	
Slurry Seal	TN		x	=	$	-	
Minor Concrete (Miscellaneous Construction)	CY		x	=	$	-	
Place Hot Mix Asphalt Dike	LF		x	=	$	-	
Cold Plane Asphalt Concrete Pavement	SY		x	=	$	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$**	**-**

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x	=	$	-	
Minor Concrete (Minor Structure)	CY		x	=	$	-	
Reinforced Concrete Pipe	LF		x	=	$	-	
Rock Slope Protection	CY		x	=	$	-	
Concrete (Ditch/Channel Lining)	CY		x	=	$	-	
				TOTAL DRAINAGE ITEMS		**$**	**-**

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x	=	$	-	
Remove Concrete Barrier	LF		x	=	$	-	
Remove Metal Beam Guard Railing	LF		x	=	$	-	
Chain Link Fence	LF		x	=	$	-	
Midwest Guardrail System (Wood Post)	LF		x	=	$	-	
Thrie Beam Barrier	LF		x	=	$	-	
Terminal System or Crash Cushion	EA		x	=	$	-	
Concrete Barrier (TYPE 60M)	LF		x	=	$	-	
Structural Concrete, Retaining Wall	CY		x	=	$	-	
				TOTAL SPECIALTY ITEMS		**$**	**-**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-11 New Intersection Control - Hollister Avenue / Pebble Beach Drive

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS		x		= $	-	
Highway Planting	LS		x		= $	-	
Irrigation System	LS		x		= $	-	
Plant Establishment Work	LS		x		= $	-	
Implement Erosion Control	LS		x		= $	-	
Prepare and Implement SWPPP / WPCP	LS		x		= $	-	
				TOTAL ENVIRONMENTAL			**$ -**

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS		x		= $	-	
Signal and Lighting	LS	1	x	700,000	= $	700,000	1
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS	1	x	100,000	= $	100,000	
Furnish and Install Sign Structure	LS		x		= $	-	
CIDH Pile (Sign Foundation)	LS		x		= $	-	
Remove Sign Structure	LS		x		= $	-	
Permanent Pavement Delineation	LS	1	x	40,000	= $	40,000	2
				TOTAL TRAFFIC ITEMS			**$ 840,000**

SECTION 7: MINOR ITEMS							Notes
Traffic Management Plan and Detours				5.0%	$	42,000	
Stage Construction and Traffic Handling				5.0%	$	42,000	
ADA Items				5.0%	$	42,000	
Other Minor Items				5.0%	$	42,000	
Total of Section 1-6	$	840,000	x	20.0%	= $	168,000	
				TOTAL MINOR ITEMS			**$ 168,000**

SECTIONS 8: MOBILIZATION							
Total Section 1-7	$	1,008,000	x	10%	= $	100,800	
				TOTAL MOBILIZATION			**$ 100,800**

SECTION 9: ROADWAY CONTINGENCY

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total Section 1-8	$	1,108,800	x	20%	= $	221,760	
				TOTAL CONTINGENCY			**$ 221,800**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-11 New Intersection Control - Hollister Avenue / Pebble Beach Drive

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF		x		=	$	-	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	20%	x	0	=	$	-	
		TOTAL RIGHT OF WAY ESTIMATE					**$**	**-**

I-12-11 New Intersection Control - Hollister Avenue / Pebble Beach Drive

NOTES AND CALCULATIONS

NOTE NO. 1

Signal and Lighting

Scale:	Major
Legs:	4
Cost:	$700,000

RESULT NO. 1 $700,000

NOTE NO. 2

Permanent Pavement Delineation

Cost	$40,000

RESULT NO. 2 $40,000

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-11 New Intersection Control - Hollister Avenue / Pebble Beach Drive

Description: New simple single-lane roundabout.

Scope: Demolition; pavement structural section reconstruction; concrete curb, gutter, sidewalk, truck apron, etc.; drainage modifications; landscaping; right of way.

Limits: Intersection of Hollister Avenue and Pebble Beach Drive

Estimate Type: Planning (City) Estimate Date: 15-Jan-26

Working Days: 200

		Current Year Costs		Section		
Earthwork	$	758,900	+	1		
Pavement Structural Section	$	1,244,400	+	2		
Drainage	$	362,100	+	3		
Specialty Items	$	-	+	4		
Environmental	$	185,000	+	5		
Traffic Items	$	330,000	+	6		
Minor Items	$	547,300	+	7		
Roadway Mobilization	$	342,800	+	8		
Roadway Contingency	$	1,131,200	+	9		
TOTAL ROADWAY COST	$	4,901,700	=			
TOTAL STRUCTURES COST	$	-	+	10		
TOTAL CONSTRUCTION COST	**$**	**4,902,000**	=			
TOTAL RIGHT OF WAY COST	**$**	**5,805,000**	=	11		
Management Support	$	490,200	+	10%		
PA&ED Support	$	490,200	+	10%		of Construction Costs
PS&E Support	$	735,300	+	15%		
Right of Way Support	$	98,100	+	2%		
Construction Support	$	784,400	+	16%		
Support Contingency	$	519,700	+	20%		of Support Costs
TOTAL SUPPORT COST	**$**	**3,118,000**	=			

Total Estimated Project Costs: $ 13,850,000 ✗ Check Status

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-11 New Intersection Control - Hollister Avenue / Pebble Beach Drive

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	3,565	x	110.00	= $	392,150	1
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY	741	x	90.00	= $	66,690	2
Structure Excavation (Retaining Wall)	CY		x		= $	-	
Structure Backfill (Retaining Wall)	CY		x		= $	-	
Clearing & Grubbing	LS	1	x	300,000	= $	300,000	
				TOTAL EARTHWORK SECTION ITEMS		**$ 758,900**	

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN	1,640	x	237.97	= $	390,271	3
Class 2 Aggregate Base	CY	194	x	295.45	= $	57,317	4
Slurry Seal	TN	5	x	3,507.95	= $	17,540	6
Minor Concrete (Miscellaneous Construction)	CY	547	x	1,424.58	= $	779,245	7,8,9
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$ 1,244,400**	

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY	24	x	2,900.00	= $	69,600	10
Reinforced Concrete Pipe	LF	1,500	x	195.00	= $	292,500	11
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$ 362,100**	

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF		x		= $	-	
Chain Link Fence	LF		x		= $	-	
Midwest Guardrail System (Wood Post)	LF		x		= $	-	
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF		x		= $	-	
Structural Concrete, Retaining Wall	CY		x		= $	-	
				TOTAL SPECIALTY ITEMS		**$ -**	

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-11 New Intersection Control - Hollister Avenue / Pebble Beach Drive

SECTION 5: ENVIRONMENTAL	Unit	Quantity	Unit Price ($)	Cost	Notes
Biological Mitigation	LS	1	x = $	-	
Highway Planting	LS	1	x 100,000 = $	100,000	
Irrigation System	LS	1	x 25,000 = $	25,000	
Plant Establishment Work	LS	1	x 20,000 = $	20,000	
Implement Erosion Control	LS	1	x 20,000 = $	20,000	
Prepare and Implement SWPPP / WPCP	LS	1	x 20,000 = $	20,000	
			TOTAL ENVIRONMENTAL	**$ 185,000**	

SECTION 6: TRAFFIC ITEMS	Unit	Quantity	Unit Price ($)	Cost	Notes
Lighting and Sign Illumination	LS	1	x 250,000 = $	250,000	12
Signal and Lighting	LS		x = $	-	
Ramp Metering System	LS		x = $	-	
Interconnection Conduit and Cable	LS		x = $	-	
Furnish and Install Sign Structure	LS		x = $	-	
CIDH Pile (Sign Foundation)	LS		x = $	-	
Remove Sign Structure	LS		x = $	-	
Permanent Pavement Delineation	LS	1	x 80,000 = $	80,000	13
			TOTAL TRAFFIC ITEMS	**$ 330,000**	

SECTION 7: MINOR ITEMS					Notes
Traffic Management Plan and Detours			5.0%	$ 144,020	
Stage Construction and Traffic Handling			6.0%	$ 172,824	
ADA Items			2.0%	$ 57,608	
Other Minor Items			6.0%	$ 172,824	
Total of Section 1-6	$	2,880,400	x 19.0% =	$ 547,276	
			TOTAL MINOR ITEMS	**$ 547,300**	

SECTIONS 8: MOBILIZATION					
Total Section 1-7	$	3,427,700	x 10% =	$ 342,770	
			TOTAL MOBILIZATION	**$ 342,800**	

SECTION 9: ROADWAY CONTINGENCY					
Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)					
Total Section 1-8	$	3,770,500	x 30% =	$ 1,131,150	
			TOTAL CONTINGENCY	**$ 1,131,200**	

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-11 New Intersection Control - Hollister Avenue / Pebble Beach Drive

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF	6,250	x	150.00	=	$	937,500	
Acquisition - Commercial Property	SF		x		=	$	-	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF	3,000	x	1,250.00	=	$	3,750,000	
Relocation Assistance	LS	1	x	150,000	=	$	150,000	
Right of Way Contingency	LS	20%	x	4,837,500	=	$	967,500	
		TOTAL RIGHT OF WAY ESTIMATE					**$**	**5,805,000**

I-12-11 New Intersection Control - Hollister Avenue / Pebble Beach Drive

NOTES AND CALCULATIONS

NOTE NO. 1

Number of intersection legs
4 legs
250 feet average approach length
200 feet average splitter island length

NOTE NO. 2

Roadway excavation area (within splitter islands)
35,000
Depth of AC
0.75
Depth of base
2.00
Roadway excavation = width * length * depth
96,250
3,565 **RESULT NO. 2** **3,565**

NOTE NO. 3

Import for landscape areas
10,000 SF
Depth
2.00 feet
Volume = width * length * depth
20,000 CF
741 CY **RESULT NO. 3** **741**

NOTE NO. 4

AC pavement area
3,500 SF
Depth of AC
0.75 feet
Volume = width * length * depth
2,625 CF

AC pavement area (approaches)
40,000
Depth of AC
0.50
Volume = width * length * depth
20,000 CF

Total
22,625 CF * 145 pounds/CF / 2,000 pounds/ton
1,640 TN **RESULT NO. 4** **1,640**

I-12-11 New Intersection Control - Hollister Avenue / Pebble Beach Drive

NOTES AND CALCULATIONS

NOTE NO. 5

Aggregate base area in RAB
3,500 SF
Depth of base
1.50 feet
Volume = width * length * depth
5,250 CF

Aggregate base area in approaches
40,000 SF
Depth of base
1.00 feet
Volume = width * length * depth
40,000 CF

45,250 CF
194 CY **RESULT NO. 5** **194**

NOTE NO. 6

Approaches to project
Length (typ)
250 feet
Width
30 feet
Area
7,500 feet
Coverage rate
1,500 SF/TN
5 CY **RESULT NO. 6** **5**

NOTE NO. 7

New sidewalk length
200 feet At roundabout
2000 feet Approaches
2200 feet TOTAL
Sidewalk width (most of it is multi-use path)
10 feet
Sidewalk thickness
4 inches
Volume = Minor Concrete (Miscellaneous Construction)
7333 CF
272 CY **RESULT NO. 7** **272**

I-12-11 New Intersection Control - Hollister Avenue / Pebble Beach Drive

NOTES AND CALCULATIONS

NOTE NO. 8

New Caltrans A1-6 curb at splitter islands
1600 feet Approaches
1600 feet TOTAL
Volume / foot
0.03 CY/foot
Volume = Minor Concrete (Miscellaneous Construction)
41 CY
New Caltrans A2-6 curb and gutter length
200 feet At roundabout
2000 feet Approaches
2200 feet TOTAL
Volume / foot
0.06 CY/foot
Volume = Minor Concrete (Miscellaneous Construction)
130 CY **RESULT NO. 8** **171**

NOTE NO. 9

Truck apron and misc
Truck apron (CAD)
2500 SF
Concrete thickness
9 inches
Volume = Minor Concrete (Miscellaneous Construction)
1875 CF
50% Additional for misc
2813 CF
104 CY **RESULT NO. 9** **104**

NOTE NO. 10

New drop inlets - assumed one each side of the road on each leg
8 each
Depth of drop inlets
5 feet
Drop inlet volume - Caltrans OL-10
Volume / foot
2.39 CY (3 feet deep)
0.28 CY/each additional foot of depth up to 8 feet
Volume = Minor Concrete (Minor Structure)
24 CY **RESULT NO. 10** **24**

NOTE NO. 11

Estimated length of RCP
1,500 feet **RESULT NO. 11** **1,500**

I-12-11 New Intersection Control - Hollister Avenue / Pebble Beach Drive

NOTES AND CALCULATIONS

NOTE NO. 12

New street lights
12 each
Cost per street light
$ 30,000
Landscape lights
12 each
Cost per street light
$ 10,000
Total lights
$ 480,000
Connection
$ 25,000

RESULT NO. 12 **$ 505,000**

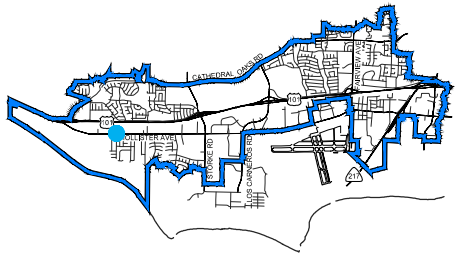
NOTE NO. 13

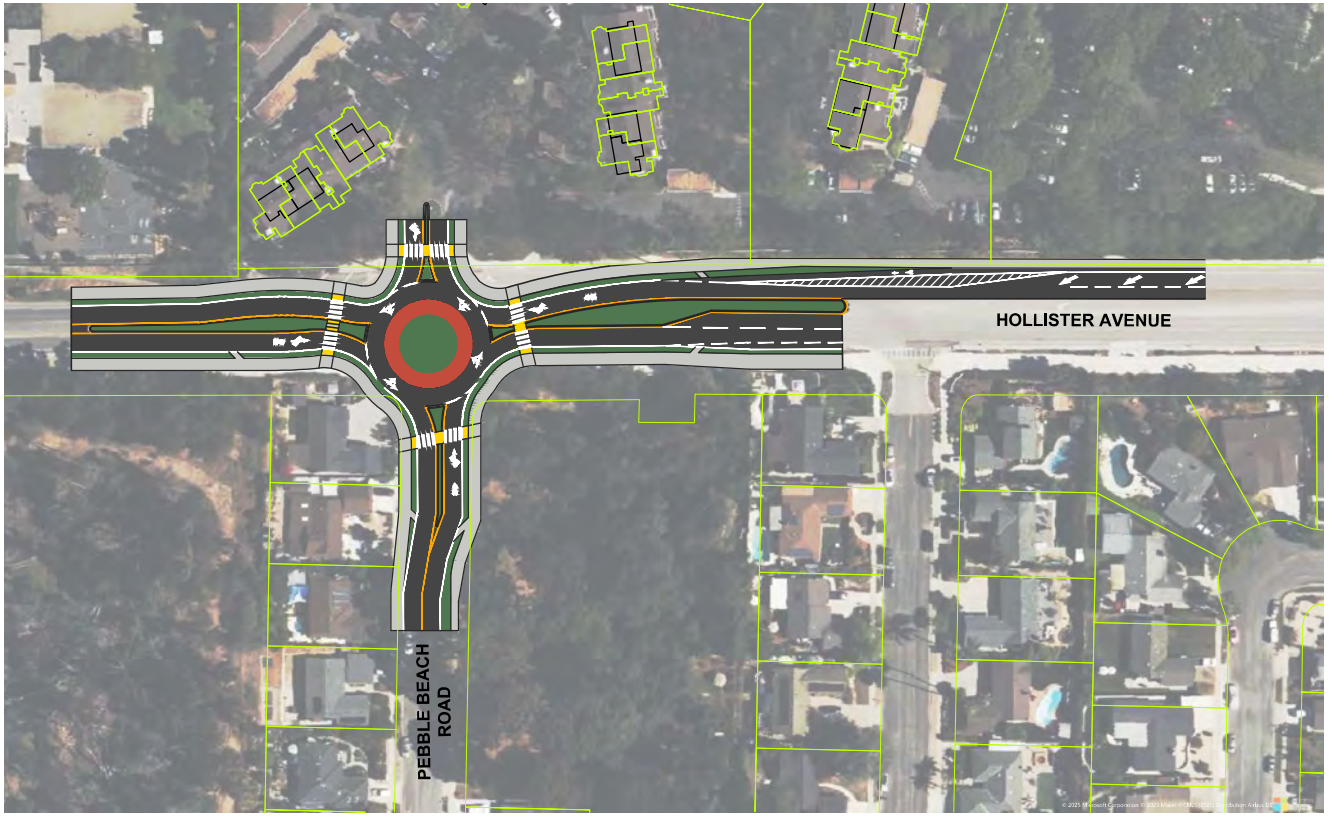
Pavement delineation and marking
$ 80,000

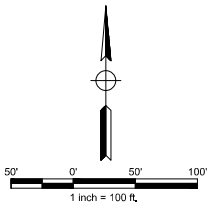
RESULT NO. 13 **80,000**

GOLETA TRANSPORTATION
IMPROVEMENTS PROGRAM

Project I-12-11: Pebble Beach Road at Hollister Avenue Roundabout







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Santa Barbara, CA 93103
805-692-6921 | www.mnsengineers.com

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-12 New Intersection Control - Hollister Avenue / La Sumida Gardens Lane

Description: New traffic signal.

Scope: New traffic signal improvements.

Limits: Intersection of Hollister Avenue and La Sumida Gardens Lane

Estimate Type: Planning (City) Estimate Date: 15-Jan-26

Working Days: 90

		Current Year Costs		Section	
Earthwork	$	-	+	1	
Pavement Structural Section	$	-	+	2	
Drainage	$	-	+	3	
Specialty Items	$	-	+	4	
Environmental	$	-	+	5	
Traffic Items	$	655,000	+	6	
Minor Items	$	131,000	+	7	
Roadway Mobilization	$	78,600	+	8	
Roadway Contingency	$	173,000	+	9	
TOTAL ROADWAY COST	$	1,037,600	=		
TOTAL STRUCTURES COST	$	-	+	10	
TOTAL CONSTRUCTION COST	**$**	**1,038,000**	=		
TOTAL RIGHT OF WAY COST	**$**	**-**	=	11	
Management Support	$	103,800	+	10%	of Construction Costs
PA&ED Support	$	103,800	+	10%	
PS&E Support	$	155,700	+	15%	
Right of Way Support	$	20,800	+	2%	
Construction Support	$	166,100	+	16%	
Support Contingency	$	110,100	+	20%	of Support Costs
TOTAL SUPPORT COST	**$**	**661,000**	=		

Total Estimated Project Costs: $ 1,700,000 ✗ Check Status

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-12 New Intersection Control - Hollister Avenue / La Sumida Gardens Lane

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY		x		= $	-	
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY		x		= $	-	
Structure Excavation (Retaining Wall)	CY		x		= $	-	
Structure Backfill (Retaining Wall)	CY		x		= $	-	
Clearing & Grubbing	LS		x		= $	-	
				TOTAL EARTHWORK SECTION ITEMS		**$**	**-**

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN		x		= $	-	
Class 2 Aggregate Base	CY		x		= $	-	
Slurry Seal	TN		x		= $	-	
Minor Concrete (Miscellaneous Construction)	CY		x		= $	-	
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$**	**-**

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY		x		= $	-	
Reinforced Concrete Pipe	LF		x		= $	-	
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$**	**-**

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF		x		= $	-	
Chain Link Fence	LF		x		= $	-	
Midwest Guardrail System (Wood Post)	LF		x		= $	-	
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF		x		= $	-	
Structural Concrete, Retaining Wall	CY		x		= $	-	
				TOTAL SPECIALTY ITEMS		**$**	**-**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-12 New Intersection Control - Hollister Avenue / La Sumida Gardens Lane

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS		x		= $	-	
Highway Planting	LS		x		= $	-	
Irrigation System	LS		x		= $	-	
Plant Establishment Work	LS		x		= $	-	
Implement Erosion Control	LS		x		= $	-	
Prepare and Implement SWPPP / WPCP	LS		x		= $	-	
				TOTAL ENVIRONMENTAL			**$ -**

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS		x		= $	-	
Signal and Lighting	LS	1	x	525,000	= $	525,000	1
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS	1	x	100,000	= $	100,000	
Furnish and Install Sign Structure	LS		x		= $	-	
CIDH Pile (Sign Foundation)	LS		x		= $	-	
Remove Sign Structure	LS		x		= $	-	
Permanent Pavement Delineation	LS	1	x	30,000	= $	30,000	2
				TOTAL TRAFFIC ITEMS			**$ 655,000**

SECTION 7: MINOR ITEMS							Notes
Traffic Management Plan and Detours				5.0%	$	32,750	
Stage Construction and Traffic Handling				5.0%	$	32,750	
ADA Items				5.0%	$	32,750	
Other Minor Items				5.0%	$	32,750	
Total of Section 1-6	$	655,000	x	20.0%	= $	131,000	
				TOTAL MINOR ITEMS			**$ 131,000**

SECTIONS 8: MOBILIZATION							
Total Section 1-7	$	786,000	x	10%	= $	78,600	
				TOTAL MOBILIZATION			**$ 78,600**

SECTION 9: ROADWAY CONTINGENCY							
Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)							
Total Section 1-8	$	864,600	x	20%	= $	172,920	
				TOTAL CONTINGENCY			**$ 173,000**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-12 New Intersection Control - Hollister Avenue / La Sumida Gardens Lane

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx
Structure Type	--Select Bridge Type--	--Select Bridge Type--	--Select Bridge Type--
Width (Feet) [out to out]	0 LF	0 LF	0 LF
Total Bridge Length	0 LF	0 LF	0 LF
Total Area (Square Feet)	0 SQFT	0 SQFT	0 SQFT
Complexity	5	5	5
Unusual Features	0	0	0
Cost Per Square Foot	$0	$0	$0
COST OF EACH BRIDGE	$ -	$ -	$ -

Name / ID	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx
Structure Type	--Select Bridge Type--	--Select Bridge Type--	--Select Bridge Type--
Width (Feet) [out to out]	0 LF	0 LF	0 LF
Total Bridge Length	0 LF	0 LF	0 LF
Total Area (Square Feet)	0 SQFT	0 SQFT	0 SQFT
Complexity	5	5	5
Unusual Features	0	0	0
Cost Per Square Foot	$0	$0	$0
COST OF EACH BRIDGE	$ -	$ -	$ -

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF		x		=	$	-	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	20%	x	0	=	$	-	
		TOTAL RIGHT OF WAY ESTIMATE					**$**	**-**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-12 New Intersection Control - Hollister Avenue / La Sumida Gardens Lane

NOTES AND CALCULATIONS

NOTE NO. 1

Signal and Lighting

Scale:	Major		
Legs:	3		
Cost:	$525,000	**RESULT NO. 1**	$525,000

NOTE NO. 2

Permanent Pavement Delineation

Cost	$30,000	**RESULT NO. 2**	$30,000

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-12 New Intersection Control - Hollister Avenue / La Sumida Lane

Description: New simple single-lane roundabout.

Scope: Demolition; pavement structural section reconstruction; concrete curb, gutter, sidewalk, truck apron, etc.; drainage modifications; landscaping; right of way.

Limits: Intersection of Hollister Avenue and La Sumida Lane

Estimate Type: Planning (City) Estimate Date: 16-Jan-26

Working Days: 200

		Current Year Costs		Section
Earthwork	$	709,000	+	1
Pavement Structural Section	$	868,600	+	2
Drainage	$	362,100	+	3
Specialty Items	$	-	+	4
Environmental	$	185,000	+	5
Traffic Items	$	330,000	+	6
Minor Items	$	466,400	+	7
Roadway Mobilization	$	292,200	+	8
Roadway Contingency	$	964,000	+	9
TOTAL ROADWAY COST	$	4,177,300	=	
TOTAL STRUCTURES COST	$	-	+	10
TOTAL CONSTRUCTION COST	**$**	**4,177,000**	=	
TOTAL RIGHT OF WAY COST	**$**	**4,275,000**	=	11
Management Support	$	417,700	+	10%
PA&ED Support	$	417,700	+	10%
PS&E Support	$	626,600	+	15%
Right of Way Support	$	83,600	+	2%
Construction Support	$	668,400	+	16%
Support Contingency	$	442,800	+	20%
TOTAL SUPPORT COST	**$**	**2,657,000**	=	

of Construction Costs

of Support Costs

Total Estimated Project Costs: $ 11,150,000 ✗ Check Status

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-12 New Intersection Control - Hollister Avenue / La Sumida Lane

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	2,139	x	160.00	= $	342,240	1
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY	741	x	90.00	= $	66,690	2
Structure Excavation (Retaining Wall)	CY		x		= $	-	
Structure Backfill (Retaining Wall)	CY		x		= $	-	
Clearing & Grubbing	LS	1	x	300,000	= $	300,000	
				TOTAL EARTHWORK SECTION ITEMS		**$ 709,000**	

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN	1,060	x	237.97	= $	252,248	3
Class 2 Aggregate Base	CY	194	x	295.45	= $	57,317	4
Slurry Seal	TN	3	x	3,507.95	= $	10,524	6
Minor Concrete (Miscellaneous Construction)	CY	385	x	1,424.58	= $	548,463	7,8,9
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$ 868,600**	

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY	24	x	2,900.00	= $	69,600	10
Reinforced Concrete Pipe	LF	1,500	x	195.00	= $	292,500	11
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$ 362,100**	

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF		x		= $	-	
Chain Link Fence	LF		x		= $	-	
Midwest Guardrail System (Wood Post)	LF		x		= $	-	
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF		x		= $	-	
Structural Concrete, Retaining Wall	CY		x		= $	-	
				TOTAL SPECIALTY ITEMS		**$ -**	

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-12 New Intersection Control - Hollister Avenue / La Sumida Lane

SECTION 5: ENVIRONMENTAL	Unit	Quantity	Unit Price ($)	Cost	Notes
Biological Mitigation	LS	1	x = $	-	
Highway Planting	LS	1	x 100,000 = $	100,000	
Irrigation System	LS	1	x 25,000 = $	25,000	
Plant Establishment Work	LS	1	x 20,000 = $	20,000	
Implement Erosion Control	LS	1	x 20,000 = $	20,000	
Prepare and Implement SWPPP / WPCP	LS	1	x 20,000 = $	20,000	
			TOTAL ENVIRONMENTAL	**$ 185,000**	

SECTION 6: TRAFFIC ITEMS	Unit	Quantity	Unit Price ($)	Cost	Notes
Lighting and Sign Illumination	LS	1	x 250,000 = $	250,000	12
Signal and Lighting	LS		x = $	-	
Ramp Metering System	LS		x = $	-	
Interconnection Conduit and Cable	LS		x = $	-	
Furnish and Install Sign Structure	LS		x = $	-	
CIDH Pile (Sign Foundation)	LS		x = $	-	
Remove Sign Structure	LS		x = $	-	
Permanent Pavement Delineation	LS	1	x 80,000 = $	80,000	13
			TOTAL TRAFFIC ITEMS	**$ 330,000**	

SECTION 7: MINOR ITEMS				Notes
Traffic Management Plan and Detours		5.0%	$ 122,735	
Stage Construction and Traffic Handling		6.0%	$ 147,282	
ADA Items		2.0%	$ 49,094	
Other Minor Items		6.0%	$ 147,282	
Total of Section 1-6	$ 2,454,700	x 19.0% =	$ 466,393	
		TOTAL MINOR ITEMS	**$ 466,400**	

SECTIONS 8: MOBILIZATION				
Total Section 1-7	$ 2,921,100	x 10% =	$ 292,110	
		TOTAL MOBILIZATION	**$ 292,200**	

SECTION 9: ROADWAY CONTINGENCY				
Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)				
Total Section 1-8	$ 3,213,300	x 30% =	$ 963,990	
		TOTAL CONTINGENCY	**$ 964,000**	

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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-12 New Intersection Control - Hollister Avenue / La Sumida Lane

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF	14,250	x	250.00	=	$	3,562,500	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	20%	x	3,562,500	=	$	712,500	
		TOTAL RIGHT OF WAY ESTIMATE					**$ 4,275,000**	

I-12-12 New Intersection Control - Hollister Avenue / La Sumida Lane

NOTES AND CALCULATIONS

NOTE NO. 1

Number of intersection legs
4 legs
150 feet average approach length
125 feet average splitter island length

NOTE NO. 2

Roadway excavation area (within splitter islands)
21,000
Depth of AC
0.75
Depth of base
2.00
Roadway excavation = width * length * depth
57,750
2,139 **RESULT NO. 2** **2,139**

NOTE NO. 3

Import for landscape areas
10,000 SF
Depth
2.00 feet
Volume = width * length * depth
20,000 CF
741 CY **RESULT NO. 3** **741**

NOTE NO. 4

AC pavement area
3,500 SF
Depth of AC
0.75 feet
Volume = width * length * depth
2,625 CF

AC pavement area (approaches)
24,000
Depth of AC
0.50
Volume = width * length * depth
12,000 CF

Total
14,625 CF * 145 pounds/CF / 2,000 pounds/ton
1,060 TN **RESULT NO. 4** **1,060**

I-12-12 New Intersection Control - Hollister Avenue / La Sumida Lane

NOTES AND CALCULATIONS

NOTE NO. 5

Aggregate base area in RAB
3,500 SF
Depth of base
1.50 feet
Volume = width * length * depth
5,250 CF

Aggregate base area in approaches
24,000 SF
Depth of base
1.00 feet
Volume = width * length * depth
24,000 CF

29,250 CF
194 CY **RESULT NO. 5** **194**

NOTE NO. 6

Approaches to project
Length (typ)
150 feet
Width
30 feet
Area
4,500 feet
Coverage rate
1,500 SF/TN
3 CY **RESULT NO. 6** **3**

NOTE NO. 7

New sidewalk length
200 feet At roundabout
1200 feet Approaches
1400 feet TOTAL
Sidewalk width (most of it is multi-use path)
10 feet
Sidewalk thickness
4 inches
Volume = Minor Concrete (Miscellaneous Construction)
4667 CF
173 CY **RESULT NO. 7** **173**

I-12-12 New Intersection Control - Hollister Avenue / La Sumida Lane

NOTES AND CALCULATIONS

NOTE NO. 8

New Caltrans A1-6 curb at splitter islands
1000 feet Approaches
1000 feet TOTAL
Volume / foot
0.03 CY/foot
Volume = Minor Concrete (Miscellaneous Construction)
26 CY
New Caltrans A2-6 curb and gutter length
200 feet At roundabout
1200 feet Approaches
1400 feet TOTAL
Volume / foot
0.06 CY/foot
Volume = Minor Concrete (Miscellaneous Construction)
83 CY **RESULT NO. 8** **108**

NOTE NO. 9

Truck apron and misc
Truck apron (CAD)
2500 SF
Concrete thickness
9 inches
Volume = Minor Concrete (Miscellaneous Construction)
1875 CF
50% Additional for misc
2813 CF
104 CY **RESULT NO. 9** **104**

NOTE NO. 10

New drop inlets - assumed one each side of the road on each leg
8 each
Depth of drop inlets
5 feet
Drop inlet volume - Caltrans OL-10
Volume / foot
2.39 CY (3 feet deep)
0.28 CY/each additional foot of depth up to 8 feet
Volume = Minor Concrete (Minor Structure)
24 CY **RESULT NO. 10** **24**

NOTE NO. 11

Estimated length of RCP
1,500 feet **RESULT NO. 11** **1,500**

I-12-12 New Intersection Control - Hollister Avenue / La Sumida Lane

NOTES AND CALCULATIONS

NOTE NO. 12

New street lights
12 each
Cost per street light
$ 30,000
Landscape lights
12 each
Cost per street light
$ 10,000
Total lights
$ 480,000
Connection
$ 25,000

RESULT NO. 12 **$ 505,000**

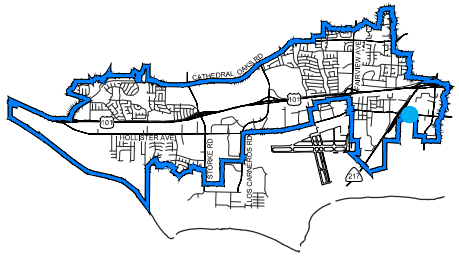
NOTE NO. 13

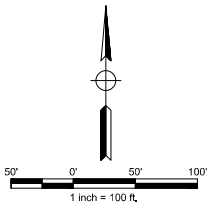
Pavement delineation and marking
$ 80,000

RESULT NO. 13 **80,000**

GOLETA TRANSPORTATION IMPROVEMENTS PROGRAM

Project I-12-12: Hollister Avenue and La Sumeda Gardens Roundabout





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Santa Barbara, CA 93103
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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-23 New Intersection Control - Carlo Drive / Cathedral Oaks Road

Description: New simple single-lane roundabout.

Scope: Demolition; pavement structural section reconstruction; concrete curb, gutter, sidewalk, truck apron, etc.; drainage modifications; landscaping; right of way.

Limits: Intersection of Cathedral Oaks Road and Carlo Drive

Estimate Type: Planning (City) Estimate Date: 20-Jan-26

Working Days: 200

		Current Year Costs		Section		
Earthwork	$	758,900	+	1		
Pavement Structural Section	$	1,244,400	+	2		
Drainage	$	362,100	+	3		
Specialty Items	$	-	+	4		
Environmental	$	185,000	+	5		
Traffic Items	$	330,000	+	6		
Minor Items	$	547,300	+	7		
Roadway Mobilization	$	342,800	+	8		
Roadway Contingency	$	1,131,200	+	9		
TOTAL ROADWAY COST	$	4,901,700	=			
TOTAL STRUCTURES COST	$	-	+	10		
TOTAL CONSTRUCTION COST	**$**	**4,902,000**	=			
TOTAL RIGHT OF WAY COST	**$**	**-**	=	11		
Management Support	$	490,200	+	10%		
PA&ED Support	$	490,200	+	10%		of Construction Costs
PS&E Support	$	735,300	+	15%		
Right of Way Support	$	98,100	+	2%		
Construction Support	$	784,400	+	16%		
Support Contingency	$	519,700	+	20%		of Support Costs
TOTAL SUPPORT COST	**$**	**3,118,000**	=			

Total Estimated Project Costs: $ 8,050,000 ✖ Check Status

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-23 New Intersection Control - Carlo Drive / Cathedral Oaks Road

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	3,565	x	110.00	= $	392,150	1
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY	741	x	90.00	= $	66,690	2
Structure Excavation (Retaining Wall)	CY		x		= $	-	
Structure Backfill (Retaining Wall)	CY		x		= $	-	
Clearing & Grubbing	LS	1	x	300,000	= $	300,000	
				TOTAL EARTHWORK SECTION ITEMS		**$ 758,900**	

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN	1,640	x	237.97	= $	390,271	3
Class 2 Aggregate Base	CY	194	x	295.45	= $	57,317	4
Slurry Seal	TN	5	x	3,507.95	= $	17,540	6
Minor Concrete (Miscellaneous Construction)	CY	547	x	1,424.58	= $	779,245	7,8,9
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$ 1,244,400**	

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY	24	x	2,900.00	= $	69,600	10
Reinforced Concrete Pipe	LF	1,500	x	195.00	= $	292,500	11
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$ 362,100**	

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF		x		= $	-	
Chain Link Fence	LF		x		= $	-	
Midwest Guardrail System (Wood Post)	LF		x		= $	-	
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF		x		= $	-	
Structural Concrete, Retaining Wall	CY		x		= $	-	
				TOTAL SPECIALTY ITEMS		**$ -**	

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-23 New Intersection Control - Carlo Drive / Cathedral Oaks Road

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS	1	x		= $	-	
Highway Planting	LS	1	x	100,000	= $	100,000	
Irrigation System	LS	1	x	25,000	= $	25,000	
Plant Establishment Work	LS	1	x	20,000	= $	20,000	
Implement Erosion Control	LS	1	x	20,000	= $	20,000	
Prepare and Implement SWPPP / WPCP	LS	1	x	20,000	= $	20,000	
				TOTAL ENVIRONMENTAL		**$ 185,000**	

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS	1	x	250,000	= $	250,000	12
Signal and Lighting	LS		x		= $	-	
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS		x		= $	-	
Furnish and Install Sign Structure	LS		x		= $	-	
CIDH Pile (Sign Foundation)	LS		x		= $	-	
Remove Sign Structure	LS		x		= $	-	
Permanent Pavement Delineation	LS	1	x	80,000	= $	80,000	13
				TOTAL TRAFFIC ITEMS		**$ 330,000**	

SECTION 7: MINOR ITEMS							Notes
Traffic Management Plan and Detours				5.0%	$	144,020	
Stage Construction and Traffic Handling				6.0%	$	172,824	
ADA Items				2.0%	$	57,608	
Other Minor Items				6.0%	$	172,824	
Total of Section 1-6	$	2,880,400	x	19.0%	= $	547,276	
				TOTAL MINOR ITEMS		**$ 547,300**	

SECTIONS 8: MOBILIZATION							
Total Section 1-7	$	3,427,700	x	10%	= $	342,770	
				TOTAL MOBILIZATION		**$ 342,800**	

SECTION 9: ROADWAY CONTINGENCY

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total Section 1-8	$	3,770,500	x	30%	= $	1,131,150	
				TOTAL CONTINGENCY		**$ 1,131,200**	

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I-12-23 New Intersection Control - Carlo Drive / Cathedral Oaks Road

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF		x		=	$	-	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	20%	x	0	=	$	-	
		TOTAL RIGHT OF WAY ESTIMATE					**$**	**-**

I-12-23 New Intersection Control - Carlo Drive / Cathedral Oaks Road

NOTES AND CALCULATIONS

NOTE NO. 1

Number of intersection legs
4 legs
250 feet average approach length
200 feet average splitter island length

NOTE NO. 2

Roadway excavation area (within splitter islands)
35,000
Depth of AC
0.75
Depth of base
2.00
Roadway excavation = width * length * depth
96,250
3,565 **RESULT NO. 2** **3,565**

NOTE NO. 3

Import for landscape areas
10,000 SF
Depth
2.00 feet
Volume = width * length * depth
20,000 CF
741 CY **RESULT NO. 3** **741**

NOTE NO. 4

AC pavement area
3,500 SF
Depth of AC
0.75 feet
Volume = width * length * depth
2,625 CF

AC pavement area (approaches)
40,000
Depth of AC
0.50
Volume = width * length * depth
20,000 CF

Total
22,625 CF * 145 pounds/CF / 2,000 pounds/ton
1,640 TN **RESULT NO. 4** **1,640**

I-12-23 New Intersection Control - Carlo Drive / Cathedral Oaks Road

NOTES AND CALCULATIONS

NOTE NO. 5

Aggregate base area in RAB
3,500 SF
Depth of base
1.50 feet
Volume = width * length * depth
5,250 CF

Aggregate base area in approaches
40,000 SF
Depth of base
1.00 feet
Volume = width * length * depth
40,000 CF

45,250 CF
194 CY **RESULT NO. 5** **194**

NOTE NO. 6

Approaches to project
Length (typ)
250 feet
Width
30 feet
Area
7,500 feet
Coverage rate
1,500 SF/TN
5 CY **RESULT NO. 6** **5**

NOTE NO. 7

New sidewalk length
200 feet At roundabout
2000 feet Approaches
2200 feet TOTAL
Sidewalk width (most of it is multi-use path)
10 feet
Sidewalk thickness
4 inches
Volume = Minor Concrete (Miscellaneous Construction)
7333 CF
272 CY **RESULT NO. 7** **272**

I-12-23 New Intersection Control - Carlo Drive / Cathedral Oaks Road

NOTES AND CALCULATIONS

NOTE NO. 8

New Caltrans A1-6 curb at splitter islands
1600 feet Approaches
1600 feet TOTAL
Volume / foot
0.03 CY/foot
Volume = Minor Concrete (Miscellaneous Construction)
41 CY
New Caltrans A2-6 curb and gutter length
200 feet At roundabout
2000 feet Approaches
2200 feet TOTAL
Volume / foot
0.06 CY/foot
Volume = Minor Concrete (Miscellaneous Construction)
130 CY **RESULT NO. 8** **171**

NOTE NO. 9

Truck apron and misc
Truck apron (CAD)
2500 SF
Concrete thickness
9 inches
Volume = Minor Concrete (Miscellaneous Construction)
1875 CF
50% Additional for misc
2813 CF
104 CY **RESULT NO. 9** **104**

NOTE NO. 10

New drop inlets - assumed one each side of the road on each leg
8 each
Depth of drop inlets
5 feet
Drop inlet volume - Caltrans OL-10
Volume / foot
2.39 CY (3 feet deep)
0.28 CY/each additional foot of depth up to 8 feet
Volume = Minor Concrete (Minor Structure)
24 CY **RESULT NO. 10** **24**

NOTE NO. 11

Estimated length of RCP
1,500 feet **RESULT NO. 11** **1,500**

I-12-23 New Intersection Control - Carlo Drive / Cathedral Oaks Road

NOTES AND CALCULATIONS

NOTE NO. 12

New street lights
12 each
Cost per street light
$ 30,000
Landscape lights
12 each
Cost per street light
$ 10,000
Total lights
$ 480,000
Connection
$ 25,000

RESULT NO. 12 **$ 505,000**

NOTE NO. 13

Pavement delineation and marking
$ 80,000

RESULT NO. 13 **80,000**

50' 0' 50' 100'

1 inch = 100 ft.

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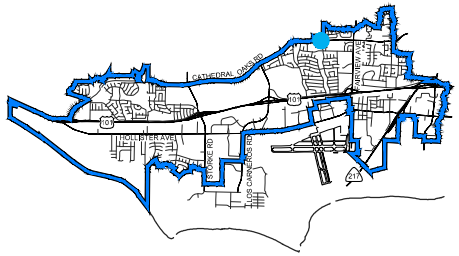
GOLETA TRANSPORTATION IMPROVEMENTS PROGRAM

Project I-12-23: Carlo Drive and Cathedral Oaks Road Roundabout



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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-27 New Intersection Control - Cathedral Oaks / 101 SB-Ramp

Description: New simple single-lane roundabout.

Scope: Demolition; pavement structural section reconstruction; concrete curb, gutter, sidewalk, truck apron, etc.; drainage modifications; landscaping; right of way.

Limits: Intersection of Cathedral Oaks Road and 101 SB Ramps

Estimate Type: Planning (Caltrans) Estimate Date: 15-Jan-26

Working Days: 220

		Current Year Costs		Section	
Earthwork	$	758,900	+	1	
Pavement Structural Section	$	1,244,400	+	2	
Drainage	$	362,100	+	3	
Specialty Items	$	624,400	+	4	
Environmental	$	185,000	+	5	
Traffic Items	$	330,000	+	6	
Minor Items	$	666,000	+	7	
Roadway Mobilization	$	417,100	+	8	
Roadway Contingency	$	1,376,400	+	9	
TOTAL ROADWAY COST	$	5,964,300	=		
TOTAL STRUCTURES COST	$	14,414,400	+	10	
TOTAL CONSTRUCTION COST	**$**	**20,379,000**	=		
TOTAL RIGHT OF WAY COST	**$**	**650,000**	=	11	
Management Support	$	2,037,900	+	10%	
PA&ED Support	$	2,037,900	+	10%	
PS&E Support	$	3,056,900	+	15%	of Construction Costs
Right of Way Support	$	407,600	+	2%	
Construction Support	$	3,260,700	+	16%	
Support Contingency	$	2,160,200	+	20%	of Support Costs
TOTAL SUPPORT COST	**$**	**12,962,000**	=		

Total Estimated Project Costs: $ 34,000,000 ✗ **Check Status**

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-27 New Intersection Control - Cathedral Oaks / 101 SB-Ramp

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	3,565	x	110.00	= $	392,150	1
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY	741	x	90.00	= $	66,690	2
Structure Excavation (Retaining Wall)	CY		x		= $	-	
Structure Backfill (Retaining Wall)	CY		x		= $	-	
Clearing & Grubbing	LS	1	x	300,000	= $	300,000	
				TOTAL EARTHWORK SECTION ITEMS		**$ 758,900**	

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN	1,640	x	237.97	= $	390,271	3
Class 2 Aggregate Base	CY	194	x	295.45	= $	57,317	4
Slurry Seal	TN	5	x	3,507.95	= $	17,540	6
Minor Concrete (Miscellaneous Construction)	CY	547	x	1,424.58	= $	779,245	7,8,9
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$ 1,244,400**	

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY	24	x	2,900.00	= $	69,600	10
Reinforced Concrete Pipe	LF	1,500	x	195.00	= $	292,500	11
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$ 362,100**	

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF		x		= $	-	
Chain Link Fence	LF		x		= $	-	
Midwest Guardrail System (Wood Post)	LF		x		= $	-	
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF		x		= $	-	
Structural Concrete, Retaining Wall	CY	326	x	1,915.28	= $	624,381	14
				TOTAL SPECIALTY ITEMS		**$ 624,400**	

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-27 New Intersection Control - Cathedral Oaks / 101 SB-Ramp

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS	1	x		= $	-	
Highway Planting	LS	1	x	100,000	= $	100,000	
Irrigation System	LS	1	x	25,000	= $	25,000	
Plant Establishment Work	LS	1	x	20,000	= $	20,000	
Implement Erosion Control	LS	1	x	20,000	= $	20,000	
Prepare and Implement SWPPP / WPCP	LS	1	x	20,000	= $	20,000	
				TOTAL ENVIRONMENTAL		**$ 185,000**	

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS	1	x	250,000	= $	250,000	12
Signal and Lighting	LS		x		= $	-	
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS		x		= $	-	
Furnish and Install Sign Structure	LS		x		= $	-	
CIDH Pile (Sign Foundation)	LS		x		= $	-	
Remove Sign Structure	LS		x		= $	-	
Permanent Pavement Delineation	LS	1	x	80,000	= $	80,000	13
				TOTAL TRAFFIC ITEMS		**$ 330,000**	

SECTION 7: MINOR ITEMS							Notes
Traffic Management Plan and Detours				5.0%	$	175,240	
Stage Construction and Traffic Handling				6.0%	$	210,288	
ADA Items				2.0%	$	70,096	
Other Minor Items				6.0%	$	210,288	
Total of Section 1-6	$	3,504,800	x	19.0%	= $	665,912	
				TOTAL MINOR ITEMS		**$ 666,000**	

SECTIONS 8: MOBILIZATION							
Total Section 1-7	$	4,170,800	x	10%	= $	417,080	
				TOTAL MOBILIZATION		**$ 417,100**	

SECTION 9: ROADWAY CONTINGENCY

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total Section 1-8	$	4,587,900	x	30%	= $	1,376,370	
				TOTAL CONTINGENCY		**$ 1,376,400**	

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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-27 New Intersection Control - Cathedral Oaks / 101 SB-Ramp

SECTION 10: STRUCTURES ITEMS

Name / ID	RR OH		xxxxxxxxx		xxxxxxxxx	
Structure Type	PC/PS Box		--Select Bridge Type--		--Select Bridge Type--	
Width (Feet) [out to out]	40	LF	0	LF	0	LF
Total Bridge Length	210	LF	0	LF	0	LF
Total Area (Square Feet)	8400	SQFT	0	SQFT	0	SQFT
Complexity	6		5		5	
Unusual Features	2		0		0	
Cost Per Square Foot	$1,200		$0		$0	
COST OF EACH BRIDGE	$	10,080,000	$	-	$	-

Name / ID	xxxxxxxxx		xxxxxxxxx		xxxxxxxxx	
Structure Type	--Select Bridge Type--		--Select Bridge Type--		--Select Bridge Type--	
Width (Feet) [out to out]	0	LF	0	LF	0	LF
Total Bridge Length	0	LF	0	LF	0	LF
Total Area (Square Feet)	0	SQFT	0	SQFT	0	SQFT
Complexity	5		5		5	
Unusual Features	0		0		0	
Cost Per Square Foot	$0		$0		$0	
COST OF EACH BRIDGE	$	-	$	-	$	-

TOTAL COST OF BRIDGES		$	10,080,000
Structures Mobilization Percentage	10%	$	1,008,000
Structures Contingency Percentage	30%	$	3,326,400
TOTAL COST OF STRUCTURES		**$**	**14,414,400**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF		x		=	$	-	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS	1	x	250,000	=	$	250,000	
Railroad - Flaggers	LS	1	x	250,000	=	$	250,000	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	30%	x	500,000	=	$	150,000	
		TOTAL RIGHT OF WAY ESTIMATE				**$**	**650,000**	

I-12-27 New Intersection Control - Cathedral Oaks / 101 SB-Ramp

NOTES AND CALCULATIONS

NOTE NO. 1

Number of intersection legs
4 legs
250 feet average approach length
200 feet average splitter island length

NOTE NO. 2

Roadway excavation area (within splitter islands)
35,000
Depth of AC
0.75
Depth of base
2.00
Roadway excavation = width * length * depth
96,250
3,565 **RESULT NO. 2** **3,565**

NOTE NO. 3

Import for landscape areas
10,000 SF
Depth
2.00 feet
Volume = width * length * depth
20,000 CF
741 CY **RESULT NO. 3** **741**

NOTE NO. 4

AC pavement area
3,500 SF
Depth of AC
0.75 feet
Volume = width * length * depth
2,625 CF

AC pavement area (approaches)
40,000
Depth of AC
0.50
Volume = width * length * depth
20,000 CF

Total
22,625 CF * 145 pounds/CF / 2,000 pounds/ton
1,640 TN **RESULT NO. 4** **1,640**

I-12-27 New Intersection Control - Cathedral Oaks / 101 SB-Ramp

NOTES AND CALCULATIONS

NOTE NO. 5

Aggregate base area in RAB
3,500 SF
Depth of base
1.50 feet
Volume = width * length * depth
5,250 CF

Aggregate base area in approaches
40,000 SF
Depth of base
1.00 feet
Volume = width * length * depth
40,000 CF

45,250 CF
194 CY **RESULT NO. 5** **194**

NOTE NO. 6

Approaches to project
Length (typ)
250 feet
Width
30 feet
Area
7,500 feet
Coverage rate
1,500 SF/TN
5 CY **RESULT NO. 6** **5**

NOTE NO. 7

New sidewalk length
200 feet At roundabout
2000 feet Approaches
2200 feet TOTAL
Sidewalk width (most of it is multi-use path)
10 feet
Sidewalk thickness
4 inches
Volume = Minor Concrete (Miscellaneous Construction)
7333 CF
272 CY **RESULT NO. 7** **272**

I-12-27 New Intersection Control - Cathedral Oaks / 101 SB-Ramp

NOTES AND CALCULATIONS

NOTE NO. 8

New Caltrans A1-6 curb at splitter islands

1600	feet	Approaches
1600	feet	TOTAL

Volume / foot

0.03 CY/foot

Volume = Minor Concrete (Miscellaneous Construction)

41 CY

New Caltrans A2-6 curb and gutter length

200	feet	At roundabout
2000	feet	Approaches
2200	feet	TOTAL

Volume / foot

0.06 CY/foot

Volume = Minor Concrete (Miscellaneous Construction)

130 CY **RESULT NO. 8** **171**

NOTE NO. 9

Truck apron and misc

Truck apron (CAD)

2500 SF

Concrete thickness

9 inches

Volume = Minor Concrete (Miscellaneous Construction)

1875 CF

50% Additional for misc

2813 CF

104 CY **RESULT NO. 9** **104**

NOTE NO. 10

New drop inlets - assumed one each side of the road on each leg

8 each

Depth of drop inlets

5 feet

Drop inlet volume - Caltrans OL-10

Volume / foot

2.39 CY (3 feet deep)

0.28 CY/each additional foot of depth up to 8 feet

Volume = Minor Concrete (Minor Structure)

24 CY **RESULT NO. 10** **24**

NOTE NO. 11

Estimated length of RCP

1,500 feet **RESULT NO. 11** **1,500**

I-12-27 New Intersection Control - Cathedral Oaks / 101 SB-Ramp

NOTES AND CALCULATIONS

NOTE NO. 12

New street lights
12 each
Cost per street light
$ 30,000
Landscape lights
12 each
Cost per street light
$ 10,000
Total lights
$ 480,000
Connection
$ 25,000

RESULT NO. 12 **$ 505,000**

NOTE NO. 13

Pavement delineation and marking
$ 80,000

RESULT NO. 13 **80,000**

NOTE NO. 14

Retaining walls

100	feet	Length
8	feet	Average Height
1	feet	Stem Thickness
12	feet	Footing Width
1.5	feet	Footing Thickness

Volume = Minor Concrete (Minor Structure)
96 CY

200	feet	Length
10	feet	Average Height
1	feet	Stem Thickness
14	feet	Footing Width
1.5	feet	Footing Thickness

Volume = Minor Concrete (Minor Structure)
230 CY

RESULT NO. 14 **326**

50' 0' 50' 100'
1 inch = 100 ft.

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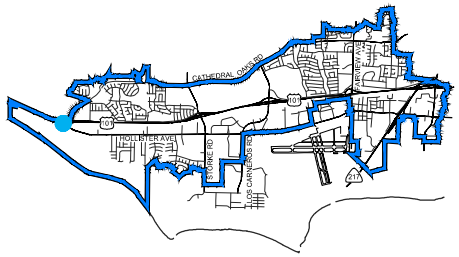
GOLETA TRANSPORTATION
IMPROVEMENTS PROGRAM

Project I-12-27: Cathedral Oaks Road and 101 Southbound Ramps Roundabout



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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-30 New Intersection Control - Hollister Avenue / Palo Alto Drive

Description: New simple single-lane roundabout.

Scope: Demolition; pavement structural section reconstruction; concrete curb, gutter, sidewalk, truck apron, etc.; drainage modifications; landscaping; right of way.

Limits: Intersection of Hollister Avenue and Palo Alto Drive

Estimate Type: Planning (City) Estimate Date: 15-Jan-26

Working Days: 200

		Current Year Costs		Section	
Earthwork	$	758,900	+	1	
Pavement Structural Section	$	1,244,400	+	2	
Drainage	$	362,100	+	3	
Specialty Items	$	-	+	4	
Environmental	$	185,000	+	5	
Traffic Items	$	330,000	+	6	
Minor Items	$	547,300	+	7	
Roadway Mobilization	$	342,800	+	8	
Roadway Contingency	$	1,131,200	+	9	
TOTAL ROADWAY COST	$	4,901,700	=		
TOTAL STRUCTURES COST	$	-	+	10	
TOTAL CONSTRUCTION COST	**$**	**4,902,000**	=		
TOTAL RIGHT OF WAY COST	**$**	**2,145,000**	=	11	
Management Support	$	490,200	+	10%	
PA&ED Support	$	490,200	+	10%	
PS&E Support	$	735,300	+	15%	of Construction Costs
Right of Way Support	$	98,100	+	2%	
Construction Support	$	784,400	+	16%	
Support Contingency	$	519,700	+	20%	of Support Costs
TOTAL SUPPORT COST	**$**	**3,118,000**	=		

Total Estimated Project Costs: $ 10,200,000 ✖ **Check Status**

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-30 New Intersection Control - Hollister Avenue / Palo Alto Drive

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	3,565	x	110.00	= $	392,150	2
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY	741	x	90.00	= $	66,690	3
Structure Excavation (Retaining Wall)	CY		x		= $	-	
Structure Backfill (Retaining Wall)	CY		x		= $	-	
Clearing & Grubbing	LS	1	x	300,000	= $	300,000	
				TOTAL EARTHWORK SECTION ITEMS		**$ 758,900**	

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN	1,640	x	237.97	= $	390,271	4
Class 2 Aggregate Base	CY	194	x	295.45	= $	57,317	5
Slurry Seal	TN	5	x	3,507.95	= $	17,540	6
Minor Concrete (Miscellaneous Construction)	CY	547	x	1,424.58	= $	779,245	7,8,9
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$ 1,244,400**	

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY	24	x	2,900.00	= $	69,600	10
Reinforced Concrete Pipe	LF	1,500	x	195.00	= $	292,500	11
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$ 362,100**	

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF		x		= $	-	
Chain Link Fence	LF		x		= $	-	
Midwest Guardrail System (Wood Post)	LF		x		= $	-	
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF		x		= $	-	
Structural Concrete, Retaining Wall	CY		x		= $	-	
				TOTAL SPECIALTY ITEMS		**$ -**	

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-30 New Intersection Control - Hollister Avenue / Palo Alto Drive

SECTION 5: ENVIRONMENTAL	Unit	Quantity	Unit Price ($)	Cost	Notes
Biological Mitigation	LS	1	x = $	-	
Highway Planting	LS	1	x 100,000 = $	100,000	
Irrigation System	LS	1	x 25,000 = $	25,000	
Plant Establishment Work	LS	1	x 20,000 = $	20,000	
Implement Erosion Control	LS	1	x 20,000 = $	20,000	
Prepare and Implement SWPPP / WPCP	LS	1	x 20,000 = $	20,000	
			TOTAL ENVIRONMENTAL	**$ 185,000**	

SECTION 6: TRAFFIC ITEMS	Unit	Quantity	Unit Price ($)	Cost	Notes
Lighting and Sign Illumination	LS	1	x 250,000 = $	250,000	12
Signal and Lighting	LS		x = $	-	
Ramp Metering System	LS		x = $	-	
Interconnection Conduit and Cable	LS		x = $	-	
Furnish and Install Sign Structure	LS		x = $	-	
CIDH Pile (Sign Foundation)	LS		x = $	-	
Remove Sign Structure	LS		x = $	-	
Permanent Pavement Delineation	LS	1	x 80,000 = $	80,000	13
			TOTAL TRAFFIC ITEMS	**$ 330,000**	

SECTION 7: MINOR ITEMS				Notes
Traffic Management Plan and Detours		5.0%	$ 144,020	
Stage Construction and Traffic Handling		6.0%	$ 172,824	
ADA Items		2.0%	$ 57,608	
Other Minor Items		6.0%	$ 172,824	
Total of Section 1-6	$ 2,880,400	x 19.0% =	$ 547,276	
		TOTAL MINOR ITEMS	**$ 547,300**	

SECTIONS 8: MOBILIZATION				
Total Section 1-7	$ 3,427,700	x 10% =	$ 342,770	
		TOTAL MOBILIZATION	**$ 342,800**	

SECTION 9: ROADWAY CONTINGENCY				
Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)				
Total Section 1-8	$ 3,770,500	x 30% =	$ 1,131,150	
		TOTAL CONTINGENCY	**$ 1,131,200**	

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-30 New Intersection Control - Hollister Avenue / Palo Alto Drive

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF	250	x	150.00	=	$	37,500	
Acquisition - Commercial Property	SF	7,000	x	250.00	=	$	1,750,000	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	20%	x	1,787,500	=	$	357,500	
		TOTAL RIGHT OF WAY ESTIMATE					**$**	**2,145,000**

I-12-30 New Intersection Control - Hollister Avenue / Palo Alto Drive

NOTES AND CALCULATIONS

NOTE NO. 1

Number of intersection legs
4 legs
250 feet average approach length
200 feet average splitter island length

NOTE NO. 2

Roadway excavation area (within splitter islands)
35,000
Depth of AC
0.75
Depth of base
2.00
Roadway excavation = width * length * depth
96,250
3,565 **RESULT NO. 2** **3,565**

NOTE NO. 3

Import for landscape areas
10,000 SF
Depth
2.00 feet
Volume = width * length * depth
20,000 CF
741 CY **RESULT NO. 3** **741**

NOTE NO. 4

AC pavement area
3,500 SF
Depth of AC
0.75 feet
Volume = width * length * depth
2,625 CF

AC pavement area (approaches)
40,000
Depth of AC
0.50
Volume = width * length * depth
20,000 CF

Total
22,625 CF * 145 pounds/CF / 2,000 pounds/ton
1,640 TN **RESULT NO. 4** **1,640**

I-12-30 New Intersection Control - Hollister Avenue / Palo Alto Drive

NOTES AND CALCULATIONS

NOTE NO. 5

Aggregate base area in RAB
3,500 SF
Depth of base
1.50 feet
Volume = width * length * depth
5,250 CF

Aggregate base area in approaches
40,000 SF
Depth of base
1.00 feet
Volume = width * length * depth
40,000 CF

45,250 CF
194 CY **RESULT NO. 5** **194**

NOTE NO. 6

Approaches to project
Length (typ)
250 feet
Width
30 feet
Area
7,500 feet
Coverage rate
1,500 SF/TN
5 CY **RESULT NO. 6** **5**

NOTE NO. 7

New sidewalk length
200 feet At roundabout
2000 feet Approaches
2200 feet TOTAL
Sidewalk width (most of it is multi-use path)
10 feet
Sidewalk thickness
4 inches
Volume = Minor Concrete (Miscellaneous Construction)
7333 CF
272 CY **RESULT NO. 7** **272**

I-12-30 New Intersection Control - Hollister Avenue / Palo Alto Drive

NOTES AND CALCULATIONS

NOTE NO. 8

New Caltrans A1-6 curb at splitter islands

1600	feet	Approaches
1600	feet	TOTAL

Volume / foot

0.03 CY/foot

Volume = Minor Concrete (Miscellaneous Construction)

41 CY

New Caltrans A2-6 curb and gutter length

200	feet	At roundabout
2000	feet	Approaches
2200	feet	TOTAL

Volume / foot

0.06 CY/foot

Volume = Minor Concrete (Miscellaneous Construction)

130 CY **RESULT NO. 8** **171**

NOTE NO. 9

Truck apron and misc

Truck apron (CAD)

2500 SF

Concrete thickness

9 inches

Volume = Minor Concrete (Miscellaneous Construction)

1875 CF

50% Additional for misc

2813 CF

104 CY **RESULT NO. 9** **104**

NOTE NO. 10

New drop inlets - assumed one each side of the road on each leg

8 each

Depth of drop inlets

5 feet

Drop inlet volume - Caltrans OL-10

Volume / foot

2.39 CY (3 feet deep)

0.28 CY/each additional foot of depth up to 8 feet

Volume = Minor Concrete (Minor Structure)

24 CY **RESULT NO. 10** **24**

NOTE NO. 11

Estimated length of RCP

1,500 feet **RESULT NO. 11** **1,500**

I-12-30 New Intersection Control - Hollister Avenue / Palo Alto Drive

NOTES AND CALCULATIONS

NOTE NO. 12

New street lights
12 each
Cost per street light
$ 30,000
Landscape lights
12 each
Cost per street light
$ 10,000
Total lights
$ 480,000
Connection
$ 25,000

RESULT NO. 12 **$ 505,000**

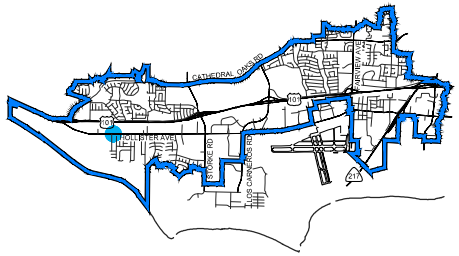
NOTE NO. 13

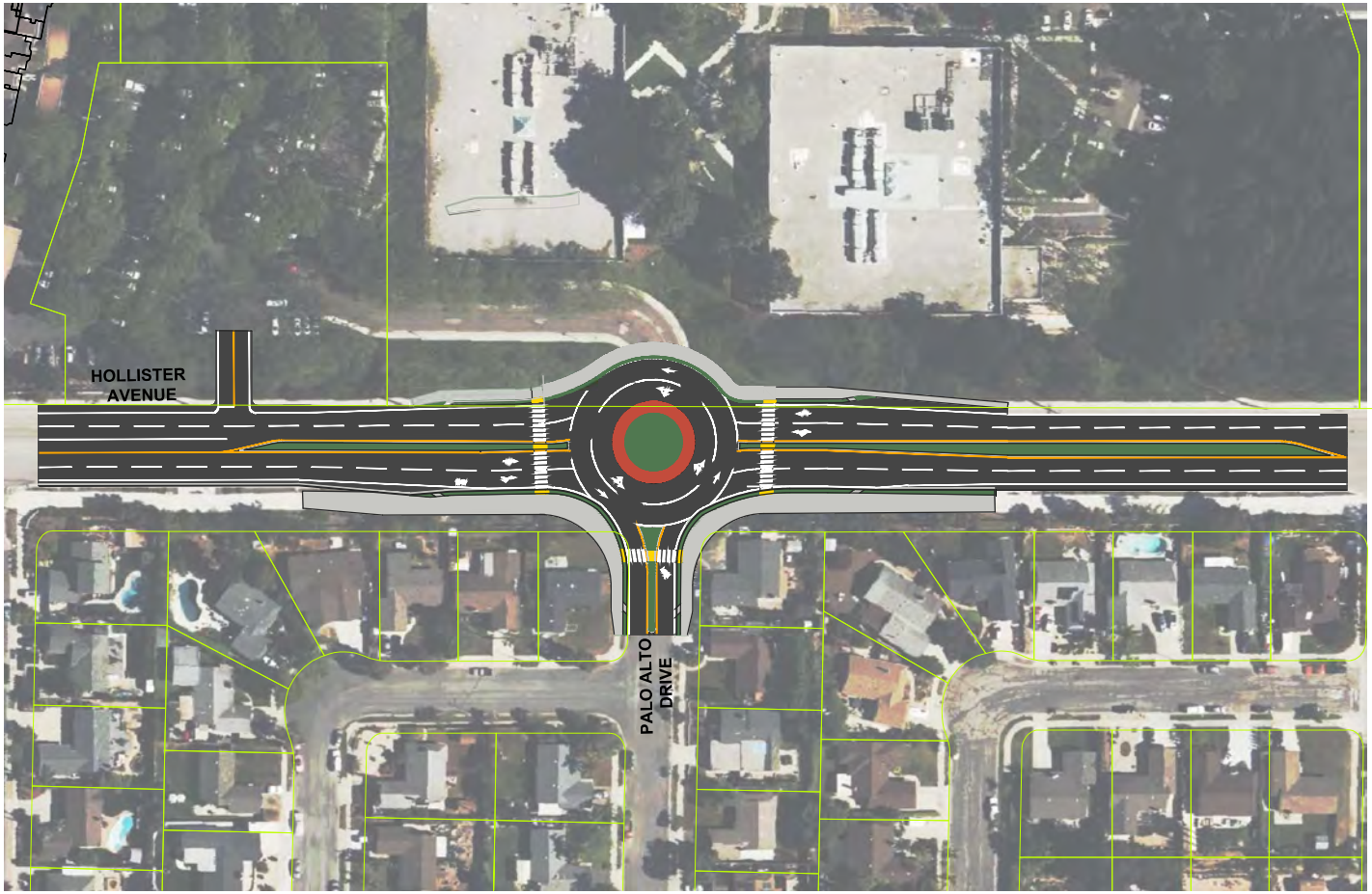
Pavement delineation and marking
$ 80,000

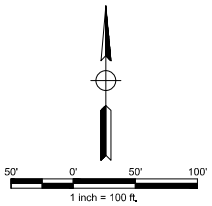
RESULT NO. 13 **80,000**

GOLETA TRANSPORTATION IMPROVEMENTS PROGRAM

Project I-12-30: Hollister Avenue and Palo Alto Drive Roundabout







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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-31 New Intersection Control - Hollister Avenue / Santa Felicia Drive

Description: New traffic signal.

Scope: New traffic signal improvements.

Limits: Intersection of Hollister Avenue and Santa Felicia Drive

Estimate Type: Planning (City) Estimate Date: 15-Jan-26

Working Days: 90

		Current Year Costs		Section	
Earthwork	$	-	+	1	
Pavement Structural Section	$	-	+	2	
Drainage	$	-	+	3	
Specialty Items	$	-	+	4	
Environmental	$	-	+	5	
Traffic Items	$	840,000	+	6	
Minor Items	$	168,000	+	7	
Roadway Mobilization	$	100,800	+	8	
Roadway Contingency	$	221,800	+	9	
TOTAL ROADWAY COST	$	1,330,600	=		
TOTAL STRUCTURES COST	$	-	+	10	
TOTAL CONSTRUCTION COST	**$**	**1,331,000**	=		
TOTAL RIGHT OF WAY COST	**$**	**-**	=	11	
Management Support	$	133,100	+	10%	of Construction Costs
PA&ED Support	$	133,100	+	10%	
PS&E Support	$	199,700	+	15%	
Right of Way Support	$	26,700	+	2%	
Construction Support	$	213,000	+	16%	
Support Contingency	$	141,200	+	20%	of Support Costs
TOTAL SUPPORT COST	**$**	**847,000**	=		

Total Estimated Project Costs: $ 2,180,000 ✗ Check Status

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-31 New Intersection Control - Hollister Avenue / Santa Felicia Drive

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY		x	= $		-	
Roadway Excavation (ADL)	CY		x	= $		-	
Imported Borrow	CY		x	= $		-	
Structure Excavation (Retaining Wall)	CY		x	= $		-	
Structure Backfill (Retaining Wall)	CY		x	= $		-	
Clearing & Grubbing	LS		x	= $		-	
				TOTAL EARTHWORK SECTION ITEMS		**$**	**-**

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x	= $		-	
Hot Mix Asphalt (Type A)	TN		x	= $		-	
Class 2 Aggregate Base	CY		x	= $		-	
Slurry Seal	TN		x	= $		-	
Minor Concrete (Miscellaneous Construction)	CY		x	= $		-	
Place Hot Mix Asphalt Dike	LF		x	= $		-	
Cold Plane Asphalt Concrete Pavement	SY		x	= $		-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$**	**-**

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x	= $		-	
Minor Concrete (Minor Structure)	CY		x	= $		-	
Reinforced Concrete Pipe	LF		x	= $		-	
Rock Slope Protection	CY		x	= $		-	
Concrete (Ditch/Channel Lining)	CY		x	= $		-	
				TOTAL DRAINAGE ITEMS		**$**	**-**

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x	= $		-	
Remove Concrete Barrier	LF		x	= $		-	
Remove Metal Beam Guard Railing	LF		x	= $		-	
Chain Link Fence	LF		x	= $		-	
Midwest Guardrail System (Wood Post)	LF		x	= $		-	
Thrie Beam Barrier	LF		x	= $		-	
Terminal System or Crash Cushion	EA		x	= $		-	
Concrete Barrier (TYPE 60M)	LF		x	= $		-	
Structural Concrete, Retaining Wall	CY		x	= $		-	
				TOTAL SPECIALTY ITEMS		**$**	**-**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-31 New Intersection Control - Hollister Avenue / Santa Felicia Drive

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS		x		= $	-	
Highway Planting	LS		x		= $	-	
Irrigation System	LS		x		= $	-	
Plant Establishment Work	LS		x		= $	-	
Implement Erosion Control	LS		x		= $	-	
Prepare and Implement SWPPP / WPCP	LS		x		= $	-	
				TOTAL ENVIRONMENTAL		**$**	**-**

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS		x		= $	-	
Signal and Lighting	LS	1	x	700,000	= $	700,000	1
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS	1	x	100,000	= $	100,000	
Furnish and Install Sign Structure	LS		x		= $	-	
CIDH Pile (Sign Foundation)	LS		x		= $	-	
Remove Sign Structure	LS		x		= $	-	
Permanent Pavement Delineation	LS	1	x	40,000	= $	40,000	2
				TOTAL TRAFFIC ITEMS		**$**	**840,000**

SECTION 7: MINOR ITEMS							Notes
Traffic Management Plan and Detours				5.0%	$	42,000	
Stage Construction and Traffic Handling				5.0%	$	42,000	
ADA Items				5.0%	$	42,000	
Other Minor Items				5.0%	$	42,000	
Total of Section 1-6	$	840,000	x	20.0%	= $	168,000	
				TOTAL MINOR ITEMS		**$**	**168,000**

SECTIONS 8: MOBILIZATION							
Total Section 1-7	$	1,008,000	x	10%	= $	100,800	
				TOTAL MOBILIZATION		**$**	**100,800**

SECTION 9: ROADWAY CONTINGENCY							
Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)							
Total Section 1-8	$	1,108,800	x	20%	= $	221,760	
				TOTAL CONTINGENCY		**$**	**221,800**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-31 New Intersection Control - Hollister Avenue / Santa Felicia Drive

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx
Structure Type	--Select Bridge Type--	--Select Bridge Type--	--Select Bridge Type--
Width (Feet) [out to out]	0 LF	0 LF	0 LF
Total Bridge Length	0 LF	0 LF	0 LF
Total Area (Square Feet)	0 SQFT	0 SQFT	0 SQFT
Complexity	5	5	5
Unusual Features	0	0	0
Cost Per Square Foot	$0	$0	$0
COST OF EACH BRIDGE	$ -	$ -	$ -

Name / ID	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx
Structure Type	--Select Bridge Type--	--Select Bridge Type--	--Select Bridge Type--
Width (Feet) [out to out]	0 LF	0 LF	0 LF
Total Bridge Length	0 LF	0 LF	0 LF
Total Area (Square Feet)	0 SQFT	0 SQFT	0 SQFT
Complexity	5	5	5
Unusual Features	0	0	0
Cost Per Square Foot	$0	$0	$0
COST OF EACH BRIDGE	$ -	$ -	$ -

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF		x		=	$	-	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	20%	x	0	=	$	-	
		TOTAL RIGHT OF WAY ESTIMATE					**$**	**-**

I-12-31 New Intersection Control - Hollister Avenue / Santa Felicia Drive

NOTES AND CALCULATIONS

NOTE NO. 1

Signal and Lighting

Scale:	Major
Legs:	4
Cost:	$700,000

RESULT NO. 1 $700,000

NOTE NO. 2

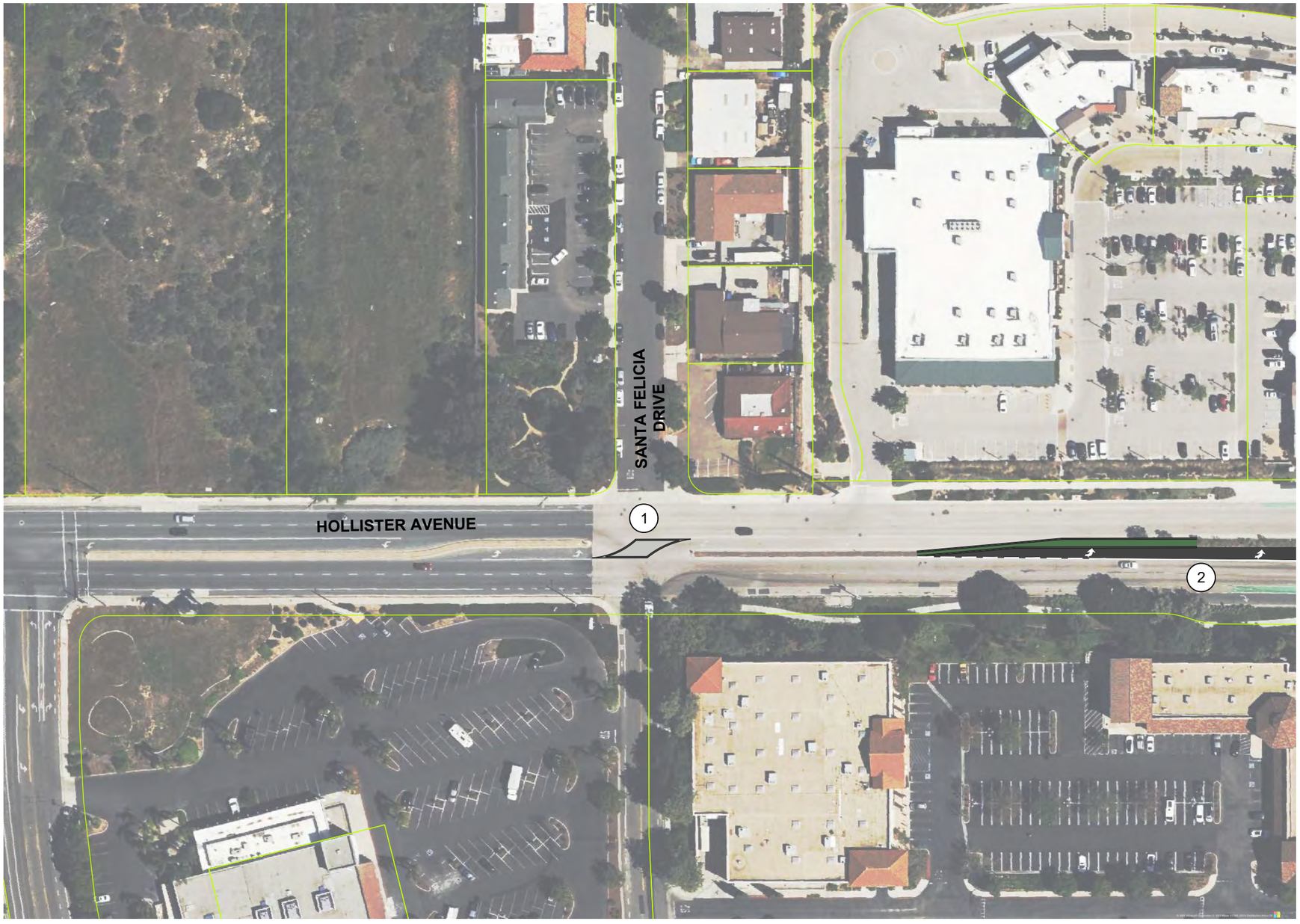
Permanent Pavement Delineation

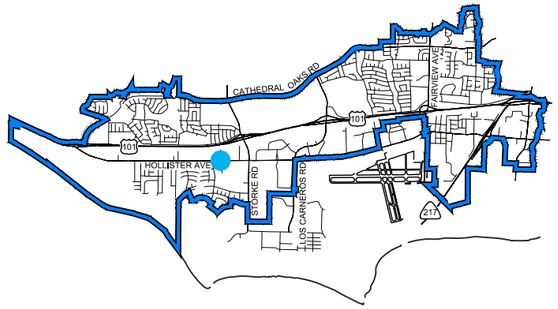
Cost	$40,000

RESULT NO. 2 $40,000

GOLETA TRANSPORTATION IMPROVEMENTS PROGRAM

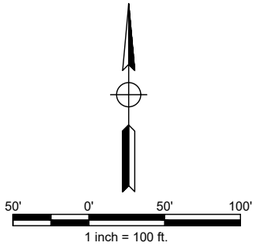
Project I-12-31: Hollister Avenue and Santa Felicia Drive





Notes

1. Median modifications: right-in / right-out only for Santa Felicia Drive. Left-turns from Hollister Avenue are allowed.
2. Lengthen Hollister eastbound left-turn pocket at Village Way.



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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-32 New Intersection Control - Storke Avenue / Santa Felicia Drive

Description: Intersection and median island modifications.

Scope: Intersection and median island modifications.

Limits: Intersection of Storke Avenue and Santa Felicia Drive

Estimate Type: Planning (City) Estimate Date: 16-Jan-26

Working Days: 60

		Current Year Costs		Section	
Earthwork	$	36,500	+	1	
Pavement Structural Section	$	36,300	+	2	
Drainage	$	-	+	3	
Specialty Items	$	-	+	4	
Environmental	$	-	+	5	
Traffic Items	$	30,000	+	6	
Minor Items	$	20,600	+	7	
Roadway Mobilization	$	12,400	+	8	
Roadway Contingency	$	27,200	+	9	
TOTAL ROADWAY COST	$	163,000	=		
TOTAL STRUCTURES COST	$	-	+	10	
TOTAL CONSTRUCTION COST	**$**	**163,000**	=		
TOTAL RIGHT OF WAY COST	**$**	**-**	=	11	
Management Support	$	16,300	+	10%	of Construction Costs
PA&ED Support	$	16,300	+	10%	
PS&E Support	$	24,500	+	15%	
Right of Way Support	$	3,300	+	2%	
Construction Support	$	26,100	+	16%	
Support Contingency	$	17,300	+	20%	of Support Costs
TOTAL SUPPORT COST	**$**	**104,000**	=		

Total Estimated Project Costs: $ 270,000 **Check Status**

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-32 New Intersection Control - Storke Avenue / Santa Felicia Drive

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	111	x	328.52	= $	36,466	2
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY		x		= $	-	
Structure Excavation (Retaining Wall)	CY		x		= $	-	
Structure Backfill (Retaining Wall)	CY		x		= $	-	
Clearing & Grubbing	LS		x		= $	-	
				TOTAL EARTHWORK SECTION ITEMS		**$**	**36,500**

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN		x		= $	-	
Class 2 Aggregate Base	CY		x		= $	-	
Slurry Seal	TN		x		= $	-	
Minor Concrete (Miscellaneous Construction)	CY	14	x	2,591.04	= $	36,275	3
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$**	**36,300**

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY		x		= $	-	
Reinforced Concrete Pipe	LF		x		= $	-	
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$**	**-**

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF		x		= $	-	
Chain Link Fence	LF		x		= $	-	
Midwest Guardrail System (Wood Post)	LF		x		= $	-	
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF		x		= $	-	
Structural Concrete, Retaining Wall	CY		x		= $	-	
				TOTAL SPECIALTY ITEMS		**$**	**-**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-32 New Intersection Control - Storke Avenue / Santa Felicia Drive

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS		x		= $	-	
Highway Planting	LS		x		= $	-	
Irrigation System	LS		x		= $	-	
Plant Establishment Work	LS		x		= $	-	
Implement Erosion Control	LS		x		= $	-	
Prepare and Implement SWPPP / WPCP	LS		x		= $	-	
					TOTAL ENVIRONMENTAL	**$**	**-**

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS		x		= $	-	
Signal and Lighting	LS		x		= $	-	
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS		x		= $	-	
Furnish and Install Sign Structure	LS		x		= $	-	
CIDH Pile (Sign Foundation)	LS		x		= $	-	
Remove Sign Structure	LS		x		= $	-	
Permanent Pavement Delineation	LS	1	x	30,000	= $	30,000	1
					TOTAL TRAFFIC ITEMS	**$**	**30,000**

SECTION 7: MINOR ITEMS						Notes
Traffic Management Plan and Detours			5.0%	$	5,140	
Stage Construction and Traffic Handling			5.0%	$	5,140	
ADA Items			5.0%	$	5,140	
Other Minor Items			5.0%	$	5,140	
Total of Section 1-6	$	102,800	x 20.0%	= $	20,560	
			TOTAL MINOR ITEMS	**$**	**20,600**	

SECTIONS 8: MOBILIZATION						
Total Section 1-7	$	123,400	x 10%	= $	12,340	
			TOTAL MOBILIZATION	**$**	**12,400**	

SECTION 9: ROADWAY CONTINGENCY

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total Section 1-8	$	135,800	x 20%	= $	27,160	
			TOTAL CONTINGENCY	**$**	**27,200**	

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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-32 New Intersection Control - Storke Avenue / Santa Felicia Drive

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx
Structure Type	--Select Bridge Type--	--Select Bridge Type--	--Select Bridge Type--
Width (Feet) [out to out]	0 LF	0 LF	0 LF
Total Bridge Length	0 LF	0 LF	0 LF
Total Area (Square Feet)	0 SQFT	0 SQFT	0 SQFT
Complexity	5	5	5
Unusual Features	0	0	0
Cost Per Square Foot	$0	$0	$0
COST OF EACH BRIDGE	$ -	$ -	$ -

Name / ID	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx
Structure Type	--Select Bridge Type--	--Select Bridge Type--	--Select Bridge Type--
Width (Feet) [out to out]	0 LF	0 LF	0 LF
Total Bridge Length	0 LF	0 LF	0 LF
Total Area (Square Feet)	0 SQFT	0 SQFT	0 SQFT
Complexity	5	5	5
Unusual Features	0	0	0
Cost Per Square Foot	$0	$0	$0
COST OF EACH BRIDGE	$ -	$ -	$ -

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF		x		=	$	-	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	20%	x	0	=	$	-	
		TOTAL RIGHT OF WAY ESTIMATE					**$**	**-**

I-12-32 New Intersection Control - Storke Avenue / Santa Felicia Drive

NOTES AND CALCULATIONS

NOTE NO. 1

Pavement delineation

Cost	$30,000		**RESULT NO. 1**	**$30,000**

NOTE NO. 2

Roadway excavation

Area				
	3000	SF		
Depth				
	2.25	FT		
Volume				
	3000	CF		
	111	CY	**RESULT NO. 2**	**111**

NOTE NO. 3

A1-6 Curb

Length				
	400	LF		
Vol per foot				
	0.02585	CY/LF		
Volume				
	10	CY/LF		

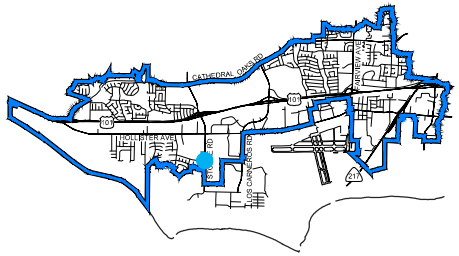
Island paving

Area				
	300	SF		
Depth				
	4	IN		
Volume				
	100	CF		
	4	CY		
TOTAL	14	CY	**RESULT NO. 3**	**14**

50' 0' 50' 100'
1 inch = 100 ft.

GOLETA TRANSPORTATION IMPROVEMENTS PROGRAM

Project I-12-32: Storke Road and Santa Felicia Drive Roundabout



Notes

1. Re-stripe Santa Felicia Drive for separate right-turn and left-turn lanes.
2. Construct landscaped median island with a receiving pocket for northbound Storke Road.

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Santa Barbara, CA 93103
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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-33 New Intersection Control - Hollister Avenue / Cathedral Oaks Avenue

Description: New simple single-lane roundabout.

Scope: Demolition; pavement structural section reconstruction; concrete curb, gutter, sidewalk, truck apron, etc.; drainage modifications; landscaping; right of way.

Limits: Intersection of Hollister Avenue and Catheral Oaks Avenue

Estimate Type: Planning (City) Estimate Date: 16-Apr-26

Working Days: 200

		Current Year Costs		Section		
Earthwork	$	758,900	+	1		
Pavement Structural Section	$	1,244,400	+	2		
Drainage	$	362,100	+	3		
Specialty Items	$	-	+	4		
Environmental	$	185,000	+	5		
Traffic Items	$	330,000	+	6		
Minor Items	$	547,300	+	7		
Roadway Mobilization	$	342,800	+	8		
Roadway Contingency	$	1,131,200	+	9		
TOTAL ROADWAY COST	$	4,901,700	=			
TOTAL STRUCTURES COST	$	-	+	10		
TOTAL CONSTRUCTION COST	**$**	**4,902,000**	=			
TOTAL RIGHT OF WAY COST	**$**	**1,230,000**	=	11		
Management Support	$	490,200	+	10%		
PA&ED Support	$	490,200	+	10%		
PS&E Support	$	735,300	+	15%		of Construction Costs
Right of Way Support	$	98,100	+	2%		
Construction Support	$	784,400	+	16%		
Support Contingency	$	519,700	+	20%		of Support Costs
TOTAL SUPPORT COST	**$**	**3,118,000**	=			

Total Estimated Project Costs: $ 9,250,000 ✗ Check Status

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-33 New Intersection Control - Hollister Avenue / Cathedral Oaks Avenue

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	3,565	x	110.00	= $	392,150	1
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY	741	x	90.00	= $	66,690	2
Structure Excavation (Retaining Wall)	CY		x		= $	-	
Structure Backfill (Retaining Wall)	CY		x		= $	-	
Clearing & Grubbing	LS	1	x	300,000	= $	300,000	
				TOTAL EARTHWORK SECTION ITEMS		**$ 758,900**	

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN	1,640	x	237.97	= $	390,271	3
Class 2 Aggregate Base	CY	194	x	295.45	= $	57,317	4
Slurry Seal	TN	5	x	3,507.95	= $	17,540	6
Minor Concrete (Miscellaneous Construction)	CY	547	x	1,424.58	= $	779,245	7,8,9
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$ 1,244,400**	

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY	24	x	2,900.00	= $	69,600	10
Reinforced Concrete Pipe	LF	1,500	x	195.00	= $	292,500	11
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$ 362,100**	

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF		x		= $	-	
Chain Link Fence	LF		x		= $	-	
Midwest Guardrail System (Wood Post)	LF		x		= $	-	
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF		x		= $	-	
Structural Concrete, Retaining Wall	CY		x		= $	-	
				TOTAL SPECIALTY ITEMS		**$ -**	

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-33 New Intersection Control - Hollister Avenue / Cathedral Oaks Avenue

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS	1	x		= $	-	
Highway Planting	LS	1	x	100,000	= $	100,000	
Irrigation System	LS	1	x	25,000	= $	25,000	
Plant Establishment Work	LS	1	x	20,000	= $	20,000	
Implement Erosion Control	LS	1	x	20,000	= $	20,000	
Prepare and Implement SWPPP / WPCP	LS	1	x	20,000	= $	20,000	
				TOTAL ENVIRONMENTAL		**$ 185,000**	

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS	1	x	250,000	= $	250,000	12
Signal and Lighting	LS		x		= $	-	
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS		x		= $	-	
Furnish and Install Sign Structure	LS		x		= $	-	
CIDH Pile (Sign Foundation)	LS		x		= $	-	
Remove Sign Structure	LS		x		= $	-	
Permanent Pavement Delineation	LS	1	x	80,000	= $	80,000	13
				TOTAL TRAFFIC ITEMS		**$ 330,000**	

SECTION 7: MINOR ITEMS							Notes
Traffic Management Plan and Detours				5.0%	$	144,020	
Stage Construction and Traffic Handling				6.0%	$	172,824	
ADA Items				2.0%	$	57,608	
Other Minor Items				6.0%	$	172,824	
Total of Section 1-6	$	2,880,400	x	19.0%	= $	547,276	
				TOTAL MINOR ITEMS		**$ 547,300**	

SECTIONS 8: MOBILIZATION							
Total Section 1-7	$	3,427,700	x	10%	= $	342,770	
				TOTAL MOBILIZATION		**$ 342,800**	

SECTION 9: ROADWAY CONTINGENCY

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total Section 1-8	$	3,770,500	x	30%	= $	1,131,150	
				TOTAL CONTINGENCY		**$ 1,131,200**	

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-33 New Intersection Control - Hollister Avenue / Cathedral Oaks Avenue

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF	2,500	x	250.00	=	$	625,000	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS	1	x	400,000	=	$	400,000	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	20%	x	1,025,000	=	$	205,000	
		TOTAL RIGHT OF WAY ESTIMATE					**$**	**1,230,000**

I-12-33 New Intersection Control - Hollister Avenue / Cathedral Oaks Avenue

NOTES AND CALCULATIONS

NOTE NO. 1

Number of intersection legs
4 legs
250 feet average approach length
200 feet average splitter island length

NOTE NO. 2

Roadway excavation area (within splitter islands)
35,000
Depth of AC
0.75
Depth of base
2.00
Roadway excavation = width * length * depth
96,250
3,565 **RESULT NO. 2** **3,565**

NOTE NO. 3

Import for landscape areas
10,000 SF
Depth
2.00 feet
Volume = width * length * depth
20,000 CF
741 CY **RESULT NO. 3** **741**

NOTE NO. 4

AC pavement area
3,500 SF
Depth of AC
0.75 feet
Volume = width * length * depth
2,625 CF

AC pavement area (approaches)
40,000
Depth of AC
0.50
Volume = width * length * depth
20,000 CF

Total
22,625 CF * 145 pounds/CF / 2,000 pounds/ton
1,640 TN **RESULT NO. 4** **1,640**

I-12-33 New Intersection Control - Hollister Avenue / Cathedral Oaks Avenue

NOTES AND CALCULATIONS

NOTE NO. 5

Aggregate base area in RAB
3,500 SF
Depth of base
1.50 feet
Volume = width * length * depth
5,250 CF

Aggregate base area in approaches
40,000 SF
Depth of base
1.00 feet
Volume = width * length * depth
40,000 CF

45,250 CF
194 CY **RESULT NO. 5** **194**

NOTE NO. 6

Approaches to project
Length (typ)
250 feet
Width
30 feet
Area
7,500 feet
Coverage rate
1,500 SF/TN
5 CY **RESULT NO. 6** **5**

NOTE NO. 7

New sidewalk length
200 feet At roundabout
2000 feet Approaches
2200 feet TOTAL
Sidewalk width (most of it is multi-use path)
10 feet
Sidewalk thickness
4 inches
Volume = Minor Concrete (Miscellaneous Construction)
7333 CF
272 CY **RESULT NO. 7** **272**

I-12-33 New Intersection Control - Hollister Avenue / Cathedral Oaks Avenue

NOTES AND CALCULATIONS

NOTE NO. 8

New Caltrans A1-6 curb at splitter islands
1600 feet Approaches
1600 feet TOTAL
Volume / foot
0.03 CY/foot
Volume = Minor Concrete (Miscellaneous Construction)
41 CY
New Caltrans A2-6 curb and gutter length
200 feet At roundabout
2000 feet Approaches
2200 feet TOTAL
Volume / foot
0.06 CY/foot
Volume = Minor Concrete (Miscellaneous Construction)
130 CY **RESULT NO. 8** **171**

NOTE NO. 9

Truck apron and misc
Truck apron (CAD)
2500 SF
Concrete thickness
9 inches
Volume = Minor Concrete (Miscellaneous Construction)
1875 CF
50% Additional for misc
2813 CF
104 CY **RESULT NO. 9** **104**

NOTE NO. 10

New drop inlets - assumed one each side of the road on each leg
8 each
Depth of drop inlets
5 feet
Drop inlet volume - Caltrans OL-10
Volume / foot
2.39 CY (3 feet deep)
0.28 CY/each additional foot of depth up to 8 feet
Volume = Minor Concrete (Minor Structure)
24 CY **RESULT NO. 10** **24**

NOTE NO. 11

Estimated length of RCP
1,500 feet **RESULT NO. 11** **1,500**

I-12-33 New Intersection Control - Hollister Avenue / Cathedral Oaks Avenue

NOTES AND CALCULATIONS

NOTE NO. 12

New street lights
12 each
Cost per street light
$ 30,000
Landscape lights
12 each
Cost per street light
$ 10,000
Total lights
$ 480,000
Connection
$ 25,000

RESULT NO. 12 **$ 505,000**

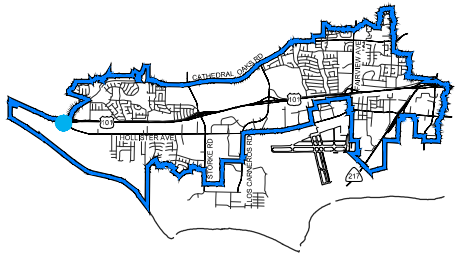
NOTE NO. 13

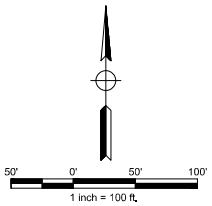
Pavement delineation and marking
$ 80,000

RESULT NO. 13 **80,000**

GOLETA TRANSPORTATION IMPROVEMENTS PROGRAM

Project I-12-33: Hollister Avenue and Cathedral Oaks Road Roundabout





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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-34 New Intersection Control - Hollister Avenue / Cortona Drive

Description: New traffic signal.

Scope: New traffic signal improvements.

Limits: Intersection of Hollister Avenue and Cortona Drive

Estimate Type: Planning (City) Estimate Date: 15-Jan-26

Working Days: 90

		Current Year Costs		Section	
Earthwork	$	-	+	1	
Pavement Structural Section	$	-	+	2	
Drainage	$	-	+	3	
Specialty Items	$	-	+	4	
Environmental	$	-	+	5	
Traffic Items	$	655,000	+	6	
Minor Items	$	131,000	+	7	
Roadway Mobilization	$	78,600	+	8	
Roadway Contingency	$	173,000	+	9	
TOTAL ROADWAY COST	$	1,037,600	=		
TOTAL STRUCTURES COST	$	-	+	10	
TOTAL CONSTRUCTION COST	**$**	**1,038,000**	=		
TOTAL RIGHT OF WAY COST	**$**	**-**	=	11	
Management Support	$	103,800	+	10%	of Construction Costs
PA&ED Support	$	103,800	+	10%	
PS&E Support	$	155,700	+	15%	
Right of Way Support	$	20,800	+	2%	
Construction Support	$	166,100	+	16%	
Support Contingency	$	110,100	+	20%	of Support Costs
TOTAL SUPPORT COST	**$**	**661,000**	=		

Total Estimated Project Costs: $ 1,700,000 ✗ **Check Status**

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-34 New Intersection Control - Hollister Avenue / Cortona Drive

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY		x	=	$	-	
Roadway Excavation (ADL)	CY		x	=	$	-	
Imported Borrow	CY		x	=	$	-	
Structure Excavation (Retaining Wall)	CY		x	=	$	-	
Structure Backfill (Retaining Wall)	CY		x	=	$	-	
Clearing & Grubbing	LS		x	=	$	-	
				TOTAL EARTHWORK SECTION ITEMS		**$**	**-**

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x	=	$	-	
Hot Mix Asphalt (Type A)	TN		x	=	$	-	
Class 2 Aggregate Base	CY		x	=	$	-	
Slurry Seal	TN		x	=	$	-	
Minor Concrete (Miscellaneous Construction)	CY		x	=	$	-	
Place Hot Mix Asphalt Dike	LF		x	=	$	-	
Cold Plane Asphalt Concrete Pavement	SY		x	=	$	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$**	**-**

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x	=	$	-	
Minor Concrete (Minor Structure)	CY		x	=	$	-	
Reinforced Concrete Pipe	LF		x	=	$	-	
Rock Slope Protection	CY		x	=	$	-	
Concrete (Ditch/Channel Lining)	CY		x	=	$	-	
				TOTAL DRAINAGE ITEMS		**$**	**-**

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x	=	$	-	
Remove Concrete Barrier	LF		x	=	$	-	
Remove Metal Beam Guard Railing	LF		x	=	$	-	
Chain Link Fence	LF		x	=	$	-	
Midwest Guardrail System (Wood Post)	LF		x	=	$	-	
Thrie Beam Barrier	LF		x	=	$	-	
Terminal System or Crash Cushion	EA		x	=	$	-	
Concrete Barrier (TYPE 60M)	LF		x	=	$	-	
Structural Concrete, Retaining Wall	CY		x	=	$	-	
				TOTAL SPECIALTY ITEMS		**$**	**-**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-34 New Intersection Control - Hollister Avenue / Cortona Drive

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS		x		= $	-	
Highway Planting	LS		x		= $	-	
Irrigation System	LS		x		= $	-	
Plant Establishment Work	LS		x		= $	-	
Implement Erosion Control	LS		x		= $	-	
Prepare and Implement SWPPP / WPCP	LS		x		= $	-	
				TOTAL ENVIRONMENTAL			**$ -**

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS		x		= $	-	
Signal and Lighting	LS	1	x	525,000	= $	525,000	1
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS	1	x	100,000	= $	100,000	
Furnish and Install Sign Structure	LS		x		= $	-	
CIDH Pile (Sign Foundation)	LS		x		= $	-	
Remove Sign Structure	LS		x		= $	-	
Permanent Pavement Delineation	LS	1	x	30,000	= $	30,000	2
				TOTAL TRAFFIC ITEMS			**$ 655,000**

SECTION 7: MINOR ITEMS							Notes
Traffic Management Plan and Detours				5.0%	$	32,750	
Stage Construction and Traffic Handling				5.0%	$	32,750	
ADA Items				5.0%	$	32,750	
Other Minor Items				5.0%	$	32,750	
Total of Section 1-6	$	655,000	x	20.0%	= $	131,000	
				TOTAL MINOR ITEMS			**$ 131,000**

SECTIONS 8: MOBILIZATION							
Total Section 1-7	$	786,000	x	10%	= $	78,600	
				TOTAL MOBILIZATION			**$ 78,600**

SECTION 9: ROADWAY CONTINGENCY							
Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)							
Total Section 1-8	$	864,600	x	20%	= $	172,920	
				TOTAL CONTINGENCY			**$ 173,000**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-34 New Intersection Control - Hollister Avenue / Cortona Drive

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx
Structure Type	--Select Bridge Type--	--Select Bridge Type--	--Select Bridge Type--
Width (Feet) [out to out]	0 LF	0 LF	0 LF
Total Bridge Length	0 LF	0 LF	0 LF
Total Area (Square Feet)	0 SQFT	0 SQFT	0 SQFT
Complexity	5	5	5
Unusual Features	0	0	0
Cost Per Square Foot	$0	$0	$0
COST OF EACH BRIDGE	$ -	$ -	$ -

Name / ID	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx
Structure Type	--Select Bridge Type--	--Select Bridge Type--	--Select Bridge Type--
Width (Feet) [out to out]	0 LF	0 LF	0 LF
Total Bridge Length	0 LF	0 LF	0 LF
Total Area (Square Feet)	0 SQFT	0 SQFT	0 SQFT
Complexity	5	5	5
Unusual Features	0	0	0
Cost Per Square Foot	$0	$0	$0
COST OF EACH BRIDGE	$ -	$ -	$ -

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF		x		=	$	-	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	20%	x	0	=	$	-	
		TOTAL RIGHT OF WAY ESTIMATE					**$**	**-**

I-12-34 New Intersection Control - Hollister Avenue / Cortona Drive

NOTES AND CALCULATIONS

NOTE NO. 1

Signal and Lighting

Scale:	Major
Legs:	3
Cost:	$525,000

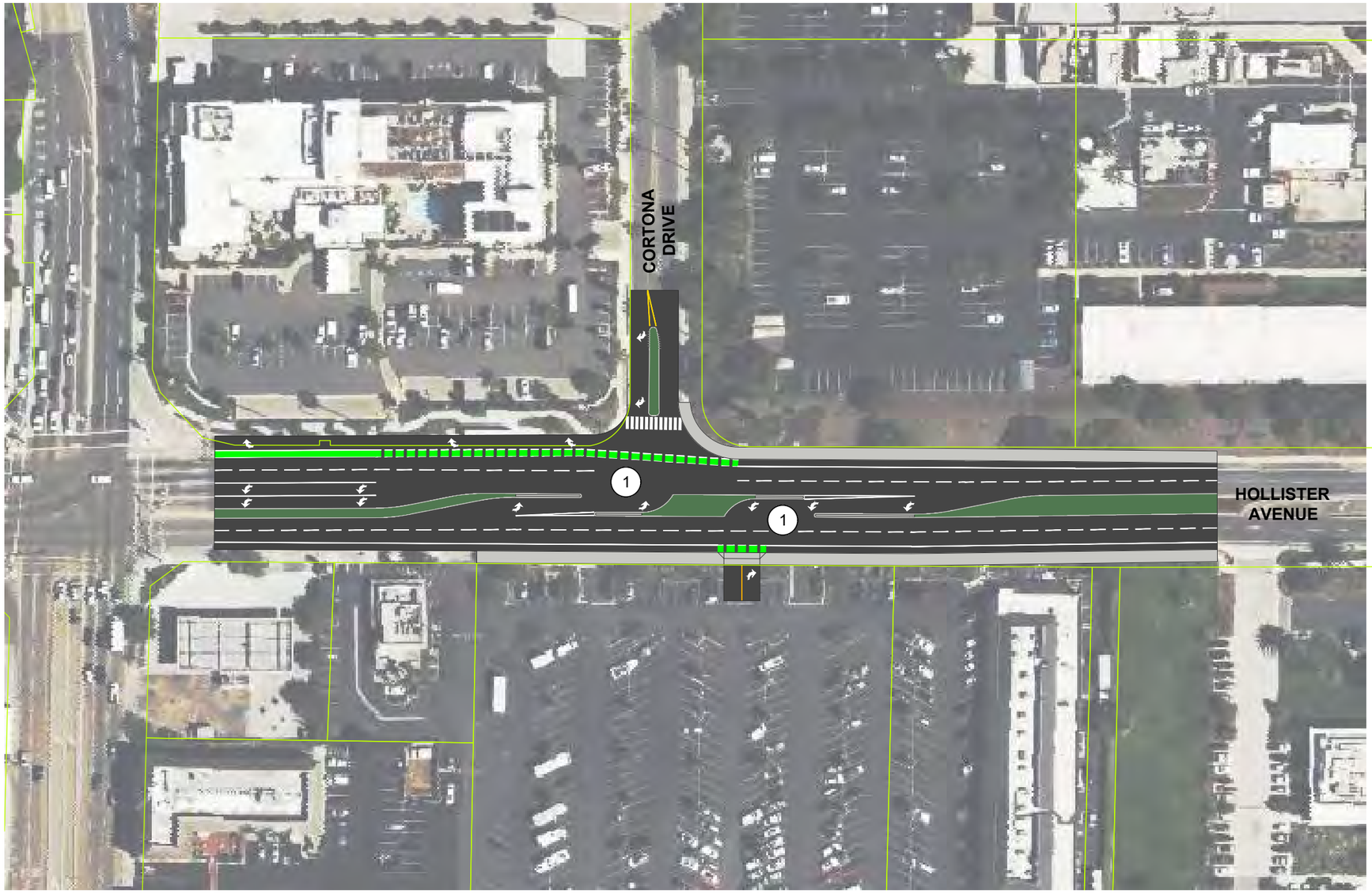
RESULT NO. 1 $525,000

NOTE NO. 2

Permanent Pavement Delineation

Cost	$30,000

RESULT NO. 2 $30,000



50' 0' 50' 100'

1 inch = 100 ft.

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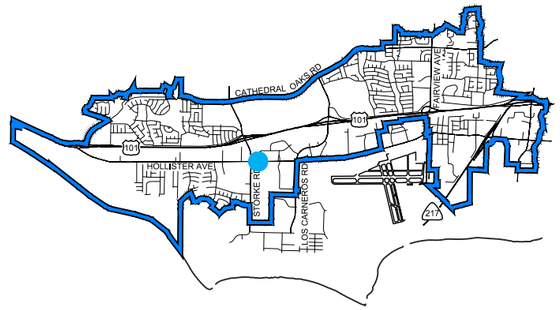
GOLETA TRANSPORTATION IMPROVEMENTS PROGRAM

Project I-12-34: Hollister Avenue and Cortona Drive



Notes

1. Construct landscape median islands to prohibit left-turn movements on to Hollister Avenue from Cortona Drive and the shopping area parking lot while allowing left-turn movements from Hollister to these areas.

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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-35 New Intersection Control - Cathedral Oaks Avenue / Glen Annie Road

Description: Modify traffic signal.
- New 200' long eastbound right-turn lane
- Extend northbound left -turn lane to 250' long.

Scope: New traffic signal improvements.

Limits: Intersection of Catheral Oaks Avenue and Glen Annie Road

Estimate Type: Planning (City) Estimate Date: 3-Apr-26

Working Days: 90

		Current Year Costs		Section	
Earthwork	$	91,200	+	1	
Pavement Structural Section	$	205,500	+	2	
Drainage	$	-	+	3	
Specialty Items	$	-	+	4	
Environmental	$	20,000	+	5	
Traffic Items	$	840,000	+	6	
Minor Items	$	231,400	+	7	
Roadway Mobilization	$	138,900	+	8	
Roadway Contingency	$	305,400	+	9	
TOTAL ROADWAY COST	$	1,832,400	=		
TOTAL STRUCTURES COST	$	-	+	10	
TOTAL CONSTRUCTION COST	**$**	**1,832,000**	=		
TOTAL RIGHT OF WAY COST	**$**	**-**	=	11	
Management Support	$	183,200	+	10%	of Construction Costs
PA&ED Support	$	183,200	+	10%	
PS&E Support	$	274,800	+	15%	
Right of Way Support	$	36,700	+	2%	
Construction Support	$	293,200	+	16%	
Support Contingency	$	194,300	+	20%	of Support Costs
TOTAL SUPPORT COST	**$**	**1,166,000**	=		

Total Estimated Project Costs: $ 3,000,000 ✗ Check Status

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-35 New Intersection Control - Cathedral Oaks Avenue / Glen Annie Road

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	311	x	228.81	= $	71,160	3
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY		x		= $	-	
Structure Excavation (Retaining Wall)	CY		x		= $	-	
Structure Backfill (Retaining Wall)	CY		x		= $	-	
Clearing & Grubbing	LS	1	x	20,000	= $	20,000	
				TOTAL EARTHWORK SECTION ITEMS		**$**	**91,200**

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN	261	x	418.28	= $	109,171	4
Class 2 Aggregate Base	CY	178	x	295.45	= $	52,590	5
Slurry Seal	TN		x		= $	-	
Minor Concrete (Miscellaneous Construction)	CY	36	x	1,212.77	= $	43,660	6
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$**	**205,500**

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY		x		= $	-	
Reinforced Concrete Pipe	LF		x		= $	-	
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$**	**-**

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF		x		= $	-	
Chain Link Fence	LF		x		= $	-	
Midwest Guardrail System (Wood Post)	LF		x		= $	-	
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF		x		= $	-	
Structural Concrete, Retaining Wall	CY		x		= $	-	
				TOTAL SPECIALTY ITEMS		**$**	**-**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-35 New Intersection Control - Cathedral Oaks Avenue / Glen Annie Road

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS		x		= $	-	
Highway Planting	LS		x		= $	-	
Irrigation System	LS		x		= $	-	
Plant Establishment Work	LS		x		= $	-	
Implement Erosion Control	LS	1	x	10,000	= $	10,000	
Prepare and Implement SWPPP / WPCP	LS	1	x	10,000	= $	10,000	
				TOTAL ENVIRONMENTAL		**$**	**20,000**

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS		x		= $	-	
Signal and Lighting	LS	1	x	700,000	= $	700,000	1
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS	1	x	100,000	= $	100,000	
Furnish and Install Sign Structure	LS		x		= $	-	
CIDH Pile (Sign Foundation)	LS		x		= $	-	
Remove Sign Structure	LS		x		= $	-	
Permanent Pavement Delineation	LS	1	x	40,000	= $	40,000	2
				TOTAL TRAFFIC ITEMS		**$**	**840,000**

SECTION 7: MINOR ITEMS							Notes
Traffic Management Plan and Detours				5.0%	$	57,835	
Stage Construction and Traffic Handling				5.0%	$	57,835	
ADA Items				5.0%	$	57,835	
Other Minor Items				5.0%	$	57,835	
Total of Section 1-6	$	1,156,700	x	20.0%	= $	231,340	
				TOTAL MINOR ITEMS		**$**	**231,400**

SECTIONS 8: MOBILIZATION							
Total Section 1-7	$	1,388,100	x	10%	= $	138,810	
				TOTAL MOBILIZATION		**$**	**138,900**

SECTION 9: ROADWAY CONTINGENCY

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total Section 1-8	$	1,527,000	x	20%	= $	305,400	
				TOTAL CONTINGENCY		**$**	**305,400**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-35 New Intersection Control - Cathedral Oaks Avenue / Glen Annie Road

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF		x		=	$	-	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	20%	x	0	=	$	-	
		TOTAL RIGHT OF WAY ESTIMATE					**$**	**-**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-35 New Intersection Control - Cathedral Oaks Avenue / Glen Annie Road

NOTES AND CALCULATIONS

NOTE NO. 1

Signal and Lighting

Scale:	Major		
Legs:	4		
Cost:	$700,000	**RESULT NO. 1**	$700,000

NOTE NO. 2

Permanent Pavement Delineation

Cost	$40,000	**RESULT NO. 2**	$40,000

NOTE NO. 3

Roadway excavation area (to add turning lanes)

12	LF	Width (both legs)
200	LF	Length Cathedral Oaks
200	LF	Length Glen Annie
4,800	SF	

Depth of AC

0.75

Depth of base

1.00

Roadway excavation = width * length * depth

8,400

311 **RESULT NO. 3** **311**

NOTE NO. 4

AC pavement area

12	LF	Width
200	LF	Length Cathedral Oaks
200	LF	Length Glen Annie
4,800	SF	

Depth of AC

0.75 feet

Volume = width * length * depth

3,600 CF * 145 pounds/CF / 2,000 pounds/ton

261 TN **RESULT NO. 4** **261**

NOTE NO. 5

Aggregate base area

12	LF	Width
200	LF	Length Cathedral Oaks
200	LF	Length Glen Annie
4,800	SF	

Depth of AB

1.00 feet

Volume = width * length * depth

4,800 CF

178 CY **RESULT NO. 5** **178**

I-12-35 New Intersection Control - Cathedral Oaks Avenue / Glen Annie Road

NOTES AND CALCULATIONS

NOTE NO. 6

New Caltrans A2-6 curb

200	LF	Length Cathedral Oaks
200	LF	Length Glen Annie
400	LF	TOTAL

Volume / foot

0.06	CY/foot

Volume = Minor Concrete (Miscellaneous Construction)

24	CY

New sidewalk

200	LF	Length Cathedral Oaks
5	LF	Width
1000	SF	TOTAL

Volume / foot

0.01	CY/SF

TOTAL Volume = Minor Concrete (Miscellaneous Construction)

12	CY	**RESULT NO. 6**	**36**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-35 New Intersection Control - Cathedral Oaks Avenue / Glen Annie Road

Description: New simple single-lane roundabout.

Scope: Demolition; pavement structural section reconstruction; concrete curb, gutter, sidewalk, truck apron, etc.; drainage modifications; landscaping; right of way.

Limits: Intersection of Catheral Oaks Avenue and Glen Annie Road

Estimate Type: Planning (City) Estimate Date: 20-Jan-26

Working Days: 200

		Current Year Costs		Section	
Earthwork	$	758,900	+	1	
Pavement Structural Section	$	1,244,400	+	2	
Drainage	$	362,100	+	3	
Specialty Items	$	-	+	4	
Environmental	$	185,000	+	5	
Traffic Items	$	330,000	+	6	
Minor Items	$	547,300	+	7	
Roadway Mobilization	$	342,800	+	8	
Roadway Contingency	$	1,131,200	+	9	
TOTAL ROADWAY COST	$	4,901,700	=		
TOTAL STRUCTURES COST	$	-	+	10	
TOTAL CONSTRUCTION COST	**$**	**4,902,000**	=		
TOTAL RIGHT OF WAY COST	**$**	**750,000**	=	11	
Management Support	$	490,200	+	10%	of Construction Costs
PA&ED Support	$	490,200	+	10%	
PS&E Support	$	735,300	+	15%	
Right of Way Support	$	98,100	+	2%	
Construction Support	$	784,400	+	16%	
Support Contingency	$	519,700	+	20%	of Support Costs
TOTAL SUPPORT COST	**$**	**3,118,000**	=		

Total Estimated Project Costs: $ 8,800,000 ✖ Check Status

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-35 New Intersection Control - Cathedral Oaks Avenue / Glen Annie Road

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	3,565	x	110.00	= $	392,150	1
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY	741	x	90.00	= $	66,690	2
Structure Excavation (Retaining Wall)	CY		x		= $	-	
Structure Backfill (Retaining Wall)	CY		x		= $	-	
Clearing & Grubbing	LS	1	x	300,000	= $	300,000	
				TOTAL EARTHWORK SECTION ITEMS		**$ 758,900**	

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN	1,640	x	237.97	= $	390,271	3
Class 2 Aggregate Base	CY	194	x	295.45	= $	57,317	4
Slurry Seal	TN	5	x	3,507.95	= $	17,540	6
Minor Concrete (Miscellaneous Construction)	CY	547	x	1,424.58	= $	779,245	7,8,9
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$ 1,244,400**	

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY	24	x	2,900.00	= $	69,600	10
Reinforced Concrete Pipe	LF	1,500	x	195.00	= $	292,500	11
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$ 362,100**	

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF		x		= $	-	
Chain Link Fence	LF		x		= $	-	
Midwest Guardrail System (Wood Post)	LF		x		= $	-	
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF		x		= $	-	
Structural Concrete, Retaining Wall	CY		x		= $	-	
				TOTAL SPECIALTY ITEMS		**$ -**	

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-35 New Intersection Control - Cathedral Oaks Avenue / Glen Annie Road

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS	1	x		= $	-	
Highway Planting	LS	1	x	100,000	= $	100,000	
Irrigation System	LS	1	x	25,000	= $	25,000	
Plant Establishment Work	LS	1	x	20,000	= $	20,000	
Implement Erosion Control	LS	1	x	20,000	= $	20,000	
Prepare and Implement SWPPP / WPCP	LS	1	x	20,000	= $	20,000	
				TOTAL ENVIRONMENTAL		**$ 185,000**	

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS	1	x	250,000	= $	250,000	12
Signal and Lighting	LS		x		= $	-	
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS		x		= $	-	
Furnish and Install Sign Structure	LS		x		= $	-	
CIDH Pile (Sign Foundation)	LS		x		= $	-	
Remove Sign Structure	LS		x		= $	-	
Permanent Pavement Delineation	LS	1	x	80,000	= $	80,000	13
				TOTAL TRAFFIC ITEMS		**$ 330,000**	

SECTION 7: MINOR ITEMS							Notes
Traffic Management Plan and Detours				5.0%	$	144,020	
Stage Construction and Traffic Handling				6.0%	$	172,824	
ADA Items				2.0%	$	57,608	
Other Minor Items				6.0%	$	172,824	
Total of Section 1-6	$	2,880,400	x	19.0%	= $	547,276	
				TOTAL MINOR ITEMS		**$ 547,300**	

SECTIONS 8: MOBILIZATION							
Total Section 1-7	$	3,427,700	x	10%	= $	342,770	
				TOTAL MOBILIZATION		**$ 342,800**	

SECTION 9: ROADWAY CONTINGENCY

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total Section 1-8	$	3,770,500	x	30%	= $	1,131,150	
				TOTAL CONTINGENCY		**$ 1,131,200**	

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-35 New Intersection Control - Cathedral Oaks Avenue / Glen Annie Road

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF	2,000	x	250.00	=	$	500,000	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	50%	x	500,000	=	$	250,000	
		TOTAL RIGHT OF WAY ESTIMATE					**$**	**750,000**

I-12-35 New Intersection Control - Cathedral Oaks Avenue / Glen Annie Road

NOTES AND CALCULATIONS

NOTE NO. 1

Number of intersection legs
4 legs
250 feet average approach length
200 feet average splitter island length

NOTE NO. 2

Roadway excavation area (within splitter islands)
35,000
Depth of AC
0.75
Depth of base
2.00
Roadway excavation = width * length * depth
96,250
3,565 **RESULT NO. 2** **3,565**

NOTE NO. 3

Import for landscape areas
10,000 SF
Depth
2.00 feet
Volume = width * length * depth
20,000 CF
741 CY **RESULT NO. 3** **741**

NOTE NO. 4

AC pavement area
3,500 SF
Depth of AC
0.75 feet
Volume = width * length * depth
2,625 CF

AC pavement area (approaches)
40,000
Depth of AC
0.50
Volume = width * length * depth
20,000 CF

Total
22,625 CF * 145 pounds/CF / 2,000 pounds/ton
1,640 TN **RESULT NO. 4** **1,640**

I-12-35 New Intersection Control - Cathedral Oaks Avenue / Glen Annie Road

NOTES AND CALCULATIONS

NOTE NO. 5

Aggregate base area in RAB
3,500 SF
Depth of base
1.50 feet
Volume = width * length * depth
5,250 CF

Aggregate base area in approaches
40,000 SF
Depth of base
1.00 feet
Volume = width * length * depth
40,000 CF

45,250 CF
194 CY **RESULT NO. 5** **194**

NOTE NO. 6

Approaches to project
Length (typ)
250 feet
Width
30 feet
Area
7,500 feet
Coverage rate
1,500 SF/TN
5 CY **RESULT NO. 6** **5**

NOTE NO. 7

New sidewalk length
200 feet At roundabout
2000 feet Approaches
2200 feet TOTAL
Sidewalk width (most of it is multi-use path)
10 feet
Sidewalk thickness
4 inches
Volume = Minor Concrete (Miscellaneous Construction)
7333 CF
272 CY **RESULT NO. 7** **272**

I-12-35 New Intersection Control - Cathedral Oaks Avenue / Glen Annie Road

NOTES AND CALCULATIONS

NOTE NO. 8

New Caltrans A1-6 curb at splitter islands
1600 feet Approaches
1600 feet TOTAL
Volume / foot
0.03 CY/foot
Volume = Minor Concrete (Miscellaneous Construction)
41 CY
New Caltrans A2-6 curb and gutter length
200 feet At roundabout
2000 feet Approaches
2200 feet TOTAL
Volume / foot
0.06 CY/foot
Volume = Minor Concrete (Miscellaneous Construction)
130 CY **RESULT NO. 8** **171**

NOTE NO. 9

Truck apron and misc
Truck apron (CAD)
2500 SF
Concrete thickness
9 inches
Volume = Minor Concrete (Miscellaneous Construction)
1875 CF
50% Additional for misc
2813 CF
104 CY **RESULT NO. 9** **104**

NOTE NO. 10

New drop inlets - assumed one each side of the road on each leg
8 each
Depth of drop inlets
5 feet
Drop inlet volume - Caltrans OL-10
Volume / foot
2.39 CY (3 feet deep)
0.28 CY/each additional foot of depth up to 8 feet
Volume = Minor Concrete (Minor Structure)
24 CY **RESULT NO. 10** **24**

NOTE NO. 11

Estimated length of RCP
1,500 feet **RESULT NO. 11** **1,500**

I-12-35 New Intersection Control - Cathedral Oaks Avenue / Glen Annie Road

NOTES AND CALCULATIONS

NOTE NO. 12

New street lights
12 each
Cost per street light
$ 30,000
Landscape lights
12 each
Cost per street light
$ 10,000
Total lights
$ 480,000
Connection
$ 25,000

RESULT NO. 12 **$ 505,000**

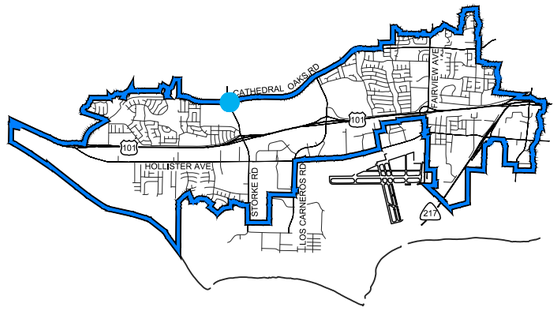
NOTE NO. 13

Pavement delineation and marking
$ 80,000

RESULT NO. 13 **80,000**

GOLETA TRANSPORTATION IMPROVEMENTS PROGRAM

Project I-12-35: Glen Annie Road at Cathedral Oaks Road Improvements



50' 0' 50' 100'
1 inch = 100 ft.

Notes

1. New 200' long eastbound right-turn lane.
2. Extend northbound left-turn lane to 250' long

MNS
201 N. Calle Cesar Chavez, Suite 300
Santa Barbara, CA 93103
805-692-6921 | www.mnsengineers.com

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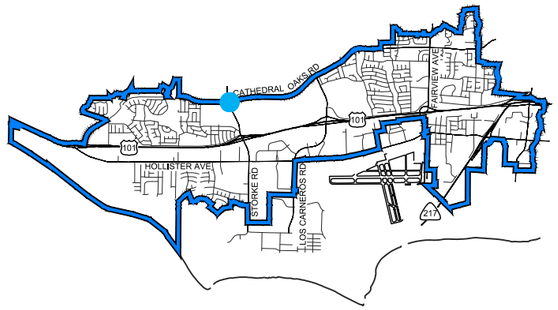
GOLETA TRANSPORTATION
IMPROVEMENTS PROGRAM

Project I-12-35: Glen Annie Road at Cathedral Oaks Road Roundabout



50' 0' 50' 100'
1 inch = 100 ft.

MNS
201 N. Calle Cesar Chavez, Suite 300
Santa Barbara, CA 93103
805-692-6921 | www.mnsengineers.com

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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-36 New Intersection Control - Cathedral Oaks Avenue / Alameda Avenue

Description: Modify traffic signal. Add fourth leg.

Scope: New traffic signal improvements.

Limits: Intersection of Catheral Oaks Avenue and Alameda Avenue

Estimate Type: Planning (City) Estimate Date: 3-Apr-26

Working Days: 90

		Current Year Costs		Section	
Earthwork	$	55,700	+	1	
Pavement Structural Section	$	130,200	+	2	
Drainage	$	-	+	3	
Specialty Items	$	-	+	4	
Environmental	$	20,000	+	5	
Traffic Items	$	840,000	+	6	
Minor Items	$	209,200	+	7	
Roadway Mobilization	$	125,600	+	8	
Roadway Contingency	$	276,200	+	9	
TOTAL ROADWAY COST	$	1,656,900	=		
TOTAL STRUCTURES COST	$	-	+	10	
TOTAL CONSTRUCTION COST	**$**	**1,657,000**	=		
TOTAL RIGHT OF WAY COST	**$**	**-**	=	11	
Management Support	$	165,700	+	10%	of Construction Costs
PA&ED Support	$	165,700	+	10%	
PS&E Support	$	248,600	+	15%	
Right of Way Support	$	33,200	+	2%	
Construction Support	$	265,200	+	16%	
Support Contingency	$	175,700	+	20%	of Support Costs
TOTAL SUPPORT COST	**$**	**1,055,000**	=		

Total Estimated Project Costs: $ 2,720,000 ✖ **Check Status**

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-36 New Intersection Control - Cathedral Oaks Avenue / Alameda Avenue

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	156	x	228.81	= $	35,694	3
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY		x		= $	-	
Structure Excavation (Retaining Wall)	CY		x		= $	-	
Structure Backfill (Retaining Wall)	CY		x		= $	-	
Clearing & Grubbing	LS	1	x	20,000	= $	20,000	
				TOTAL EARTHWORK SECTION ITEMS		**$**	**55,700**

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN	87	x	733.24	= $	63,792	4
Class 2 Aggregate Base	CY	59	x	334.98	= $	19,764	5
Slurry Seal	TN		x		= $	-	
Minor Concrete (Miscellaneous Construction)	CY	18	x	2,591.04	= $	46,639	6
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$**	**130,200**

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY		x		= $	-	
Reinforced Concrete Pipe	LF		x		= $	-	
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$**	**-**

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF		x		= $	-	
Chain Link Fence	LF		x		= $	-	
Midwest Guardrail System (Wood Post)	LF		x		= $	-	
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF		x		= $	-	
Structural Concrete, Retaining Wall	CY		x		= $	-	
				TOTAL SPECIALTY ITEMS		**$**	**-**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-36 New Intersection Control - Cathedral Oaks Avenue / Alameda Avenue

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS		x		= $	-	
Highway Planting	LS		x		= $	-	
Irrigation System	LS		x		= $	-	
Plant Establishment Work	LS		x		= $	-	
Implement Erosion Control	LS	1	x	10,000	= $	10,000	
Prepare and Implement SWPPP / WPCP	LS	1	x	10,000	= $	10,000	
				TOTAL ENVIRONMENTAL		**$**	**20,000**

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS		x		= $	-	
Signal and Lighting	LS	1	x	700,000	= $	700,000	1
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS	1	x	100,000	= $	100,000	
Furnish and Install Sign Structure	LS		x		= $	-	
CIDH Pile (Sign Foundation)	LS		x		= $	-	
Remove Sign Structure	LS		x		= $	-	
Permanent Pavement Delineation	LS	1	x	40,000	= $	40,000	2
				TOTAL TRAFFIC ITEMS		**$**	**840,000**

SECTION 7: MINOR ITEMS							Notes
Traffic Management Plan and Detours				5.0%	$	52,295	
Stage Construction and Traffic Handling				5.0%	$	52,295	
ADA Items				5.0%	$	52,295	
Other Minor Items				5.0%	$	52,295	
Total of Section 1-6	$	1,045,900	x	20.0%	= $	209,180	
				TOTAL MINOR ITEMS		**$**	**209,200**

SECTIONS 8: MOBILIZATION							
Total Section 1-7	$	1,255,100	x	10%	= $	125,510	
				TOTAL MOBILIZATION		**$**	**125,600**

SECTION 9: ROADWAY CONTINGENCY							
Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)							
Total Section 1-8	$	1,380,700	x	20%	= $	276,140	
				TOTAL CONTINGENCY		**$**	**276,200**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-36 New Intersection Control - Cathedral Oaks Avenue / Alameda Avenue

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF		x		=	$	-	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	20%	x	0	=	$	-	
		TOTAL RIGHT OF WAY ESTIMATE					**$**	**-**

I-12-36 New Intersection Control - Cathedral Oaks Avenue / Alameda Avenue

NOTES AND CALCULATIONS

NOTE NO. 1

Signal and Lighting
Scale: Major
Legs: 4
Cost: $700,000

RESULT NO. 1 $700,000

NOTE NO. 2

Permanent Pavement Delineation
Cost $40,000

RESULT NO. 2 $40,000

NOTE NO. 3

Roadway excavation area (to add turning lanes)
60 LF Width
40 LF Length
2,400 SF
Depth of AC
0.75
Depth of base
1.00
Roadway excavation = width * length * depth
4,200
156

RESULT NO. 3 **156**

NOTE NO. 4

AC pavement area
40 LF Width
40 LF Length
1,600 SF
Depth of AC
0.75 feet
Volume = width * length * depth
1,200 CF * 145 pounds/CF / 2,000 pounds/ton
87 TN

RESULT NO. 4 **87**

NOTE NO. 5

Aggregate base area
40 LF Width
40 LF Length
1,600 SF
Depth of AB
1.00 feet
Volume = width * length * depth
1,600 CF
59 CY

RESULT NO. 5 **59**

I-12-36 New Intersection Control - Cathedral Oaks Avenue / Alameda Avenue

NOTES AND CALCULATIONS

NOTE NO. 6

New Caltrans A2-6 curb
100 LF Lengt TOTAL
Volume / foot
0.06 CY/foot
Volume = Minor Concrete (Miscellaneous Construction)
6 CY
New sidewalk
100 LF Length Cathedral Oaks
10 LF Width
1000 SF TOTAL
Volume / foot
0.01 CY/SF
TOTAL Volume = Minor Concrete (Miscellaneous Construction)
12 CY **RESULT NO. 6** **18**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-36 New Intersection Control - Cathedral Oaks Avenue / Alameda Avenue

Description: New simple single-lane roundabout.

Scope: Demolition; pavement structural section reconstruction; concrete curb, gutter, sidewalk, truck apron, etc.; drainage modifications; landscaping; right of way.

Limits: Intersection of Catheral Oaks Avenue and Alameda Avenue

Estimate Type: Planning (City) Estimate Date: 20-Jan-26

Working Days: 200

		Current Year Costs		Section		
Earthwork	$	769,400	+	1		
Pavement Structural Section	$	1,038,600	+	2		
Drainage	$	344,700	+	3		
Specialty Items	$	-	+	4		
Environmental	$	185,000	+	5		
Traffic Items	$	310,000	+	6		
Minor Items	$	503,100	+	7		
Roadway Mobilization	$	315,100	+	8		
Roadway Contingency	$	1,039,800	+	9		
TOTAL ROADWAY COST	$	4,505,700	=			
TOTAL STRUCTURES COST	$	-	+	10		
TOTAL CONSTRUCTION COST	**$**	**4,506,000**	=			
TOTAL RIGHT OF WAY COST	**$**	**1,875,000**	=	11		
Management Support	$	450,600	+	10%		
PA&ED Support	$	450,600	+	10%		of Construction Costs
PS&E Support	$	675,900	+	15%		
Right of Way Support	$	90,200	+	2%		
Construction Support	$	721,000	+	16%		
Support Contingency	$	477,700	+	20%		of Support Costs
TOTAL SUPPORT COST	**$**	**2,866,000**	=			

Total Estimated Project Costs: $ 9,250,000 ✖ **Check Status**

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-36 New Intersection Control - Cathedral Oaks Avenue / Alameda Avenue

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	2,674	x	160.00	= $	427,840	1
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY	1,037	x	40.00	= $	41,480	2
Structure Excavation (Retaining Wall)	CY		x		= $	-	
Structure Backfill (Retaining Wall)	CY		x		= $	-	
Clearing & Grubbing	LS	1	x	300,000	= $	300,000	
				TOTAL EARTHWORK SECTION ITEMS		**$ 769,400**	

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN	1,278	x	237.97	= $	304,126	3
Class 2 Aggregate Base	CY	194	x	295.45	= $	57,317	4
Slurry Seal	TN	5	x	3,507.95	= $	17,540	6
Minor Concrete (Miscellaneous Construction)	CY	463	x	1,424.58	= $	659,581	7,8,9
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$ 1,038,600**	

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY	18	x	2,900.00	= $	52,200	10
Reinforced Concrete Pipe	LF	1,500	x	195.00	= $	292,500	11
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$ 344,700**	

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF		x		= $	-	
Chain Link Fence	LF		x		= $	-	
Midwest Guardrail System (Wood Post)	LF		x		= $	-	
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF		x		= $	-	
Structural Concrete, Retaining Wall	CY		x		= $	-	
				TOTAL SPECIALTY ITEMS		**$ -**	

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-36 New Intersection Control - Cathedral Oaks Avenue / Alameda Avenue

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS	1	x		= $	-	
Highway Planting	LS	1	x	100,000	= $	100,000	
Irrigation System	LS	1	x	25,000	= $	25,000	
Plant Establishment Work	LS	1	x	20,000	= $	20,000	
Implement Erosion Control	LS	1	x	20,000	= $	20,000	
Prepare and Implement SWPPP / WPCP	LS	1	x	20,000	= $	20,000	
				TOTAL ENVIRONMENTAL		**$ 185,000**	

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS	1	x	250,000	= $	250,000	12
Signal and Lighting	LS		x		= $	-	
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS		x		= $	-	
Furnish and Install Sign Structure	LS		x		= $	-	
CIDH Pile (Sign Foundation)	LS		x		= $	-	
Remove Sign Structure	LS		x		= $	-	
Permanent Pavement Delineation	LS	1	x	60,000	= $	60,000	13
				TOTAL TRAFFIC ITEMS		**$ 310,000**	

SECTION 7: MINOR ITEMS							Notes
Traffic Management Plan and Detours				5.0%	$	132,385	
Stage Construction and Traffic Handling				6.0%	$	158,862	
ADA Items				2.0%	$	52,954	
Other Minor Items				6.0%	$	158,862	
Total of Section 1-6	$	2,647,700	x	19.0%	= $	503,063	
				TOTAL MINOR ITEMS		**$ 503,100**	

SECTIONS 8: MOBILIZATION							
Total Section 1-7	$	3,150,800	x	10%	= $	315,080	
				TOTAL MOBILIZATION		**$ 315,100**	

SECTION 9: ROADWAY CONTINGENCY							
Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)							
Total Section 1-8	$	3,465,900	x	30%	= $	1,039,770	
				TOTAL CONTINGENCY		**$ 1,039,800**	

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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-12-36 New Intersection Control - Cathedral Oaks Avenue / Alameda Avenue

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF	5,000	x	250.00	=	$	1,250,000	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	50%	x	1,250,000	=	$	625,000	
		TOTAL RIGHT OF WAY ESTIMATE					**$**	**1,875,000**

I-12-36 New Intersection Control - Cathedral Oaks Avenue / Alameda Avenue

NOTES AND CALCULATIONS

NOTE NO. 1

Number of intersection legs
3 legs
250 feet average approach length
200 feet average splitter island length

NOTE NO. 2

Roadway excavation area (within splitter islands)
26,250
Depth of AC
0.75
Depth of base
2.00
Roadway excavation = width * length * depth
72,188
2,674 **RESULT NO. 2** **2,674**

NOTE NO. 3

Import for landscape areas
14,000 SF
Depth
2.00 feet
Volume = width * length * depth
28,000 CF
1,037 CY **RESULT NO. 3** **1,037**

NOTE NO. 4

AC pavement area
3,500 SF
Depth of AC
0.75 feet
Volume = width * length * depth
2,625 CF

AC pavement area (approaches)
30,000
Depth of AC
0.50
Volume = width * length * depth
15,000 CF

Total
17,625 CF * 145 pounds/CF / 2,000 pounds/ton
1,278 TN **RESULT NO. 4** **1,278**

I-12-36 New Intersection Control - Cathedral Oaks Avenue / Alameda Avenue

NOTES AND CALCULATIONS

NOTE NO. 5

Aggregate base area in RAB
3,500 SF
Depth of base
1.50 feet
Volume = width * length * depth
5,250 CF

Aggregate base area in approaches
30,000 SF
Depth of base
1.00 feet
Volume = width * length * depth
30,000 CF

35,250 CF
194 CY **RESULT NO. 5** **194**

NOTE NO. 6

Approaches to project
Length (typ)
250 feet
Width
30 feet
Area
7,500 feet
Coverage rate
1,500 SF/TN
5 CY **RESULT NO. 6** **5**

NOTE NO. 7

New sidewalk length
250 feet At roundabout
1500 feet Approaches
1750 feet TOTAL
Sidewalk width (most of it is multi-use path)
10 feet
Sidewalk thickness
4 inches
Volume = Minor Concrete (Miscellaneous Construction)
5833 CF
216 CY **RESULT NO. 7** **216**

I-12-36 New Intersection Control - Cathedral Oaks Avenue / Alameda Avenue

NOTES AND CALCULATIONS

NOTE NO. 8

New Caltrans A1-6 curb at splitter islands
1200 feet Approaches
1200 feet TOTAL
Volume / foot
0.03 CY/foot
Volume = Minor Concrete (Miscellaneous Construction)
31 CY
New Caltrans A2-6 curb and gutter length
400 feet At roundabout
1500 feet Approaches
1900 feet TOTAL
Volume / foot
0.06 CY/foot
Volume = Minor Concrete (Miscellaneous Construction)
112 CY **RESULT NO. 8** **143**

NOTE NO. 9

Truck apron and misc
Truck apron (CAD)
2500 SF
Concrete thickness
9 inches
Volume = Minor Concrete (Miscellaneous Construction)
1875 CF
50% Additional for misc
2813 CF
104 CY **RESULT NO. 9** **104**

NOTE NO. 10

New drop inlets - assumed one each side of the road on each leg
6 each
Depth of drop inlets
5 feet
Drop inlet volume - Caltrans OL-10
Volume / foot
2.39 CY (3 feet deep)
0.28 CY/each additional foot of depth up to 8 feet
Volume = Minor Concrete (Minor Structure)
18 CY **RESULT NO. 10** **18**

NOTE NO. 11

Estimated length of RCP
1,500 feet **RESULT NO. 11** **1,500**

I-12-36 New Intersection Control - Cathedral Oaks Avenue / Alameda Avenue

NOTES AND CALCULATIONS

NOTE NO. 12

New street lights
9 each
Cost per street light
$ 30,000
Landscape lights
12 each
Cost per street light
$ 10,000
Total lights
$ 390,000
Connection
$ 25,000

RESULT NO. 12 **$ 415,000**

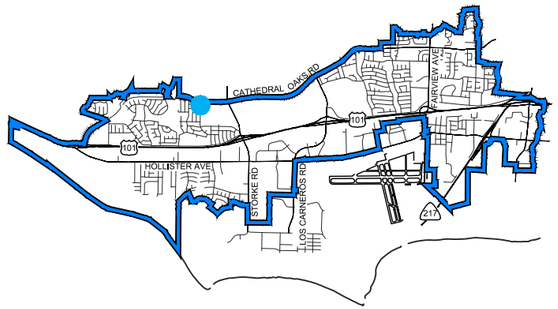
NOTE NO. 13

Pavement delineation and marking
$ 60,000

RESULT NO. 13 **60,000**

GOLETA TRANSPORTATION
IMPROVEMENTS PROGRAM

Project I-12-36: Alameda Avenue at Cathedral Oaks Road Improvements



50' 0' 50' 100'
1 inch = 100 ft.

MNS
201 N. Calle Cesar Chavez, Suite 300
Santa Barbara, CA 93103
805-692-6921 | www.mnsengineers.com

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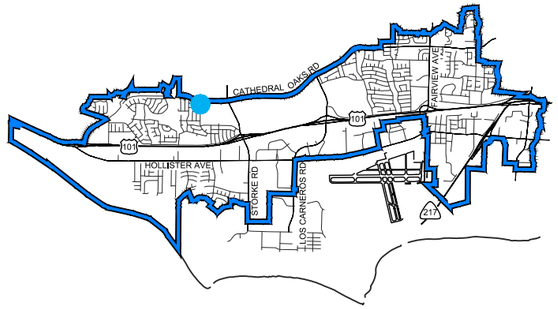
GOLETA TRANSPORTATION
IMPROVEMENTS PROGRAM

Project I-12-36: Alameda Avenue at Cathedral Oaks Road Roundabout



50' 0' 50' 100'
1 inch = 100 ft.

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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-18 Stork Road at US 101 Southbound Ramps

Description: Additional second dedicated right turn lane on Storke Road Right US 101 southbound on-ramp. Currently 1 through lane; 1 through and right turn lane; 1 right turn lane.
• Additional Storke Road NB right turn lane onto US 101 SB on-ramp.
• Widen OH structure to accomodate Class I facilties on each side and provide Class I bike path from Hollister Avenue to SB ramps.

Scope: Demolition; pavement widening; overhead bridge widening; traffic signal; pavement delineation and slurry seal; railroad coordination.

Limits: Intersection.

Estimate Type: Planning (Caltrans) Estimate Date: 20-Jan-26

Working Days: 240

		Current Year Costs		Section		
Earthwork	$	860,300	+	1		
Pavement Structural Section	$	805,800	+	2		
Drainage	$	-	+	3		
Specialty Items	$	1,576,500	+	4		
Environmental	$	95,000	+	5		
Traffic Items	$	860,000	+	6		
Minor Items	$	545,700	+	7		
Roadway Mobilization	$	474,400	+	8		
Roadway Contingency	$	1,565,400	+	9		
TOTAL ROADWAY COST	$	6,783,100	=			
TOTAL STRUCTURES COST	$	4,684,700	+	10		
TOTAL CONSTRUCTION COST	**$**	**11,468,000**	=			
TOTAL RIGHT OF WAY COST	**$**	**3,000,000**	=	11		
Management Support	$	1,146,800	+	10%		
PA&ED Support	$	1,146,800	+	10%		
PS&E Support	$	1,720,200	+	15%		of Construction Costs
Right of Way Support	$	229,400	+	2%		
Construction Support	$	1,834,900	+	16%		
Support Contingency	$	1,823,500	+	30%		of Support Costs
TOTAL SUPPORT COST	**$**	**7,902,000**	=			

Total Estimated Project Costs: $ 22,400,000 ✗ **Check Status**

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-18 Stork Road at US 101 Southbound Ramps

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	444	x	228.81	= $	101,592	1
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY	759	x	40.00	= $	30,360	3
Structure Excavation (Retaining Wall)	CY	850	x	300.00	= $	255,000	4
Structure Backfill (Retaining Wall)	CY	622	x	560.00	= $	348,320	5
Clearing & Grubbing	LS	1	x	125,000	= $	125,000	
				TOTAL EARTHWORK SECTION ITEMS		**$**	**860,300**

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN	326	x	418.28	= $	136,359	6
Class 2 Aggregate Base	CY	278	x	295.45	= $	82,135	7
Slurry Seal	TN	20	x	3,507.95	= $	70,159	8
Minor Concrete (Miscellaneous Construction)	CY	363	x	1,424.58	= $	517,123	15
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$**	**805,800**

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY		x		= $	-	
Reinforced Concrete Pipe	LF		x		= $	-	
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$**	**-**

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF	600	x	22.04	= $	13,224	9
Chain Link Fence	LF		x		= $	-	
Midwest Guardrail System (Wood Post)	LF	100	x	61.81	= $	6,181	10
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF	600	x	325.82	= $	195,492	11
Structural Concrete, Retaining Wall	CY	1,214	x	1,121.58	= $	1,361,598	12
				TOTAL SPECIALTY ITEMS		**$**	**1,576,500**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-18 Stork Road at US 101 Southbound Ramps

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS		x		= $	-	
Highway Planting	LS	1	x	40,000	= $	40,000	
Irrigation System	LS	1	x	15,000	= $	15,000	
Plant Establishment Work	LS		x	10,000	= $	-	
Implement Erosion Control	LS	1	x	10,000	= $	10,000	
Prepare and Implement SWPPP / WPCP	LS	1	x	30,000	= $	30,000	
				TOTAL ENVIRONMENTAL		**$**	**95,000**

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS		x		= $	-	
Signal and Lighting	LS	1	x	700,000	= $	700,000	13
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS	1	x	100,000	= $	100,000	
Furnish and Install Sign Structure	LS		x		= $	-	
CIDH Pile (Sign Foundation)	LS		x		= $	-	
Remove Sign Structure	LS		x		= $	-	
Permanent Pavement Delineation	LS	1	x	60,000	= $	60,000	14
				TOTAL TRAFFIC ITEMS		**$**	**860,000**

SECTION 7: MINOR ITEMS							Notes
Traffic Management Plan and Detours				3.5%	$	146,916	
Stage Construction and Traffic Handling				4.0%	$	167,904	
ADA Items				0.5%	$	20,988	
Other Minor Items				5.0%	$	209,880	
Total of Section 1-6	$	4,197,600	x	13.0%	= $	545,688	
				TOTAL MINOR ITEMS		**$**	**545,700**

SECTIONS 8: MOBILIZATION							
Total Section 1-7	$	4,743,300	x	10%	= $	474,330	
				TOTAL MOBILIZATION		**$**	**474,400**

SECTION 9: ROADWAY CONTINGENCY							
Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)							
Total Section 1-8	$	5,217,700	x	30%	= $	1,565,310	
				TOTAL CONTINGENCY		**$**	**1,565,400**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-18 Stork Road at US 101 Southbound Ramps

SECTION 10: STRUCTURES ITEMS

Name / ID	UPRR Overhead	xxxxxxxxx	xxxxxxxxx
Structure Type	PC/PS I	--Select Bridge Type--	--Select Bridge Type--
Width (Feet) [out to out]	26 LF	0 LF	0 LF
Total Bridge Length	105 LF	0 LF	0 LF
Total Area (Square Feet)	2730 SQFT	0 SQFT	0 SQFT
Complexity	5	5	5
Unusual Features	4	0	0
Cost Per Square Foot	$1,200	$0	$0
COST OF EACH BRIDGE	$ 3,276,000	$ -	$ -

Name / ID	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx
Structure Type	--Select Bridge Type--	--Select Bridge Type--	--Select Bridge Type--
Width (Feet) [out to out]	0 LF	0 LF	0 LF
Total Bridge Length	0 LF	0 LF	0 LF
Total Area (Square Feet)	0 SQFT	0 SQFT	0 SQFT
Complexity	5	5	5
Unusual Features	0	0	0
Cost Per Square Foot	$0	$0	$0
COST OF EACH BRIDGE	$ -	$ -	$ -

TOTAL COST OF BRIDGES		$	3,276,000
Structures Mobilization Percentage	10%	$	327,600
Structures Contingency Percentage	30%	$	1,081,080
TOTAL COST OF STRUCTURES		**$**	**4,684,700**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF		x		=	$	-	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS	1	x	1,000,000	=	$	1,000,000	
Railroad - Flaggers	LS	1	x	500,000	=	$	500,000	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	100%	x	1,500,000	=	$	1,500,000	
TOTAL RIGHT OF WAY ESTIMATE						**$**	**3,000,000**	

I-18 Stork Road at US 101 Southbound Ramps

NOTES AND CALCULATIONS

NOTE NO. 1

Roadway excavation area
6000 SF Widenings
Depth
2.00 feet
Volume = (Sum of Areas) * Depth
12000 CF
444 CY **RESULT NO. 1** **444**

NOTE NO. 2

Retaining Wall
Total Wall Lengths

600 feet

NOTE NO. 3

Borrow cross sectional area
55 SF
Length
100 feet

Borrow Cross Sectional Area
25 SF
Length
600 feet

Volume = Sum (area * length)
20500 CF
759 CY **RESULT NO. 3** **759**

NOTE NO. 4

Structure excavation
38 SF
Length
600 feet
Volume = (Sum of Areas) * Depth
22950 CF
850 CY **RESULT NO. 4** **850**

NOTE NO. 5

Structure Backfill
28 SF
Length
600 feet
Volume = (Sum of Areas) * Depth
16800 CF
622 CY **RESULT NO. 5** **622**

I-18 Stork Road at US 101 Southbound Ramps

NOTES AND CALCULATIONS

NOTE NO. 6

AC Pavement
Widening Area (from CAD)
6000 SF
Depth
0.75 feet
Tonnage = Area * Depth * 145lbs/CF / 2000lbs/ton
326 ton

RESULT NO. 6 **326**

NOTE NO. 7

Aggregate base
Area (from CAD)
6000 SF Widenings
Depth
1.25 feet
Volume = (Sum of Areas) * Depth
7500 CF
278 CY

RESULT NO. 7 **278**

NOTE NO. 8

Slurry seal
Area (from CAD)
30000 SF
Tonnage = area / 1500SF/ton
20 ton

RESULT NO. 8 **20**

NOTE NO. 9

Remove guard rail
100 feet South of structure
500 feet Along ramp

RESULT NO. 9 **600**

NOTE NO. 10

Midwest guard rail
100 feet South of structure

RESULT NO. 10 **100**

NOTE NO. 11

Concrete barrier
600 feet Installed on retaining wall

RESULT NO. 11 **600**

NOTE NO. 12

Retaining Wall Cross Sectional Area
55 SF
Length
600 feet
Volume = Area * Length
32769 CF
1214 CY

RESULT NO. 12 **1214**

I-18 Stork Road at US 101 Southbound Ramps

NOTES AND CALCULATIONS

NOTE NO. 13

Signal and Lighting

Scale:	Major		
Legs:	4		
Cost:	$700,000	**RESULT NO. 13**	**$700,000**

NOTE NO. 14

Permanent Pavement Delineation

Cost	$60,000	**RESULT NO. 14**	**$60,000**

NOTE NO. 15

Bike path pavement

Length
1400 feet

Width
14 feet

Depth
0.50 feet

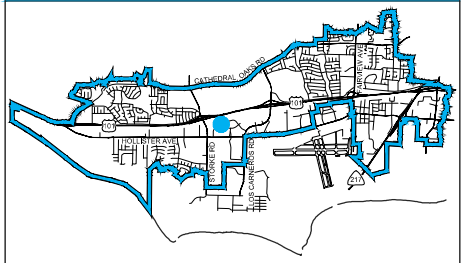
Volume = Area * Length
9800 CF
363 CY

RESULT NO. 15 **363**

30' 0' 30' 60'
1 inch = 60 ft.

GOLETA TRANSPORTATION IMPROVEMENTS PROGRAM

Project I-18: Storke Road at US 101 Southbound Ramps



Notes

1. Widen Storke Rd to the east to accommodate two free right turn lanes onto southbound US 101 on-ramp.
2. Widen structure to accommodate new turning lanes and Class I paths.
3. Add Class I paths on both sides of Storke Road.

MNS
201 N. Calle Cesar Chavez, Suite 300
Santa Barbara, CA 93103
805-692-6921 | www.mnsengineers.com

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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-22 Fairview Avenue at Hollister Avenue (Roundabout)

Description: • Construct two lane roundabout to improve congestion at one of the busiest intersections in the City.
• Provide Class I bike path on NW quandrant.

Scope: Demolition; pavement structural section reconstruction; concrete curb, gutter, sidewalk, truck apron, etc.; drainage modifications; landscaping; right of way.

Limits: Intersection and each leg of Hollister Avenue and Fairview Avenue.

Estimate Type: Planning (City) Estimate Date: 20-Jan-26

Working Days: 280

		Current Year Costs		Section		
Earthwork	$	1,060,300	+	1		
Pavement Structural Section	$	1,692,100	+	2		
Drainage	$	362,100	+	3		
Specialty Items	$	-	+	4		
Environmental	$	650,000	+	5		
Traffic Items	$	495,000	+	6		
Minor Items	$	809,400	+	7		
Roadway Mobilization	$	506,900	+	8		
Roadway Contingency	$	1,115,200	+	9		
TOTAL ROADWAY COST	$	6,691,000	=			
TOTAL STRUCTURES COST	$	-	+	10		
TOTAL CONSTRUCTION COST	**$**	**6,691,000**	=			
TOTAL RIGHT OF WAY COST	**$**	**4,875,000**	=	11		
Management Support	$	669,100	+	10%		
PA&ED Support	$	669,100	+	10%		of Construction Costs
PS&E Support	$	1,003,700	+	15%		
Right of Way Support	$	133,900	+	2%		
Construction Support	$	1,070,600	+	16%		
Support Contingency	$	709,300	+	20%		of Support Costs
TOTAL SUPPORT COST	**$**	**4,256,000**	=			

Total Estimated Project Costs: $ 15,850,000 ✗ **Check Status**

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

I-22 Fairview Avenue at Hollister Avenue (Roundabout)

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	5,093	x	110.00	= $	560,230	1
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY		x		= $	-	
Structure Excavation (Retaining Wall)	CY		x		= $	-	
Structure Backfill (Retaining Wall)	CY		x		= $	-	
Clearing & Grubbing	LS	1	x	500,000	= $	500,000	
				TOTAL EARTHWORK SECTION ITEMS		**$**	**1,060,300**

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN	2,719	x	237.97	= $	647,040	2
Class 2 Aggregate Base	CY	2,778	x	134.30	= $	373,085	3
Slurry Seal	TN	23	x	3,507.95	= $	80,683	4
Minor Concrete (Miscellaneous Construction)	CY	415	x	1,424.58	= $	591,201	5,6,7,8
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$**	**1,692,100**

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY	24	x	2,900.00	= $	69,600	9
Reinforced Concrete Pipe	LF	1,500	x	195.00	= $	292,500	10
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$**	**362,100**

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF		x		= $	-	
Chain Link Fence	LF		x		= $	-	
Midwest Guardrail System (Wood Post)	LF		x		= $	-	
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF		x		= $	-	
Structural Concrete, Retaining Wall	CY		x		= $	-	
				TOTAL SPECIALTY ITEMS		**$**	**-**

I-22 Fairview Avenue at Hollister Avenue (Roundabout)

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS		x		= $	-	
Highway Planting	LS	1	x	400,000	= $	400,000	
Irrigation System	LS	1	x	125,000	= $	125,000	
Plant Establishment Work	LS	1	x	65,000	= $	65,000	
Implement Erosion Control	LS	1	x	25,000	= $	25,000	
Prepare and Implement SWPPP / WPCP	LS	1	x	35,000	= $	35,000	
				TOTAL ENVIRONMENTAL		**$**	**650,000**

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS	1	x	445,000	= $	445,000	11
Signal and Lighting	LS		x		= $	-	
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS		x		= $	-	
Furnish and Install Sign Structure	LS		x		= $	-	
CIDH Pile (Sign Foundation)	LS		x		= $	-	
Remove Sign Structure	LS		x		= $	-	
Permanent Pavement Delineation	LS	1	x	50,000	= $	50,000	
				TOTAL TRAFFIC ITEMS		**$**	**495,000**

SECTION 7: MINOR ITEMS							Notes
Traffic Management Plan and Detours				5.0%	$	212,975	
Stage Construction and Traffic Handling				6.0%	$	255,570	
ADA Items				2.0%	$	85,190	
Other Minor Items				6.0%	$	255,570	
Total of Section 1-6	$	4,259,500	x	19.0%	= $	809,305	
				TOTAL MINOR ITEMS		**$**	**809,400**

SECTIONS 8: MOBILIZATION							
Total Section 1-7	$	5,068,900	x	10%	= $	506,890	
				TOTAL MOBILIZATION		**$**	**506,900**

SECTION 9: ROADWAY CONTINGENCY

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total Section 1-8	$	5,575,800	x	20%	= $	1,115,160	
				TOTAL CONTINGENCY		**$**	**1,115,200**

I-22 Fairview Avenue at Hollister Avenue (Roundabout)

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF	13,000	x	250.00	=	$	3,250,000	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	50%	x	3,250,000	=	$	1,625,000	
		TOTAL RIGHT OF WAY ESTIMATE					**$ 4,875,000**	

I-22 Fairview Avenue at Hollister Avenue (Roundabout)

NOTES AND CALCULATIONS

NOTE NO. 1

Roadway excavation area (from CAD)
50,000 SF
Depth of AC
0.75 feet
Depth of base
2.00 feet
Roadway excavation = width * length * depth
137,500 CF
5,093 CY **RESULT NO. 1** **5,093**

NOTE NO. 2

AC pavement area (from CAD)
50,000 SF
Depth of AC
0.75 feet
Roadway excavation = width * length * depth
37,500 CF * 145 pounds/CF / 2,000 pounds/ton
2,719 TN **RESULT NO. 2** **2,719**

NOTE NO. 3

Aggregate base area (from CAD)
50,000 SF
Depth of base
1.50 feet
Roadway excavation = width * length * depth
75,000 CF
2,778 CY **RESULT NO. 3** **2,778**

NOTE NO. 4

Approaches to project
Length along:
150 feet northerly Fairview
150 feet easterly Hollister
50 feet southerly Fairview
100 feet westerly Hollister
Width
86 feet northerly Fairview
72 feet easterly Hollister
56 feet southerly Fairview
86 feet westerly Hollister
Area
35,100 feet
Coverage rate
1,500 SF/TN
23 CY **RESULT NO. 4** **23**

I-22 Fairview Avenue at Hollister Avenue (Roundabout)

NOTES AND CALCULATIONS

NOTE NO. 5

New sidewalk length

225	feet	Fairview NW
100	feet	Fairview NE
420	feet	Hollister NE
100	feet	Hollister SE
100	feet	Fairview SE
110	feet	Fairview SW
200	feet	Hollister SW
225	feet	Hollister NW
1480	feet	TOTAL

Sidewalk width (most of it is multi-use path)

10 feet

Sidewalk thickness

4 inches

Volume = Minor Concrete (Miscellaneous Construction)

4933 CF

183 CY

Additional area for Class I bike path in NW quadrant

600 SF

Sidewalk thickness

6 inches

Volume = Minor Concrete (Miscellaneous Construction)

300 CF

11 CY

TOTAL

194 CY **RESULT NO. 5** **194**

NOTE NO. 6

New Caltrans A2-6 curb and gutter length

240	feet	Fairview NW
115	feet	Fairview NE
450	feet	Hollister NE
110	feet	Hollister SE
110	feet	Fairview SE
120	feet	Fairview SW
225	feet	Hollister SW
240	feet	Hollister NW
1610	feet	TOTAL

Volume / foot

0.06 CY/foot

Volume = Minor Concrete (Miscellaneous Construction)

95 CY **RESULT NO. 6** **95**

I-22 Fairview Avenue at Hollister Avenue (Roundabout)

NOTES AND CALCULATIONS

NOTE NO. 7

Driveways and truck apron
4 each
25 feet length Driveway width
100 feet TOTAL 20 feet
Driveway area
2000 SF
Truck apron (CAD)
2500 SF
Concrete thickness
6 inches
Volume = Minor Concrete (Miscellaneous Construction)
2250 CF
83 CY **RESULT NO. 7** **83**

NOTE NO. 8

New Caltrans A1-6 curb length
500 feet northerly Fairview
500 feet easterly Hollister
225 feet southerly Fairview
450 feet westerly Hollister
1,675 feet TOTAL
Volume / foot
0.03 CY/foot
Volume = Minor Concrete (Miscellaneous Construction)
43 CY **RESULT NO. 8** **43**

NOTE NO. 9

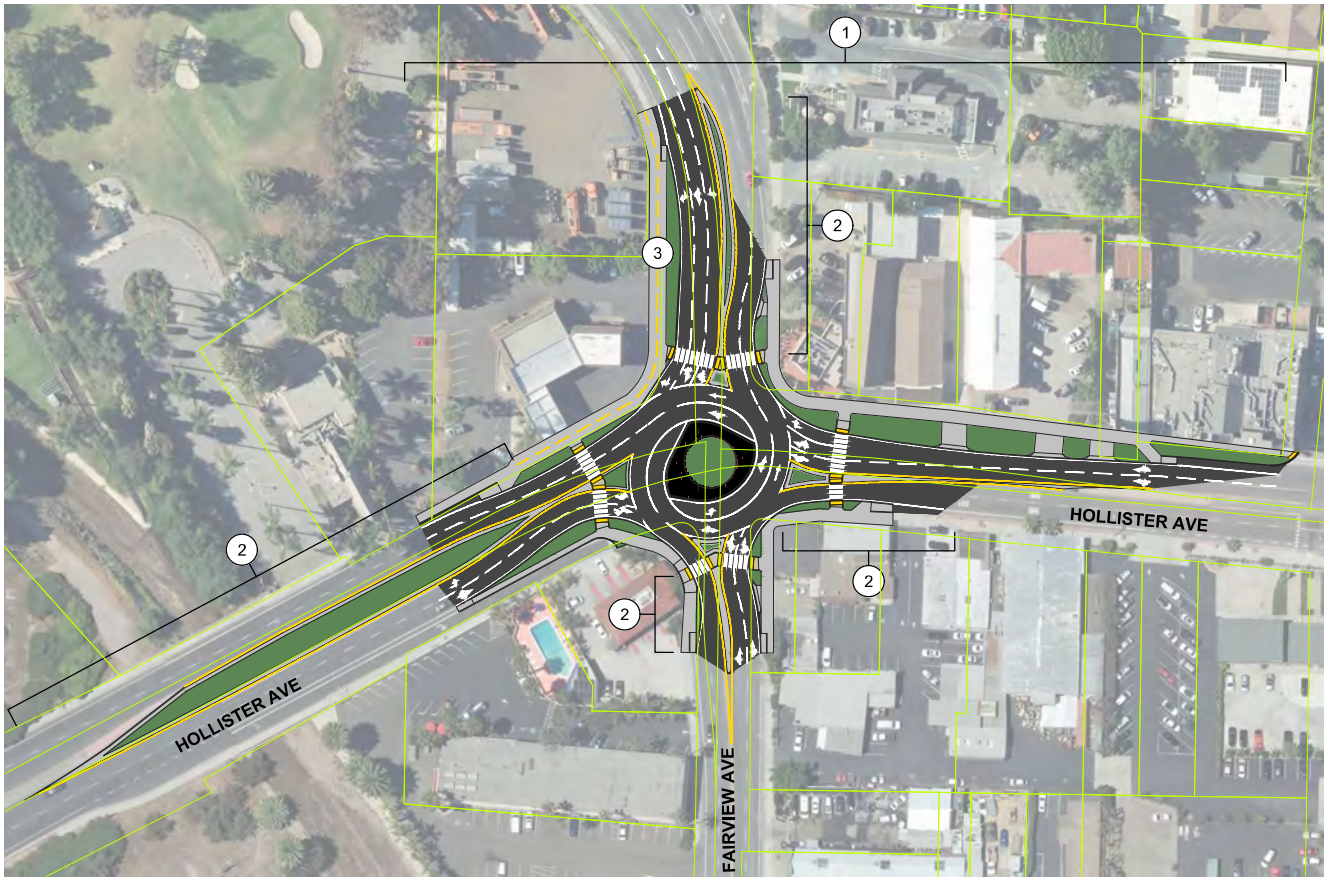
New drop inlets - assumed one each side of the road on each leg
8 each
Depth of drop inlets
5 feet
Drop inlet volume - Caltrans OL-10
Volume / foot
2.39 CY (3 feet deep)
0.28 CY/each additional foot of depth up to 8 feet
Volume = Minor Concrete (Miscellaneous Construction)
24 CY **RESULT NO. 9** **24**

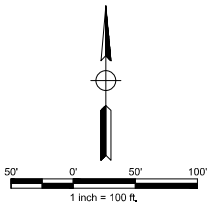
NOTE NO. 10

Estimated length of RCP
1,500 feet **RESULT NO. 10** **1,500**

NOTE NO. 11

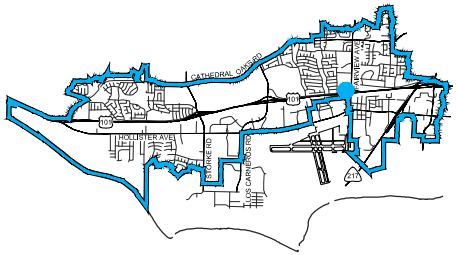
New street lights
12 each
Cost per street light
$ 35,000
Total lights
$ 420,000
Connection
$ 25,000 **RESULT NO. 11** **$ 445,000**





GOLETA TRANSPORTATION IMPROVEMENTS PROGRAM

Project I-22: Fairview Avenue at Hollister Avenue Roundabout



Notes

1. Construct a two-lane roundabout at the intersection of Hollister Ave and Fairview Ave.
2. Construct splitter islands in place of left turn lanes. Islands to connect to existing medians where present.
3. Construct Class I path.

MNS
201 N. Calle Cesar Chavez, Suite 300
Santa Barbara, CA 93103
805-692-6921 | www.mnsengineers.com

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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-02 Hollister Avenue Old Town (Complete Streets)

Description: Hollister Avenue beautification and pedestrian improvements.
- Bike lanes in each direction.
- Widen sidewalks and provide ADA accessible pathways where feasible.
- Addition of street furniture, lighting and landscaping.
- Improvements to street drainage.
- Reconstruction where necessary and re-paving of Hollister Avenue.
- Reconstruction of sidewalk curbs and gutters.

Scope: Demolition; pavement widening; concrete curb, gutter, sidewalk, etc.; drainage system modifications; utility relocation; pavement delineation and slurry seal; traffic signal.

Limits: Fairview Avenue to Kellogg Avenue.

Estimate Type: Planning (City) Estimate Date: 15-Jan-26

Working Days: 300

		Current Year Costs		Section	
Earthwork	$	463,900	+	1	
Pavement Structural Section	$	1,415,400	+	2	
Drainage	$	422,500	+	3	
Specialty Items	$	-	+	4	
Environmental	$	475,000	+	5	
Traffic Items	$	1,400,000	+	6	
Minor Items	$	584,800	+	7	
Roadway Mobilization	$	476,200	+	8	
Roadway Contingency	$	1,047,600	+	9	
TOTAL ROADWAY COST	$	6,285,400	=		
TOTAL STRUCTURES COST	$	-	+	10	
TOTAL CONSTRUCTION COST	**$**	**6,285,000**	=		
TOTAL RIGHT OF WAY COST	**$**	**420,000**	=	11	
Management Support	$	628,500	+	10%	of Construction Costs
PA&ED Support	$	628,500	+	10%	
PS&E Support	$	942,800	+	15%	
Right of Way Support	$	125,700	+	2%	
Construction Support	$	1,005,600	+	16%	
Support Contingency	$	666,300	+	20%	of Support Costs
TOTAL SUPPORT COST	**$**	**3,998,000**	=		

Total Estimated Project Costs: $ 10,750,000 ✗ Check Status

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-02 Hollister Avenue Old Town (Complete Streets)

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	1,493	x	160.00	= $	238,880	1
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY		x		= $	-	
Structure Excavation (Retaining Wall)	CY		x		= $	-	
Structure Backfill (Retaining Wall)	CY		x		= $	-	
Clearing & Grubbing	LS	1	x	225,000	= $	225,000	
				TOTAL EARTHWORK SECTION ITEMS		**$**	**463,900**

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN		x		= $	-	
Class 2 Aggregate Base	CY		x		= $	-	
Slurry Seal	TN	148	x	2,700.00	= $	399,600	2
Minor Concrete (Miscellaneous Construction)	CY	713	x	1,424.58	= $	1,015,726	3
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$**	**1,415,400**

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY	52	x	2,500.00	= $	130,000	4
Reinforced Concrete Pipe	LF	1,500	x	195.00	= $	292,500	5
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$**	**422,500**

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF		x		= $	-	
Chain Link Fence	LF		x		= $	-	
Midwest Guardrail System (Wood Post)	LF		x		= $	-	
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF		x		= $	-	
Structural Concrete, Retaining Wall	CY		x		= $	-	
				TOTAL SPECIALTY ITEMS		**$**	**-**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-02 Hollister Avenue Old Town (Complete Streets)

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS		x		= $	-	
Highway Planting	LS	1	x	250,000	= $	250,000	
Irrigation System	LS	1	x	100,000	= $	100,000	
Plant Establishment Work	LS	1	x	75,000	= $	75,000	
Implement Erosion Control	LS	1	x	15,000	= $	15,000	
Prepare and Implement SWPPP / WPCP	LS	1	x	35,000	= $	35,000	
				TOTAL ENVIRONMENTAL		**$ 475,000**	

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS		x		= $	-	
Signal and Lighting	LS	1	x	1,050,000	= $	1,050,000	6
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS	1	x	350,000	= $	350,000	
Furnish and Install Sign Structure	LS		x		= $	-	
CIDH Pile (Sign Foundation)	LS		x		= $	-	
Remove Sign Structure	LS		x		= $	-	
Permanent Pavement Delineation	LS		x		= $	-	
				TOTAL TRAFFIC ITEMS		**$ 1,400,000**	

SECTION 7: MINOR ITEMS							Notes
Traffic Management Plan and Detours				4.0%	$	167,072	
Stage Construction and Traffic Handling				4.0%	$	167,072	
ADA Items				1.0%	$	41,768	
Other Minor Items				5.0%	$	208,840	
Total of Section 1-6	$	4,176,800	x	14.0%	= $	584,752	
				TOTAL MINOR ITEMS		**$ 584,800**	

SECTIONS 8: MOBILIZATION							
Total Section 1-7	$	4,761,600	x	10%	= $	476,160	
				TOTAL MOBILIZATION		**$ 476,200**	

SECTION 9: ROADWAY CONTINGENCY							
Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)							
Total Section 1-8	$	5,237,800	x	20%	= $	1,047,560	
				TOTAL CONTINGENCY		**$ 1,047,600**	

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-02 Hollister Avenue Old Town (Complete Streets)

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx
Structure Type	--Select Bridge Type--	--Select Bridge Type--	--Select Bridge Type--
Width (Feet) [out to out]	0 LF	0 LF	0 LF
Total Bridge Length	0 LF	0 LF	0 LF
Total Area (Square Feet)	0 SQFT	0 SQFT	0 SQFT
Complexity	5	5	5
Unusual Features	0	0	0
Cost Per Square Foot	$0	$0	$0
COST OF EACH BRIDGE	$ -	$ -	$ -

Name / ID	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx
Structure Type	--Select Bridge Type--	--Select Bridge Type--	--Select Bridge Type--
Width (Feet) [out to out]	0 LF	0 LF	0 LF
Total Bridge Length	0 LF	0 LF	0 LF
Total Area (Square Feet)	0 SQFT	0 SQFT	0 SQFT
Complexity	5	5	5
Unusual Features	0	0	0
Cost Per Square Foot	$0	$0	$0
COST OF EACH BRIDGE	$ -	$ -	$ -

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF		x		=	$	-	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS	1	x	350,000	=	$	350,000	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	20%	x	350,000	=	$	70,000	
		TOTAL RIGHT OF WAY ESTIMATE					**$**	**420,000**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-02 Hollister Avenue Old Town (Complete Streets)

NOTES AND CALCULATIONS

NOTE NO. 1

Roadway excavation (areas from CAD)

Bulbouts/Widen Area	28500	SF		
Medians Area	10000	SF		
Bus Stops	1800	SF		
Average Depth	1	feet		
Vol = Areas * Depth/27	1493	CY	**RESULT NO. 1**	**1493**

NOTE NO. 2

Slury Seal existing remaining pavement (area from CAD)

Area	222500	SF		
Tonnage = area / 1500SF/ton	148	ton	**RESULT NO. 2**	**148**

NOTE NO. 3

Minor Concrete (Miscellaneous Construction)

Concrete Sidewalks

Sidewalks Plan Area (from CAD): 28500 SF

Depth: 0.33 feet

Volume = Area * Depth: 9500 CF = 352 CY

Concrete Bus Stops

Sidewalks Plan Area (from CAD): 1800 SF

Depth: 0.50 feet

Volume = Area * Depth: 900 CF = 33 CY

Concrete Curb and Gutter Type A2-6 per Caltrans

Volume / foot: 0.05903 CY/foot

Length: 4096 feet

Volume = length * volume / foot: 242 CY

Concrete Curb A1-6 per Caltrans (medians)

Volume / foot: 0.02585 CY/foot

Length: 3342 feet

Volume = length * volume / foot: 86 CY

RESULT NO. 3 **713**

NOTE NO. 4

Minor Concrete (Minor Structure)

Per Caltrans Standard Plans OL21 Vol

5.71	CY / structure (up to H=3 feet)
0.278	CY for each additional foot
6	Height (feet)
6.544	CY / structure
8	Structure to reconstruct

RESULT NO. 4 **52**

NOTE NO. 5

Reinforced concrete pipe

Length: 1500 feet

RESULT NO. 5 **1500**

NOTE NO. 6

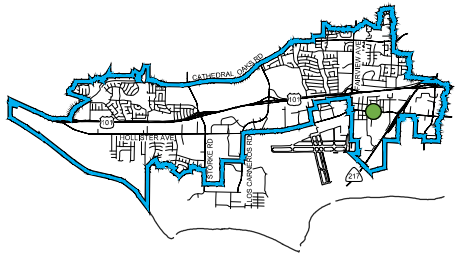
Traffic signals

$350,000	Pine - modifications
$350,000	Rutherford - modifications
$350,000	Kinman - modifications

RESULT NO. 6 **$ 1,050,000**

GOLETA TRANSPORTATION IMPROVEMENTS PROGRAM

Project R-02: Hollister Avenue Old Town (Complete Streets)



Notes

Hollister Avenue beautification and pedestrian improvements. Widen sidewalks and provide ADA accessible pathways, re-surface/repair asphalt, pavement delineation; install furniture and landscaping.

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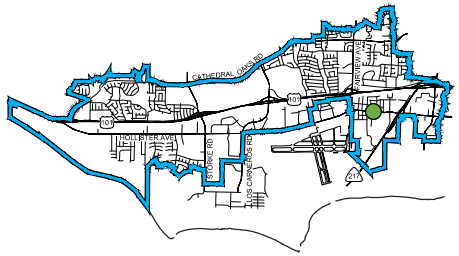
GOLETA TRANSPORTATION IMPROVEMENTS PROGRAM

Project R-02: Hollister Avenue Old Town (Complete Streets)



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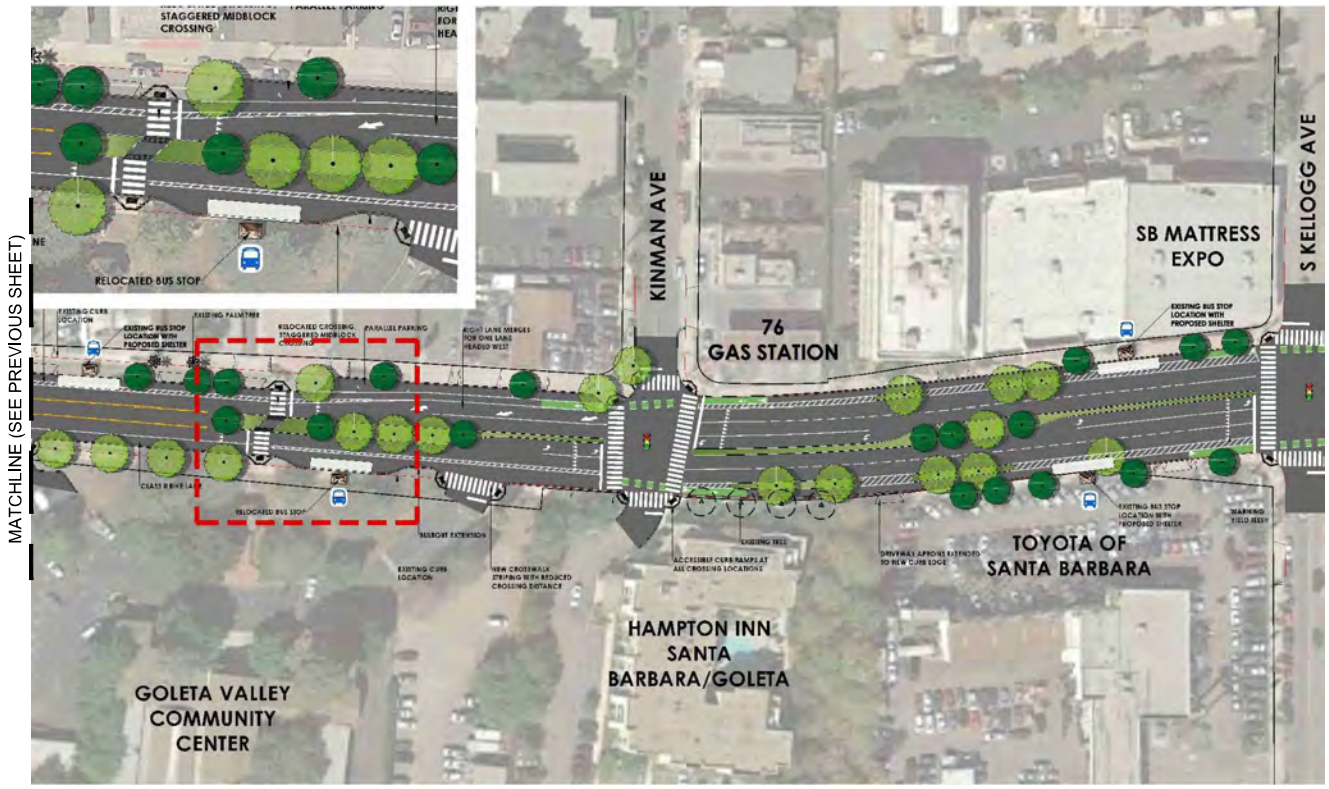
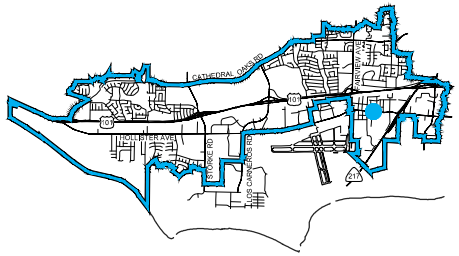


GOLETA TRANSPORTATION IMPROVEMENTS PROGRAM

Project R-02: Hollister Avenue Old Town (Complete Streets)



Notes

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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-05 Ellwood Station Overcrossing (US 101) and Overhead (UPRR)

Description: Construct new pedestrian and bicycle overpass to provide another north-south connection. Alignment and scope is TBD.
- From theintersection of Hollister Avenue and Ellwood Station Road to intersection of Calle Real and San Rossano Drive.
- Pedestrian and bicycle bridge spanning Union Pacific Railroad and US 101.
- Signalized intersection with Calle Real.

Scope: Demolition; new roadway; overhead and overcrossing bridges; retaining walls; traffic signal; pavement delineation; railroad coordination; right of way.

Limits: Hollister Avenue to Calle Real.

Estimate Type: Planning (Caltrans) Estimate Date: 20-Jan-26

Working Days: 240

		Current Year Costs		Section	
Earthwork	$	2,293,500	+	1	
Pavement Structural Section	$	858,600	+	2	
Drainage	$	109,800	+	3	
Specialty Items	$	1,513,400	+	4	
Environmental	$	975,000	+	5	
Traffic Items	$	1,981,300	+	6	
Minor Items	$	657,200	+	7	
Roadway Mobilization	$	838,900	+	8	
Roadway Contingency	$	2,768,400	+	9	
TOTAL ROADWAY COST	$	11,996,100	=		
TOTAL STRUCTURES COST	$	31,093,900	+	10	
TOTAL CONSTRUCTION COST	**$**	**43,090,000**	=		
TOTAL RIGHT OF WAY COST	**$**	**19,500,000**	=	11	
Management Support	$	4,309,000	+	10%	of Construction Costs
PA&ED Support	$	4,309,000	+	10%	
PS&E Support	$	6,463,500	+	15%	
Right of Way Support	$	861,800	+	2%	
Construction Support	$	6,894,400	+	16%	
Support Contingency	$	6,851,400	+	30%	of Support Costs
TOTAL SUPPORT COST	**$**	**29,690,000**	=		

Total Estimated Project Costs: $ 92,300,000 ✗ Check Status

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-05 Ellwood Station Overcrossing (US 101) and Overhead (UPRR)

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	111	x	328.52	= $	36,466	1
Roadway Excavation (ADL)	CY	1,000	x	332.60	= $	332,600	2
Imported Borrow	CY	1,630	x	40.00	= $	65,200	3
Structure Excavation (Retaining Wall)	CY	1,370	x	300.00	= $	411,000	4
Structure Backfill (Retaining Wall)	CY	1,533	x	325.00	= $	498,225	5
Clearing & Grubbing	LS	1	x	950,000	= $	950,000	
				TOTAL EARTHWORK SECTION ITEMS		**$ 2,293,500**	

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN	870	x	237.97	= $	207,034	6
Class 2 Aggregate Base	CY	667	x	295.45	= $	197,065	7
Slurry Seal	TN		x		= $	-	
Minor Concrete (Miscellaneous Construction)	CY	319	x	1,424.58	= $	454,441	8,9
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$ 858,600**	

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY	12	x	2,900.00	= $	34,800	10
Reinforced Concrete Pipe	LF	200	x	375.00	= $	75,000	11
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$ 109,800**	

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF		x		= $	-	
Chain Link Fence	LF	3,300	x	50.00	= $	165,000	12
Midwest Guardrail System (Wood Post)	LF		x		= $	-	
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF		x		= $	-	
Structural Concrete, Retaining Wall	CY	704	x	1,915.28	= $	1,348,357	13
				TOTAL SPECIALTY ITEMS		**$ 1,513,400**	

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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-05 Ellwood Station Overcrossing (US 101) and Overhead (UPRR)

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS		x		= $	-	
Highway Planting	LS	1	x	500,000	= $	500,000	
Irrigation System	LS	1	x	175,000	= $	175,000	
Plant Establishment Work	LS	1	x	150,000	= $	150,000	
Implement Erosion Control	LS	1	x	100,000	= $	100,000	
Prepare and Implement SWPPP / WPCP	LS	1	x	50,000	= $	50,000	
				TOTAL ENVIRONMENTAL		**$ 975,000**	

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS	1	x	985,000	= $	985,000	14
Signal and Lighting	LS	1	x	956,250	= $	956,250	15
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS		x		= $	-	
Furnish and Install Sign Structure	LS		x		= $	-	
CIDH Pile (Sign Foundation)	LS		x		= $	-	
Remove Sign Structure	LS		x		= $	-	
Permanent Pavement Delineation	LS	1	x	40,000	= $	40,000	17
				TOTAL TRAFFIC ITEMS		**$ 1,981,300**	

SECTION 7: MINOR ITEMS							Notes
Traffic Management Plan and Detours					$	-	
Stage Construction and Traffic Handling					$	-	
ADA Items				1.0%	$	77,316	
Other Minor Items				7.5%	$	579,870	
Total of Section 1-6	$	7,731,600	x	8.5%	= $	657,186	
				TOTAL MINOR ITEMS		**$ 657,200**	

SECTIONS 8: MOBILIZATION						
Total Section 1-7	$	8,388,800	x	10%	= $	838,880
				TOTAL MOBILIZATION		**$ 838,900**

SECTION 9: ROADWAY CONTINGENCY

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total Section 1-8	$	9,227,700	x	30%	= $	2,768,310
				TOTAL CONTINGENCY		**$ 2,768,400**

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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-05 Ellwood Station Overcrossing (US 101) and Overhead (UPRR)

SECTION 10: STRUCTURES ITEMS

Name / ID	US 101 Overpass	UPRR Overhead	xxxxxxxxx
Structure Type	CIP/PS Box	PC/PS I	--Select Bridge Type--
Width (Feet) [out to out]	16 LF	16 LF	0 LF
Total Bridge Length	700 LF	950 LF	0 LF
Total Area (Square Feet)	9600 SQFT	8520 SQFT	0 SQFT
Complexity	6	6	5
Unusual Features	2	2	0
Cost Per Square Foot	$1,200	$1,200	$0
COST OF EACH BRIDGE	$ 11,520,000	$ 10,224,000	$ -

Name / ID	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx
Structure Type	--Select Bridge Type--	--Select Bridge Type--	--Select Bridge Type--
Width (Feet) [out to out]	0 LF	0 LF	0 LF
Total Bridge Length	0 LF	0 LF	0 LF
Total Area (Square Feet)	0 SQFT	0 SQFT	0 SQFT
Complexity	5	5	5
Unusual Features	0	0	0
Cost Per Square Foot	$0	$0	$0
COST OF EACH BRIDGE	$ -	$ -	$ -

TOTAL COST OF BRIDGES		$	21,744,000
Structures Mobilization Percentage	10%	$	2,174,400
Structures Contingency Percentage	30%	$	7,175,520
TOTAL COST OF STRUCTURES		**$**	**31,093,900**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF	10,000	x	250.00	=	$	2,500,000	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS	1	x	2,000,000	=	$	2,000,000	
Railroad - TCE	LS	1	x	1,500,000	=	$	1,500,000	
Railroad - Flaggers	LS	1	x	500,000	=	$	500,000	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	200%	x	6,500,000	=	$	13,000,000	
TOTAL RIGHT OF WAY ESTIMATE						**$**	**19,500,000**	

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-05 Ellwood Station Overcrossing (US 101) and Overhead (UPRR)

NOTES AND CALCULATIONS

NOTE NO. 1

Roadway excavation

2,000	SF	Near Hollister

Depth of removals

1.50	feet	

Volume = area * depth

3,000	CF	
111	CY	

RESULT NO. 1 **111**

NOTE NO. 2

Roadway excavation - ADL

Area

18,000	SF	Adjacent to US 101

Depth of removals

1.50	feet	

Volume = area * depth

27,000	CF	
1,000	CY	

RESULT NO. 2 **1,000**

NOTE NO. 3

Import borrow

22,000	SF	

Average Depth

2	feet	Average - ramp up for intersection

Volume = width * length * depth

44,000	CF	
1,630	CY	

RESULT NO. 3 **1,630**

NOTE NO. 4

Structure excavation for new Caltrans Type 1-Case 1 retaining wall

	Calle Real		Hollister Avenue	
Lengths	1,000	feet	100	feet
	0	feet	100	feet
Total wall	1,000	feet	200	feet
Height of grade over toe	2	feet	2	feet
Height of grade over heel	2	feet	2	feet
Footing depth	1.33	feet	1.33	feet
Average depth	3.33	feet	3.33	feet
Footing width	7.25	feet	7.25	feet
Total width	9.25	feet	9.25	feet
Volume / foot	30.8	CF/foot	30.8	CF/foot
Volume	30,833	CF	6,167	CF
	1,142	CY	228	CY

RESULT NO. 4 **1,370**

R-05 Ellwood Station Overcrossing (US 101) and Overhead (UPRR)

NOTES AND CALCULATIONS

NOTE NO. 5

Structure backfill for new Caltrans Type 1-Case 1 retaining wall

	Calle Real	Hollister Avenue
Lengths	1,000 feet	100 feet
	0 feet	100 feet
Total wall	1,000 feet	200 feet
Retained height	6 feet	6 feet
Footing width	7 feet	7 feet
Footing toe width	2.25 feet	2.25 feet
Footing toe cover	2 feet	2 feet
Footing heel width	2.5 feet	2.5 feet
Footing heel cover	8 feet	8 feet
Volume / foot	34.5 CF/foot	34.5 CF/foot
Volume	34,500 CF	6,900 CF
	1,278 CY	256 CY

RESULT NO. 5 **1,533**

NOTE NO. 6

AC pavement

16,000 SF Calle Real
2,000 SF Hollister

Depth

0.67 feet

Tonnage = area * depth * 145lbs/CF / 2000lbs/TN

870 TN

RESULT NO. 6 **870**

NOTE NO. 7

Aggregate base

Area (from CAD)

16,000 SF Calle Real
2,000 SF Hollister

Depth

1.00 feet

Volume = area * depth

18,000 CF
667 CY

RESULT NO. 7 **667**

NOTE NO. 8

Concrete sidewalk

Length

1 x	400 =	400 feet	Calle Real connection
1 x	600 =	600 feet	Hollister Avenue connection

Total	1000	feet
Width	14	feet
Thickness	6	inches
Volume	7000	CF
	259	CY

RESULT NO. 8 **259**

R-05 Ellwood Station Overcrossing (US 101) and Overhead (UPRR)

NOTES AND CALCULATIONS

NOTE NO. 9

Caltrans A2-6 curb and gutter

Length

1	x	400	=	400 feet	Calle Real connection
1	x	600	=	600 feet	Hollister Avenue connection

Total

1000 feet

Volume / foot

0.06 CY/foot

Volume

60 CY **RESULT NO. 9** **60**

NOTE NO. 10

Minor Concrete (Minor Structure)

New drop inlets

4 each

Depth of drop inlets

5 feet

Drop inlet volume - Caltrans OL-10

Volume / foot

2.39 CY (3 feet deep)

0.28 CY/each additional foot of depth up to 8 feet

Volume

12 CY **RESULT NO. 10** **12**

NOTE NO. 11

Reinforced concrete pipe

200 feet **RESULT NO. 11** **200**

NOTE NO. 12

Chain link fence and railing on bridge

US 101 and UPRR chain link fence

2 ea

1,650 feet

Total

3300 feet **RESULT NO. 12** **3,300**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-05 Ellwood Station Overcrossing (US 101) and Overhead (UPRR)

NOTES AND CALCULATIONS

NOTE NO. 13

New Caltrans Type 1-Case 1 retaining wall

	Calle Real	Hollister Avenue
Lengths	1,000 feet	100 feet
	0 feet	100 feet
Total wall	1,000 feet	200 feet
Retained height	6 feet	6 feet
Stem batter	24 :1	24 :1
Stem top width	11.5 inches	11.5 inches
Stem bottom width	14.5 inches	14.5 inches
Stem volume / foot	6.5 CF/foot	6.5 CF/foot
Footing width	7 feet	7 feet
Footing depth	1.33 feet	1.33 feet
Footing volume / foot	9.33 CF/foot	9.33 CF/foot
Volume / foot	15.8 CF/foot	15.8 CF/foot
Volume	15,833 CF	3,167 CF
	586 CY	117 CY

RESULT NO. 13 **704**

NOTE NO. 14

New street lights
32 each
Cost per street light
$ 30,000
Total lights
$ 960,000
Connection
$ 25,000

RESULT NO. 15 **$ 985,000**

NOTE NO. 15

Signal and Lighting

Scale:	Major
Legs:	3
Cost:	$525,000
Scale:	Minor
Legs:	3
Cost:	$431,250

RESULT NO. 16 **$ 956,250**

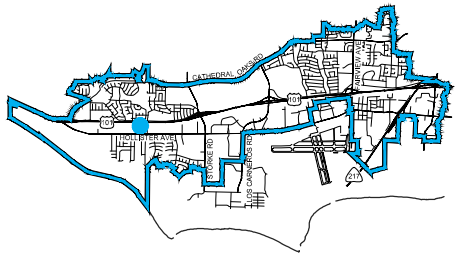
NOTE NO. 16

Permanent Pavement Delineation
Cost $40,000

RESULT NO. 17 **$ 40,000**

GOLETA TRANSPORTATION IMPROVEMENTS PROGRAM

Project R-05: Ellwood Station Overcrossing (US 101) and Overhead (UPRR)



Notes

1. Reconstruct Calle Real and San Rossano Drive to to provide bicycle and pedestrian connectivity. Add traffic signal.
2. Construct freeway over-crossing.
3. Construct railroad over-crossing.
4. Ellwood Station Road curb extension and sidewalk bypass around and then under structure.

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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-09 Phelps Road Extension

Description: Extend Phelps Road from Mesa Road to Los Carneros Road. Widen existing Mesa Road to the north; construct sidewalk; landscape strip; construct Class I facility.
• Link improved Phelps Road with existing Phelps Road within county jurisdiction by removing gate and extending roadway cross-section.
• Install traffic signal at Bayberry Lane for "Day-Care" center.
• Restripe Phelps Road for 11-foot lanes and 4-foot bike lanes.

Scope: Demolition; widen pavement; concrete curb, gutter, sidewalk, etc.; traffic signal; pavement delineation and slurry seal; right of way.

Limits: Storke Road to Los Carneros Road

Estimate Type: Planning (City) Estimate Date: 15-Jan-26

Working Days: 120

		Current Year Costs		Section		
Earthwork	$	653,500	+	1		
Pavement Structural Section	$	1,220,100	+	2		
Drainage	$	-	+	3		
Specialty Items	$	111,000	+	4		
Environmental	$	201,100	+	5		
Traffic Items	$	550,000	+	6		
Minor Items	$	164,200	+	7		
Roadway Mobilization	$	290,000	+	8		
Roadway Contingency	$	638,000	+	9		
TOTAL ROADWAY COST	$	3,827,900	=			
TOTAL STRUCTURES COST	$	-	+	10		
TOTAL CONSTRUCTION COST	**$**	**3,828,000**	=			
TOTAL RIGHT OF WAY COST	**$**	**12,511,000**	=	11		
Management Support	$	382,800	+	10%		
PA&ED Support	$	382,800	+	10%		
PS&E Support	$	574,200	+	15%		of Construction Costs
Right of Way Support	$	76,600	+	2%		
Construction Support	$	612,500	+	16%		
Support Contingency	$	405,800	+	20%		of Support Costs
TOTAL SUPPORT COST	**$**	**2,435,000**	=			

Total Estimated Project Costs: $ 18,800,000 ✗ Check Status

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-09 Phelps Road Extension

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	5,522	x	110.00	= $	607,420	1
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY		x		=	1/15/2026	
Structure Excavation (Retaining Wall)	CY		x		= $	-	
Structure Backfill (Retaining Wall)	CY		x		= $	-	
Clearing & Grubbing	LS		x		= $	-	
				TOTAL EARTHWORK SECTION ITEMS		**$**	**653,500**

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN	711	x	418.28	= $	297,397	2
Class 2 Aggregate Base	CY	544	x	295.45	= $	160,725	3
Slurry Seal	TN	41	x	2,700.00	= $	110,700	4
Minor Concrete (Miscellaneous Construction)	CY	786	x	828.49	= $	651,193	5
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$**	**1,220,100**

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY		x		= $	-	
Reinforced Concrete Pipe	LF		x		= $	-	
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$**	**-**

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF		x		= $	-	
Chain Link Fence	LF	1,850	x	60.00	= $	111,000	6
Midwest Guardrail System (Wood Post)	LF		x		= $	-	
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF		x		= $	-	
Structural Concrete, Retaining Wall	CY		x		= $	-	
				TOTAL SPECIALTY ITEMS		**$**	**111,000**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-09 Phelps Road Extension

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS		x		= $	-	
Highway Planting	LS	1	x	100,000	= $	100,000	
Irrigation System	LS	1	x	25,000	=	1/15/2026	
Plant Establishment Work	LS	1	x	20,000	= $	20,000	
Implement Erosion Control	LS	1	x	15,000	= $	15,000	
Prepare and Implement SWPPP / WPCP	LS	1	x	20,000	= $	20,000	
				TOTAL ENVIRONMENTAL		**$**	**201,100**

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS		x		= $	-	
Signal and Lighting	LS	1	x	550,000	= $	550,000	7
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS		x		= $	-	
Furnish and Install Sign Structure	LS		x		= $	-	
CIDH Pile (Sign Foundation)	LS		x		= $	-	
Remove Sign Structure	LS		x		= $	-	
Permanent Pavement Delineation	LS		x		= $	-	
				TOTAL TRAFFIC ITEMS		**$**	**550,000**

SECTION 7: MINOR ITEMS							Notes
Traffic Management Plan and Detours					$	-	
Stage Construction and Traffic Handling				1.0%	$	27,357	
ADA Items				1.0%	$	27,357	
Other Minor Items				4.0%	$	109,428	
Total of Section 1-6	$	2,735,700	x	6.0%	= $	164,142	
				TOTAL MINOR ITEMS		**$**	**164,200**

SECTIONS 8: MOBILIZATION							
Total Section 1-7	$	2,899,900	x	10%	= $	289,990	
				TOTAL MOBILIZATION		**$**	**290,000**

SECTION 9: ROADWAY CONTINGENCY							
Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)							
Total Section 1-8	$	3,189,900	x	20%	= $	637,980	
				TOTAL CONTINGENCY		**$**	**638,000**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-09 Phelps Road Extension

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx			xxxxxxxxx				xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			####	--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF			0	LF
Total Bridge Length	0	LF		0	LF			0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT			0	SQFT
Complexity	5			5				5	
Unusual Features	0			0				0	
Cost Per Square Foot	$0			$0				$0	
COST OF EACH BRIDGE	$	-		$	-			$	-

Name / ID	xxxxxxxxx			xxxxxxxxx				xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--				--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF			0	LF
Total Bridge Length	0	LF		0	LF			0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT			0	SQFT
Complexity	5			5				5	
Unusual Features	0			0				0	
Cost Per Square Foot	$0			$0				$0	
COST OF EACH BRIDGE	$	-		$	-			$	-

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF	59,577	x	150.00	=	$	8,936,612	8
Acquisition - Commercial Property	SF		x		=	$	-	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	40%	x	8,936,612	=	$	3,574,645	
		TOTAL RIGHT OF WAY ESTIMATE					**$**	**12,511,300**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-09 Phelps Road Extension

NOTES AND CALCULATIONS

NOTE NO. 1

Roadway Excavation (areas from CAD)

71400	SF	Phelps eastern terminus and north of Mesa
13800	SF	####

Depth of removals

1.75 feet

Volume = area * depth

149,100 CF

5,522 CY

RESULT NO. 1 **5,522**

NOTE NO. 2

Hot Mix Asphalt

Area (from CAD)

14700 SF Mesa widening and new intersection of Mesa and Phelps

Depth

0.67 feet

Tonnage = area * depth * 145lbs/CF / 2000lbs/ton

711 ton

RESULT NO. 2 **711**

NOTE NO. 3

Aggregate Base

Area (from CAD)

14700 SF New Pavement

Depth

1.00 feet

Volume = area * depth

14700 CF

544 CY

RESULT NO. 3 **544**

NOTE NO. 4

Slurry seal

Area (from CAD) of entire Phleps Extension

61000 SF

Coverage rate (Caltrans)

1500 SF/ton

Tonnage = area / coverage rate

41 ton

RESULT NO. 4 **41**

NOTE NO. 5

Minor concrete (miscellaneous construction)

<u>New Sidewalks and Class I</u>

South Side	12500	SF
North Side	32200	SF

Depth of Concrete

0.33 feet

Total Concrete = Area * Depth

14900 CF

552 CY

<u>Concrete Curb and Gutter Type A2-6 per Caltrans</u>

Volume per linear feet

0.05903 CY/LF

Curb and Gutter Length

South Side	2100	feet
North Side	1870	feet

Total Concrete = Volume per length * length

234 CY

RESULT NO. 5 **786**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-09 Phelps Road Extension

NOTES AND CALCULATIONS

NOTE NO. 6

Chain link fence

1850	feet	along Class I	**RESULT NO. 6**	**1850**

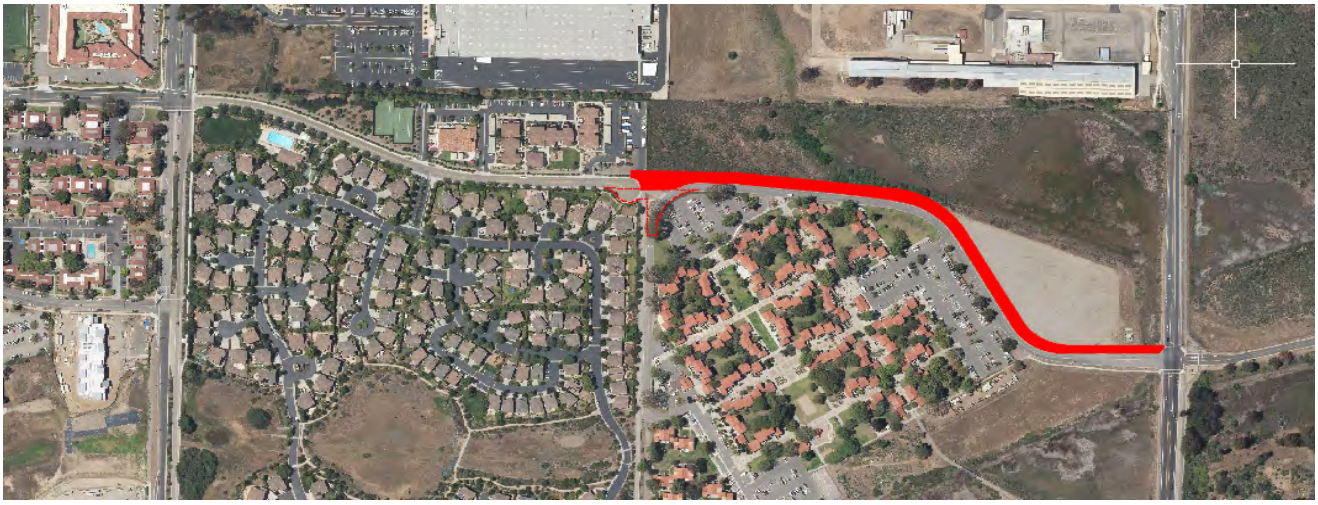
NOTE NO. 7

Signalized Intersection

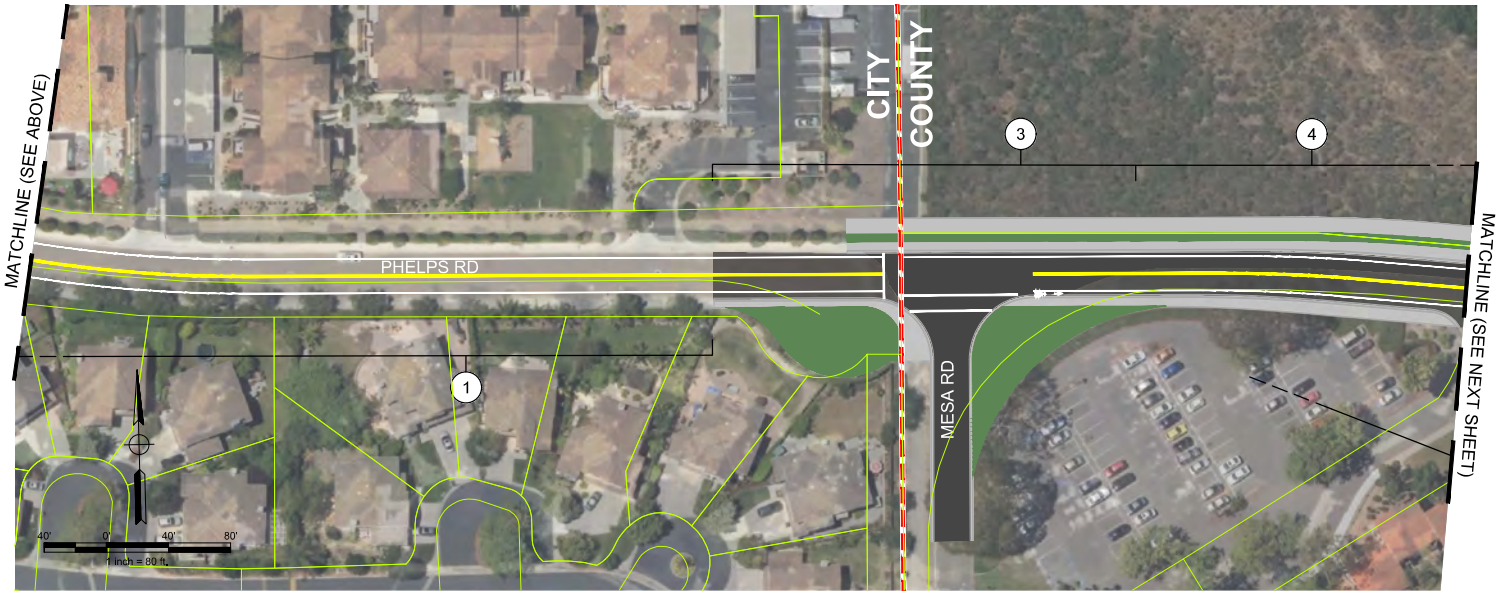
1	x	$550,000	**RESULT NO. 7**	**$**	**550,000**

NOTE NO. 8

Right of way acquisition

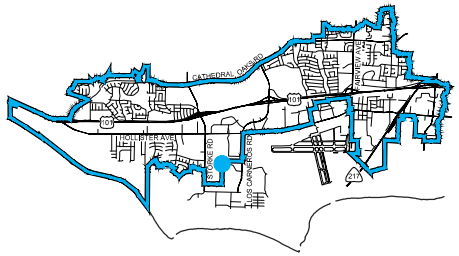


59577	SF	widening to the north requires ROW	**RESULT NO. 8**	**59577**



GOLETA TRANSPORTATION IMPROVEMENTS PROGRAM

Project R-09: Phelps Road Extension



NOTES

1. Restripe Phelps Road for 11-foot lanes and 4-foot bike lanes.
2. Install traffic signal at Bayberry Lane for "Day Care" center.
3. Link existing Phelps Road to proposed extension within County jurisdiction.
4. Extend Phelps Road from Mesa Road to Los Carneros Road. Widen existing road to the north to construct sidewalk, bike lanes, landscape strip and Class I facility.

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Santa Barbara, CA 93103
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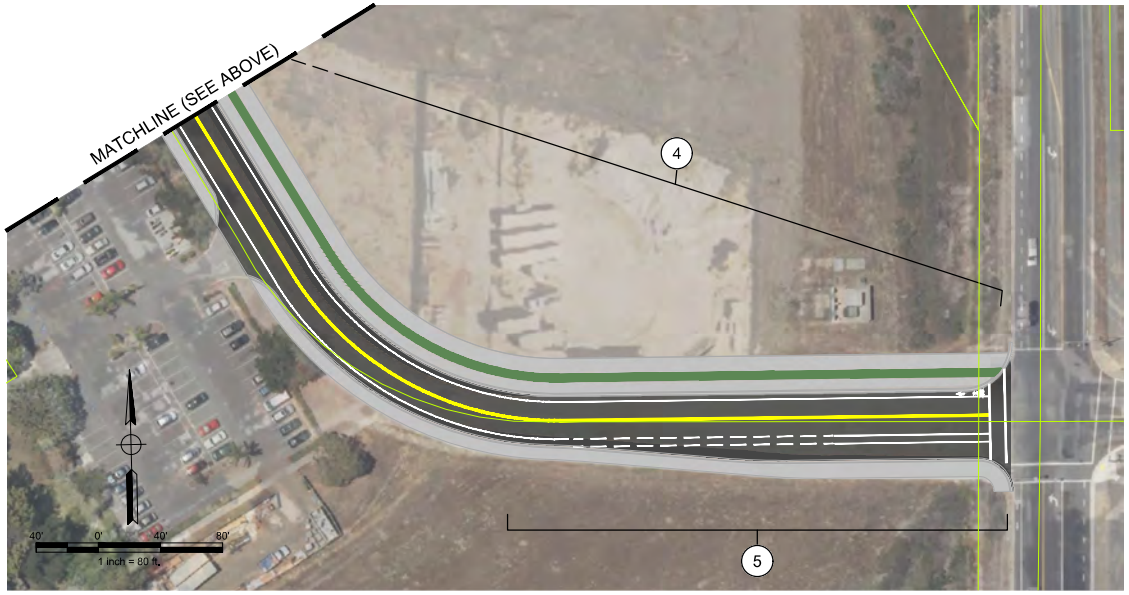
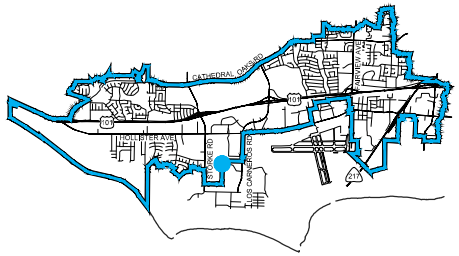


GOLETA TRANSPORTATION IMPROVEMENTS PROGRAM

Project R-09: Phelps Road Extension



NOTES

(4) Extend Phelps Road from Mesa Road to Los Carneros Road. Widen existing road to the north to construct sidewalk, bike lanes, landscape strip and Class I facility

(5) Widen existing road to the south to construct a right turn lane

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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-10 US 101 Northbound Auxiliary Lane (North Segment)

Description:
- Construct an auxiliary lane on US 101 NB between Los Carneros Road and Glen Annie Road and Storke Road.
- Widen freeway pavement to the north and construct retaining walls along north edge of pavement.
- Construction of retaining walls along north side of US 101.
- Add second lane on off-ramp.

Scope: Demolition; pavement widening; retaining walls; pavement delineation.

Limits: Storke Road to Los Carneros Road

Estimate Type: Planning (Caltrans) Estimate Date: 15-Jan-26

Working Days: 240

		Current Year Costs		Section	
Earthwork	$	3,629,700	+	1	
Pavement Structural Section	$	1,411,800	+	2	
Drainage	$	-	+	3	
Specialty Items	$	2,178,000	+	4	
Environmental	$	925,000	+	5	
Traffic Items	$	375,000	+	6	
Minor Items	$	852,000	+	7	
Roadway Mobilization	$	937,200	+	8	
Roadway Contingency	$	3,092,700	+	9	
TOTAL ROADWAY COST	$	13,401,400	=		
TOTAL STRUCTURES COST	$	-	+	10	
TOTAL CONSTRUCTION COST	**$**	**13,401,000**	=		
TOTAL RIGHT OF WAY COST	**$**	**-**	=	11	
Management Support	$	1,340,100	+	10%	
PA&ED Support	$	1,340,100	+	10%	
PS&E Support	$	2,010,200	+	15%	of Construction Costs
Right of Way Support	$	268,100	+	2%	
Construction Support	$	2,144,200	+	16%	
Support Contingency	$	2,130,900	+	30%	of Support Costs
TOTAL SUPPORT COST	**$**	**9,234,000**	=		

Total Estimated Project Costs: $ 22,650,000 ✗ **Check Status**

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-10 US 101 Northbound Auxiliary Lane (North Segment)

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	1,545	x	160.00	= $	247,200	2
Roadway Excavation (ADL)	CY	3,604	x	464.86	= $	1,675,355	3
Imported Borrow	CY	231	x	90.00	= $	20,790	4
Structure Excavation (Retaining Wall)	CY	2,285	x	300.00	= $	685,500	5
Structure Backfill (Retaining Wall)	CY	1,541	x	325.00	= $	500,825	6
Clearing & Grubbing	LS	1	x	500,000	= $	500,000	
				TOTAL EARTHWORK SECTION ITEMS		**$ 3,629,700**	

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN	4,007	x	237.97	= $	953,546	7
Class 2 Aggregate Base	CY	3,412	x	134.30	= $	458,232	8
Slurry Seal	TN		x		= $	-	
Minor Concrete (Miscellaneous Construction)	CY		x		= $	-	
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$ 1,411,800**	

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY		x		= $	-	
Reinforced Concrete Pipe	LF		x		= $	-	
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$ -**	

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF	19,600	x	50.00	= $	980,000	12
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF	350	x	22.04	= $	7,714	
Chain Link Fence	LF		x		= $	-	
Midwest Guardrail System (Wood Post)	LF		x		= $	-	
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF	1,000	x	214.48	= $	214,480	9
Structural Concrete, Retaining Wall	CY	870	x	1,121.58	= $	975,775	10
				TOTAL SPECIALTY ITEMS		**$ 2,178,000**	

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-10 US 101 Northbound Auxiliary Lane (North Segment)

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS		x		= $	-	
Highway Planting	LS	1	x	500,000	= $	500,000	
Irrigation System	LS	1	x	150,000	= $	150,000	
Plant Establishment Work	LS	1	x	125,000	= $	125,000	
Implement Erosion Control	LS	1	x	100,000	= $	100,000	
Prepare and Implement SWPPP / WPCP	LS	1	x	50,000	= $	50,000	
				TOTAL ENVIRONMENTAL		**$ 925,000**	

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS		x		= $	-	
Signal and Lighting	LS		x		= $	-	
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS		x		= $	-	
Furnish and Install Sign Structure	LB	25,000	x	10.00	= $	250,000	
CIDH Pile (Sign Foundation)	LF	25	x	1,000.00	= $	25,000	11
Remove Sign Structure	EA		x		= $	-	
Permanent Pavement Delineation	LS	1	x	100,000	= $	100,000	
				TOTAL TRAFFIC ITEMS		**$ 375,000**	

SECTION 7: MINOR ITEMS							Notes
Traffic Management Plan and Detours				5.0%	$	425,975	
Stage Construction and Traffic Handling				2.0%	$	170,390	
ADA Items					$	-	
Other Minor Items				3.0%	$	255,585	
Total of Section 1-6	$	8,519,500	x	10.0%	= $	851,950	
				TOTAL MINOR ITEMS		**$ 852,000**	

SECTIONS 8: MOBILIZATION							
Total Section 1-7	$	9,371,500	x	10%	= $	937,150	
				TOTAL MOBILIZATION		**$ 937,200**	

SECTION 9: ROADWAY CONTINGENCY							
Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)							
Total Section 1-8	$	10,308,700	x	30%	= $	3,092,610	
				TOTAL CONTINGENCY		**$ 3,092,700**	

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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-10 US 101 Northbound Auxiliary Lane (North Segment)

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	30%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

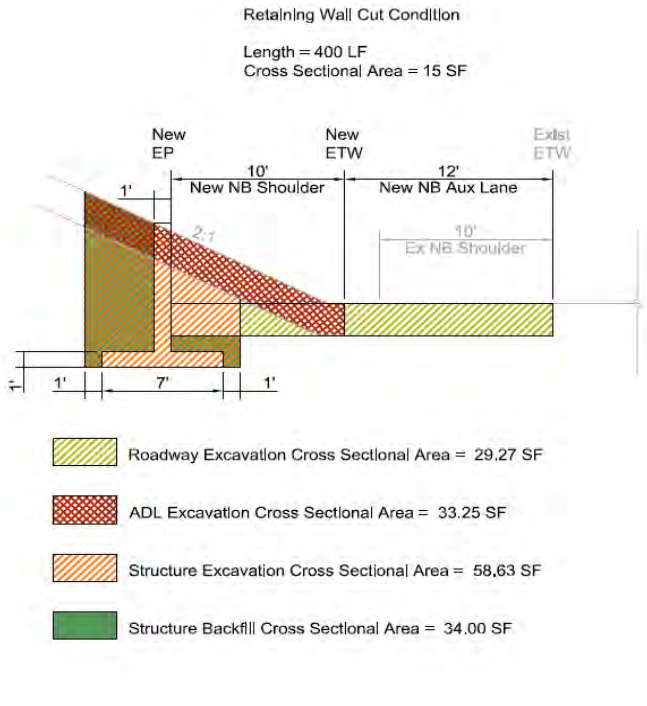
SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF		x		=	$	-	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	30%	x	0	=	$	-	
		TOTAL RIGHT OF WAY ESTIMATE					**$**	**-**

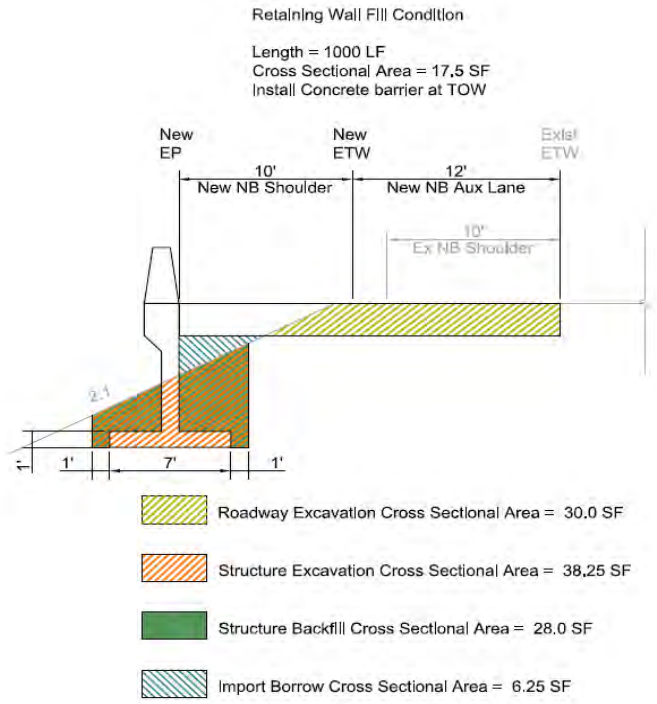
City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-10 US 101 Northbound Auxiliary Lane (North Segment)

NOTES AND CALCULATIONS

NOTE NO. 1





NOTE NO. 2

Roadway excavation

Cut Condition			Fill Condition		
Area	29.27	SF	Area	30	SF
Length	400	LF	Length	1000	LF
Vol = Area * Length			Vol = Area * Length		
	434	CY		1111	CY

RESULT NO. 2 **1545**

NOTE NO. 3

Roadway excavation (ADL)

Cut Condition

Area	33.25	SF
Length	400	LF
Vol = Area * Length		
	493	CY

Ramp Widening for Second Lane

Area	42000	SF
Depth	2	LF
Vol = Area * Length		
	3111	CY

Total 3604 CY

RESULT NO. 3 **3604**

R-10 US 101 Northbound Auxiliary Lane (North Segment)

NOTES AND CALCULATIONS

NOTE NO. 4

Import borrow

Fill Condition

Area 6.25 SF
Length 1000 LF
Vol = Area * Length
231 CY

RESULT NO. 4 **231**

NOTE NO. 5

Structure excavation

Cut Condition			Fill Condition		
Area	58.63	SF	Area	38.25	SF
Length	400	LF	Length	1000	LF
Vol = Area * Length			Vol = Area * Length		
	869	CY		1417	CY

RESULT NO. 5 **2285**

NOTE NO. 6

Structure backfill

Cut Condition			Fill Condition		
Area	34	SF	Area	28	SF
Length	400	LF	Length	1000	LF
Vol = Area * Length			Vol = Area * Length		
	504	CY		1037	CY

RESULT NO. 6 **1541**

NOTE NO. 7

AC Pavement area (from CAD)
73700 SF
Depth
0.75 feet
Tonnage = Area * Depth * 145lbs/CF / 2000lbs/ton
4007 ton

RESULT NO. 7 **4007**

NOTE NO. 8

Aggregate base area (from CAD)
73700 SF
Depth
1.25 feet
Volume = (Sum of Areas) * Depth
92125 CF
3412 CY

RESULT NO. 8 **3412**

NOTE NO. 9

Concrete barrier
Length
1000 LF

RESULT NO. 9 **1000**

R-10 US 101 Northbound Auxiliary Lane (North Segment)

NOTES AND CALCULATIONS

NOTE NO. 10

Structural concrete, retaining wall

Cut Condition			Fill Condition		
Area	15	SF	Area	17.5	SF
Length	400	LF	Length	1000	LF
Vol = Area * Length			Vol = Area * Length		
	222	CY		648	CY

RESULT NO. 10 **870**

NOTE NO. 11

CIDH pile (sign structure)

25	feet	Relocate overhead sign. Foundation only.

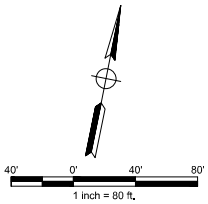
RESULT NO. 11 **25**

NOTE NO. 12

Soundwall at R/W NB only

1,400	feet	Length
14	feet	Height
19,600	feet	Relocate overhead sign. Foundation only.

RESULT NO. 12 **19600**



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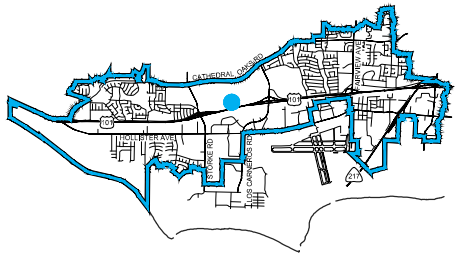
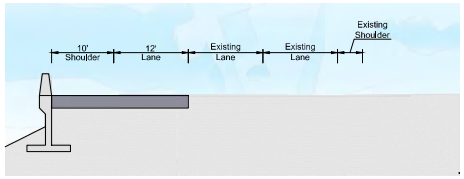
GOLETA TRANSPORTATION IMPROVEMENTS PROGRAM

Project R-10: US 101 Northbound Auxilary Lane (North Segment)



Notes

1. Construct 12-foot auxiliary lane with 10-foot shoulder on northbound HWY 101 between Los Carneros Rd & Storke Rd ramps. See cross section A-A.
2. Construct retaining wall. See cross section B-B.



Cross Section A-A

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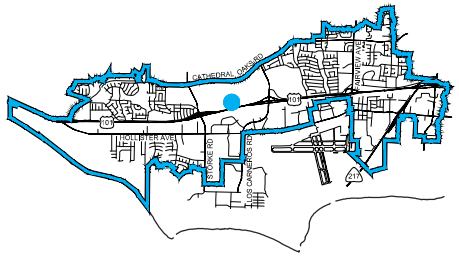
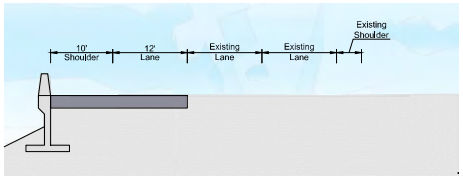
GOLETA TRANSPORTATION IMPROVEMENTS PROGRAM

Project R-10: US 101 Northbound Auxilary Lane (North Segment)



Notes

1. Construct 12-foot auxiliary lane with 10-foot shoulder on northbound HWY 101 between Los Carneros Rd & Storke Rd ramps. See cross section A-A.
2. Construct retaining wall. See cross section B-B.



Cross Section A-A

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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-11 US 101 Northbound and Southbound Auxiliary Lanes (South Segment)

Description: Construct auxiliary lanes on US 101 NB and SB.
For northbound auxiliary lane:
• Widening on north side of US 101 between freeway and Calle Real.
• Construct retaining walls on north side of US 101 to avoid right of way takes.
• Extend culverts under US 101 at Las Vegas and San Pedro Creeks.
For southbound auxiliary lane:
• Widening on south side of US 101 between freeway and UPRR.
• Extend culverts under US 101 at Las Vegas and San Pedro Creeks.

Scope: Demolition; pavement widening; retaining wall; pavement delineation.

Limits: Los Carneros Road to Fairview Avenue.

Estimate Type: Planning (Caltrans) Estimate Date: 15-Jan-26

Working Days: 200

		Current Year Costs		Section	
Earthwork	$	2,924,000	+	1	
Pavement Structural Section	$	2,897,800	+	2	
Drainage	$	-	+	3	
Specialty Items	$	4,202,100	+	4	
Environmental	$	990,000	+	5	
Traffic Items	$	50,000	+	6	
Minor Items	$	663,900	+	7	
Roadway Mobilization	$	1,172,800	+	8	
Roadway Contingency	$	3,870,200	+	9	
TOTAL ROADWAY COST	$	16,770,800	=		
TOTAL STRUCTURES COST	$	2,665,800	+	10	
TOTAL CONSTRUCTION COST	**$**	**19,437,000**	=		
TOTAL RIGHT OF WAY COST	**$**	**650,000**	=	11	
Management Support	$	1,943,700	+	10%	of Construction Costs
PA&ED Support	$	1,943,700	+	10%	
PS&E Support	$	2,915,600	+	15%	
Right of Way Support	$	388,800	+	2%	
Construction Support	$	3,110,000	+	16%	
Support Contingency	$	3,090,600	+	30%	of Support Costs
TOTAL SUPPORT COST	**$**	**13,393,000**	=		

Total Estimated Project Costs: $ 33,500,000 ✖ Check Status

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-11 US 101 Northbound and Southbound Auxiliary Lanes (South Segment)

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	10,884	x	71.00	= $	772,764	2
Roadway Excavation (ADL)	CY	1,666	x	332.60	= $	554,112	3
Imported Borrow	CY	9,107	x	20.00	= $	182,140	4
Structure Excavation (Retaining Wall)	CY	1,686	x	300.00	= $	505,800	5
Structure Backfill (Retaining Wall)	CY	1,259	x	325.00	= $	409,175	6
Clearing & Grubbing	LS	1	x	500,000	= $	500,000	
				TOTAL EARTHWORK SECTION ITEMS		**$ 2,924,000**	

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN	12,760	x	174.42	= $	2,225,599	7
Class 2 Aggregate Base	CY	6,519	x	103.10	= $	672,109	8
Slurry Seal	TN		x		= $	-	
Minor Concrete (Miscellaneous Construction)	CY		x		= $	-	
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$ 2,897,800**	

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY		x		= $	-	
Reinforced Concrete Pipe	LF		x		= $	-	
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$ -**	

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF	70,000	x	35.00	= $	2,450,000	13
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF	700	x	22.04	= $	15,428	9
Chain Link Fence	LF		x		= $	-	
Midwest Guardrail System (Wood Post)	LF	900	x	50.50	= $	45,450	10
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF	5,000	x	149.01	= $	745,050	
Structural Concrete, Retaining Wall	CY	494	x	1,915.28	= $	946,148	11
				TOTAL SPECIALTY ITEMS		**$ 4,202,100**	

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-11 US 101 Northbound and Southbound Auxiliary Lanes (South Segment)

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS	1	x	50,000	= $	50,000	
Highway Planting	LS	1	x	500,000	= $	500,000	
Irrigation System	LS	1	x	150,000	= $	150,000	
Plant Establishment Work	LS	1	x	125,000	= $	125,000	
Implement Erosion Control	LS	1	x	100,000	= $	100,000	
Prepare and Implement SWPPP / WPCP	LS	1	x	65,000	= $	65,000	
				TOTAL ENVIRONMENTAL		**$ 990,000**	

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS		x		= $	-	
Signal and Lighting	LS		x		= $	-	
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS		x		= $	-	
Furnish and Install Sign Structure	LB	25,000	x	0.00	= $	-	
CIDH Pile (Sign Foundation)	LF	25	x	0.00	= $	-	12
Remove Sign Structure	EA	2	x	0.00	= $	-	
Permanent Pavement Delineation	LS	1	x	50,000	= $	50,000	
				TOTAL TRAFFIC ITEMS		**$ 50,000**	

SECTION 7: MINOR ITEMS						Notes
Traffic Management Plan and Detours				$	-	
Stage Construction and Traffic Handling		3.0%		$	331,917	
ADA Items				$	-	
Other Minor Items		3.0%		$	331,917	
Total of Section 1-6	$ 11,063,900	x 6.0%	= $	663,834		
		TOTAL MINOR ITEMS		**$ 663,900**		

SECTIONS 8: MOBILIZATION						
Total Section 1-7	$ 11,727,800	x	10%	= $	1,172,780	
			TOTAL MOBILIZATION		**$ 1,172,800**	

SECTION 9: ROADWAY CONTINGENCY						
Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)						
Total Section 1-8	$ 12,900,600	x	30%	= $	3,870,180	
			TOTAL CONTINGENCY		**$ 3,870,200**	

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-11 US 101 Northbound and Southbound Auxiliary Lanes (South Segment)

SECTION 10: STRUCTURES ITEMS

Name / ID	Las Vegas Cr Widen	San Pedro Cr N Widen	San Pedro Cr S Widen
Structure Type	RC Box	RC Box	RC Box
Width (Feet) [out to out]	12 LF	12 LF	12 LF
Total Bridge Length	105 LF	110 LF	110 LF
Total Area (Square Feet)	1260 SQFT	1320 SQFT	1320 SQFT
Complexity	5	5	5
Unusual Features	4	4	4
Cost Per Square Foot	$478	$478	$478
COST OF EACH BRIDGE	$ 602,280	$ 630,960	$ 630,960

Name / ID	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx
Structure Type	--Select Bridge Type--	--Select Bridge Type--	--Select Bridge Type--
Width (Feet) [out to out]	0 LF	0 LF	0 LF
Total Bridge Length	0 LF	0 LF	0 LF
Total Area (Square Feet)	0 SQFT	0 SQFT	0 SQFT
Complexity	5	5	5
Unusual Features	0	0	0
Cost Per Square Foot	$0	$0	$0
COST OF EACH BRIDGE	$ -	$ -	$ -

TOTAL COST OF BRIDGES		$	1,864,200
Structures Mobilization Percentage	10%	$	186,420
Structures Contingency Percentage	30%	$	615,186
TOTAL COST OF STRUCTURES		**$**	**2,665,800**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF		x		=	$	-	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS	1	x	250,000	=	$	250,000	
Railroad - Flaggers	LS	1	x	250,000	=	$	250,000	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	30%	x	500,000	=	$	150,000	
TOTAL RIGHT OF WAY ESTIMATE						**$**	**650,000**	

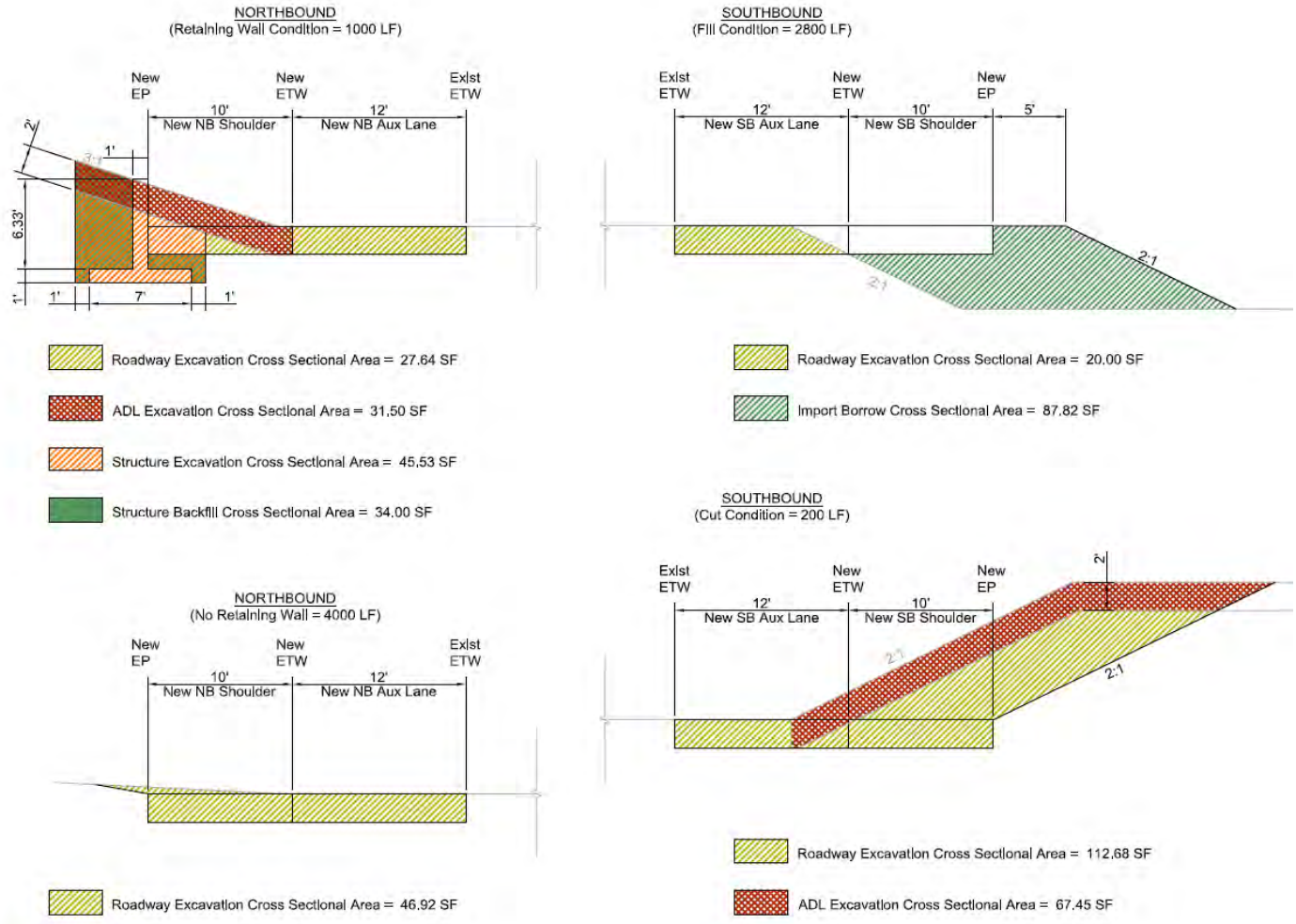
City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-11 US 101 Northbound and Southbound Auxiliary Lanes (South Segment)

NOTES AND CALCULATIONS

NOTE NO. 1

1 #####



NOTE NO. 2

(Roadway Excavation Numbers from Note 1)

Northbound

(2.1) Ret. Wall Condition - Cross Sectional Area
27.64 SF
(2.2) Length of Wall
1000 feet
(2.3) No Ret. Wall - Cross Sectional Area
46.92 SF
(2.4) Length without Ret Wall
4000 feet
Volume = (2.1)* (2.2) + (2.3) * (2.4)
215320 CF
7975 CY

Southbound

(2.5) Fill Condition - Cross Sectional Area
20 SF
(2.6) Length in Fill Condition
2800 feet
(2.7) Cut Condition - Cross Sectional Area
112.68 SF
(2.4) Length in Cut Condition
200 feet
Volume = (2.5)* (2.6) + (2.7) * (2.8)
78536 CF
2909 CY

RESULT NO. 2 **10884**

R-11 US 101 Northbound and Southbound Auxiliary Lanes (South Segment)

NOTES AND CALCULATIONS

NOTE NO. 3

(ADL Excavation Numbers from Note 1)

Northbound

(3.1) Ret. Wall Condition - Cross Sectional Area
31.5 SF
(3.2) Length of Wall
1000 feet
Volume = (3.1) * (3.2)
31500 CF
1167 CY

Southbound

(3.3) Cut Condition - Cross Sectional Area
67.45 SF
(3.4) Length in Cut Condition
200 feet
Volume = (3.3) * (3.4)
13490 CF
500 CY

RESULT NO. 3 **1666**

NOTE NO. 4

(Imported Borrow Numbers from Note 1)

Southbound Fill Condition - Cross Sectional Area
87.82 SF
Length of Fill Condition
2800 feet
Volume = Area * Length
245896 CF
9107 CY

RESULT NO. 4 **9107**

NOTE NO. 5

(Structure Excavation Numbers from Note 1)

Northbound Ret. Wall Condition - Cross Sectional Area
45.53 SF
Length of Wall
1000 feet
Volume = Area * Length
45530 CF
1686 CY

RESULT NO. 5 **1686**

NOTE NO. 6

(Structure Backfill Numbers from Note 1)

Northbound Ret. Wall Condition - Cross Sectional Area
34 SF
Length of Wall
1000 feet
Volume = Area * Length
34000 CF
1259.26 CY

RESULT NO. 6 **1259**

NOTE NO. 7

AC pavement area (from CAD)
176000 SF
Depth
1.00 feet
Tonnage = Area * Depth * 145lbs/CF / 2000lbs/ton
12760 ton

RESULT NO. 7 **12760**

R-11 US 101 Northbound and Southbound Auxiliary Lanes (South Segment)

NOTES AND CALCULATIONS

NOTE NO. 8

Aggregate base area (from CAD)
176000 SF
Depth
1.00 feet
Volume = Area * Depth
176000 CF
6519 CY

RESULT NO. 8 **6519**

NOTE NO. 9

Remove guard rail
600 feet NB guard rail protecting overhead sign
100 feet SB guard rail protecting San Pedro Creek culvert

RESULT NO. 9 **700**

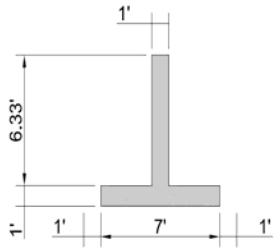
NOTE NO. 10

Install guard railing before creek structures
Creek structure approaches
3 EA
100 feet/EA
Guarding NB Los Carneros Overhead
600 feet

RESULT NO. 10 **900**

NOTE NO. 11

Structural Concrete - NB Ret Wall
Wall Cross Sectional Area
13.33 SF
Length of Wall
1000 feet
Volume = Area * Length
13330 CF
494 CY



Cross Sectional Area of Wall = 13.33 SF

RESULT NO. 11 **494**

NOTE NO. 12

CIDH pile (sign structure)
25 feet Relocate overhead sign. Foundation only.

RESULT NO. 12 **25**

NOTE NO. 13

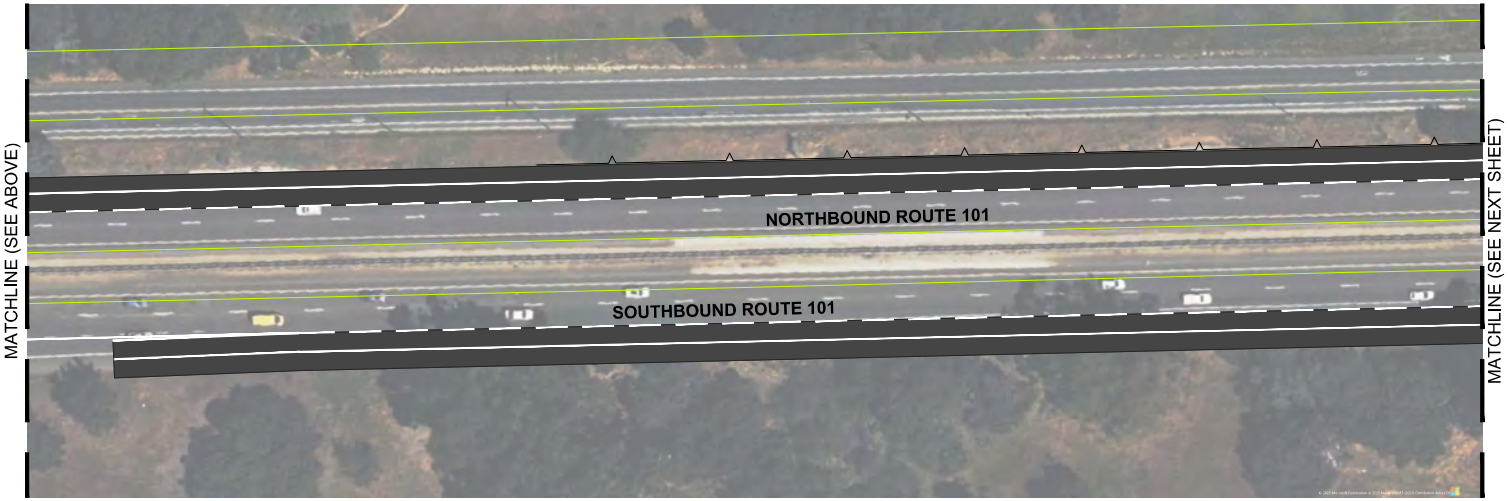
Soundwall at R/W NB only
5,000 feet Length
14 feet Height
70,000 feet Relocate overhead sign. Foundation only.

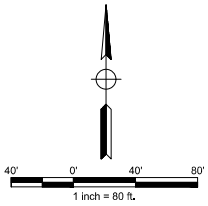
RESULT NO. 13 **70000**

NOTE NO. 14

Concrete barrier at base of sound wall
Length
5000 LF

RESULT NO. 14 **5000**





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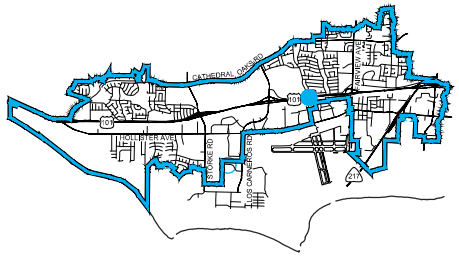
GOLETA TRANSPORTATION IMPROVEMENTS PROGRAM

Project R-11: **US 101 Northbound and Southbound Auxiliary Lanes (South Segment)**



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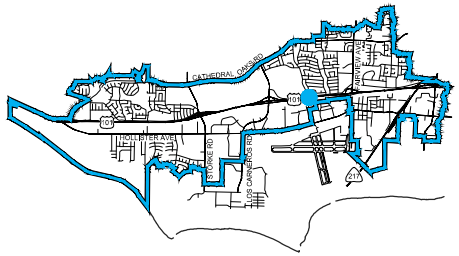
GOLETA TRANSPORTATION IMPROVEMENTS PROGRAM

Project R-11: **US 101 Northbound and Southbound Auxiliary Lanes (South Segment)**



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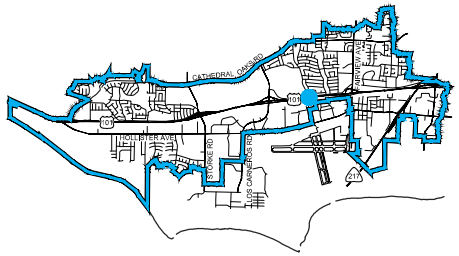
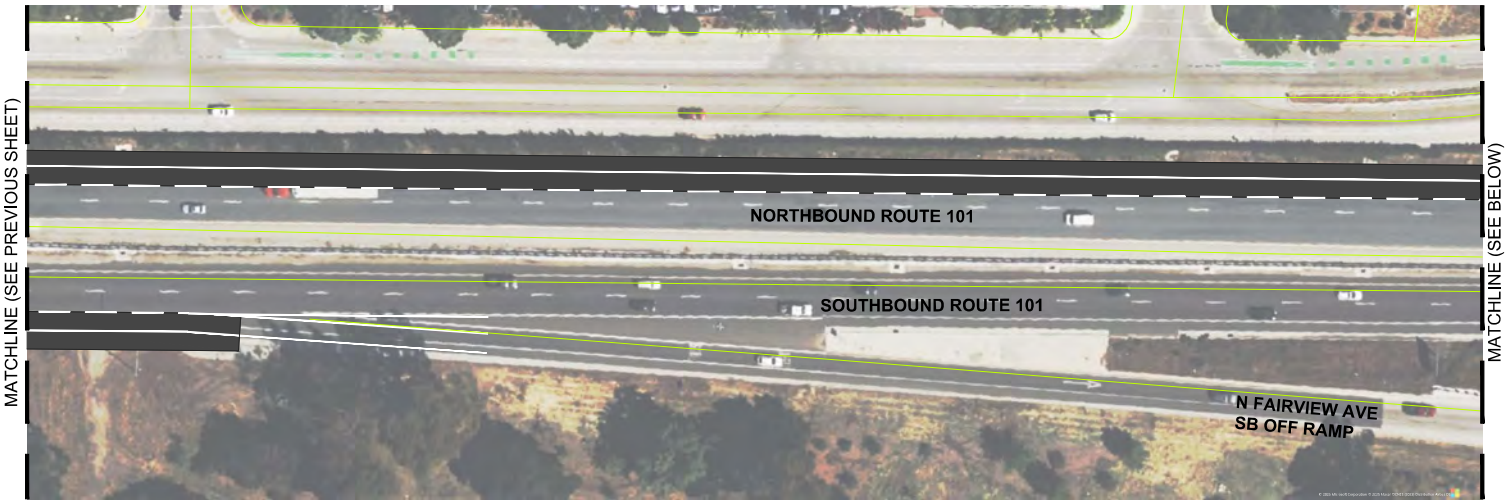
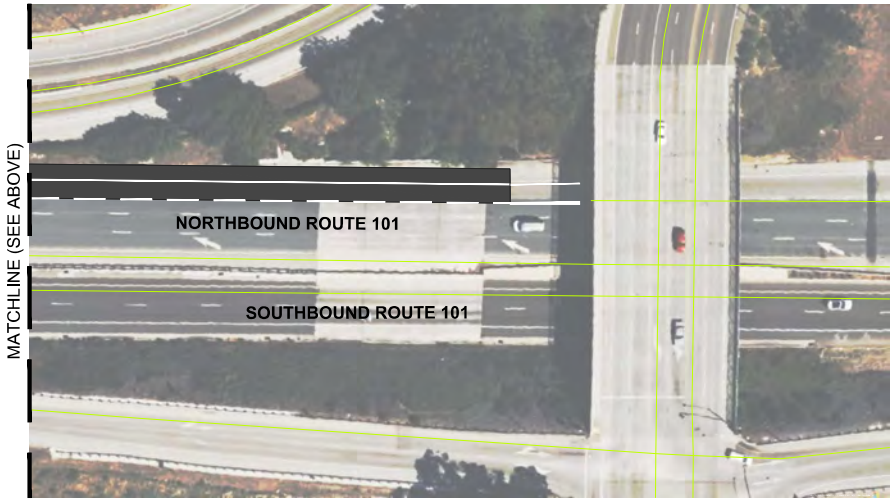
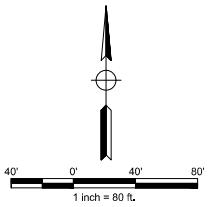
GOLETA TRANSPORTATION
IMPROVEMENTS PROGRAM

Project R-11: **US 101 Northbound and Southbound Auxiliary Lanes (South Segment)**









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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-12 Storke Road

Description: • Widen Storke Road from Phelps Road to southern city limits. Complete remaining widening of Storke Road to convert it into a 4 lane roadway with bicycle lanes and sidewalks on both directions.
• Reduce width of planted median.
• Reduce width of existing travel lanes.
• Sidewalk on eastside of Storke Road adjacent to road
• Sidewalk on west side separated from road.

Scope: Demolition; pavement widening; concrete curb, gutter, sidewalk, etc.; retaining wall; pavement delineation.

Limits: Phelps Road to City Limit

Estimate Type: Planning (City) Estimate Date: 15-Jan-26

Working Days: 100

		Current Year Costs		Section	
Earthwork	$	822,800	+	1	
Pavement Structural Section	$	915,800	+	2	
Drainage	$	-	+	3	
Specialty Items	$	747,000	+	4	
Environmental	$	100,000	+	5	
Traffic Items	$	20,000	+	6	
Minor Items	$	156,400	+	7	
Roadway Mobilization	$	276,200	+	8	
Roadway Contingency	$	607,700	+	9	
TOTAL ROADWAY COST	$	3,645,900	=		
TOTAL STRUCTURES COST	$	-	+	10	
TOTAL CONSTRUCTION COST	**$**	**3,646,000**	=		
TOTAL RIGHT OF WAY COST	**$**	**-**	=	11	
Management Support	$	364,600	+	10%	of Construction Costs
PA&ED Support	$	364,600	+	10%	
PS&E Support	$	546,900	+	15%	
Right of Way Support	$	73,000	+	2%	
Construction Support	$	583,400	+	16%	
Support Contingency	$	386,500	+	20%	of Support Costs
TOTAL SUPPORT COST	**$**	**2,319,000**	=		

Total Estimated Project Costs: $ 6,000,000 ✗ **Check Status**

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-12 Storke Road

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	2,992	x	160.00	= $	478,720	1
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY	155	x	90.00	= $	13,950	3
Structure Excavation (Retaining Wall)	CY	313	x	450.00	= $	140,850	4
Structure Backfill (Retaining Wall)	CY	204	x	560.00	= $	114,240	5
Clearing & Grubbing	LS	1	x	75,000	= $	75,000	
				TOTAL EARTHWORK SECTION ITEMS		**$**	**822,800**

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN	1,832	x	237.97	= $	435,961	6
Class 2 Aggregate Base	CY	1,404	x	134.30	= $	188,557	7
Slurry Seal	TN	1	x	3,507.95	= $	3,508	8
Minor Concrete (Miscellaneous Construction)	CY	202	x	1,424.58	= $	287,765	9
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$**	**915,800**

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY		x		= $	-	
Reinforced Concrete Pipe	LF		x		= $	-	
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$**	**-**

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF		x		= $	-	
Chain Link Fence	LF		x		= $	-	
Midwest Guardrail System (Wood Post)	LF		x		= $	-	
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF		x		= $	-	
Structural Concrete, Retaining Wall	CY	390	x	1,915.28	= $	746,959	10
				TOTAL SPECIALTY ITEMS		**$**	**747,000**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-12 Storke Road

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS		x		= $	-	
Highway Planting	LS	1	x	40,000	= $	40,000	
Irrigation System	LS	1	x	10,000	= $	10,000	
Plant Establishment Work	LS	1	x	10,000	= $	10,000	
Implement Erosion Control	LS	1	x	15,000	= $	15,000	
Prepare and Implement SWPPP / WPCP	LS	1	x	25,000	= $	25,000	
				TOTAL ENVIRONMENTAL		**$ 100,000**	

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS		x		= $	-	
Signal and Lighting	LS		x		= $	-	
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS		x		= $	-	
Furnish and Install Sign Structure	LS		x		= $	-	
CIDH Pile (Sign Foundation)	LS		x		= $	-	
Remove Sign Structure	LS		x		= $	-	
Permanent Pavement Delineation	LS	1	x	20,000	= $	20,000	
				TOTAL TRAFFIC ITEMS		**$ 20,000**	

SECTION 7: MINOR ITEMS							Notes
Traffic Management Plan and Detours				3.0%	$	78,168	
Stage Construction and Traffic Handling					$	-	
ADA Items				1.0%	$	26,056	
Other Minor Items				2.0%	$	52,112	
Total of Section 1-6	$	2,605,600	x	6.0%	= $	156,336	
				TOTAL MINOR ITEMS		**$ 156,400**	

SECTIONS 8: MOBILIZATION							
Total Section 1-7	$	2,762,000	x	10%	= $	276,200	
				TOTAL MOBILIZATION		**$ 276,200**	

SECTION 9: ROADWAY CONTINGENCY

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total Section 1-8	$	3,038,200	x	20%	= $	607,640	
				TOTAL CONTINGENCY		**$ 607,700**	

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-12 Storke Road

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

Name / ID	xxxxxxxxx			xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--			--Select Bridge Type--			--Select Bridge Type--	
Width (Feet) [out to out]	0	LF		0	LF		0	LF
Total Bridge Length	0	LF		0	LF		0	LF
Total Area (Square Feet)	0	SQFT		0	SQFT		0	SQFT
Complexity	5			5			5	
Unusual Features	0			0			0	
Cost Per Square Foot	$0			$0			$0	
COST OF EACH BRIDGE	$	-		$	-		$	-

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF		x		=	$	-	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	20%	x	0	=	$	-	
		TOTAL RIGHT OF WAY ESTIMATE					**$**	**-**

R-12 Storke Road

NOTES AND CALCULATIONS

NOTE NO. 1

Roadway excavation area (from CAD)

37900	SF	Widenings
4180	SF	Curb
6389	SF	Sidewalks

Depth

1.67 feet

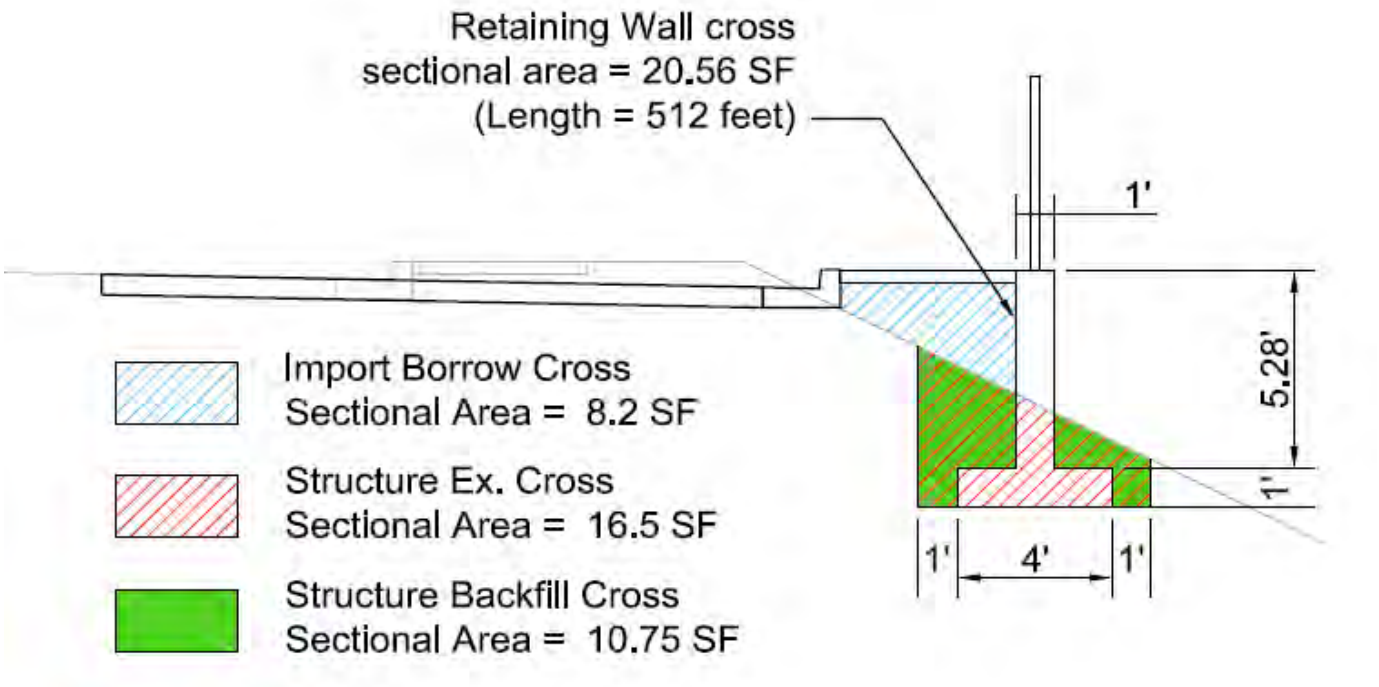
Volume = (Sum of Areas) * Depth

80782 CF

2992 CY

RESULT NO. 1 **2992**

NOTE NO. 2



RESULT NO. 2 **Information Only**

NOTE NO. 3

Imported Borrow

Area (from CAD)

8 SF

Length

512 feet

Volume = Area * Length

4198 CF

155 CY

RESULT NO. 3 **155**

NOTE NO. 4

Structure Excavation

Area (from CAD)

R-12 Storke Road

NOTES AND CALCULATIONS

17 SF
Length of Wall
512 feet
Volume = Area * Length
8448 CF
313 CY **RESULT NO. 4** **313**

NOTE NO. 5

Structure Backfill
Cross Sectional Area
11 SF
Length of Wall
512 feet
Volume = Area * Length
5504 CF
204 CY **RESULT NO. 5** **204**

NOTE NO. 6

AC Pavement
Widening area (from CAD)
37900 SF
Depth
0.67 feet
Tonnage = Area * Depth * 145lbs/CF / 2000lbs/ton
1832 ton **RESULT NO. 6** **1832**

NOTE NO. 7

Aggregate base
Area (from CAD)
37900 SF Widenings
Depth
1.00 feet
Volume = (Sum of Areas) * Depth
37900 CF
1404 CY **RESULT NO. 7** **1404**

NOTE NO. 8

Slurry seal
Seal Existing northbound lane and left turn pocket between Whittier and Willowgrove

Area (CAD) 1682.26 SF

Tonnage = area / 1500SF/TN 1.12 TN

RESULT NO. 8 **1**

NOTE NO. 9

Minor concrete (miscellaneous construction)

<u>Concrete Sidewalks</u>
Sidewalks Plan Area (from CAD)
6389 SF
Depth

<u>Concrete Curb and Gutter Type A2-6 per Caltrans</u>
Volume / foot
0.05903 CY/foot
Length

R-12 Storke Road

NOTES AND CALCULATIONS

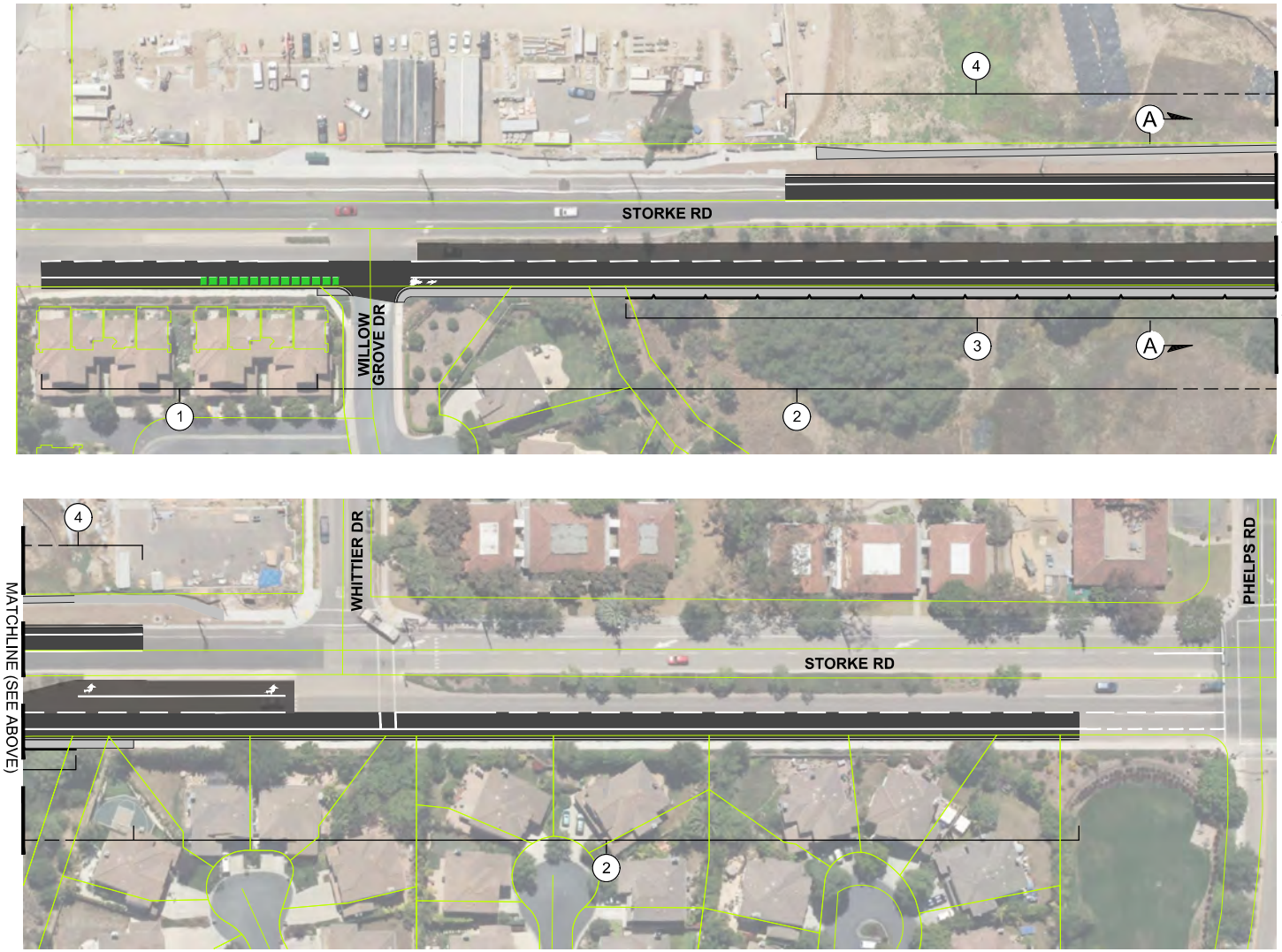
0.33	feet	444 feet	Westerly Curb
Volume = Area * Depth		1415 feet	Easterly curb north of Willowgrove Dr
2130	CF	227 feet	Easterly curb south of Willowgrove Dr
79	CY	Volume = length * volume / foot	
		123 CY	

RESULT NO. 9 **202**

NOTE NO. 10

Retaining Wall
Cross Sectional Area (from CAD)
21 SF
Length
512 feet
Volume = Area * Length
10527 CF
390 CY

RESULT NO. 10 **390**



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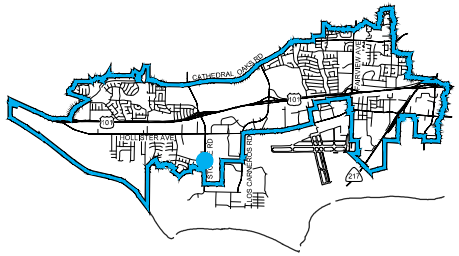
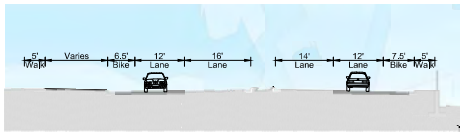
GOLETA TRANSPORTATION IMPROVEMENTS PROGRAM

Project R-12: Storke Road



Notes

1. Widen Storke Rd to the east to accommodate two northbound vehicle lanes and a bicycle lane. Protect existing sidewalk in place.
2. Widen Storke Rd to the east to accommodate two northbound vehicle lanes, a bicycle lanes, and new sidewalk.
3. Construct a retaining wall with decorative railing at the back of new sidewalk to avoid right-of-way impacts.
4. Widen Storke Rd to the west to accommodate two southbound vehicle lanes and a bicycle lane. Construct new sidewalk separated from roadway connecting existing sidewalk segments.



Cross Section A-A

MNS
201 N. Calle Cesar Chavez, Suite 300
Santa Barbara, CA 93103
805-692-6921 | www.mnsengineers.com

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-13 Los Carneros Way Realignment

Description: Realign Los Carneros Way to make a new ~~roundabout~~ intersection with Los Carneros Road and Karl Storz Drive. New four lane highway road with bicycle lanes and sidewalks on each direction.
- Realignment of northern 500 feet of Los Carneros Way to the east aligning with Karl Storz Drive.
- Removal of existing Los Carneros Way pavement.
- Modification of medians on Los Carneros Way.
- Major signal modification at Los Carneros Road.

Scope: Demolition; roadway and pavement construction; concrete curb, gutter, sidewalk; pavement delineation and slurry seal; drainage; traffic signal and interconnect; right of way.

Limits: Intersection of Los Carneros Road and Karl Storz Drive to Los Carneros Way south leg.

Estimate Type: Planning (City) Estimate Date: 9-Feb-26

Working Days: 150

		Current Year Costs		Section	
Earthwork	$	1,194,900	+	1	
Pavement Structural Section	$	1,114,600	+	2	
Drainage	$	204,900	+	3	
Specialty Items	$	-	+	4	
Environmental	$	501,100	+	5	
Traffic Items	$	1,165,000	+	6	
Minor Items	$	334,500	+	7	
Roadway Mobilization	$	451,500	+	8	
Roadway Contingency	$	993,300	+	9	
TOTAL ROADWAY COST	$	5,959,800	=		
TOTAL STRUCTURES COST	$	-	+	10	
TOTAL CONSTRUCTION COST	**$**	**5,960,000**	=		
TOTAL RIGHT OF WAY COST	**$**	**12,000,000**	=	11	
Management Support	$	596,000	+	10%	of Construction Costs
PA&ED Support	$	596,000	+	10%	
PS&E Support	$	894,000	+	15%	
Right of Way Support	$	119,200	+	2%	
Construction Support	$	953,600	+	16%	
Support Contingency	$	631,800	+	20%	of Support Costs
TOTAL SUPPORT COST	**$**	**3,791,000**	=		

Total Estimated Project Costs: $ 21,800,000 ✗ Check Status

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-13 Los Carneros Way Realignment

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	8,000	x	110.00	= $	880,000	1
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY	721	x	90.00	= $	64,890	5
Structure Excavation (Retaining Wall)	CY		x		= $	-	
Structure Backfill (Retaining Wall)	CY		x		= $	-	
Clearing & Grubbing	LS	1	x	250,000	= $	250,000	
				TOTAL EARTHWORK SECTION ITEMS		**$ 1,194,900**	

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN	1,903	x	237.97	= $	452,857	2
Class 2 Aggregate Base	CY	1,944	x	134.30	= $	261,079	3
Slurry Seal	TN	20	x	3,507.95	= $	70,159	10
Minor Concrete (Miscellaneous Construction)	CY	232	x	1,424.58	= $	330,503	4
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$ 1,114,600**	

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY	6	x	2,900.00	= $	17,400	6
Reinforced Concrete Pipe	LF	500	x	375.00	= $	187,500	7
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$ 204,900**	

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF		x		= $	-	
Chain Link Fence	LF		x		= $	-	
Midwest Guardrail System (Wood Post)	LF		x		= $	-	
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF		x		= $	-	
Structural Concrete, Retaining Wall	CY		x		= $	-	
				TOTAL SPECIALTY ITEMS		**$ -**	

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-13 Los Carneros Way Realignment

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS		x		= $	-	
Highway Planting	LS	1	x	250,000	= $	250,000	
Irrigation System	LS	1	x	50,000	=	1/16/2026	
Plant Establishment Work	LS	1	x	30,000	= $	30,000	
Implement Erosion Control	LS	1	x	75,000	= $	75,000	
Prepare and Implement SWPPP / WPCP	LS	1	x	100,000	= $	100,000	
				TOTAL ENVIRONMENTAL		**$ 501,100**	

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS	1	x	325,000	= $	325,000	8
Signal and Lighting	LS	1	x	700,000	= $	700,000	11
Ramp Metering System	LS		x		= $	-	
Interconnection Conduit and Cable	LS	1	x	100,000	= $	100,000	
Furnish and Install Sign Structure	LS		x		= $	-	
CIDH Pile (Sign Foundation)	LS		x		= $	-	
Remove Sign Structure	LS		x		= $	-	
Permanent Pavement Delineation	LS	1	x	40,000	= $	40,000	9
				TOTAL TRAFFIC ITEMS		**$ 1,165,000**	

SECTION 7: MINOR ITEMS							Notes
Traffic Management Plan and Detours				2.5%	$	104,513	
Stage Construction and Traffic Handling					$	-	
ADA Items				1.5%	$	62,708	
Other Minor Items				4.0%	$	167,220	
Total of Section 1-6	$	4,180,500	x	8.0%	= $	334,440	
				TOTAL MINOR ITEMS		**$ 334,500**	

SECTIONS 8: MOBILIZATION							
Total Section 1-7	$	4,515,000	x	10%	= $	451,500	
				TOTAL MOBILIZATION		**$ 451,500**	

SECTION 9: ROADWAY CONTINGENCY							
Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)							
Total Section 1-8	$	4,966,500	x	20%	= $	993,300	
				TOTAL CONTINGENCY		**$ 993,300**	

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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-13 Los Carneros Way Realignment

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx		xxxxxxxxx			xxxxxxxxx	
Structure Type	--Select Bridge Type--		--Select Bridge Type--		####	--Select Bridge Type--	
Width (Feet) [out to out]	0	LF	0	LF		0	LF
Total Bridge Length	0	LF	0	LF		0	LF
Total Area (Square Feet)	0	SQFT	0	SQFT		0	SQFT
Complexity	5		5			5	
Unusual Features	0		0			0	
Cost Per Square Foot	$0		$0			$0	
COST OF EACH BRIDGE	$	-	$	-		$	-

Name / ID	xxxxxxxxx		xxxxxxxxx		xxxxxxxxx	
Structure Type	--Select Bridge Type--		--Select Bridge Type--		--Select Bridge Type--	
Width (Feet) [out to out]	0	LF	0	LF	0	LF
Total Bridge Length	0	LF	0	LF	0	LF
Total Area (Square Feet)	0	SQFT	0	SQFT	0	SQFT
Complexity	5		5		5	
Unusual Features	0		0		0	
Cost Per Square Foot	$0		$0		$0	
COST OF EACH BRIDGE	$	-	$	-	$	-

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF	40,000	x	250.00	=	$	10,000,000	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	20%	x	10,000,000	=	$	2,000,000	
		TOTAL RIGHT OF WAY ESTIMATE					**$**	**12,000,000**

R-13 Los Carneros Way Realignment

NOTES AND CALCULATIONS

NOTE NO. 1

Roadway excavation area (from CAD)
96000 SF
Average Depth
2.25 feet
Volume = Area * Depth
216000 CF
8000 CY

RESULT NO. 1 **8,000**

NOTE NO. 2

AC pavement area (from CAD)
35000 SF
Depth of AC
0.75 feet
Tonnage = Area * Depth * 145lbs/CF / 2000lbs/ton
1903 ton

RESULT NO. 2 **1,903**

NOTE NO. 3

Aggregate base are (from CAD)
35000 SF
Depth
1.50 LF
Volume = Area * Depth
52500 CF
1944 CY

RESULT NO. 3 **1,944**

NOTE NO. 4

New sidewalk length	1200	feet
Sidewalk width (most of it is multi-use path)	8	feet
Sidewalk thickness	4	inches
Volume - Sidewalk	3200	CF
	119	CY
New Caltrans A1-6 curb at median islands	1200	feet
Volume / foot	0.03	CY/foot
Volume - Curb	31	CY
New Caltrans A2-6 curb and gutter length	1400	feet
Volume / foot	0.06	CY/foot
Volume - Curb	83	CY
Volume = Minor Concrete (Miscellaneous Construction)	232	CY

RESULT NO. 4 **232**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-13 Los Carneros Way Realignment

NOTES AND CALCULATIONS

NOTE NO. 5

Import for landscape areas
9,740 SF
Depth
2.00 feet
Volume = width * length * depth
19,480 CF
721 CY

RESULT NO. 5 **721**

NOTE NO. 6

New drop inlets - assumed one each side of the road on each leg
2 each
Depth of drop inlets
5 feet
Drop inlet volume - Caltrans OL-10
Volume / foot
2.39 CY (3 feet deep)
0.28 CY/each additional foot of depth up to 8 feet
Volume = Minor Concrete (Minor Structure)
6 CY

RESULT NO. 6 **6**

NOTE NO. 7

Estimated length of RCP
500 feet

RESULT NO. 7 **500**

NOTE NO. 8

New street lights	6 each
Cost per street light	$ 30,000
Landscape lights	12 each
Cost per street light	$ 10,000
Total lights	$300,000
Connection	$ 25,000

RESULT NO. 8 **$325,000**

NOTE NO. 9

Pavement delineation and marking
$ 40,000

RESULT NO. 9 **$40,000**

NOTE NO. 10

Slurry seal are (from CAD)
30000 SF
Tonnage = area / 1500SF/TN
20 ton

RESULT NO. 10 **20**

NOTE NO. 11

Signal and Lighting
Scale: Major
Legs: 4
Cost: $700,000

RESULT NO. 11 **$700,000**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-13 Los Carneros Way Realignment

Description: Realign Los Carneros Way to make a new roundabout intersection with Los Carneros Road and Karl Storz Drive. New four lane highway road with bicycle lanes and sidewalks on each direction.
- Realignment of northern 500 feet of Los Carneros Way to the east aligning with Karl Storz Drive.
- Removal of existing Los Carneros Way pavement.
- Modification of medians on Los Carneros Way.
- Roundabout at Los Carneros Road.

Scope: Demolition; roadway and pavement construction; concrete curb, gutter, sidewalk; pavement delineation and slurry seal; drainage; traffic signal and interconnect; right of way.

Limits: Intersection of Los Carneros Road and Karl Storz Drive to Los Carneros Way south leg.

Estimate Type: Planning (City) Estimate Date: 9-Feb-26

Working Days: 150

		Current Year Costs		Section		
Earthwork	$	1,328,300	+	1		
Pavement Structural Section	$	1,820,600	+	2		
Drainage	$	313,400	+	3		
Specialty Items	$	-	+	4		
Environmental	$	746,100	+	5		
Traffic Items	$	840,000	+	6		
Minor Items	$	403,900	+	7		
Roadway Mobilization	$	545,300	+	8		
Roadway Contingency	$	1,199,600	+	9		
TOTAL ROADWAY COST	$	7,197,200	=			
TOTAL STRUCTURES COST	$	-	+	10		
TOTAL CONSTRUCTION COST	**$**	**7,197,000**	=			
TOTAL RIGHT OF WAY COST	**$**	**13,500,000**	=	11		
Management Support	$	719,700	+	10%		
PA&ED Support	$	719,700	+	10%		
PS&E Support	$	1,079,600	+	15%		of Construction Costs
Right of Way Support	$	144,000	+	2%		
Construction Support	$	1,151,600	+	16%		
Support Contingency	$	763,000	+	20%		of Support Costs
TOTAL SUPPORT COST	**$**	**4,578,000**	=			

Total Estimated Project Costs: $ 25,300,000 ✗ Check Status

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-13 Los Carneros Way Realignment

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	10,674	x	71.00	= $	757,854	1,12
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY	1,759	x	40.00	= $	70,360	5,13
Structure Excavation (Retaining Wall)	CY		x		= $	-	
Structure Backfill (Retaining Wall)	CY		x		= $	-	
Clearing & Grubbing	LS	1	x	500,000	= $	500,000	
				TOTAL EARTHWORK SECTION ITEMS		**$**	**1,328,300**

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN	3,181	x	164.79	= $	524,197	2,14
Class 2 Aggregate Base	CY	2,139	x	134.30	= $	287,268	3,15
Slurry Seal	TN	5	x	3,507.95	= $	17,540	10,16
Minor Concrete (Miscellaneous Construction)	CY	696	x	1,424.58	= $	991,508	4,17,18,19
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$**	**1,820,600**

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY	24	x	2,900.00	= $	69,600	6,20
Reinforced Concrete Pipe	LF	1,250	x	195.00	= $	243,750	7,21
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$**	**313,400**

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF		x		= $	-	
Chain Link Fence	LF		x		= $	-	
Midwest Guardrail System (Wood Post)	LF		x		= $	-	
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF		x		= $	-	
Structural Concrete, Retaining Wall	CY		x		= $	-	
				TOTAL SPECIALTY ITEMS		**$**	**-**

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-13 Los Carneros Way Realignment

SECTION 5: ENVIRONMENTAL	Unit	Quantity		Unit Price ($)		Cost	Notes
Biological Mitigation	LS		x		=	$ -	
Highway Planting	LS	1	x	400,000	=	$ 400,000	
Irrigation System	LS	1	x	80,000	=	1/16/2026	
Plant Establishment Work	LS	1	x	50,000	=	$ 50,000	
Implement Erosion Control	LS	1	x	100,000	=	$ 100,000	
Prepare and Implement SWPPP / WPCP	LS	1	x	150,000	=	$ 150,000	
				TOTAL ENVIRONMENTAL			**$ 746,100**

SECTION 6: TRAFFIC ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Lighting and Sign Illumination	LS	1	x	740,000	=	$ 740,000	8,22
Signal and Lighting	LS		x		=	$ -	
Ramp Metering System	LS		x		=	$ -	
Interconnection Conduit and Cable	LS		x		=	$ -	
Furnish and Install Sign Structure	LS		x		=	$ -	
CIDH Pile (Sign Foundation)	LS		x		=	$ -	
Remove Sign Structure	LS		x		=	$ -	
Permanent Pavement Delineation	LS	1	x	100,000	=	$ 100,000	9,23
				TOTAL TRAFFIC ITEMS			**$ 840,000**

SECTION 7: MINOR ITEMS							Notes
Traffic Management Plan and Detours				2.5%		$ 126,210	
Stage Construction and Traffic Handling						$ -	
ADA Items				1.5%		$ 75,726	
Other Minor Items				4.0%		$ 201,936	
Total of Section 1-6	$	5,048,400	x	8.0%	=	$ 403,872	
				TOTAL MINOR ITEMS			**$ 403,900**

SECTIONS 8: MOBILIZATION							
Total Section 1-7	$	5,452,300	x	10%	=	$ 545,230	
				TOTAL MOBILIZATION			**$ 545,300**

SECTION 9: ROADWAY CONTINGENCY							
Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)							
Total Section 1-8	$	5,997,600	x	20%	=	$ 1,199,520	
				TOTAL CONTINGENCY			**$ 1,199,600**

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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-13 Los Carneros Way Realignment

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx		xxxxxxxxx			xxxxxxxxx		
Structure Type	--Select Bridge Type--		--Select Bridge Type--		####	--Select Bridge Type--		
Width (Feet) [out to out]	0	LF	0	LF		0	LF	
Total Bridge Length	0	LF	0	LF		0	LF	
Total Area (Square Feet)	0	SQFT	0	SQFT		0	SQFT	
Complexity	5		5			5		
Unusual Features	0		0			0		
Cost Per Square Foot	$0		$0			$0		
COST OF EACH BRIDGE	$	-	$	-		$	-	

Name / ID	xxxxxxxxx		xxxxxxxxx			xxxxxxxxx		
Structure Type	--Select Bridge Type--		--Select Bridge Type--			--Select Bridge Type--		
Width (Feet) [out to out]	0	LF	0	LF		0	LF	
Total Bridge Length	0	LF	0	LF		0	LF	
Total Area (Square Feet)	0	SQFT	0	SQFT		0	SQFT	
Complexity	5		5			5		
Unusual Features	0		0			0		
Cost Per Square Foot	$0		$0			$0		
COST OF EACH BRIDGE	$	-	$	-		$	-	

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF	45,000	x	250.00	=	$	11,250,000	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	20%	x	11,250,000	=	$	2,250,000	
		TOTAL RIGHT OF WAY ESTIMATE					**$ 13,500,000**	

R-13 Los Carneros Way Realignment

NOTES AND CALCULATIONS

Notes 1 through 10 are for the road realignment. The remaining are specifically for the roundabout.

NOTE NO. 1

Roadway excavation area (from CAD)
96000 SF
Average Depth
2.25 feet
Volume = Area * Depth
216000 CF
8000 CY

RESULT NO. 1 **8,000**

NOTE NO. 2

AC pavement area (from CAD)
35000 SF
Depth of AC
0.75 feet
Tonnage = Area * Depth * 145lbs/CF / 2000lbs/ton
1903 ton

RESULT NO. 2 **1,903**

NOTE NO. 3

Aggregate base are (from CAD)
35000 SF
Depth
1.50 LF
Volume = Area * Depth
52500 CF
1944 CY

RESULT NO. 3 **1,944**

NOTE NO. 4

New sidewalk length	1200	feet
Sidewalk width (most of it is multi-use path)	8	feet
Sidewalk thickness	4	inches
Volume - Sidewalk	3200	CF
	119	CY
New Caltrans A1-6 curb at median islands	1200	feet
Volume / foot	0.03	CY/foot
Volume - Curb	31	CY
New Caltrans A2-6 curb and gutter length	1400	feet
Volume / foot	0.06	CY/foot
Volume - Curb	83	CY
Volume = Minor Concrete (Miscellaneous Construction)	232	CY

RESULT NO. 4 **232**

R-13 Los Carneros Way Realignment

NOTES AND CALCULATIONS

NOTE NO. 5

Import for landscape areas
9,740 SF
Depth
2.00 feet
Volume = width * length * depth
19,480 CF
721 CY

RESULT NO. 5 **721**

NOTE NO. 6

New drop inlets - assumed one each side of the road on each leg
2 each
Depth of drop inlets
5 feet
Drop inlet volume - Caltrans OL-10
Volume / foot
2.39 CY (3 feet deep)
0.28 CY/each additional foot of depth up to 8 feet
Volume = Minor Concrete (Minor Structure)
6 CY

RESULT NO. 6 **6**

NOTE NO. 7

Estimated length of RCP
500 feet

RESULT NO. 7 **500**

NOTE NO. 8

New street lights
6 each
Cost per street light
$ 30,000
Landscape lights
12 each
Cost per street light
$ 10,000
Total lights
$ 300,000
Connection
$ 25,000

RESULT NO. 8 **$ 325,000**

NOTE NO. 9

Pavement delineation and marking
$ 40,000

RESULT NO. 9 **40,000**

NOTE NO. 10

Slurry seal are (from CAD)
30000 SF
Tonnage = area / 1500SF/TN
20 ton

RESULT NO. 10 **20**

R-13 Los Carneros Way Realignment

NOTES AND CALCULATIONS

NOTE NO. 11

Number of intersection legs
3 legs
250 feet average approach length
200 feet average splitter island length

NOTE NO. 12

Roadway excavation area (within splitter islands)
26,250
Depth of AC
0.75
Depth of base
2.00
Roadway excavation = width * length * depth
72,188
2,674 **RESULT NO. 12** **2,674**

NOTE NO. 13

Import for landscape areas
14,000 SF
Depth
2.00 feet
Volume = width * length * depth
28,000 CF
1,037 CY **RESULT NO. 13** **1,037**

NOTE NO. 14

AC pavement area
3,500 SF
Depth of AC
0.75 feet
Volume = width * length * depth
2,625 CF

AC pavement area (approaches)
30,000
Depth of AC
0.50
Volume = width * length * depth
15,000 CF

Total
17,625 CF * 145 pounds/CF / 2,000 pounds/ton
1,278 TN **RESULT NO. 14** **1,278**

R-13 Los Carneros Way Realignment

NOTES AND CALCULATIONS

NOTE NO. 15

Aggregate base area in RAB
3,500 SF
Depth of base
1.50 feet
Volume = width * length * depth
5,250 CF

Aggregate base area in approaches
30,000 SF
Depth of base
1.00 feet
Volume = width * length * depth
30,000 CF

35,250 CF
194 CY **RESULT NO. 15** **194**

NOTE NO. 16

Approaches to project
Length (typ)
250 feet
Width
30 feet
Area
7,500 feet
Coverage rate
1,500 SF/TN
5 CY **RESULT NO. 16** **5**

NOTE NO. 17

New sidewalk length
250 feet At roundabout
1500 feet Approaches
1750 feet TOTAL
Sidewalk width (most of it is multi-use path)
10 feet
Sidewalk thickness
4 inches
Volume = Minor Concrete (Miscellaneous Construction)
5833 CF
216 CY **RESULT NO. 17** **216**

R-13 Los Carneros Way Realignment

NOTES AND CALCULATIONS

NOTE NO. 18

New Caltrans A1-6 curb at splitter islands
1200 feet Approaches
1200 feet TOTAL
Volume / foot
0.03 CY/foot
Volume = Minor Concrete (Miscellaneous Construction)
31 CY
New Caltrans A2-6 curb and gutter length
400 feet At roundabout
1500 feet Approaches
1900 feet TOTAL
Volume / foot
0.06 CY/foot
Volume = Minor Concrete (Miscellaneous Construction)
112 CY **RESULT NO. 18** **143**

NOTE NO. 19

Truck apron and misc
Truck apron (CAD)
2500 SF
Concrete thickness
9 inches
Volume = Minor Concrete (Miscellaneous Construction)
1875 CF
50% Additional for misc
2813 CF
104 CY **RESULT NO. 19** **104**

NOTE NO. 20

New drop inlets - assumed one each side of the road on each leg
6 each
Depth of drop inlets
5 feet
Drop inlet volume - Caltrans OL-10
Volume / foot
2.39 CY (3 feet deep)
0.28 CY/each additional foot of depth up to 8 feet
Volume = Minor Concrete (Minor Structure)
18 CY **RESULT NO. 20** **18**

NOTE NO. 21

Estimated length of RCP
750 feet **RESULT NO. 21** **750**

R-13 Los Carneros Way Realignment

NOTES AND CALCULATIONS

NOTE NO. 22

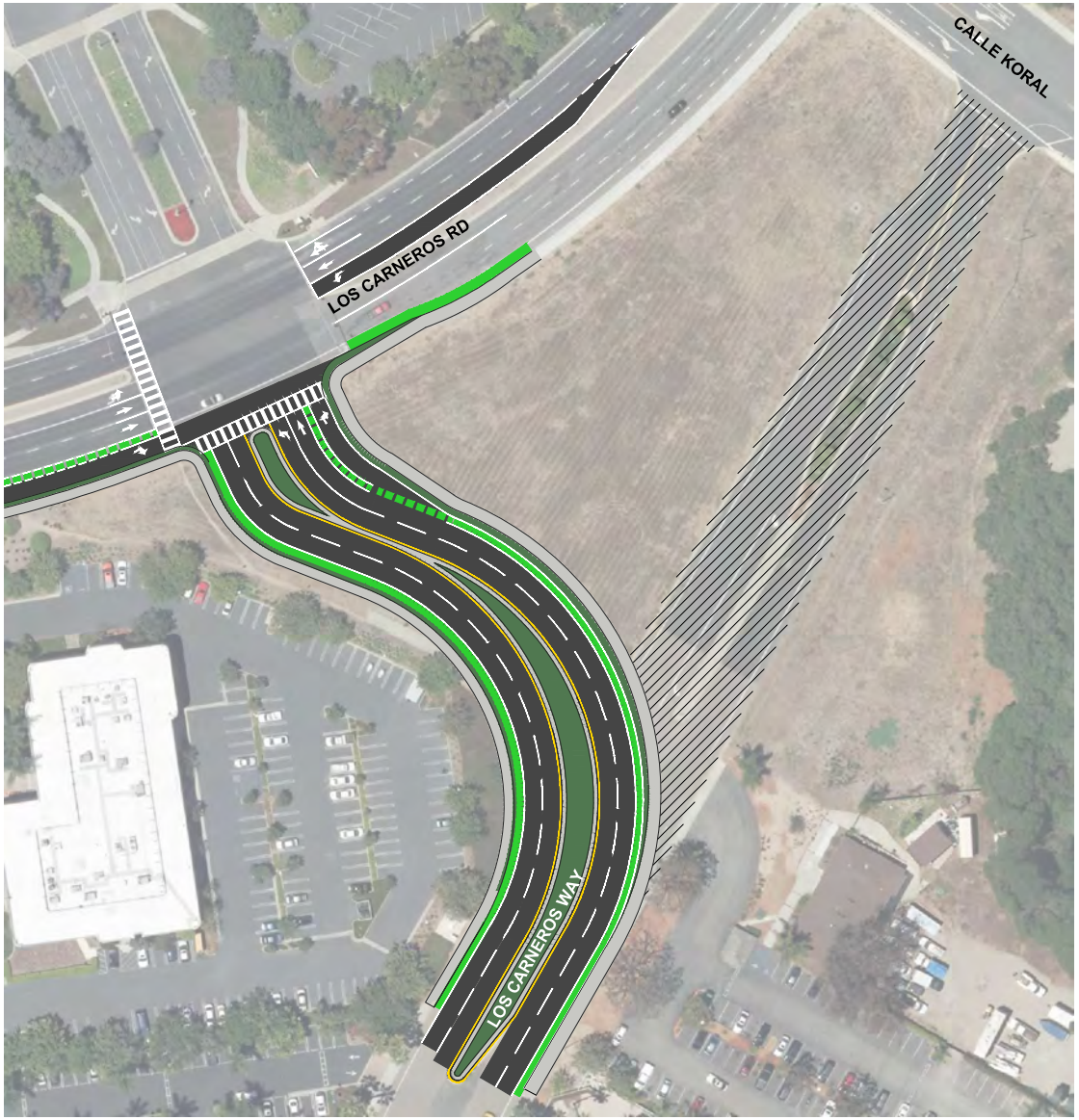
New street lights
9 each
Cost per street light
$ 30,000
Landscape lights
12 each
Cost per street light
$ 10,000
Total lights
$ 390,000
Connection
$ 25,000

RESULT NO. 22 **$ 415,000**

NOTE NO. 23

Pavement delineation and marking
$ 60,000

RESULT NO. 23 **60,000**

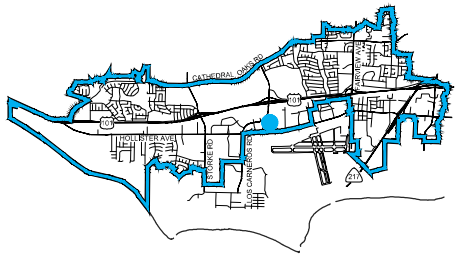


40' 0' 40' 80'

1 inch = 80 ft.

GOLETA TRANSPORTATION IMPROVEMENTS PROGRAM

Project R-13: Los Carneros Way Realignment



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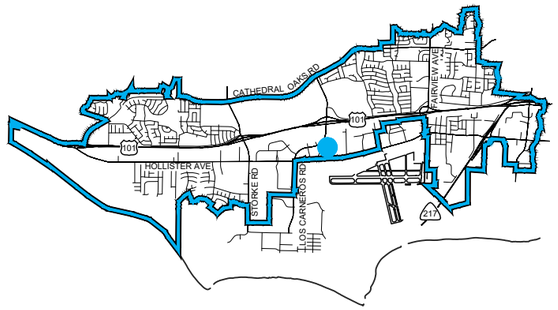
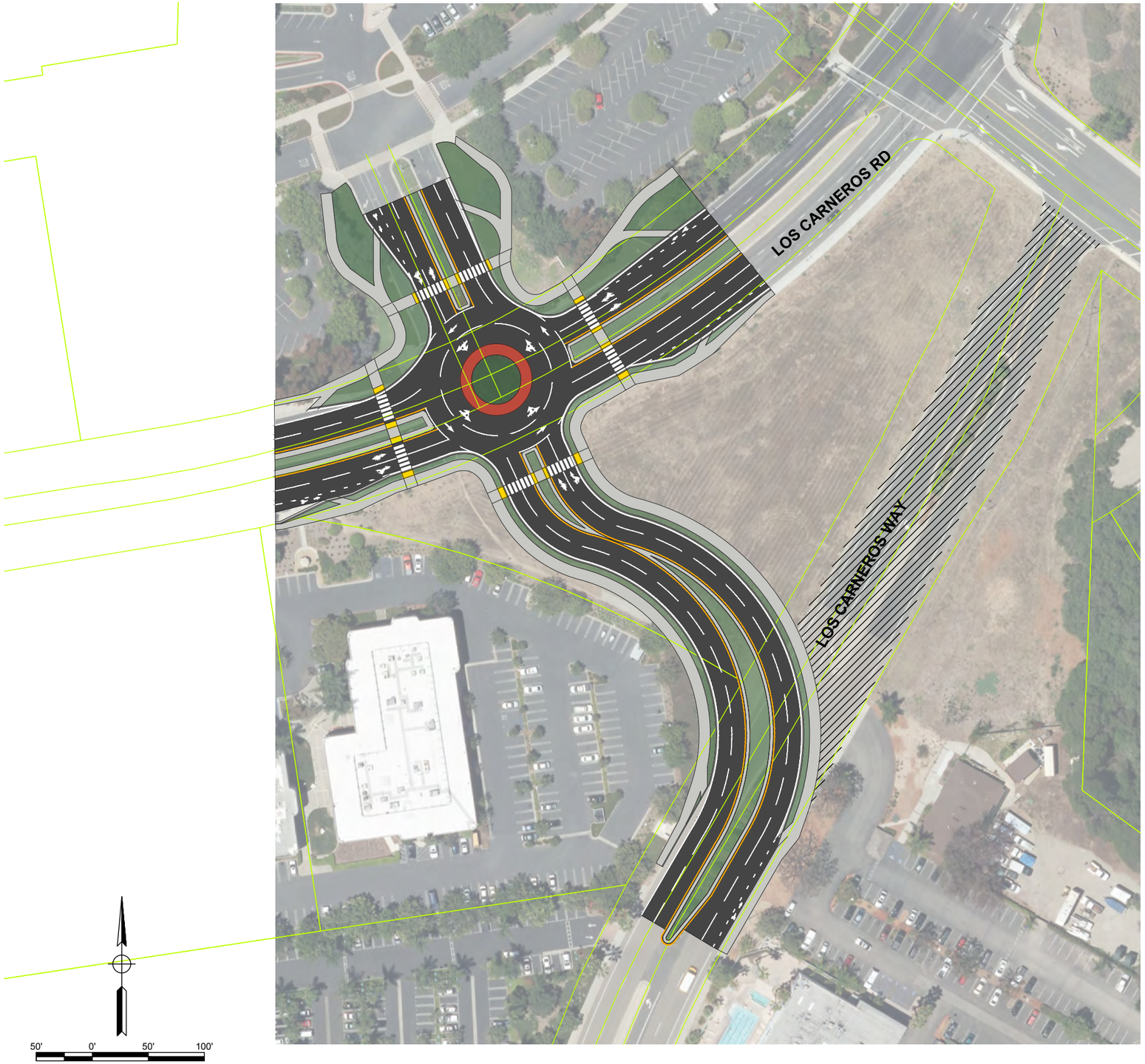
GOLETA TRANSPORTATION IMPROVEMENTS PROGRAM

Project R-13: Los Carneros Way at Los Carneros Road Roundabout





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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-14 South Fairview Avenue Widening

Description: Widen Fairview Ave between Ekwill Street (Project R-1C) and Olney Street. Utilize retaining walls to minimize wetland impacts. Construct sidewalk on east side. Include bike lanes and a center turning lane.
- Widening on west side of Fairview Avenue to accommodate southbound Fairview Avenue left turn pockets between Ekwill Street and Airport property.
- Provide 5 foot sidewalk on east side of Fairview Avenue.
- Maintain one lane of through traffic in each direction.
- Maintain Class II bike lanes in each direction.

Scope: Demolition; pavement widening; retaining wall; pavement delineation; wetlands; City of Santa Barbara coordination.

Limits: Ekwill Street to Olney Street.

Estimate Type: Planning (City) Estimate Date: 15-Jan-26

Working Days: 80

		Current Year Costs		Section	
Earthwork	$	876,100	+	1	
Pavement Structural Section	$	294,800	+	2	
Drainage	$	-	+	3	
Specialty Items	$	1,093,900	+	4	
Environmental	$	310,000	+	5	
Traffic Items	$	15,000	+	6	
Minor Items	$	51,800	+	7	
Roadway Mobilization	$	264,200	+	8	
Roadway Contingency	$	871,800	+	9	
TOTAL ROADWAY COST	$	3,777,600	=		
TOTAL STRUCTURES COST	$	-	+	10	
TOTAL CONSTRUCTION COST	**$**	**3,778,000**	=		
TOTAL RIGHT OF WAY COST	**$**	**-**	=	11	
Management Support	$	377,800	+	10%	of Construction Costs
PA&ED Support	$	377,800	+	10%	
PS&E Support	$	566,700	+	15%	
Right of Way Support	$	75,600	+	2%	
Construction Support	$	604,500	+	16%	
Support Contingency	$	400,500	+	20%	of Support Costs
TOTAL SUPPORT COST	**$**	**2,403,000**	=		

Total Estimated Project Costs: $ 6,200,000 ✗ Check Status

Prepared by: _____
Project Engineer

Approved by: _____
Project Manager

City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-14 South Fairview Avenue Widening

SECTION 1: EARTHWORK	Unit	Quantity		Unit Price		Cost	Notes
Roadway Excavation	CY	106	x	328.52	= $	34,823	1
Roadway Excavation (ADL)	CY		x		= $	-	
Imported Borrow	CY	1,129	x	40.00	= $	45,160	2
Structure Excavation (Retaining Wall)	CY	1,316	x	300.00	= $	394,800	3
Structure Backfill (Retaining Wall)	CY	1,004	x	325.00	= $	326,300	4
Clearing & Grubbing	LS	1	x	75,000	= $	75,000	
				TOTAL EARTHWORK SECTION ITEMS		**$**	**876,100**

SECTION 2: PAVEMENT STRUCTURAL SECTION	Unit	Quantity		Unit Price		Cost	Notes
Continuously Reinforced Concrete Pavement	CY		x		= $	-	
Hot Mix Asphalt (Type A)	TN	529	x	418.28	= $	-	5
Class 2 Aggregate Base	CY	374	x	295.45	= $	156,293	6
Slurry Seal	TN	17	x	3,507.95	= $	59,635	7
Minor Concrete (Miscellaneous Construction)	CY	65	x	1,212.77	= $	78,830	8
Place Hot Mix Asphalt Dike	LF		x		= $	-	
Cold Plane Asphalt Concrete Pavement	SY		x		= $	-	
				TOTAL PAVEMENT STRUCTURAL SECTION ITEMS		**$**	**294,800**

SECTION 3: DRAINAGE	Unit	Quantity		Unit Price ($)		Cost	Notes
Structural Concrete, Box Culvert	CY		x		= $	-	
Minor Concrete (Minor Structure)	CY		x		= $	-	
Reinforced Concrete Pipe	LF		x		= $	-	
Rock Slope Protection	CY		x		= $	-	
Concrete (Ditch/Channel Lining)	CY		x		= $	-	
				TOTAL DRAINAGE ITEMS		**$**	**-**

SECTION 4: SPECIALTY ITEMS	Unit	Quantity		Unit Price ($)		Cost	Notes
Sound Wall (Masonry Block)	SF		x		= $	-	
Remove Concrete Barrier	LF		x		= $	-	
Remove Metal Beam Guard Railing	LF		x		= $	-	
Chain Link Fence	LF		x		= $	-	
Midwest Guardrail System (Wood Post)	LF	760	x	68.37	= $	51,961	9
Thrie Beam Barrier	LF		x		= $	-	
Terminal System or Crash Cushion	EA		x		= $	-	
Concrete Barrier (TYPE 60M)	LF		x		= $	-	
Structural Concrete, Retaining Wall	CY	544	x	1,915.28	= $	1,041,912	
				TOTAL SPECIALTY ITEMS		**$**	**1,093,900**

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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-14 South Fairview Avenue Widening

SECTION 5: ENVIRONMENTAL	Unit	Quantity	Unit Price ($)	Cost	Notes
Biological Mitigation	LS	1	x 200,000	= $ 200,000	
Highway Planting	LS	1	x 50,000	= $ 50,000	
Irrigation System	LS	1	x 15,000	= $ 15,000	
Plant Establishment Work	LS	1	x 15,000	= $ 15,000	
Implement Erosion Control	LS	1	x 15,000	= $ 15,000	
Prepare and Implement SWPPP / WPCP	LS	1	x 15,000	= $ 15,000	
			TOTAL ENVIRONMENTAL		**$ 310,000**

SECTION 6: TRAFFIC ITEMS	Unit	Quantity	Unit Price ($)	Cost	Notes
Lighting and Sign Illumination	LS		x	= $ -	
Signal and Lighting	LS		x	= $ -	
Ramp Metering System	LS		x	= $ -	
Interconnection Conduit and Cable	LS		x	= $ -	
Furnish and Install Sign Structure	LS		x	= $ -	
CIDH Pile (Sign Foundation)	LS		x	= $ -	
Remove Sign Structure	LS		x	= $ -	
Permanent Pavement Delineation	LS	1	x 15,000	= $ 15,000	
			TOTAL TRAFFIC ITEMS		**$ 15,000**

SECTION 7: MINOR ITEMS					Notes
Traffic Management Plan and Detours			1.0%	$ 25,898	
Stage Construction and Traffic Handling				$ -	
ADA Items			1.0%	$ 25,898	
Other Minor Items				$ -	
Total of Section 1-6	$	2,589,800	x 2.0%	= $ 51,796	
			TOTAL MINOR ITEMS		**$ 51,800**

SECTIONS 8: MOBILIZATION					
Total Section 1-7	$	2,641,600	x 10%	= $ 264,160	
			TOTAL MOBILIZATION		**$ 264,200**

SECTION 9: ROADWAY CONTINGENCY					
Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)					
Total Section 1-8	$	2,905,800	x 30%	= $ 871,740	
			TOTAL CONTINGENCY		**$ 871,800**

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City of Goleta
GOLETA TRANSPORTATION IMPROVEMENT PROGRAM (GTIP)

R-14 South Fairview Avenue Widening

SECTION 10: STRUCTURES ITEMS

Name / ID	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx
Structure Type	--Select Bridge Type--	--Select Bridge Type--	--Select Bridge Type--
Width (Feet) [out to out]	0 LF	0 LF	0 LF
Total Bridge Length	0 LF	0 LF	0 LF
Total Area (Square Feet)	0 SQFT	0 SQFT	0 SQFT
Complexity	5	5	5
Unusual Features	0	0	0
Cost Per Square Foot	$0	$0	$0
COST OF EACH BRIDGE	$ -	$ -	$ -

Name / ID	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx
Structure Type	--Select Bridge Type--	--Select Bridge Type--	--Select Bridge Type--
Width (Feet) [out to out]	0 LF	0 LF	0 LF
Total Bridge Length	0 LF	0 LF	0 LF
Total Area (Square Feet)	0 SQFT	0 SQFT	0 SQFT
Complexity	5	5	5
Unusual Features	0	0	0
Cost Per Square Foot	$0	$0	$0
COST OF EACH BRIDGE	$ -	$ -	$ -

TOTAL COST OF BRIDGES		$	-
Structures Mobilization Percentage	10%	$	-
Structures Contingency Percentage	20%	$	-
TOTAL COST OF STRUCTURES		**$**	**-**

SECTION 11: RIGHT OF WAY	Unit	Quantity		Unit Price			Cost	Notes
Acquisition - Residential Property	SF		x		=	$	-	
Acquisition - Commercial Property	SF		x		=	$	-	
Acquisition of Offsite Mitigation	SF		x		=	$	-	
Utility Relocation	LS		x		=	$	-	
Railroad - TCE	LS		x		=	$	-	
Railroad - Flaggers	LS		x		=	$	-	
Clearance / Demolition	SF		x		=	$	-	
Relocation Assistance	LS		x		=	$	-	
Right of Way Contingency	LS	20%	x	0	=	$	-	
TOTAL RIGHT OF WAY ESTIMATE						**$**	**-**	

R-14 South Fairview Avenue

NOTES AND CALCULATIONS

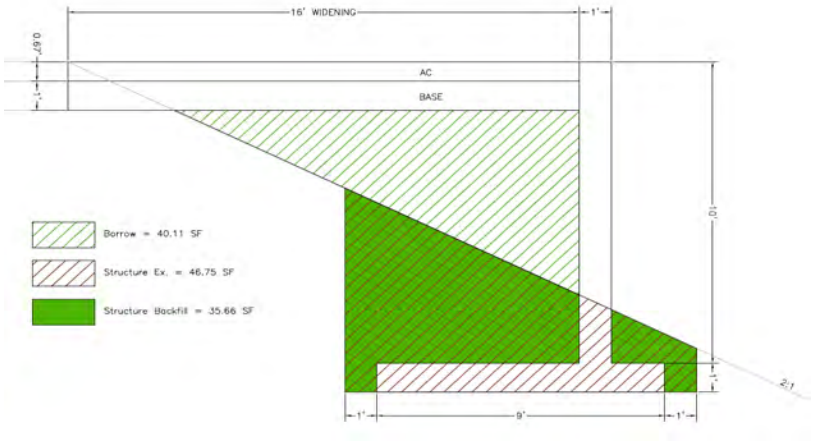
NOTE NO. 1

Roadway excavation (only needed for the contstruction of the sidewalks)
Area of Sidewaks Curbs and Gutters
3750 SF
Area of Excavation = Area of Sidewalks Curbs and Gutters + 15%
4313 SF
Depth
0.67 feet
Volume = Area * Depth
2875 CF
106 CY

RESULT NO. 1 **106**

NOTE NO. 2

Imported borrow
Area (from CAD)
40 SF
Length (wall)
760 feet
Volume = Area * Length
30484 CF
1129 CY



RESULT NO. 2 **1129**

NOTE NO. 3

Structure excavation (see Note 2)
47 SF
Length of Wall
760 feet
Volume = Area * Length
35530 CF
1316 CY

RESULT NO. 3 **1316**

NOTE NO. 4

Structure backfill (see Note 2)
36 SF
Length of Wall
760 feet
Volume = Area * Length
27102 CF
1004 CY

RESULT NO. 4 **1004**

R-14 South Fairview Avenue

NOTES AND CALCULATIONS

NOTE NO. 5

AC pavement

Roadway Widening
- Area of widening: 10100 SF
- Depth of AC: 0.67 feet
- Tonnage = Area * Depth * 145lbs/CF / 2000lbs/ton': 488 ton

Patch Curb and Gutter forms
- Cross sectional Area (1ft x 1ft Assumed): 1.00 SF
- Length of Curb and Gutter: 566 feet
- 41 ton

RESULT NO. 5 **529**

NOTE NO. 6

Aggregate base
- Area of widening: 10100 SF
- Depth: 1.00 feet
- Volume = Area * Depth: 10100 CF, 374 CY

RESULT NO. 6 **374**

NOTE NO. 7

Slurry seal
- Area (from CAD): 25900 SF
- Coverage rate (Caltrans): 1500 SF/ton
- Tonnage = area / coverage rate: 17 TN

RESULT NO. 7 **17**

NOTE NO. 8

Minor Concrete (Miscellaneous Construction)

Concrete Sidewalks
- Concrete Sidewalks Plan Area: 2600 SF
- Depth of Concrete: 0.33 feet
- Total Concrete = Area * Depth: 867 CF, 32 CY

Concrete Curb and Gutter Type A2-6 per Caltrans
- Volume per linear ft: 0.05903 CY/LF
- Curb and Gutter Length: 566 feet
- Total Concrete = Volume per length * length: 33 CY

RESULT NO. 8 **65**

NOTE NO. 9

Midwest guard rail - along top of wall
- Length of retaining Wall: 760 feet

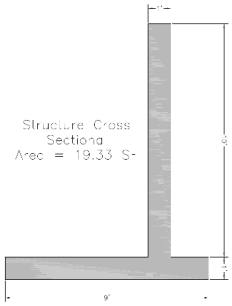
RESULT NO. 9 **760**

NOTE NO. 10

R-14 South Fairview Avenue

NOTES AND CALCULATIONS

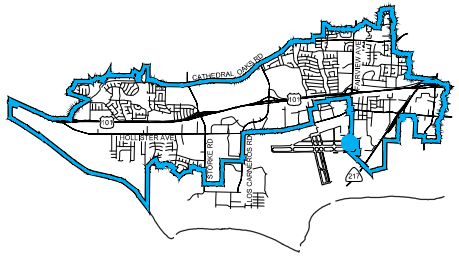
Structural Concrete, Retaining Wall
Cross sectional area (from CAD)
19 SF
Length feet
760 feet
Volume = Area * Length
14691 CF
544 CY



RESULT NO. 10 **544**

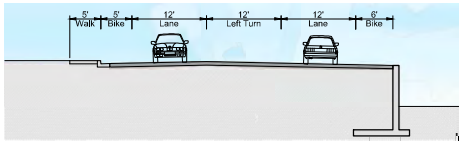
GOLETA TRANSPORTATION IMPROVEMENTS PROGRAM

Project R-14: South Fairview Avenue Widening



Notes

1. Widen Fairview Ave to the west to include a sidewalk on the east side, a bicycle lane, one vehicle lane in each direction, and a center turning lane. See cross section A-A.



Cross Section A-A

40' 0' 40' 80'
1 inch = 80 ft.

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Existing and Maximum Justified Fee Schedule

Land Use Category	Units	Adopted Fee (2019 Nexus Study)	Existing Fee (FY 2025-26)	Maximum Justified Fee	Difference (Justified vs. Existing) Amount	Percent
Public Administration						
Single Family Detached[1]	per DU	$3,086	$4,132	$10,540	$ 6,408	155%
All Other Residential	per DU	2,238	2,999	7,396	4,397	147%
Retail & Commercial	per KSF	487	656	1,665	1,009	154%
Office & Medical	per KSF	655	880	2,237	1,357	154%
Industrial	per KSF	243	329	829	500	152%
Library						
Single Family Detached[1]	per DU	$959	$1,287	$ 873	$ (414)	(32%)
All Other Residential	per DU	696	934	613	(321)	(34%)
Retail & Commercial	per KSF	151	206	138	(68)	(33%)
Office & Medical	per KSF	203	275	185	(90)	(33%)
Industrial	per KSF	75	105	69	(36)	(35%)
Parks & Recreation						
Residential Subdivisions (Quimby Act)						
Single Family Detached[1]	per DU	$14,998	$20,084	$36,913	$16,829	84%
All Other Residential	per DU	10,880	14,572	25,902	11,330	78%
All Other Development (Mitigation Fee Act)						
Single Family Detached[1]	per DU	$11,900	$15,928	$32,895	$16,967	107%
All Other Residential	per DU	7,947	13,175	23,083	9,908	75%
Retail & Commercial	per KSF	1,880	2,519	5,196	2,677	106%
Office & Medical	per KSF	2,525	3,382	6,981	3,599	106%
Industrial	per KSF	936	1,257	2,587	1,330	106%
Storm Drain						
Single Family Detached[1]	per DU	$ 3,596	$ 4,817	$10,845	$ 6,028	125%
All Other Residential	per DU	2,609	3,494	3,904	410	12%
Retail & Commercial	per KSF	1,988	2,665	6,290	3,625	136%
Office & Medical	per KSF	2,671	3,578	4,338	760	21%
Industrial	per KSF	990	1,329	5,097	3,768	284%

Existing and Maximum Justified Fee Schedule (continued)

Land Use Category	Units	Adopted Fee (2019 Nexus Study)	Existing Fee (FY 2025-26)	Maximum Justified Fee	Difference (Justified vs. Existing) Amount	Percent
Transportation						
All Land Uses	per PM Peak Hour Trip	$ 12,450	$ 16,665	$ 22,687	$ 6,022	36%
Sample of Land Uses						
Single Family Detached[1]	per DU	$ 12,077	$ 15,165	$ 20,466	$ 5,301	35%
Apartment	per DU	7,487	8,166	11,443	3,277	40%
Hotel	per room	7,171	9,499	10,236	737	8%
Supermarket	per KSF	70,816	89,491	119,651	30,160	34%
General Office	per KSF	17,808	22,998	25,700	2,702	12%
General Light Industrial	per KSF	11,835	10,666	10,894	228	2%
Bicycle & Pedestrian						
Single Family Detached[1]	per DU	$3,092	$4,142	$ 13,812	$ 9,670	233%
All Other Residential	per DU	2,243	3,006	9,692	6,686	222%
Retail & Commercial	per KSF	488	657	2,182	1,525	232%
Office & Medical	per KSF	656	881	2,931	2,050	233%
Industrial	per KSF	243	329	1,086	757	230%
All Updated Fees						
Single Family Detached[1]	**per DU**	**$ 34,710**	**$45,471**	**$ 89,431**	**$43,960**	97%
All Other Residential[2]	**per DU**	**23,220**	**31,774**	**56,132**	**24,358**	77%
Retail & Commercial[3]	**per KSF**	**75,810**	**96,194**	**135,122**	**38,928**	40%
Office & Medical[4]	**per KSF**	**24,518**	**31,994**	**42,372**	**10,378**	32%
Industrial[5]	**per KSF**	**14,322**	**14,015**	**20,562**	**6,547**	47%

Notes: "DU" = dwelling unit; "KSF" = thousand building square feet. Residential fees are calculated per square foot of living space in this nexus study update, though residential fees are shown per average sized DU in this table for the purpose of comparison to current fee schedule.
The City also charges impact fees for fire and affordable housing that are not included in this update.
[1] Includes detached and attached accessory dwelling units (ADU). Fees for ADUs can only be charged on ADUs greater than 750 square feet, and are charged proportionally based on the square footage of the ADU to the square footage of the primary unit.
[2] Parks and transportation fees based on "Apartment" category.
[3] For transportation fee, based on supermarket category.
[4] For transportation fee, based on general office category.
[5] For transportation fee, based on general light industrial category.
Sources: City of Goleta Fee Schedule, FY 2025-26; Tables 3.3, 4.3, 5.4, 6.1, 6.2, 6.4, 7.3, and 8.2.

ATTACHMENT 2

Presentation 2026 Development Impact Fee Program Update

Development Impact Fee Nexus Study Update

May 19, 2026

Luz “Nina” Buelna, Public Works Director
Robert Spencer, Urban Economics
Carlos Villarreal, Urban Economics
Jim Damkowitch, DKS
Gerald Comati, Contract Project Manager

Background

- DIF program adopted at City incorporation using County Nexus Studies
- City adopted its own DIF Nexus Study and ordinance in 2019
- DIFs fund public facilities needed to serve new development
- Fees apply to residential, commercial, and industrial development
- Development Impact Fee or DIF program - at City incorporation, adopted ordinances and nexus studies conducted by the County
- The Current DIF's are:
    1. Public Administration
    2. Fire Facilities
    3. Library
    4. Parks and Recreation Facilities
    5. Storm Drain
    6. Transportation (Road/Rail)
    7. Bicycle and Pedestrian
    8. Affordable Housing Fee (in-lieu and Nexus Fee) (not part of study)
- Authorized under the Mitigation Fee Act
- Fire Facilities fee update not included and will be addressed separately

What Is A Development Impact Fee?

- DIFs fund “public facilities” required to serve new development
- One-time charge for capital facilities
- A DIF is not:
  - A funding source for operations or maintenance costs
  - A special tax or special assessment
  - Subject to Proposition 218 approval requirements

Mitigation Fee Act Findings

- **Key findings to demonstrate nexus:**
  - Need: Development creates need for facilities
  - Benefit: Development benefits from the use of revenue
  - Rough Proportionality: Fee amounts are proportional to development's share of facility costs (i.e., proportional to demand)
- **Other findings**
  - Purpose of fee
  - Use of fee revenue

2026 DIF Nexus Study Update – What We Did

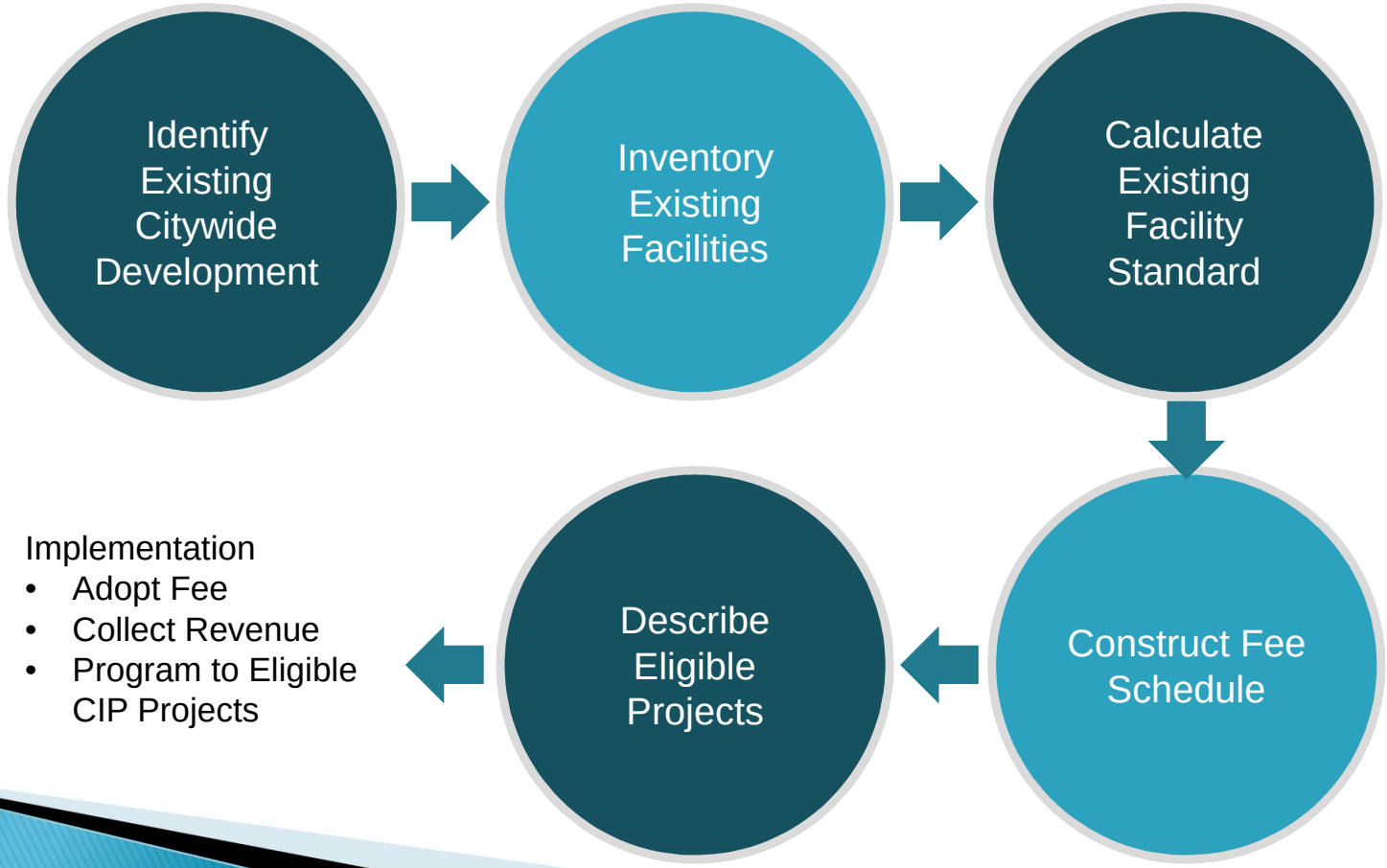
All DIFs except Transportation

- Review existing DIF program and legislative changes
- Update base year, and buildout land use scenario, population and employment estimates
- Update existing asset inventories, level of service
- Convert residential fees to per square foot, from per dwelling unit to comply with AB 602

Changes Since City Council Workshop

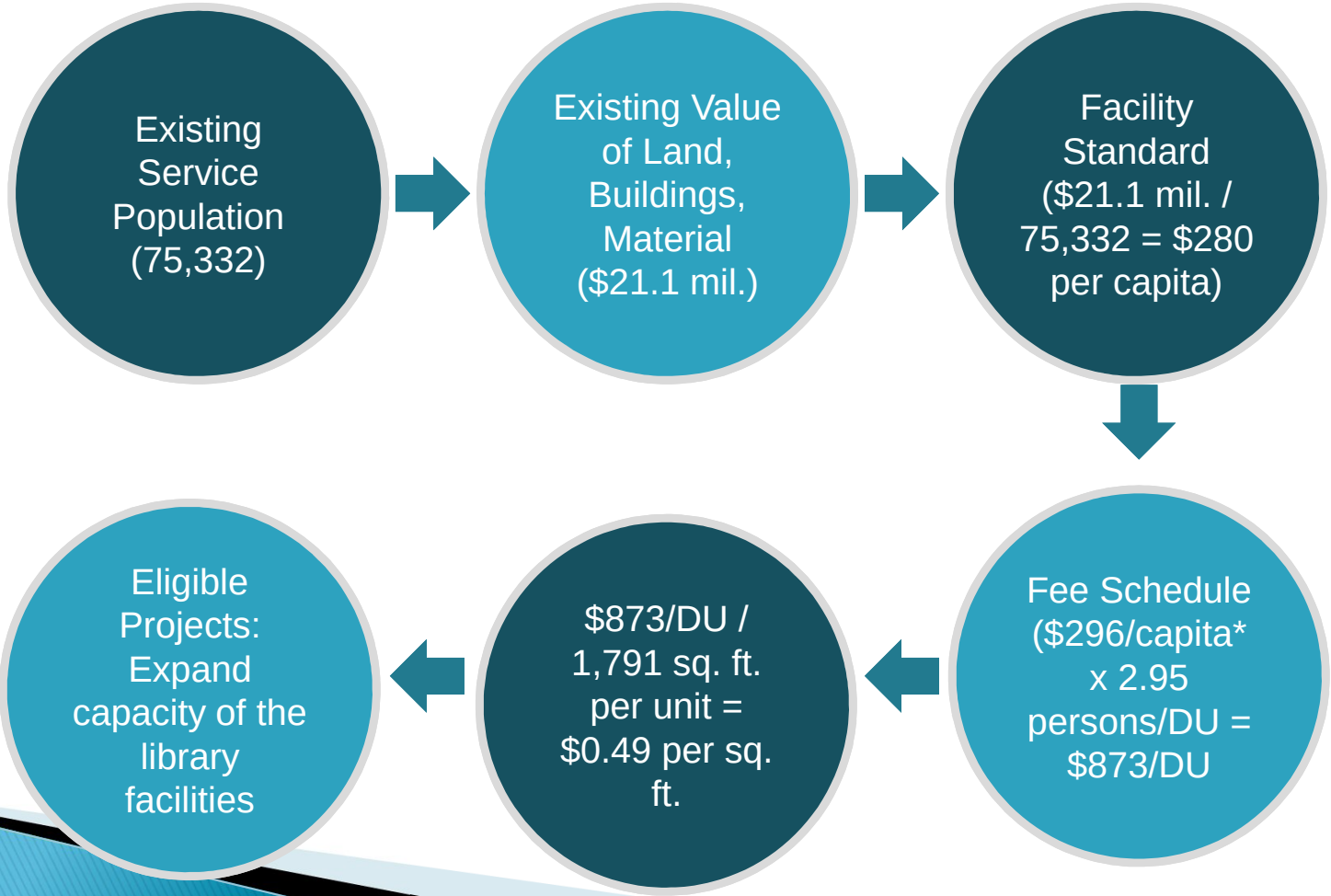
- Refined transportation deficiency analysis
- Used average costs of roundabout and traffic signal for locations with uncertain improvements
- Updated library service population and resulting facility standards to reflect Goleta Valley Library contractual service area
- Updated bicycle and pedestrian facilities inventory and standards to avoid any potential overlap with transportation facilities projects
- Split cost of the Goleta Freeway Crossing between Traffic Fee and Bicycle/Pedestrian Fee.

Nexus Analysis – Except Transportation



Implementation
- Adopt Fee
- Collect Revenue
- Program to Eligible CIP Projects

Example – Libraries

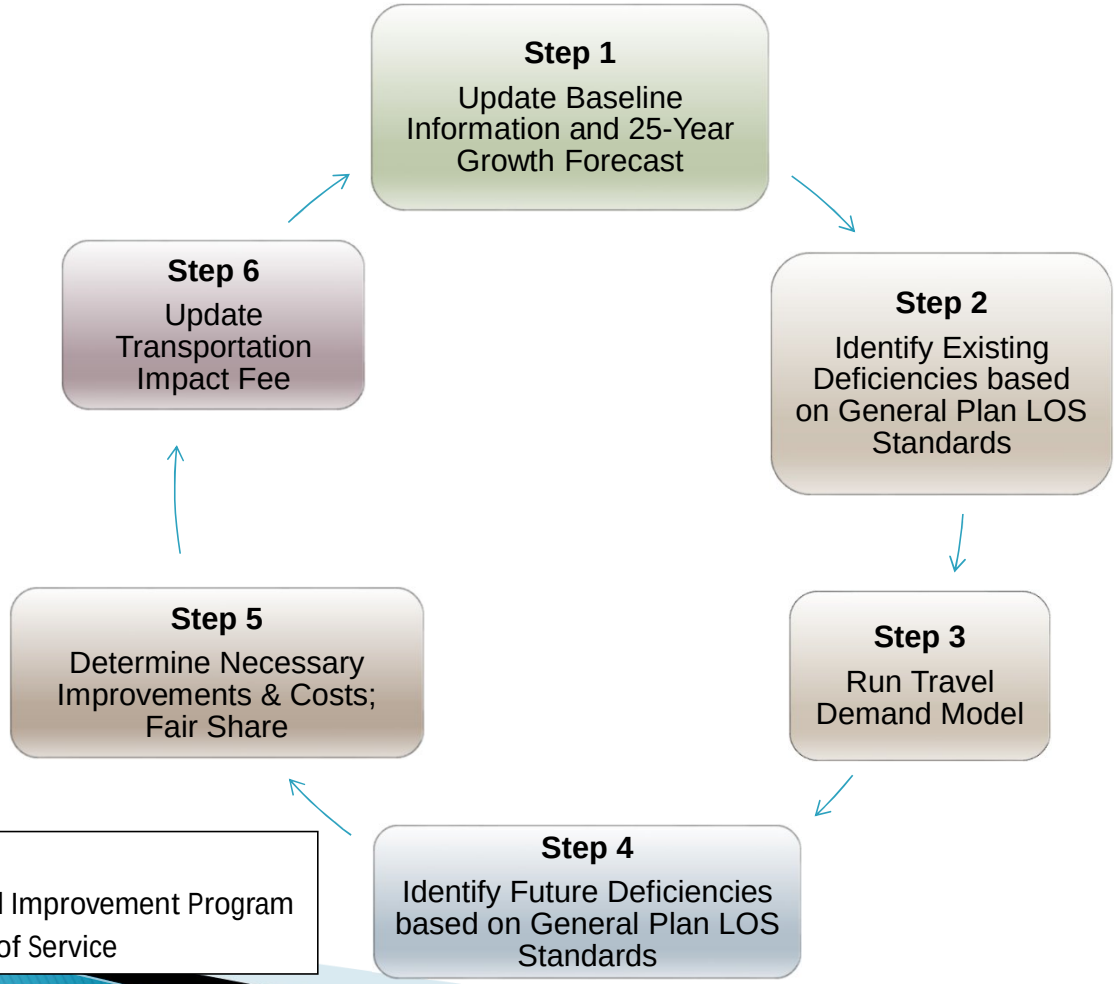


* Includes additional 5% for fee program administration

Growth Projections (Buildout)

Land Use	Existing (2026)	Buildout	Growth (% Buildout)	
Residential (dwelling units)				
Single Family Detached	5,533	6,511	978	15%
All Other Residential	7,622	9,973	2,351	24%
Total Dwelling Units	13,155	16,484	3,329	20%
Non-residential (1,000 sq. ft.)				
Retail / Commercial	3,353	4,621	1,268	27%
Office & Medical	3,187	5,058	1,871	37%
Industrial	6,684	7,572	888	12%
Total Bldg. Sq. Ft. (1,000s)	13,224	17,251	4,027	23%

Transportation DIF Process



Acronyms:
CIP: Capital Improvement Program
LOS: Level of Service

Transportation DIF – Why Update?

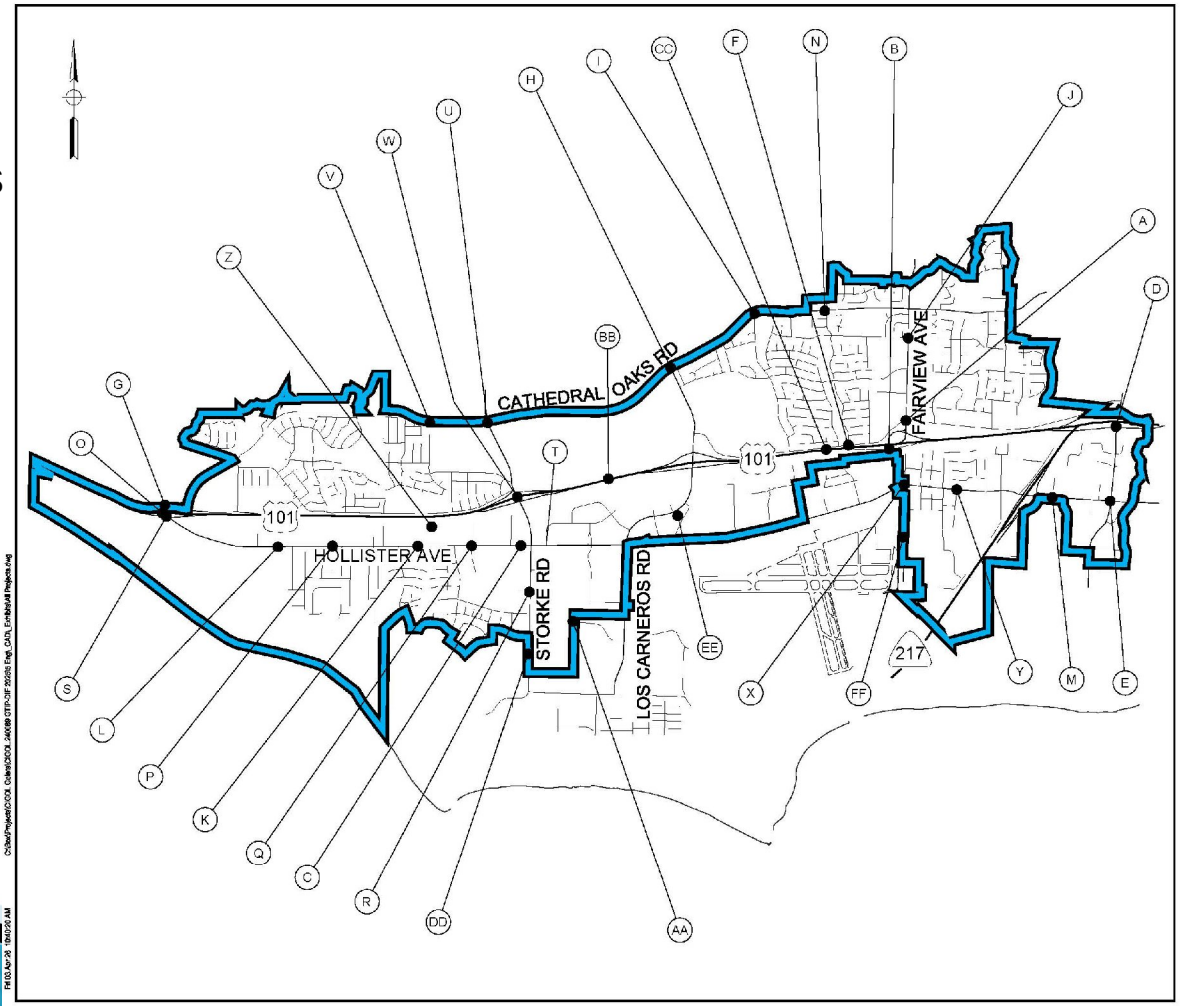
- **New legislative updates**
  - AB 602 (residential expressed in sq.ft. | noticing requirements)
  - SB 99 (ADUs)
  - AB 358 (VMT Efficient Residential Housing Discount)
- **AB 1600 Requires Periodic Updates**
  - Reflect updated land use assumptions and analysis tools
  - Every 8-years
  - City has been adjusting fees to account for inflation and changes in construction costs
- **Source of the current fees is the 2019 DIF**
  - Update Growth Projections (Based on the adopted City General Plan)
  - 2015 City Traffic Model
  - Institute of Transportation Engineering (ITE) Trip General Manual (10th Edition)
  - 2019 Construction Costs

Transportation DIF Update – What We Did

- Citywide Traffic Counts
- Update Travel Model to 2024 Baseline
  - Permit Data & School/College Enrollment Data
  - Validated to State/Federal criteria
- Update Land Use Forecasts – input to Travel Model
  - General Plan Buildout and Update Resolutions,
  - County/City Rezones, Enrollment projections, UCSB LRDP projections, Specific Plans
- Model output identifies transportation deficiencies
  - Baseline Conditions: Traffic Counts
  - Future Year Conditions: 2050 Travel Forecasts
- Project Team identified improvement projects to remedy deficiencies
  - New or widened roadways
  - Intersection channelization
  - Intersection Control Type
- Determine project delivery cost estimates.
- Fair share of improvement costs to new development

Deficiency Assessment

- 32 Deficient Locations
  - 15 Existing
  - 17 Future



GOLETA TRANSPORTATION IMPROVEMENTS PROGRAM

- (A) I-01 Fairview Av / Calle Real
- (B) I-02 Fairview Av / US 101 SB On-Ramp
- (C) I-07 Hollister Av Widening - West of Storke Rd
- (D) I-08 Patterson Av / US 101 SB Ramp
- (E) I-10 Hollister Av / Patterson Av
- (F) I-12-02 Calle Real / Carlo Dr
- (G) **I-12-02 (I4) Cathedral Oaks Rd / Hollister Av / US 101 NB Ramps**
- (H) I-12-05 Cathedral Oaks Rd / Los Carneros Rd
- (I) I-12-06 Cathedral Oaks Rd / N La Patera Ln
- (J) I-12-07 Fairview Av / Stow Canyon Rd
- (K) I-12-10 Hollister Av / Cannon Green Dr
- (L) I-12-11 Hollister Av / Pebble Beach Dr
- (M) I-12-12 Hollister Av / La Sumida Gardens Ln
- (N) I-12-23 Carlo Dr / Cathedral Oaks Rd
- (O) I-12-27 Cathedral Oaks Rd / US 101 SB Ramp
- (P) I-12-30 Hollister Av / Palo Alto Dr
- (Q) I-12-31 Hollister Av / Santa Felicia Dr
- (R) I-12-32 Storke Av / Santa Felicia Dr
- (S) I-12-33 Hollister Av / Cathedral Oaks Rd
- (T) I-12-34 Hollister Av / Cortona Dr
- (U) I-12-35 Cathedral Oaks Rd / Glen Annie Rd
- (V) I-12-36 Cathedral Oaks Rd / Alameda Av
- (W) I-18 Storke Rd / US 101 SB Ramp
- (X) I-22 Hollister Av / Fairview Av
- (Y) R-02 Hollister Av Complete Streets Corridor
- (Z) R-05 US 101 Bicycle and Pedestrian Overcrossing
- (AA) R-09 Phelps Rd Extension
- (BB) R-10 US 101 NB Aux Lane - Los Carneros Rd to Storke Rd
- (CC) **R-11 US 101 NB/SB Aux Lanes - Fairview Av to Los Carneros Rd**
- (DD) R-12 Storke Rd Widening - Phelps Rd to City Limits
- (EE) R-13 Los Carneros Wy Realignment
- (FF) R-14 South Fairview Av Widening

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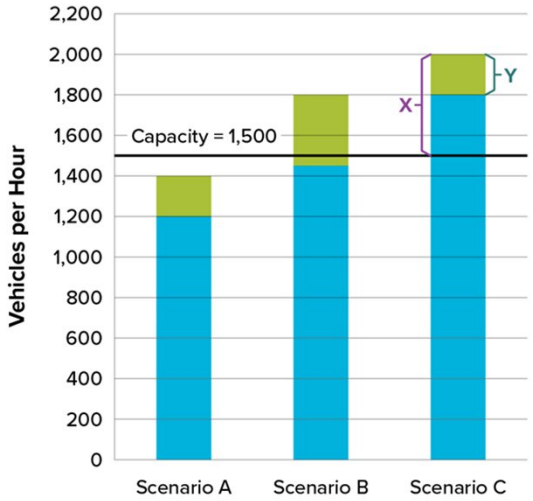
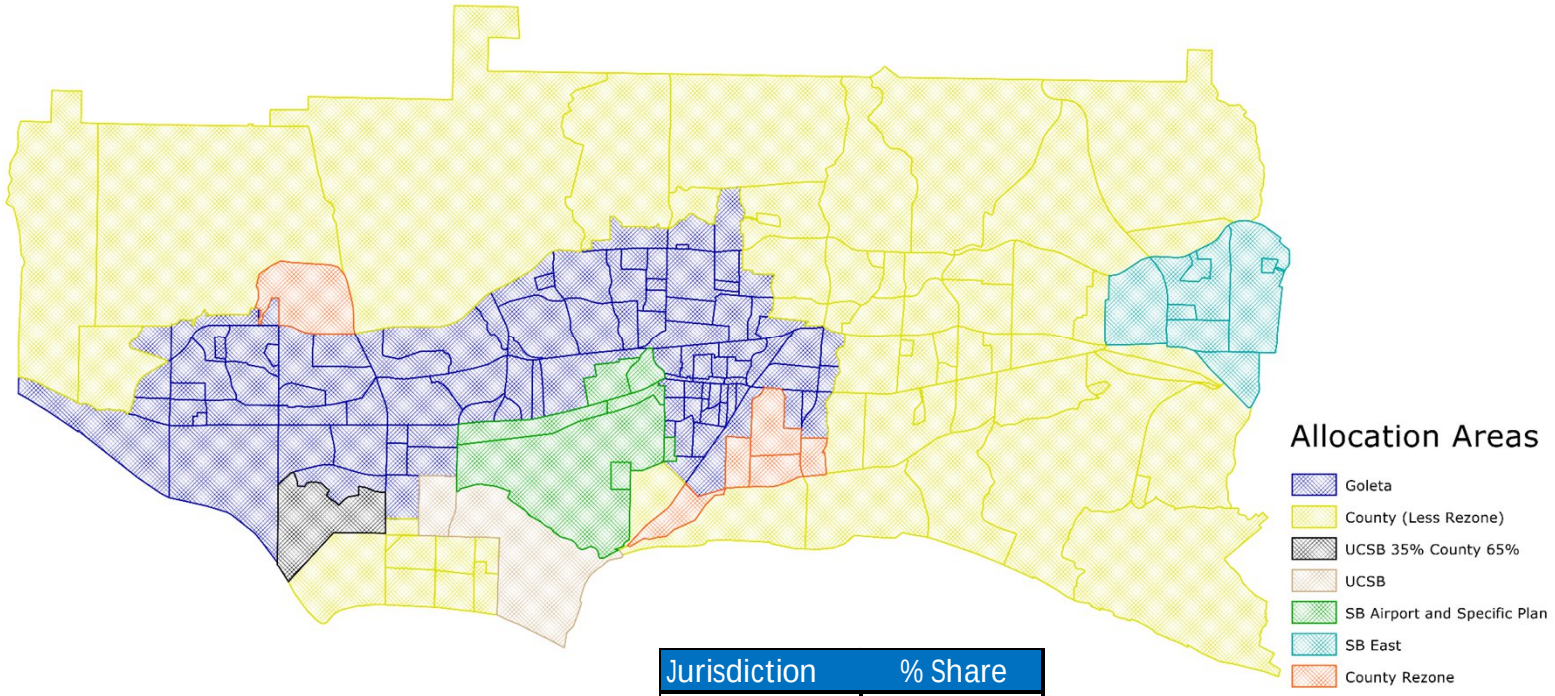
Traffic Fee Fair Share Assessment

% of Project Cost Attributable to New Development



Scenario A: No Deficiency. No Fee Charged.
Scenario B: Deficiency triggered by new development. 100% attributable to new development.
Scenario C: Existing deficiency: New development's fair share of worsening the existing deficiency is Y / X.

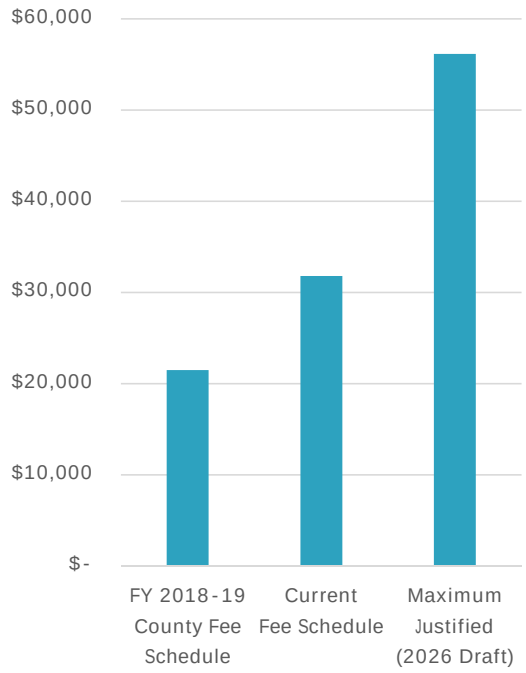
Fee Fair Share Assessment



Jurisdiction	% Share
Goleta	64.64%
UCSB	6.04%
City of SB	6.71%
County	22.62%

Existing & Maximum Justified Fees
All Residential except Single Family
Fee per dwelling unit

Fee	FY18-19 County Fees	Current Fee Schedule	Maximum Justified	Change Compared to Existing	
Public Administration	$1,672	$2,999	$7,396	$4,397	147%
Library	$429	$934	$613	($321)	(34%)
Parks	8,412	$13,175	23,083	$9,908	75%
Storm Drain	$0	$3,494	$3,904	$410	12%
Transportation	$10,948	$8,166	11,443	$3,277	40%
Bicycle & Pedestrian	$0	$3,006	$9,692	$6,686	222%
Fire	$840	$840	$840	$0	0%
Total	$22,301	**$32,614**	$56,972	$24,358	75%



Factors Driving Change to DIFs

Reason for Increases to Maximum Justified Fees:

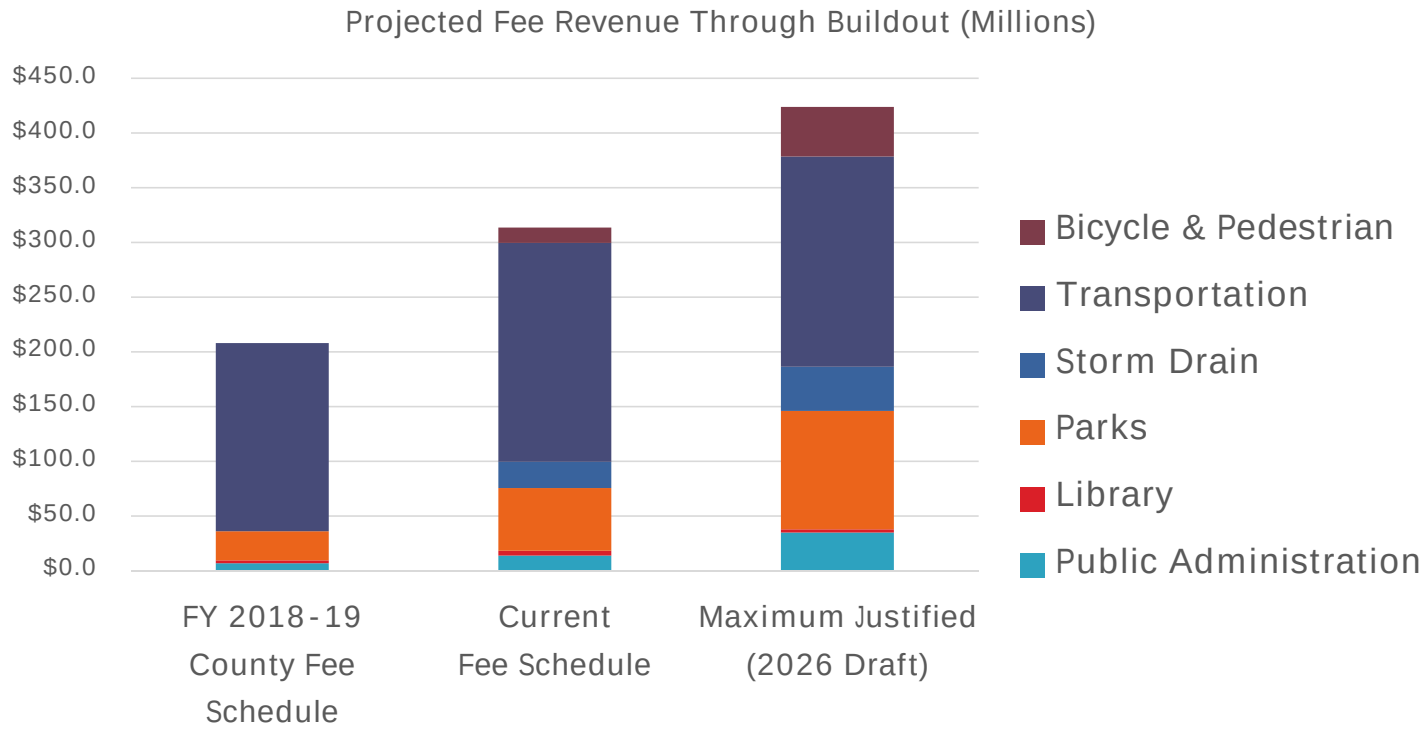
a. Revised transportation projects deficiency list and projects to address deficiencies.
b. Updated and more accurate (in this case larger) inventory of existing facilities (assets) through GIS software, resulting in a higher existing level of service
c. Increased construction and land acquisition costs since 2019

Why Changes in Fee Amounts?

Public Administration	Increase in fee due to updated asset inventories (new building acquired by City and built by the City) and increases in replacement construction costs, and land values.
Library	Increase service population to include entire Goleta Valley Library service area, resulting in lower existing standard.
Parks	Increase in fee due to updated inventories and increases in replacement construction costs, and land values.
Storm Drain	Increase in fee due to a more accurate and comprehensive calculation of existing assets and significant increase in the cost of construction since 2019. Revised to use impervious surface generation as demand factor.
Transportation	Revised deficiency analysis and project list. Increase in fees due to the significant increase in the cost of construction since 2019. 101 overcrossing project split between transportation and bike/pedestrian fee.
Bicycle & Pedestrian	Increase in fee due to a more accurate and comprehensive calculation of existing assets and significant increase in the cost of construction since 2019.

Existing & Maximum Justified Fees Total Revenue

$ millions



* Does not assume any potential reductions / exemptions from beneficial land uses resolutions.

Recommendation

- Adopt Council Resolution No. 26-_____ entitled “A Resolution of The City Council of the City of Goleta, California, approving the 2026 Development Impact Fee Program Update Report and Updated Development Impact Fees pursuant to the Mitigation Fee Act and finding that the Resolution to be Exempt under the California Environmental Quality Act.”

Questions