ORANGE COUNTY OC Public Works

OC DEVELOPMENT SERVICES REPORT

ITEM #2

DATE:	December 9, 2020
TO:	OC Planning Commission
FROM:	OC Development Services/Land Development Division
SUBJECT:	PA20-0073: General Plan Amendment T20-03 – Transportation Element
PROPOSAL:	OC Development Services is requesting to revise the County of Orange Circulation Plan, contained in the General Plan's Transportation Element, to conform the Circulation Plan to the Orange County Master Plan of Arterial Highways (MPAH), administered by the Orange County Transportation Authority (OCTA). The proposed revision to the County's Circulation Plan, once adopted, will: (1) reclassify Chiquita Canyon Drive between Fauna Drive and Esencia Drive from its current Secondary Arterial Highway designation to a Divided Collector Arterial; (2) add Fauna Drive as a Commuter roadway (Collector Arterial) between Chiquita Canyon Drive and Esencia Drive; and (3) add Esencia Drive as a Commuter roadway (Collector Arterial) between Andaza Street and Fauna Drive.
ZONING:	N/A
GENERAL PLAN:	N/A
LOCATION:	Unincorporated Areas of Orange County
APPLICANT:	OC Development Services
STAFF CONTACT:	Debbie Drasler, Contract Planner, Land Development Division Debbie.Drasler@ocpw.ocgov.com

RECOMMENDED ACTION(S):

OC Development Services/Land Development recommends the Planning Commission:

1. Receive staff report and public testimony as appropriate; and

2. Adopt Planning Commission Resolution No. 2020-03 (Attachment 1) recommending that the Board of Supervisors make the appropriate findings under the California Environmental Quality Act (CEQA) and adopt the proposed General Plan Amendment T20-03 – Transportation Element that will update the County of Orange Circulation Plan (Attachment 2).

BACKGROUND AND EXISTING CONDITIONS:

The County of Orange General Plan – Transportation Element contains the County's policies on the development of the transportation facilities necessary to accommodate the orderly growth of the County. The Transportation Element identifies goals, objectives, policies, and implementation programs that affect the transportation system and provide guidance for future planning efforts within the unincorporated area. The Transportation Element contains the Circulation Plan, Bikeways Plan, and Scenic Highways Plan. Implementation of these three plans is necessary to ensure a balanced transportation system. The proposed changes do not involve the Scenic Highway Plan or Bikeway Plan.

The Circulation Plan (Attachment 3) depicts the arterial highways that make up the surface transportation system within the unincorporated area. The Circulation Plan identifies each facility as existing or proposed, and its arterial designation: Principal, Major, Primary, Secondary, or Commuter. It also depicts existing highways, freeways, toll roads, and arterial highways located within other local jurisdictions.

A goal identified in the Transportation Element is to "provide a Circulation Plan that is integrated with that of adjacent jurisdictions." To achieve this goal, the County's transportation system is designed to be compatible with adjacent jurisdictions and amended as necessary to remain consistent with the Orange County Master Plan of Arterial Highways (MPAH) (Attachment 4), administered by the Orange County Transportation Authority (OCTA).

The MPAH depicts a Countywide roadway network intended to ensure coordinated transportation system development among local jurisdictions in Orange County. The MPAH describes an arterial highway system that effectively serves existing and adopted future land uses in both incorporated and unincorporated areas of the County.

Chiquita Canyon Drive is an existing roadway currently depicted as a Secondary Arterial Highway on both the Circulation Plan and MPAH. Fauna Drive and Esencia Drive are not designated as Arterial Highways and were removed from the Circulation Plan in 2018. At the time, the alignments of both Fauna Drive and Esencia Drive were not fully defined on the County's Circulation Plan. The removal of Fauna Drive and Esencia Drive did not transfer to OCTA's MPAH. The roadway construction of Fauna Drive and Esencia Drive is now complete and the County intends to reinstate Fauna Drive and Esencia Drive to the County's Circulation Plan in order to make the County's General Plan and MPAH consistent.

PROPOSED PROJECT:

Staff is requesting to update the County's Circulation Plan to complete the following revisions:

1. Reclassification of Chiquita Canyon Drive from its current Secondary Arterial Highway designation to a Divided Collector Arterial.

The County's Circulation Plan currently depicts Chiquita Canyon Drive as a 4-lane Secondary Arterial Highway located between Cow Camp Road and Los Patrones Parkway. Adoption of the proposed amendment to the Circulation Plan will reclassify Chiquita Canyon Drive between Fauna Drive and Esencia Drive from its current Secondary Arterial Highway designation to a Divided 2-lane Collector Arterial Highway.

2. Add to the Circulation Plan the alignment of Fauna Drive as a Commuter roadway (Collector Arterial) between Chiquita Canyon Drive and Esencia Drive.

   One of the goals of the County's Transportation Element is to ensure consistency between the County's Circulation Plan and the MPAH. Adding Fauna Drive to the County's Circulation Plan will achieve this goal.

3. Add to the Circulation Plan the alignment of Esencia Drive as a Commuter roadway (Collector Arterial) between Andaza Street and Fauna Drive.

   One of the goals of the County's Transportation Element is to ensure consistency between the County's Circulation Plan and the MPAH. Adding Esencia Drive to the County's Circulation Plan will achieve this goal.

A Commuter roadway is a type of Collector Arterial on the County's Circulation Plan and is equivalent to a Collector on the MPAH.

Previously anticipated traffic demand for these roads are lower than previously estimated due to the availability of greater detail regarding the associated backbone roadway system and further refinements in land use development. A Divided Collector Arterial can accommodate up to approximately 15,000 vehicle trips per day and a Commuter roadway up to approximately 10,000 vehicle trips per day at Level of Service (LOS) 'C'. The LOS is a measure of average operating conditions with a range from A to F. A Level of Service 'C' is defined as good operation. Assuming build-out of The Ranch Plan Planned Community and 2045 growth, Chiquita Canyon Drive has a projected Average Daily Traffic (ADT) volume of 3,900, Fauna Drive 4,000 and Esencia a volume of 4,900; resulting in an excellent (free-flow) LOS 'A'.

The results of the traffic modeling prepared for the Project confirms that roadway operations for Chiquita Canyon Drive, Fauna Drive, and Esencia Drive can operate acceptably at lower classifications than their current MPAH designations.

The request to (1) reclassify Chiquita Canyon Drive from a Secondary Arterial Highway to a Divided 2-lane Collector; (2) add Fauna Drive as a Commuter roadway (Collector Arterial); and (3) add Esencia Drive as a Commuter roadway (Collector Arterial) will be proposed to OCTA as updates to the MPAH, which is expected to be considered in January 2021.

CEQA COMPLIANCE:

Final EIR (FEIR) No. 589, previously certified by the Board of Supervisors on November 8, 2004, regarding the Ranch Plan Planned Community, together with Planning Area 2 Addendum to FEIR 589, previously certified by the Board of Supervisors on March 27, 2013, reflect the independent judgment of

the County of Orange and satisfy the requirements of CEQA when considered in conjunction with the Chiquita Canyon Drive Initial Study (Attachment 5). Chiquita Canyon Drive, Fauna Drive, and Esencia Drive are a system of internal collector streets located within PA 2 and are substantially the same as described in the Master Area Plan for PA 2. The refinements of Chiquita Canyon Drive, Fauna Drive, and Esencia Drive would not result in any physical change to that previously approved. Rancho Mission Viejo has refined its land use plan for The Ranch Plan Planned Community and related circulation system such that the internal street network and the location of key land uses result in vehicle traffic on the subject MPAH roadways being lower than previously estimated. Following an evaluation of roadway operations in the area, several existing roadways that are part of the MPAH would be able to operate acceptably at lower classifications than their current MPAH designations, assuming build-out of The Ranch Plan Planned Community and including 2045 growth in the balance of Orange County.

The County of Orange finds, on the basis of substantial evidence in the light of the whole record, that (1) the amendment to the Circulation Plan and MPAH to reclassify Chiquita Canyon Drive between Fauna Drive and Esencia Drive from its current Secondary Arterial Highway designation to a Divided Collector Arterial, the addition of Fauna Drive as a Commuter roadway between Chiquita Canyon Drive and Esencia Drive, and the addition of Esencia Drive as a Commuter roadway between Andaza Street and Fauna Drive does not represent a substantial change from FEIR 589 and Planning Area 2 Addendum to FEIR 589; (2) there are no substantial changes with respect to the circumstances under which the Project is undertaken; and (3) there is no new information of substantial importance, which was not known and could not have been known at the time FEIR 589 and Planning Area 2 Addendum to FEIR 589 were certified as complete. The proposed amendment would not have any new or substantially more severe impacts than what was evaluated in FEIR 589 and Planning Area 2 Addendum to FEIR 589. There are no new mitigation measures that were not adopted at the time the FEIRs were certified that would further reduce Project impacts. FEIR No. 589 and Planning Area 2 Addendum to FEIR 589, when considered in conjunction with this Initial Study (Attachment 5), provide adequate documentation pursuant to the CEQA, therefore no further environmental review is required.

Submitted by:

Bea Bea Jiménez, Division Manager
OC Development Services/Land Development

Concurred by:

Richard Vuong, Interim Deputy Director
OC Public Works/OC Development Services

ATTACHMENTS:

1. Draft Planning Commission Resolution No. 2020-03
2. Draft of Proposed Update to the County of Orange Circulation Plan
3. Current County of Orange Circulation Plan, 2020
4. Current Orange County Master Plan of Arterial Highways, 2020
5. Chiquita Canyon Drive Initial Study

ATTACHMENT 1

RESOLUTION NO. 2020-03
RESOLUTION OF THE PLANNING COMMISSION OF
ORANGE COUNTY, CALIFORNIA

December 9, 2020

On Motion of Commissioner _____, duly seconded and carried, the following Resolution was adopted:

WHEREAS, on November 10, 2020, the Planning Commission authorized staff to initiate General Plan Amendment T20-03 – Transportation Element to update the County of Orange Circulation Plan; and

WHEREAS, the County of Orange General Plan Transportation Element ("Transportation Element") contains the County's policies on the development of the transportation facilities necessary to accommodate the orderly growth of the County; and

WHEREAS, the Transportation Element identifies goals, objectives, policies, and implementation programs that affect the transportation system and provide guidance for future planning efforts within the unincorporated area; and

WHEREAS, the Transportation Element contains the Circulation Plan, Bikeways Plan, and Scenic Highways Plan, which are implemented to ensure a balanced transportation system; and

WHEREAS, the County's transportation system is designed to be compatible with adjacent jurisdictions and amended as necessary to remain consistent with the Orange County Master Plan of Arterial Highways (MPAH) which is maintained by the Orange County Transportation Authority (OCTA); and

WHEREAS, in compliance with the California Environmental Quality Act (California Public Resources Code, Sections 21000 et seq.) (CEQA) and the CEQA Guidelines (Title 14, California Code of Regulations, Sections 15000 et seq.) (CEQA Guidelines) the County, as Lead Agency, has prepared an Initial Study for Chiquita Canyon Drive; and

WHEREAS, based on the Chiquita Canyon Drive Initial Study, together with Final Environmental Impact Report (FEIR) No. 589 and Planning Area 2 Addendum to FEIR 589, it has been determined that the proposed General Plan Amendment T20-03 – Transportation Element – will not have a significant impact on the environment; and

WHEREAS, on December 9, 2020, this Planning Commission conducted a public hearing regarding proposed General Plan Amendment T20-03 – Transportation Element; and

WHEREAS, the Planning Commission has reviewed and fully considered the proposed General Plan Amendment T20-03 – Transportation Element and has heard and considered the public comments that were presented to it at the public hearing held on this project and has determined after review and consideration to recommend adoption of proposed General Plan Amendment T20-03 – Transportation Element.

NOW, THEREFORE, BE IT RESOLVED THAT

1. The Planning Commission recommends that the Board of Supervisors finds that, Final Environmental Impact Report (FEIR) No. 589, previously certified by the Board of Supervisors on November 8, 2004, and Planning Area 2 Addendum to FEIR 589, previously certified by the Board of Supervisors on March 27, 2013, together with the Chiquita Canyon Drive Initial Study, adequately address the effects of General Plan Amendment T20-03, reflect the independent judgment of the County of Orange and are approved based on the following additional findings:

    (a) Chiquita Canyon Drive, Fauna Drive, and Esencia Drive are a system of internal collector streets located within PA 2 and are substantially the same as described in the Master Area Plan for PA 2.

    (b) Rancho Mission Viejo has refined its land use plan for The Ranch Plan Planned Community and related circulation system such that the internal street network and the location of key land uses result in vehicle traffic on the subject MPAH roadways being lower than previously estimated.

    (c) The circumstances of the Project are substantially the same and FEIR 589, Planning Area 2 Addendum to FEIR 589, and the Chiquita Canyon Drive Initial Study to FEIR 589, adequately address the effects of the County's Circulation Plan amendments. No substantial changes have been made, no substantial changes have occurred in the circumstances under which the Project is being undertaken, and no new information of substantial importance which was not known or could not have been known when FEIR 589, Planning Area 2 Addendum to FEIR 589, and the Chiquita Canyon Drive Initial Study thereto were certified has become known; therefore no further environmental review is required.

    (d) All mitigation measures are fully enforceable pursuant to CEQA (Public Resources Codes) Section 21081.6(b) and have either been adopted as conditions, incorporated as part of the project design, or included in the procedures of project implementation.

2. The Planning Commission recommends the following revisions to the County of Orange Circulation Plan contained in the proposed General Plan Amendment T20-03 – Transportation Element (Attached hereto as Exhibit A):

   (a) Reclassify Chiquita Canyon Drive between Fauna Drive and Esencia Drive from its current Secondary Arterial Highway designation to a Divided 2-lane Collector Arterial.

   (b) Add to the Circulation Plan the alignment of Fauna Drive as a Commuter roadway (Collector Arterial) between Chiquita Canyon Drive and Esencia Drive.

   (c) Add to the Circulation Plan the alignment of Esencia Drive as a Commuter roadway (Collector Arterial) between Andaza Street and Fauna Drive.

BE IT FURTHER RESOLVED that the Planning Commission recommends the Board of Supervisors adopt the proposed General Plan Amendment T20-03 – Transportation Element.

The foregoing resolution was passed and adopted by the following vote of the Orange County Planning Commission, on December 9, 2020 to wit:

Ayes:
Noes:
Absent:

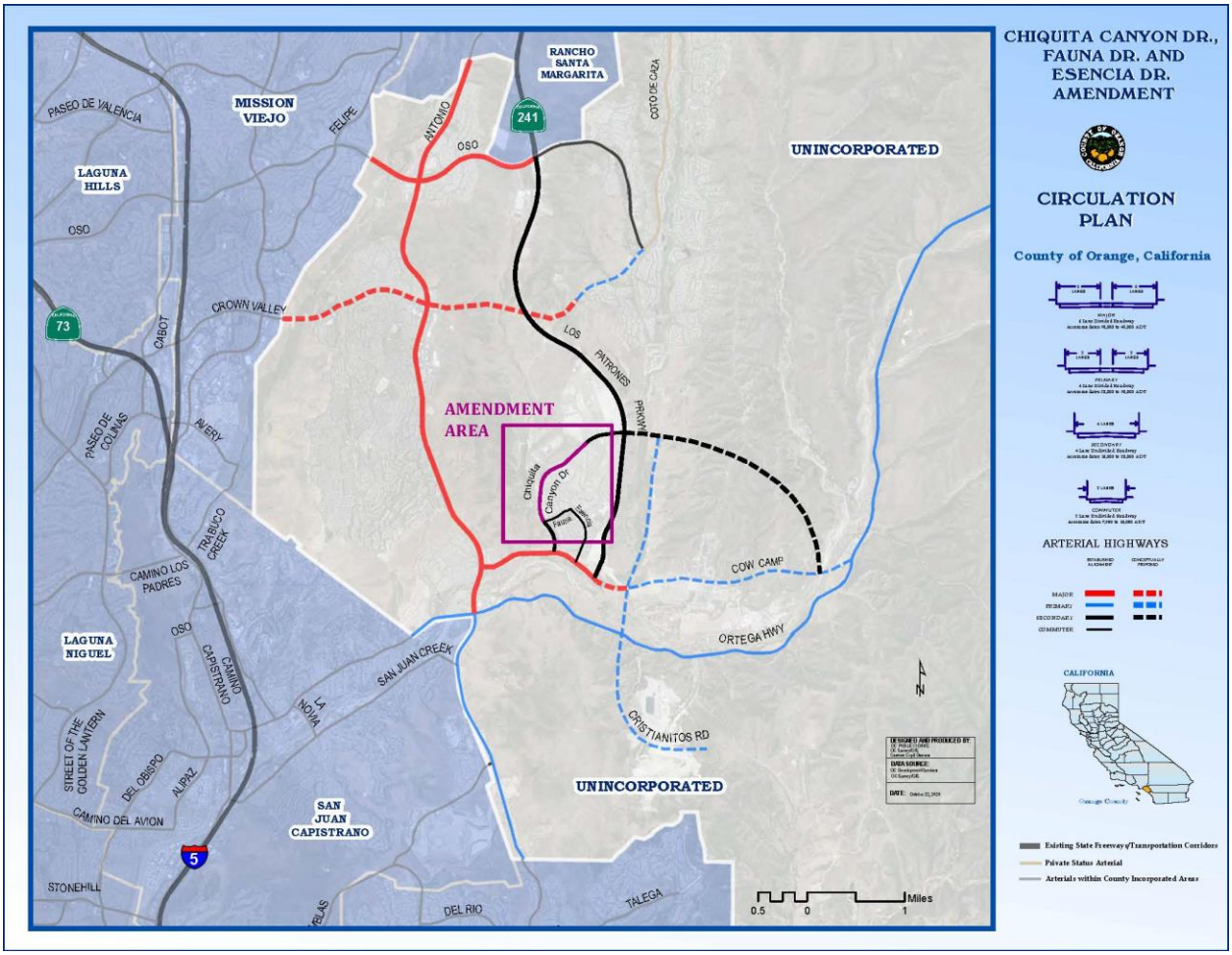
I HEREBY CERTIFY that the foregoing Resolution No. 2020-03 was adopted on December 9, 2020, by the Orange County Planning Commission.

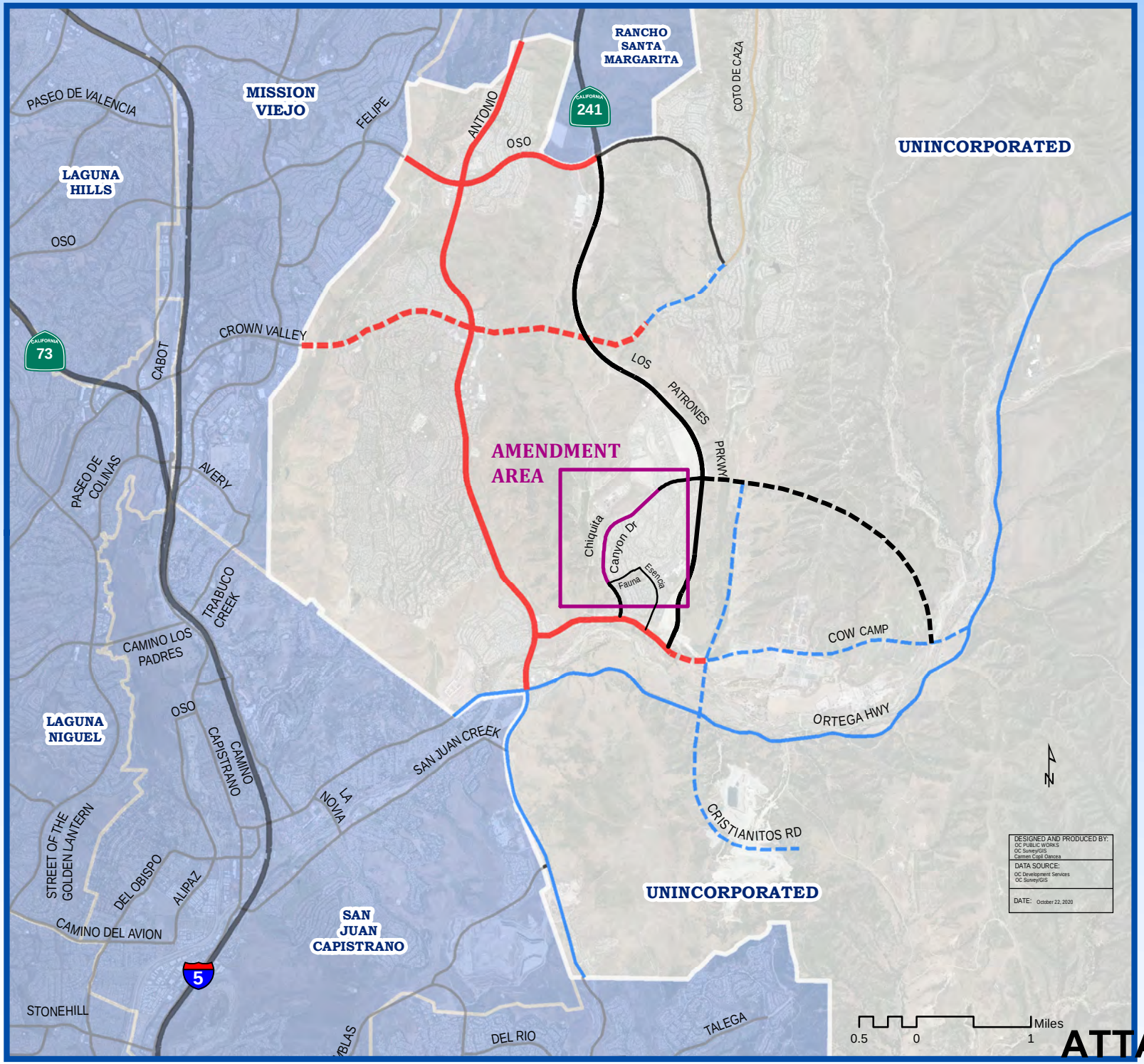
_____

By: Richard Vuong,
Interim Executive Officer, Orange County Planning Commission

Resolution No. 2020-003
Date of Adoption: December 9, 2020

EXHIBIT A

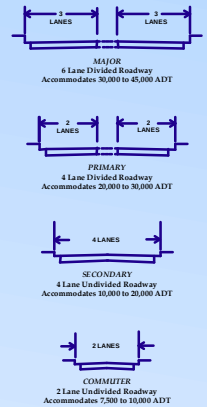

CHIQUITA CANYON DR., FAUNA DR. AND ESENCIA DR. AMENDMENT
CIRCULATION PLAN
County of Orange, California
ARTERIAL HIGHWAYS
CALIFORNIA
Existing State Freeway/Transportation Corridors
Private Status Arterial
Arterials within County Incorporated Areas
AMENDMENT AREA
Chiquita Canyon Dr
Fauna
Esencia
RANCHO SANTA MARGARITA
MISSION VIEJO
LAGUNA HILLS
LAGUNA NIGUEL
SAN JUAN CAPISTRANO
UNINCORPORATED
UNINCORPORATED
PASEO DE VALENCIA
FELIPE
ANTONIO
OSO
COTO DE CAZA
241
CROWN VALLEY
CABOT
73
LOS PATRONES
PARKWAY
PASEO DE COLINAS
AVERY
TRABUCO CREEK
CAMINO LOS PADRES
COW CAMP
ORTEGA HWY
SAN JUAN CREEK
CAMINO CAPISTRANO
LA NOVIA
CRISTIANITOS RD
STREET OF THE GOLDEN LANTERN
DEL OBISPO
AURAZ
CAMINO DEL AVION
5
STONEHILL
PALAS
DEL RIO
TALEGA
0.5
0
1
Miles



CHIQUITA CANYON DR., FAUNA DR. AND ESENCIA DR. AMENDMENT

CIRCULATION PLAN

County of Orange, California



ARTERIAL HIGHWAYS

	ESTABLISHED ALIGNMENT	CONCEPTUALLY PROPOSED
MAJOR		
PRIMARY		
SECONDARY		
COMMUTER		

CALIFORNIA

Existing State Freeways/Transportation Corridors

Private Status Arterial

Arterials within County Incorporated Areas

ATTACHMENT 2

CIRCULATION PLAN

County of Orange, California

LOS ANGELES COUNTY

SAN BERNARDINO COUNTY

RIVERSIDE COUNTY

SAN DIEGO COUNTY

UNINCORPORATED

Cleveland National Forest

Pacific Ocean

ARTERIAL HIGHWAYS

	ESTABLISHED ALIGNMENT	CONCEPTUALLY PROPOSED
PRINCIPAL		
MAJOR		
PRIMARY		
SECONDARY		
COMMUTER		

- Existing State Freeways/Transportation Corridors
- Private Status Arterial
- Arterials within County Incorporated Areas
- County Unincorporated Areas
- County Incorporated Areas
- * Future extension/transportation options currently under evaluation by TCA

*See Note

CALIFORNIA

Orange County

0 2.5 5 Miles

4 LANES | 4 LANES

PRINCIPAL
8 Lane Divided Roadway
Accommodates 45,000 to 60,0000 ADT

3 LANES | 3 LANES

MAJOR
6 Lane Divided Roadway
Accommodates 30,000 to 45,000 ADT

2 LANES | 2 LANES

PRIMARY
4 Lane Divided Roadway
Accommodates 20,000 to 30,000 ADT

4 LANES

SECONDARY
4 Lane Undivided Roadway
Accommodates 10,000 to 20,000 ADT

2 LANES

COMMUTER
2 Lane Undivided Roadway
Accommodates 7,500 to 10,000 ADT

EXTRA RIGHT-OF-WAY MAY BE REQUIRED WHEN AN ARTERIAL HIGHWAY COINCIDES WITH AN ADOPTED ROUTE FOR AN ADDITIONAL PUBLIC FACILITY (EX. PEDESTRIAN, BICYCLE, OR EQUESTRIAN TRAIL), OR FOR A SCENIC HIGHWAY. SEE CALTRANS DESIGN MANUAL.

CERTIFICATION

I HEREBY CERTIFY THAT THE RECOMMENDED CIRCULATION PLAN WAS APPROVED AS THE OFFICIAL MAP OF THE TRANSPORTATION ELEMENT OF THE GENERAL PLAN BY THE ORANGE COUNTY PLANNING COMMISSION ON NOVEMBER 13, 2019 AND ADOPTED BY RESOLUTION NUMBER 20-009 AND 20-010 OF THE ORANGE COUNTY BOARD OF SUPERVISORS ON FEBRUARY 25, 2020

KHALID BAZMI, INTERIM DIRECTOR
OC PUBLIC WORKS

DESIGNED AND PRODUCED BY:
OC PUBLIC WORKS
OC Survey/GIS
Carmen Copil Oancea

DATA SOURCE:
OC Development Services
OC Survey/GIS

DATE: March23, 2020

NOTE: USERS ARE ENCOURAGED TO CHECK FOR SUBSEQUENT AMENDMENTS TO THE CIRCULATION PLAN. FOR FURTHER INFORMATION, REFER TO THE TRANSPORTATION ELEMENT OF THE COUNTY OF ORANGE GENERAL PLAN

ATTACHMENT 3

2020 Master Plan of Arterial Highways

ORANGE COUNTY

California

OCTA

LEGEND

ARTERIAL HIGHWAYS

CONSTRUCTED ROADWAYS *	UNCONSTRUCTED ROADWAYS **	
		PRINCIPAL
		MAJOR
		PRIMARY
		SECONDARY
		DIVIDED COLLECTOR
		COLLECTOR

ROADS OUTSIDE OF OC SHOWN FOR CONTINUITY

FREEWAY / TOLL ROAD

SMART STREET 8 LANE

SMART STREET 6 LANE

SMART STREET 4 LANE

EXISTING	PROPOSED	
		FREEWAY / TOLL ROAD INTERCHANGES

RIGHT-OF-WAY RESERVE

NOTES:

** Figures show lane difference between MPAH classification and constructed lanes. Red label indicates roadway segment is underbuilt to MPAH classification. Black label indicates overbuilt segments.*

*** Unconstructed roadway alignments may not be finalized*

Freeways / Toll Roads shown for reference purposes only.

CLASSIFICATION

PRINCIPAL
8 Lane Divided Roadway
Accommodates 45,000 to 60,000 ADT

MAJOR
6 Lane Divided Roadway
Accommodates 30,000 to 45,000 ADT

PRIMARY
4 Lane Divided Roadway
Accommodates 20,000 to 30,000 ADT

SECONDARY
4 Lane Undivided Roadway
Accommodates 10,000 to 20,000 ADT

DIVIDED COLLECTOR
2 Lane Divided Roadway
Accommodates 9,000 to 15,000 ADT

COLLECTOR
2 Lane Undivided Roadway
Accommodates 7,500 to 10,000 ADT

Map Published June 1, 2020

0 2.5 5 Miles

Source: OCTA

ATTACHMENT 4

CEQA INITIAL STUDY

CHIQUITA CANYON DRIVE
PLANNING APPLICATION (PA) 20-0073
INITIAL STUDY

Prepared for:

County of Orange
OC Public Works, Development Services/Land Development
601 North Ross Street
Santa Ana, CA 92701-4048

Prepared by:

OC Public Works, Development Services/Land Development
601 North Ross Street
Santa Ana, CA 92701-4048

November 2020

ATTACHMENT 5

Table of Contents

List of Figures

List of Tables

Appendices

Chapter 1: Introduction

The purpose of this Initial Study is to evaluate the potentially significant environmental impacts associated with implementing the proposed project.

- Chapter 1: Introduction
- Chapter 2: Environmental Determination
- Chapter 3: Environmental Evaluation
- Chapter 4: References

1.1 Project Title

General Plan Amendment T20-03 – Chiquita Canyon Drive - General Plan Transportation Element - T 20-03

1.2 Lead Agency Name | Address

County of Orange
OC Public Works
Development Services/Land Development
601N. Ross Street
Santa Ana, CA.

1.3 Lead Agency Contact Person | Telephone Number | Email

Wei Zhu, PE, TE
Sr. Civil Engineer
OC Public Works/ Traffic Engineering
601 N. Ross Street
Santa Ana, CA 92601

Telephone: 714.647.3976
Email: Wei.Zhu@ocpw.ocgov.com

1.4 Project Sponsor's Name | Address

Rancho Mission Viejo
28811 Ortega Highway
San Juan Capistrano, CA 92693

1.5 Project Location

The 22,683-acre Rancho Mission Viejo Planned Community is located in southeast Orange County within unincorporated Orange County and within the boundary of the Rancho Mission Viejo Specific Plan. The Ladera Ranch Planned Community (Ladera Ranch) and the cities of San Juan Capistrano and San Clemente border the Rancho Plan Planned Community on the west. The planned community of Coto de Caza and the City of Rancho Santa Margarita border the northern edge of the site; the United States Marine Corps Base (MCB) Camp Pendleton in San Diego County borders the southern edge; and Caspers Wilderness Park, the Cleveland National Forest, and several private properties in Riverside and San Diego Counties border the site on its eastern edge.

Chiquita Canyon Drive, Fauna Drive, and Esencia Drive are located north of Cow Camp Road in the southern region of Planning Area 2 in the Rancho Mission Viejo Planned Community.

Refer to Figure 1: Regional Location, Figure 2: Vicinity Location, and Figure 3: Circulation.

1.6 Description of Project

The County of Orange with the support of Rancho Mission Viejo is requesting an amendment to the Master Plan of Arterial Highways (MPAH) in the Rancho Mission Viejo community located in South Orange County. Rancho Mission Viejo has refined its land use plan for The Ranch Plan and related circulation system such that the internal street network and the location of key land uses result in vehicle traffic on the subject MPAH roadways being lower than previously estimated.

Following an evaluation of roadway operations in the area, several existing[1] roadways that are part of the MPAH would be able to operate acceptably at lower classifications than their current MPAH designations, assuming build-out of The Ranch Plan and including 2045 growth in the balance of Orange County. The roadways proposed for amendment designations are summarized below.[2]

Table 1: Roadways Proposed for Amendment

Roadway Facility	Extent	Current Designation	Proposed Designation
1. Chiquita Canyon Drive ("A" Street VTTM17561)	Fauna Drive to Esencia Drive	Secondary (4 Lanes)	Divided Collector (2 Lanes)
2. Fauna Drive ("B" Street VTTM17561)	Chiquita Canyon Drive to Esencia Drive	Secondary (4 Lanes)	Commuter roadway (Collector -2 Lanes)
3. Esencia Drive ("J" Street VTTM17561)	Andaza Street to Fauna Drive	Secondary (4 Lanes)	Commuter roadway (Collector -2 Lanes)

1.7 Other Public Agency Approvals

Table 2 below provides a list of required public agency approvals that are associated with the Project.

Table 2: Public Agency Approvals

Body	Action
Orange County Transportation Authority	Amend Master Plan of Arterial Highways

[1] The roadways have been constructed and no further improvements or changes are proposed or required.

[2] Iteris Traffic Impact Study, November 23, 2020

Figure 1: Regional Location

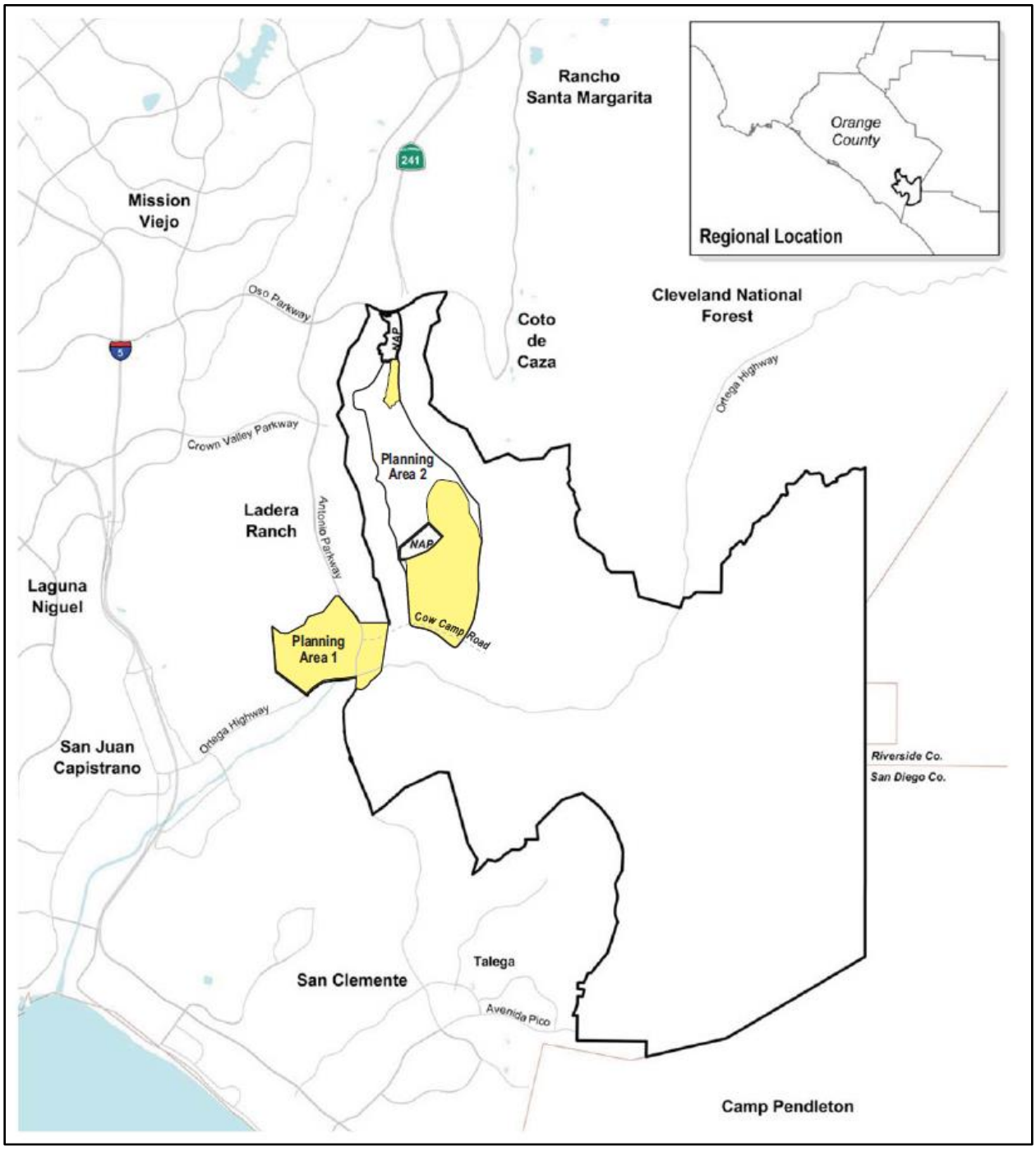


Figure 2: Vicinity Location

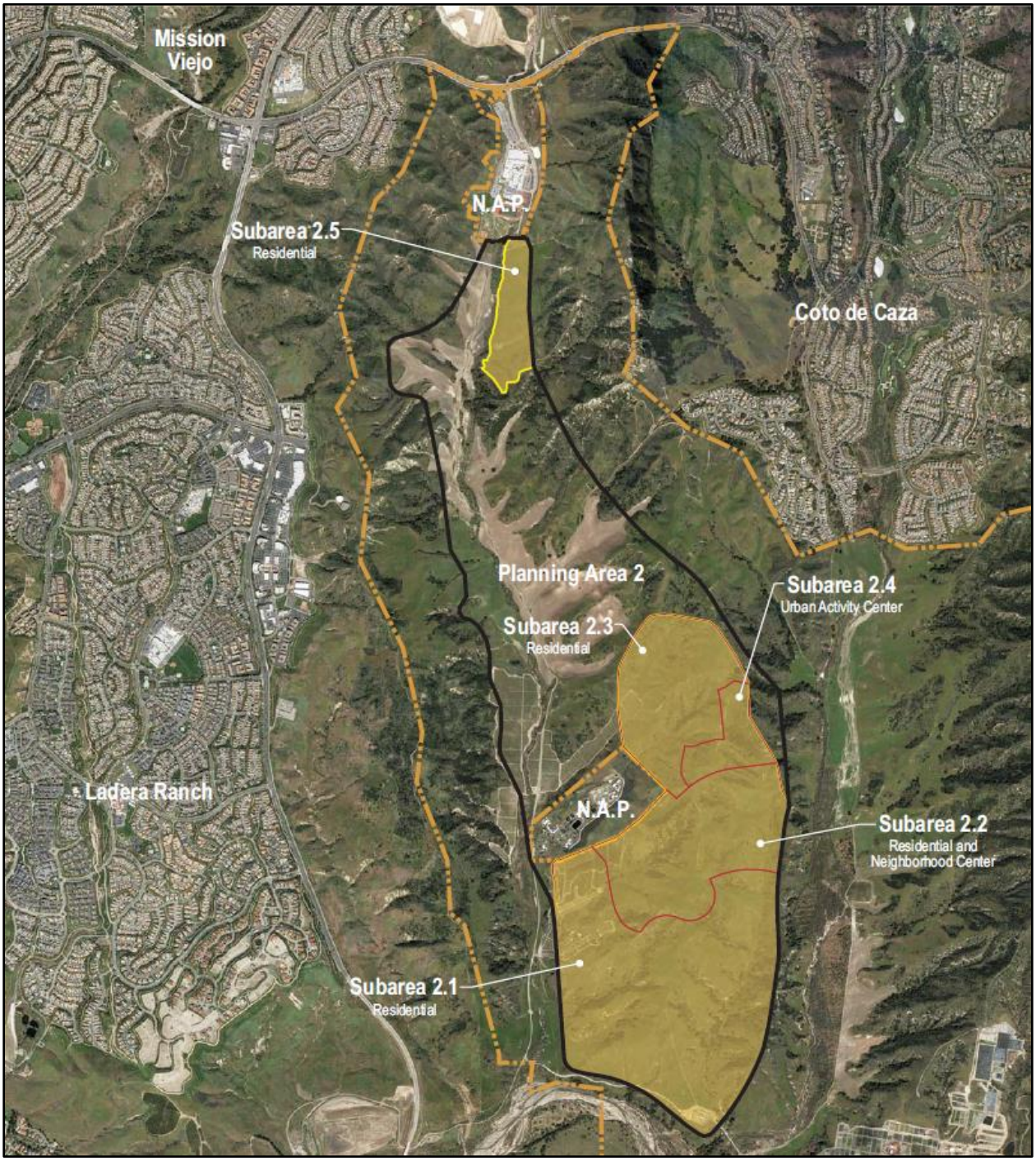
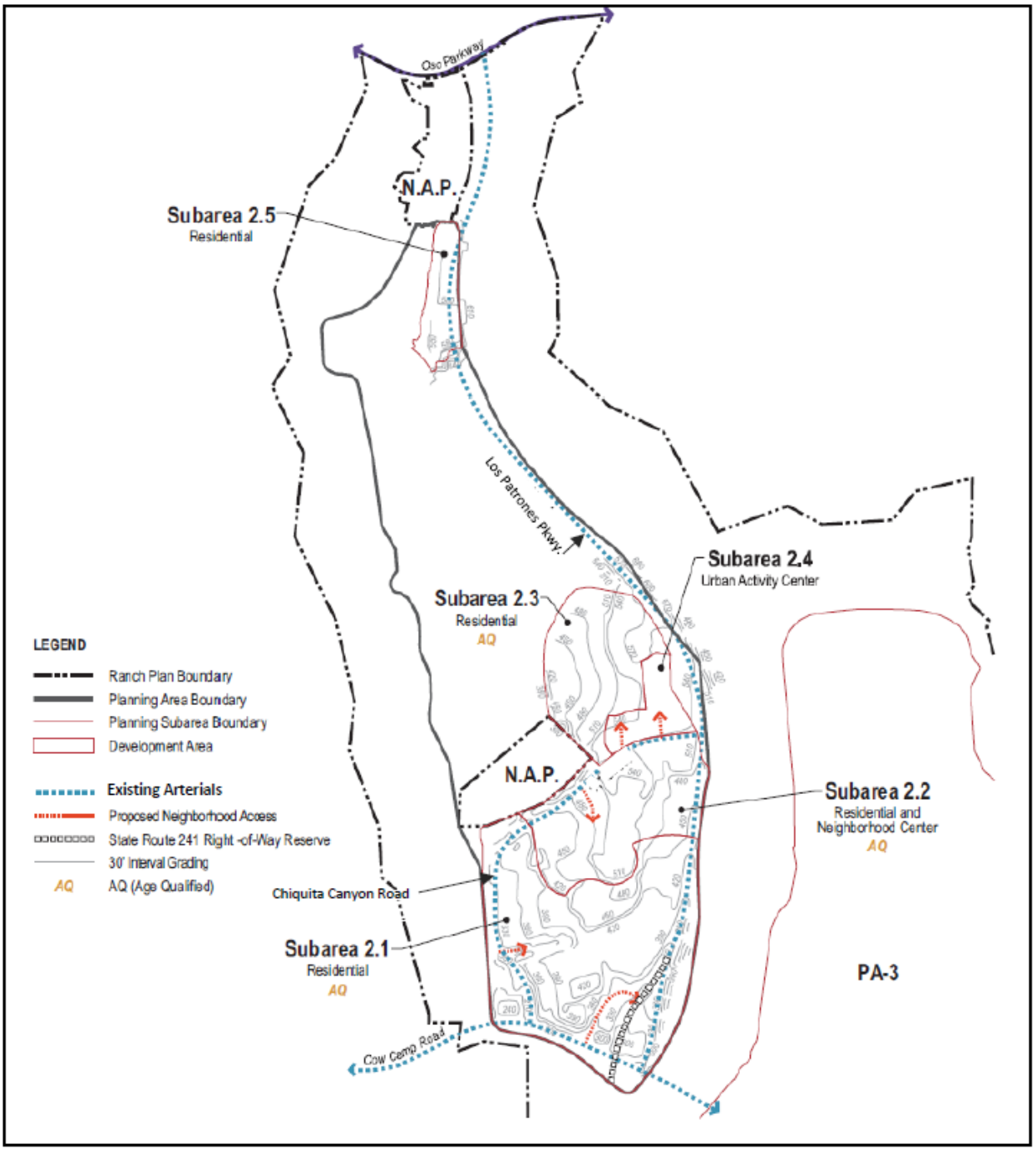


Figure 3: Circulation



Chapter 2: Environmental Determination

Based on the analysis conducted in this Initial Study, the County of Orange, OC Public Works, Development Services/Planning, as the Lead Agency, has made the following determination:

Table 3: Environmental Determination

I find that the proposed project COULD NOT have a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared.	☐
I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made or agreed to by the project proponent. A **MITIGATED NEGATIVE DECLARATION** will be prepared.	☐
I find that the proposed project MAY have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required.	☐
I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An **ENVIRONMENTAL IMPACT REPORT** is required, but it must analyze only the effects that remain to be addressed.	☐
I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier **EIR** or **NEGATIVE DECLARATION** pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier **EIR** or **NEGATIVE DECLARATION**, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.	☐
I find that the proposed project has previously been analyzed as part of an earlier CEQA document (which either mitigated the project or adopted impacts pursuant to findings) adopted/certified pursuant to the State CEQA Guidelines and the County's adopted Local CEQA Guidelines. The proposed project is a component of the whole action analyzed in the previously adopted/certified CEQA document.	☒
I find that the proposed project has previously been analyzed as part of an earlier CEQA document (which either mitigated the project or adopted impacts pursuant to findings) adopted/certified pursuant to State and County CEQA Guidelines. Minor additions and/or clarifications are needed to make the previous documentation adequate to cover the project which are documented in this addendum to the earlier CEQA document (CEQA §15164).	☐
I find that the proposed project Has previously been analyzed as part of an earlier CEQA document (which either mitigated the project or adopted impacts pursuant to findings) adopted/certified pursuant to State and County CEQA Guidelines. However, there is important new information and/or substantial changes have occurred requiring the preparation of an additional CEQA document (ND or EIR) pursuant to CEQA Guidelines Sections 15162 through 15163.	☐

_____ _____

Signature Date

_____

Printed Name

Chapter 3: Environmental Evaluation

3.1 Analysis Methodology

Planning Area 2 Addendum to Final EIR No. 589 evaluated the potential environmental impacts associated with constructing the roadways. This analysis methodology identifies the locations in the Addendum where each of the applicable environmental factors, identified in Table 4 below, was evaluated. In addition, this analysis methodology discusses the potential environmental impacts associated with the proposed general plan amendment in accordance with the guidance provided in Section 4 of the Guidance for Administration of the Orange County Master Plan of Arterial Highways. [3]

3.2 Environmental Factors Potentially Affected

This document incorporates the Environmental Checklist Form from Appendix G of the CEQA Guidelines.

Table 4 below lists the environmental factors that are evaluated in this document. Environmental factors unchecked indicate that impacts were determined to be consistent with the analysis in the Addendum or not applicable.

Table 4: Environmental Factors Potentially Affected

☐ Aesthetics (3.3)	☐ Mineral Resources (3.14)
☐ Agriculture & Forestry Resources (3.4)	☐ Noise (3.15)
☐ Air Quality (3.5)	☐ Population & Housing (3.16)
☐ Biological Resources (3.6)	☐ Public Services (3.17)
☐ Cultural Resources (3.7)	☐ Recreation (3.18)
☐ Energy (3.8)	☐ Transportation (3.19)
☐ Geology and Soils (3.9)	☐ Tribal Cultural Resources (3.20)
☐ Greenhouse Gas Emissions (3.10)	☐ Utilities & Service Systems (3.21)
☐ Hazards & Hazardous Materials (3.11)	☐ Wildfire (3.22)
☐ Hydrology & Water Quality (3.12)	☐ Mandatory Findings (3.23)
☐ Land Use & Planning (3.13)	

[3] Orange County Transportation Authority, August 14, 2017.

3.3 Aesthetics *Except as provided in Public Resources Code Section 21099, would the project:*	**Potentially Significant Impact**	**Less than Significant With Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☒
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

Response to Question a-d): No Substantial Change from Previous Analysis. Aesthetic impacts have been previously analyzed as part of Final EIR 589 and Section 4.2 of Planning Area 2 Addendum to FEIR 589, which were prepared and certified pursuant to State and County CEQA Guidelines. Because the roadways have been constructed and no changes or improvements are necessary, no impacts to Aesthetics would result.

Therefore, consistent with MPAH Amendment Policy 4.0-2, no significant impacts would result from implementing the proposed general plan amendment. Upon approval of this project the OCTA would file a CEQA Notice of Exemption with the Orange County Clerk in accordance with MPAH Amendment Policy No. 4.0-5.

3.4 Agriculture and Forestry Resources *In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:*	**Potentially Significant Impact**	**Less than Significant With Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code 12220 (g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51004(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or forest land to non-forest use?	☐	☐	☐	☒

Response to Question a-e): No Substantial Change from Previous Analysis. Agricultural and Forestry Resource impacts have been previously analyzed as part of Final EIR 589 and Section 4.1 of Planning Area 2 Addendum to FEIR 589, which were prepared and certified pursuant to State and County CEQA Guidelines. Because the roadways have been constructed and no changes or improvements are necessary, no impacts to Agricultural and Forestry Resources would result.

Therefore, consistent with MPAH Amendment Policy 4.0-2, no significant impacts would result from implementing the proposed general plan amendment. Upon approval of this project the OCTA would file a CEQA Notice of Exemption with the Orange County Clerk in accordance with MPAH Amendment Policy No. 4.0-5.

3.5 Air Quality *Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:*	**Potentially Significant Impact**	**Less than Significant With Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☐	☒
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
d) Result in other emissions (such as those leading to odors affecting a substantial number of people?	☐	☐	☐	☒

Response to Question a-d): No Substantial Change from Previous Analysis. Air Quality impacts have been previously analyzed as part of Final EIR 589 and Section 4.3 of Planning Area 2 Addendum to FEIR 589, which were prepared and certified pursuant to State and County CEQA Guidelines. Because the roadways have been constructed and no changes or improvements are necessary, no impacts to Air Quality would result.

Therefore, consistent with MPAH Amendment Policy 4.0-2, no significant impacts would result from implementing the proposed general plan amendment. Upon approval of this project the OCTA would file a CEQA Notice of Exemption with the Orange County Clerk in accordance with MPAH Amendment Policy No. 4.0-5.

3.6 Biological Resources *Would the project:*	**Potentially Significant Impact**	**Less than Significant With Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Response to Question a-f): No Substantial Change from Previous Analysis. Impacts to Biological Resources have been previously analyzed as part of Final EIR 589 and Section 4.4 of Planning Area 2 Addendum to FEIR 589, which were prepared and certified pursuant to State and County CEQA Guidelines. Because the roadways have been constructed and no changes or improvements are necessary, no impacts to Biological Resources would result.

Therefore, consistent with MPAH Amendment Policy 4.0-2, no significant impacts would result from implementing the proposed general plan amendment. Upon approval of this project the OCTA would file a CEQA Notice of Exemption with the Orange County Clerk in accordance with MPAH Amendment Policy No. 4.0-5.

3.7 Cultural Resources *Would the project:*	**Potentially Significant Impact**	**Less than Significant With Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☒
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☐	☒

Response to Question a-c): No Substantial Change from Previous Analysis. Cultural Resources impacts have been previously analyzed as part of Final EIR 589 and Section 4.5 of Planning Area 2 Addendum to FEIR 589, which were prepared and certified pursuant to State and County CEQA Guidelines. Because the roadways have been constructed and no changes or improvements are necessary, no impacts to Cultural Resources would result.

Therefore, consistent with MPAH Amendment Policy 4.0-2, no significant impacts would result from implementing the proposed general plan amendment. Upon approval of this project the OCTA would file a CEQA Notice of Exemption with the Orange County Clerk in accordance with MPAH Amendment Policy No. 4.0-5.

3.8 Energy *Would the project:*	**Potentially Significant Impact**	**Less than Significant With Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☐	☒
b) Conflict or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

Response to Impact Question a-b): Energy impacts

At the time of certification of FEIR 589 for the Rancho Mission Viejo Planned Community, Energy analysis was not part of the required CEQA Checklist. The refinement of Chiquita Canyon Drive, Fauna Drive, and Esencia Drive would implement a component of the previously approved Rancho Mission Viejo Planned Community based on FEIR 589, which was certified on November 8, 2004. Effective December 28, 2018, the State of California adopted amendments to the State CEQA Guidelines requiring the analysis and mitigation of energy resources in CEQA documents. The new State CEQA Guidelines regarding energy do not specifically address situations involving subsequent implementing actions for a project with a previously certified FEIR.

3.9 Geology and Soils *Would the project:*	**Potentially Significant Impact**	**Less than Significant With Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in onsite or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal system where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒

Response to Impact Question a-f): No Substantial Change from Previous Analysis. Geophysical impacts have been previously analyzed as part of Final EIR 589 and Section 4.6 of Planning Area 2 Addendum to FEIR 589, which were prepared and certified pursuant to State and County CEQA Guidelines. Because the roadways have been constructed and no changes or improvements are necessary, no impacts to Geology and Soils would result.

Therefore, consistent with MPAH Amendment Policy 4.0-2, no significant impacts would result from implementing the proposed general plan amendment. Upon approval of this project the OCTA would file a CEQA Notice of Exemption with the Orange County Clerk in accordance with MPAH Amendment Policy No. 4.0-5.

3.10 Greenhouse Gas Emissions *Would the project:*	**Potentially Significant Impact**	**Less than Significant With Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant effect on the environment?	☐	☐	☐	☒

b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

Response to Impact Question a-b): No Substantial Change from Previous Analysis. Greenhouse Gas Emissions have been previously analyzed as part of Final EIR 589 and Section 4.7 of Planning Area 2 Addendum to FEIR 589, which were prepared and certified pursuant to State and County CEQA Guidelines. Because the roadways have been constructed and no changes or improvements are necessary, no impacts to Greenhouse Gas Emissions would result.

Therefore, consistent with MPAH Amendment Policy 4.0-2, no significant impacts would result from implementing the proposed general plan amendment. Upon approval of this project the OCTA would file a CEQA Notice of Exemption with the Orange County Clerk in accordance with MPAH Amendment Policy No. 4.0-5.

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

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

Response to Impact Question a-g): No Substantial Change from Previous Analysis. Hazardous Materials impacts have been previously analyzed as part of Final EIR 589 and Section 4.8 of Planning Area 2 Addendum to FEIR 589, which were prepared and certified pursuant to State and County CEQA Guidelines. Because the roadways have been constructed and no changes or improvements are necessary, no impacts to Hazards and Hazardous Materials would result.

Therefore, consistent with MPAH Amendment Policy 4.0-2, no significant impacts would result from implementing the proposed general plan amendment. Upon approval of this project the OCTA would file a CEQA Notice of Exemption with the Orange County Clerk in accordance with MPAH Amendment Policy No. 4.0-5.

3.12 Hydrology and Water Quality *Would the project:*	**Potentially Significant Impact**	**Less than Significant With Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☐	☒
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner, which would:	☐	☐	☐	☒
i) result in substantial erosion or siltation on- or offsite?	☐	☐	☐	☒
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?	☐	☐	☐	☒

iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial sources of polluted runoff?	☐	☐	☐	☒
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

Response to Question a-e): No Substantial Change from Previous Analysis. Hydrology and Water Quality impacts have been previously analyzed as part of Final EIR 589 and Section 4.9 of Planning Area 2 Addendum to FEIR 589, which were prepared and certified pursuant to State and County CEQA Guidelines. Because the roadways have been constructed and no changes or improvements are necessary, no impacts to Hydrology and Water Quality would result.

Therefore, consistent with MPAH Amendment Policy 4.0-2, no significant impacts would result from implementing the proposed general plan amendment. Upon approval of this project the OCTA would file a CEQA Notice of Exemption with the Orange County Clerk in accordance with MPAH Amendment Policy No. 4.0-5.

3.13 Land Use and Planning *Would the project:*	**Potentially Significant Impact**	**Less than Significant With Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

Response to Question a-b): No Substantial Change from Previous Analysis. Land Use and Planning impacts have been previously analyzed as part of Final EIR 589 and Section 4.10 of Planning Area 2 Addendum to FEIR 589, which were prepared and certified pursuant to State and County CEQA Guidelines. Because the roadways have been constructed and no changes or improvements are necessary, no impacts to Land Use and Planning would result.

Therefore, consistent with MPAH Amendment Policy 4.0-2, no significant impacts would result from implementing the proposed general plan amendment. Upon approval of this project the OCTA would file a CEQA Notice of Exemption with the Orange County Clerk in accordance with MPAH Amendment Policy No. 4.0-5.

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

Response to Question a-b): No Substantial Change from Previous Analysis. Mineral Resources impacts have been previously analyzed as part of Final EIR 589 and Section 4.11 of Planning Area 2 Addendum to FEIR 589, which were prepared and certified pursuant to State and County CEQA Guidelines. Because the roadways have been constructed and no changes or improvements are necessary, no impacts to Mineral Resources would result.

Therefore, consistent with MPAH Amendment Policy 4.0-2, no significant impacts would result from implementing the proposed general plan amendment. Upon approval of this project the OCTA would file a CEQA Notice of Exemption with the Orange County Clerk in accordance with MPAH Amendment Policy No. 4.0-5.

3.15 Noise *Would the project result in:*	**Potentially Significant Impact**	**Less than Significant With Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☒
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Response to Question a-c): No Substantial Change from Previous Analysis. Noise impacts have been previously analyzed as part of Final EIR 589 and Section 4.12 of Planning Area 2 Addendum to FEIR 589, which were prepared and certified pursuant to State and County CEQA Guidelines. Because the roadways have been constructed and no changes or improvements are necessary, no impacts to Noise would result.

Therefore, consistent with MPAH Amendment Policy 4.0-2, no significant impacts would result from implementing the proposed general plan amendment. Upon approval of this project the OCTA would file a CEQA Notice of Exemption with the Orange County Clerk in accordance with MPAH Amendment Policy No. 4.0-5.

3.16 Population and Housing *Would the project:*	**Potentially Significant Impact**	**Less than Significant With Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Response to Question a-b): No Substantial Change from Previous Analysis. Population and Housing impacts have been previously analyzed as part of Final EIR 589 and Section 4.13 of Planning Area 2 Addendum to FEIR 589, which were prepared and certified pursuant to State and County CEQA Guidelines. Because the roadways have been constructed and no changes or improvements are necessary, no impacts to Population and Housing would result.

Therefore, consistent with MPAH Amendment Policy 4.0-2, no significant impacts would result from implementing the proposed general plan amendment. Upon approval of this project the OCTA would file a CEQA Notice of Exemption with the Orange County Clerk in accordance with MPAH Amendment Policy No. 4.0-5.

3.17 Public Services *Would the project:*	**Potentially Significant Impact**	**Less than Significant With Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
a-i) Fire protection	☐	☐	☐	☒
a-ii) Police protection	☐	☐	☐	☒
a-iii) Schools	☐	☐	☐	☒
a-iv) Parks	☐	☐	☐	☒
a-v) Other public facilities	☐	☐	☐	☒

Response to Question a-i-v): No Substantial Change from Previous Analysis. Public Services impacts have been previously analyzed as part of Final EIR 589 and Section 4.14 of Planning Area 2 Addendum to FEIR 589, which were prepared and certified pursuant to State and County CEQA Guidelines. Because the roadways have been constructed and no changes or improvements are necessary, no impacts to Public Services would result.

Therefore, consistent with MPAH Amendment Policy 4.0-2, no significant impacts would result from implementing the proposed general plan amendment. Upon approval of this project the OCTA would file a CEQA Notice of Exemption with the Orange County Clerk in accordance with MPAH Amendment Policy No. 4.0-5.

3.18 Recreation *Would the project:*	**Potentially Significant Impact**	**Less than Significant With Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Response to Question a-b): No Substantial Change from Previous Analysis. Recreation impacts have been previously analyzed as part of Final EIR 589 and Section 4.15 of Planning Area 2 Addendum to FEIR 589, which were prepared and certified pursuant to State and County CEQA Guidelines. Because the roadways have been constructed and no changes or improvements are necessary, no impacts to Recreation would result.

Therefore, consistent with MPAH Amendment Policy 4.0-2, no significant impacts would result from implementing the proposed general plan amendment. Upon approval of this project the OCTA would file a CEQA Notice of Exemption with the Orange County Clerk in accordance with MPAH Amendment Policy No. 4.0-5.

3.19Transportation *Would the project:*	**Potentially Significant Impact**	**Less than Significant With Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☐	☒
b) Would the project conflict or be inconsistent with CEQA section 15064.3, subdivision (b)?	☐	☐	☐	☒
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☐	☐	☒

Response to Impact Question a-d): No Substantial Change from Previous Analysis. Transportation impacts have been previously analyzed as part of Final EIR 589 and Section 4.16 of Planning Area 2 Addendum to FEIR 589, which were prepared and certified pursuant to State and County CEQA Guidelines. Because the roadways have been constructed and no changes or improvements are necessary, no impacts to Transportation would result.

Therefore, consistent with MPAH Amendment Policy 4.0-2, no significant impacts would result from implementing the proposed general plan amendment. Upon approval of this project the OCTA would file a CEQA Notice of Exemption with the Orange County Clerk in accordance with MPAH Amendment Policy No. 4.0-5.

3.20 Tribal Cultural Resources *Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:*	**Potentially Significant Impact**	**Less than Significant With Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k).	☐	☐	☐	☒

b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒

Response to Question a-b): Tribal Cultural Resources Impacts

At the time of certification of FEIR 589 for the Rancho Mission Viejo Planned Community, Tribal Cultural Resources analysis was not part of the required CEQA Checklist. The refinement of Chiquita Canyon Drive, Fauna Drive, and Esencia Drive would implement a component of the previously approved Rancho Mission Viejo Planned Community based on FEIR 589, which was certified on November 8, 2004. Effective July 1, 2015, the analysis and mitigation of Tribal Cultural Resources in CEQA documents was required. The new State CEQA Guidelines regarding Tribal Cultural Resources do not specifically address situations involving subsequent implementing actions for a project with a previously certified FEIR.

3.21 Utilities and Service Systems *Would the project:*	**Potentially Significant Impact**	**Less than Significant With Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	☐	☒
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☐	☒
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

Response to Question a-e): No Substantial Change from Previous Analysis. Utilities and Service Systems impacts have been previously analyzed as part of Final EIR 589 and Section 4.17 of Planning Area 2 Addendum to FEIR 589, which were prepared and certified pursuant to State and County CEQA Guidelines. Because the roadways have been constructed and no changes or improvements are necessary, no impacts to Utilities and Service Systems would result.

Therefore, consistent with MPAH Amendment Policy 4.0-2, no significant impacts would result from implementing the proposed general plan amendment. Upon approval of this project the OCTA would file a CEQA Notice of Exemption with the Orange County Clerk in accordance with MPAH Amendment Policy No. 4.0-5.

3.22 Wildfire *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:*	**Potentially Significant Impact**	**Less than Significant With Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

Response to Question a-d): Wildfire Impacts

At the time of certification of FEIR 589 for the Rancho Mission Viejo Planned Community, Wildfire analysis was not part of the required CEQA Checklist. The refinement of Chiquita Canyon Drive, Fauna Drive, and Esencia Drive would implement a component of the previously

approved Rancho Mission Viejo Planned Community based on FEIR 589, which was certified on November 8, 2004. Effective December 28, 2018, the State of California adopted State CEQA Guidelines requiring the analysis and mitigation of energy resources in CEQA documents. The new State CEQA Guidelines regarding wildfires do not specifically address situations involving subsequent implementing actions for a project with a previously certified FEIR.

3.23 Mandatory Findings of Significance *Would the project:*	**Potentially Significant Impact**	**Less than Significant With Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☐	☒
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☐	☒

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

Response to Question a - c): Implementation of the proposed project does not have the potential to degrade the quality of the environment, result in cumulatively considerable impacts, or cause substantial adverse effects on human beings.

Chapter 4: References

Final Traffic Study, November 23, 2020, Iteris

Fehr & Peers. 2020 (February). Evaluation of MPAH Amendments (5).

Orange County Transportation Authority. 2017. (August). Guidance for Administration of the Orange County Master Plan of Arterial Highways. Orange, CA.

Orange, County of (County). 2004. The Ranch Plan Final EIR 589. Santa Ana, CA.

County of Orange. 2013. (March). Planning Area 2 Addendum to Final EIR No. 589. Santa Ana, CA.

Rancho Mission Viejo. 2020. (April). Request for Amendment to the Master Plan of Arterial Highways (MPAH) in Southeast Orange County in the Ranch Plan of Rancho Mission Viejo – Chiquita Canyon Drive, Fauna Drive, and Esencia Drive.

APPENDIX A

County of Orange MPAH Amendments in Rancho Mission Viejo

Traffic Impact Study

FINAL

November 23, 2020

Submitted to: OC Public Works

21-10979 | Prepared by Iteris, Inc.

Innovating through Informatics™

DOCUMENT VERSION CONTROL

DOCUMENT NAME	SUBMITTAL DATE	VERSION NO.
Draft	7/14/2020	1.0
Draft	8/21/2020	1.1
Draft Final	9/25/2020	1.2
Initial Final	10/1/2020	1.3
Second Final	10/21/2020	1.4
Final	11/23/2020	1.5

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APPENDICES

1 INTRODUCTION

Iteris was contracted by the County of Orange to perform a traffic impact study to analyze the effects of four (4) proposed amendments to the Master Plan of Arterial Highways (MPAH) in the Rancho Mission Viejo community located in South Orange County. This report documents the results of that analysis.

Roadway operations were evaluated in the area to test the removal of Cristianitos Road and replacing it with the Los Patrones Parkway extension in Rancho Mission Viejo, and downgrades on three minor streets in Planning Area 2 of Rancho Mission Viejo. The analysis was performed using the current Orange County Traffic Analysis Model (OCTAM) Version 5.0. OCTAM was run for Future Year scenarios (2045 No Project and 2045 With Project). At the County's request, the analysis was performed twice, once with Ortega Highway assumed to be two lanes east of Antonio Parkway (current configuration) and again with Ortega Highway assumed to be four lanes east of Antonio Parkway (MPAH scenario).

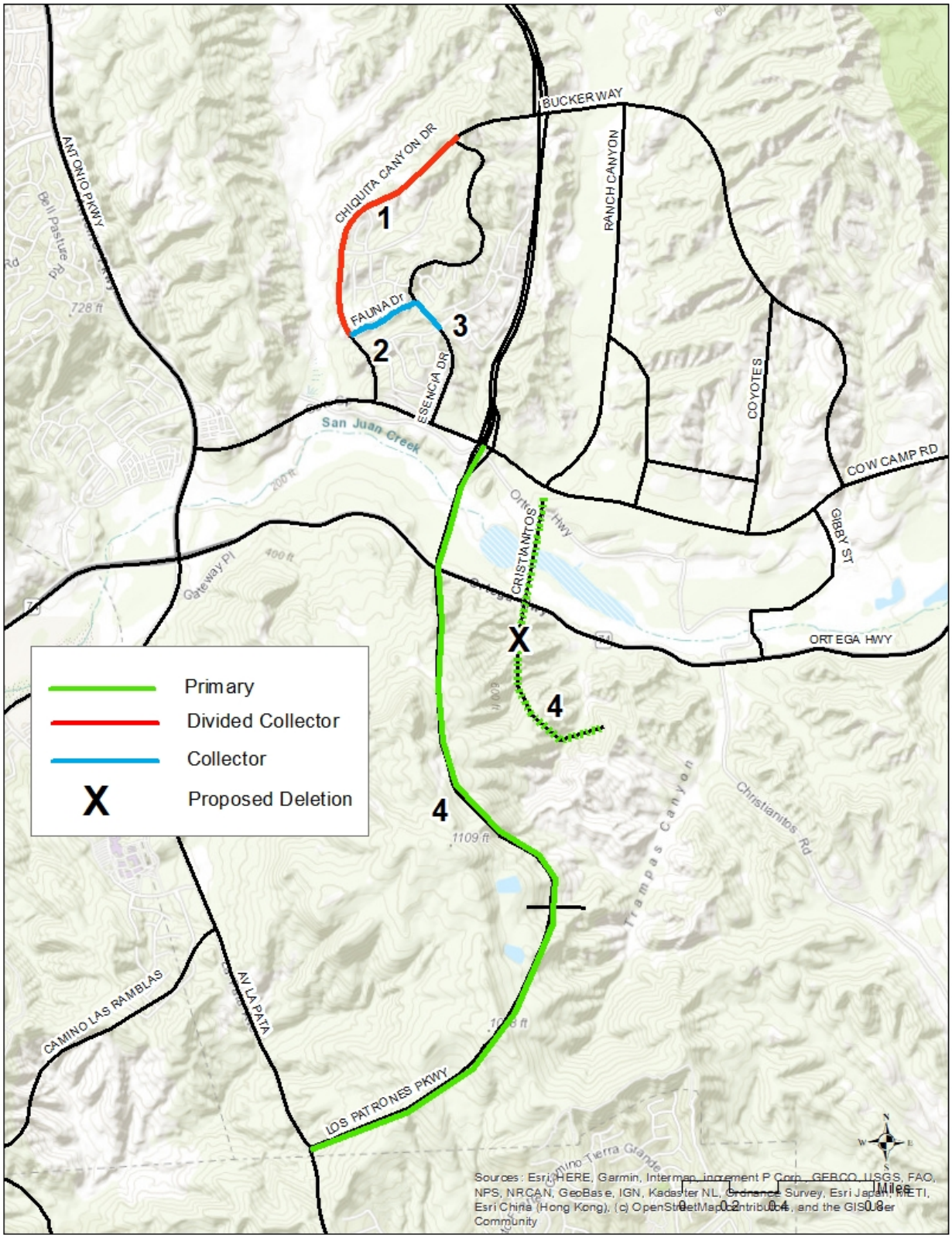
Traffic operations analysis was conducted at selected intersections and arterial segments. The proposed amended designations represented in the 2045 With Project scenario are summarized in **Table 1-1** and **Figure 1-1**.

Table 1-1: Recommended Amendments

Facility	Extent	Current Designation	Proposed Designation
1. Chiquita Canyon Drive	Fauna Drive to Esencia Drive	Secondary (4 Lanes)	Divided Collector (2 Lanes)
2. Fauna Drive	Chiquita Canyon Drive to Esencia Drive	Secondary (4 Lanes)	Collector (2 Lanes)
3. Esencia Drive	Andaza Street to Fauna Drive	Secondary (4 Lanes)	Collector (2 Lanes)
4. Cristianitos Road Extension replaced with Los Patrones Parkway Extension (LPPE)[1] with connection to Avenida La Pata	South of Cow Camp Road	Primary (4 Lanes)	Primary (4 Lanes)

[1] LPPE includes a grade-separation with new ramps at Cow Camp Road and at a future interchange in Planning Area 5

Figure 1-1: Proposed New MPAH Designations



1.1 Study Area

Arterial analysis based on Average Daily Traffic (ADT) volumes was performed at representative arterials throughout the study area as shown in **Figure 1-2** and listed in **Table 1-2.**

Table 1-2: Study Arterials

#	Arterial	Extent	Facility Type	
			Without Project	With Project
1	Antonio Parkway	Sweetwater to Oso Parkway	Major	Major
2	Antonio Parkway	Avendale Boulevard to O'Neill Drive	Major	Major
3	Avenida La Pata	Sierra Pasture Road to Stallion Ridge	Primary	Primary
4	Avenida La Pata	Prima Deshecha Bridge to Camino Del Rio	Primary	Primary
45	Avenida La Pata	Los Patrones to Camino Del Rio	Primary	Primary
46	Avenida La Pata	Camino Del Rio to Ave Vista Hermosa	Primary	Primary
47	Avenida La Pata	Ave Vista Hermosa to Ave Pico	Major	Major
5	Avenida Pico	Calle Frontera/Avenida Presidio to Calle Del Cerro	Major	Major
6	Avenida Vista Hermosa	Calle Frontera to Camino Faro/Laurel	Primary	Primary
7	Avenida Vista Hermosa	Camino Vera Cruz to Sports Park	Primary	Primary
8	Camino Del Rio	Camino Del Los Mares to Calle Sarmentoso	Secondary	Secondary
9	Camino Las Ramblas	West of Camino De Los Mares	Secondary	Secondary
10	Chiquita Canyon Drive	Los Patrones Parkway SB Off-Ramp to Airoso Street	Secondary	Secondary
11	Chiquita Canyon Drive	Airoso Street North to Esencia Drive	Secondary	Secondary
12	Chiquita Canyon Drive	Esencia Drive to Airoso Street South	Secondary	Divided Collector
13	Chiquita Canyon Drive	Airoso Street to Fauna Drive	Secondary	Divided Collector
14	Chiquita Canyon Drive	Fauna Drive to Cow Camp Drive	Secondary	Secondary
15	Cow Camp Road	Antonio Parkway to Chiquita Canyon Drive	Major	Major
16	Cow Camp Road	Coyotes to Bucker Way	Primary	Primary
17	Cow Camp Road	Bucker Way to Ortega Highway	Primary	Primary)
18	Coyotes	South of Bucker Way	Collector	Collector
19	Cristianitos Road South	Cow Camp Road to Ortega Highway	Primary	Remove
20	Esencia Drive	Chiquita Canyon Drive to Risilla Drive	Collector	Collector
21	Esencia Drive	South of Fauna Drive	Secondary	Collector
22	Esencia Drive	South of Andaza Street	Secondary	Secondary
23	Esencia Drive	North of Cow Camp Road	Secondary	Secondary
24	Fauna Drive	Chiquita Canyon Drive to Esencia Drive	Secondary	Collector
25	Gibby Street	North of Ortega Highway	Secondary	Secondary
26	Bucker Way[1]	Los Patrones Parkway SB and NB On-Ramps	Secondary	Secondary
27	Bucker Way [1]	Los Patrones Parkway NB On-Ramp to Ranch Canyon	Secondary	Secondary
28	Bucker Way [1]	Coyotes to Cow Camp Road	Secondary	Secondary
29	Legado Road	North of Cow Camp Road	Secondary	Secondary
30	Los Patrones Parkway NB [2]	North of Chiquita Canyon Drive Ramps	Secondary	Secondary
31	Los Patrones Parkway SB [2]	North of Chiquita Canyon Drive Ramps	Secondary	Secondary
32	Los Patrones Parkway NB [2]	South of Chiquita Canyon Drive Ramps	Secondary	Secondary
33	Los Patrones Parkway SB [2]	South of Chiquita Canyon Drive Ramps	Secondary	Secondary
34	Ortega Highway	West of Cow Camp Road	Primary [3]	Primary [3]
35	Los Patrones Parkway	South of Cow Camp Road	N/A	Primary
36	Los Patrones Parkway	East of Avenida La Pata	N/A	Primary
37	Ortega Highway	Shadetree Lane/Avenida Siega to Reata Road	Primary	Primary
38	Ortega Highway	Antonio Parkway/La Pata Ave to Gateway Place	Primary	Primary
39	Ortega Highway	Cristianitos to Gibby Road	Primary [3]	Primary [3]

#	Arterial	Extent	Facility Type	
			Without Project	With Project
40	Ortega Highway	West of Caspers Park Road	Primary [3]	Primary [3]
41	Oso Parkway	Meandering Trail to SB SR-241 Off-Ramp	Major	Major
42	Oso Parkway	NB SR-241 On-Ramp to Solano	Secondary	Secondary
43	Ranch Canyon	North of Cow Camp Road	Primary	Primary
44	San Juan Creek Road	West of Avenida La Pata	Secondary	Secondary
48	Camino las Ramblas	West of Avenida La Pata	Secondary	Secondary

[1] Bucker Way was previously named Grandeza Road

[2] Although the existing Los Patrones Parkway is designated on the MPAH as a secondary, the roadway functions at a higher capacity because there are no conflicting movements (i.e., cross streets, driveway breaks, or signals). These characteristics increase the functional characteristics by allowing a greater volume of traffic to be carried than the typical roadway with this MPAH classification. Therefore, for traffic modeling and operational purposes, the roadway is assumed to operate at a higher capacity than a typical secondary arterial.

[3] In the two-lane Ortega Highway alternative this segment is a collector though in practice it functions as a rural highway rather than a collector.

In addition, the following 18 intersections were identified and analyzed. All study intersections were evaluated for the AM and PM peak hour weekday conditions. The study locations are illustrated in **Figure 1-3** and listed below:

1. Ortega Highway/Antonio Parkway
2. Cow Camp Road/Antonio Parkway
3. Cow Camp Road/Chiquita Canyon Drive
4. Cow Camp Road/Ranch Canyon
5. Cow Camp Road/Ledago Road
6. Cow Camp Road/Ortega Highway
7. Chiquita Canyon Drive/Los Patrones Parkway - Southbound
8. Chiquita Canyon Drive/Los Patrones Parkway - Northbound
9. Oso Parkway/Los Patrones Parkway - Southbound
10. Oso Parkway /Los Patrones Parkway - Northbound
11. Los Patrones Parkway / La Pata (With Project only)
12. PA5 Ramp Northbound (With Project only)
13. PA5 Ramp Southbound (With Project only)
14. Cow Camp Road / Esencia Drive
15. Cow Camp Road / Los Patrones (No Project Only)

15A. Cow Camp Road / Los Patrones Parkway Southbound (With Project Only)

15B. Cow Camp Road / Los Patrones parkway Northbound (With Project Only)

16. Avenida La Pata/Camino Del Rio
17. Avenida La Pata/Avenida Vista Hermosa

Note: There is no intersection at Ortega Highway and Los Patrones Parkway since this location is grade-separated.

1.2 Study Periods

Traffic operations are evaluated for each of the following scenarios during the weekday AM peak hour, PM peak hour, and daily traffic volumes:

- Existing Year – MPAH Amendment segments only
- Year 2045 No Project – Ortega Highway 2-lanes east of Antonio Parkway
- Year 2045 With Project - Ortega Highway 2-lanes east of Antonio Parkway
- Year 2045 No Project – Ortega Highway 4-lanes east of Antonio Parkway
- Year 2045 With Project - Ortega Highway 4-lanes east of Antonio Parkway – MPAH scenario

Figure 1-2: Study Arterials

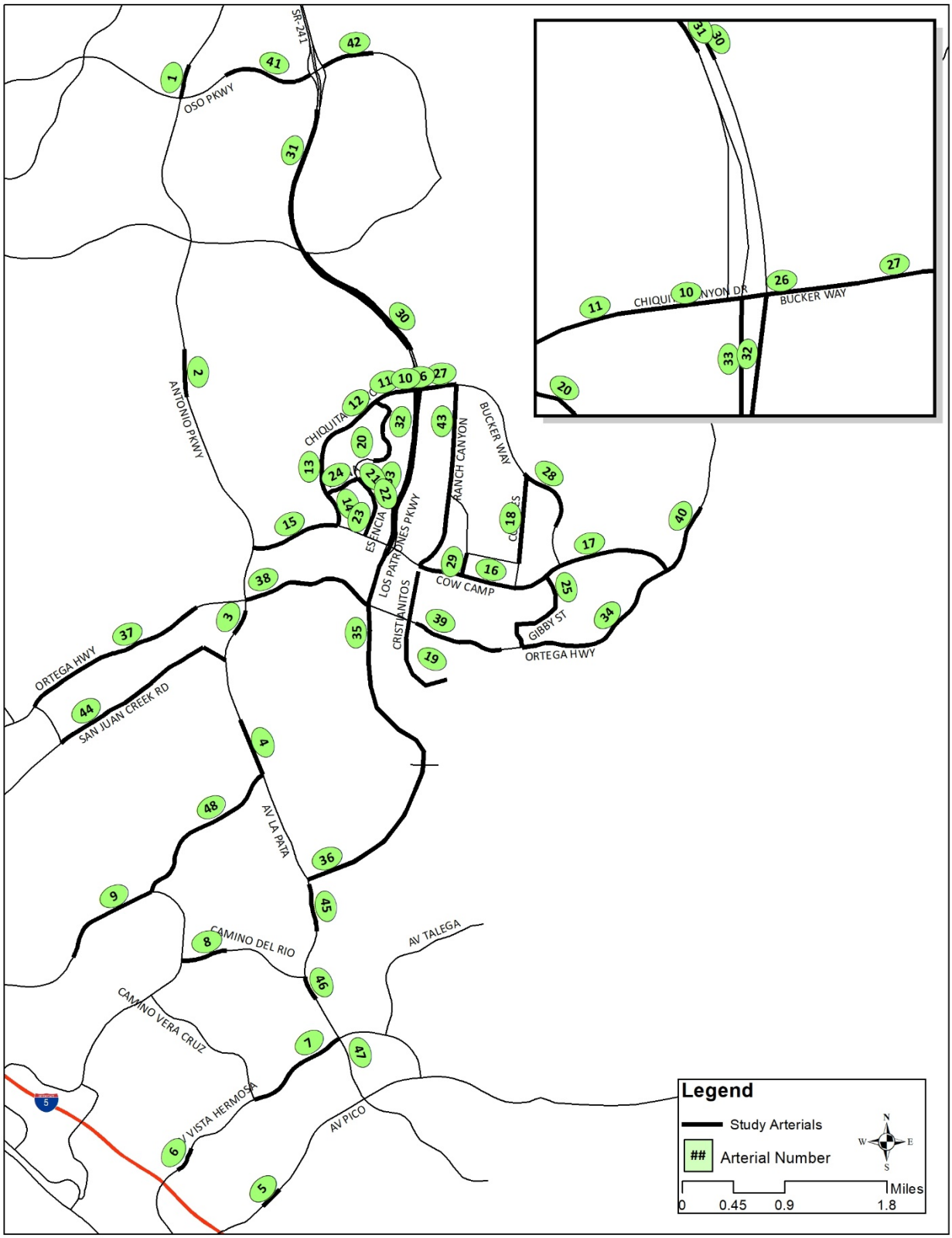
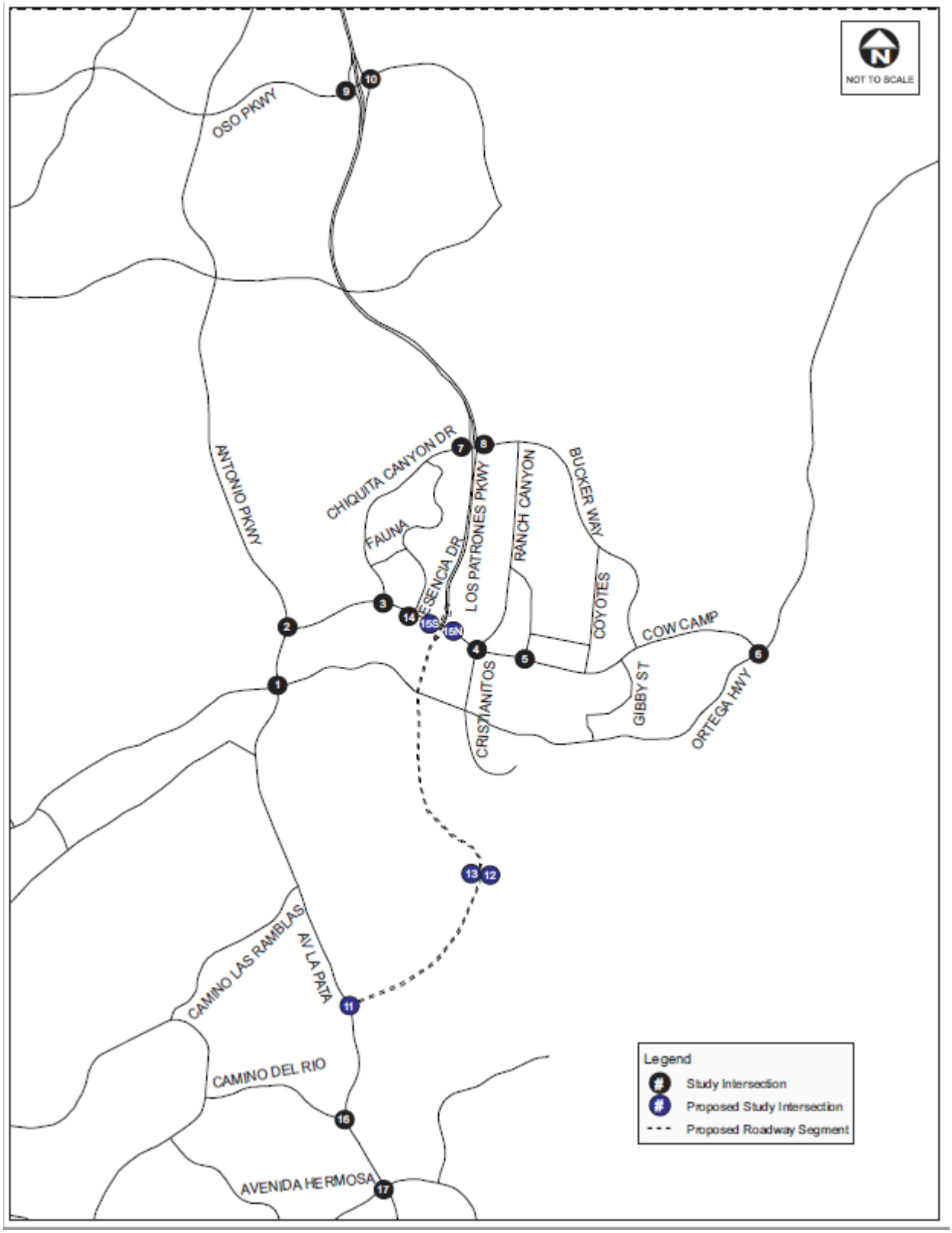


Figure 1-3: Study Intersections



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2 DEVELOPMENT OF TRAFFIC VOLUMES

2.1 Existing Traffic Data

Existing daily traffic counts for a limited number of study roadway segments were provided by the County. The collection of additional traffic counts was beyond the agreed scope of work for this traffic study. Due to reduced traffic volumes and changing traffic patterns as a result of COVID-19 pandemic at the time of the study, any counts taken would likely be an underestimate of actual existing conditions. Furthermore, many of the roadway connections and localized development assumed in the future conditions are not yet built, so no existing data would be available to help inform future traffic volumes. Existing ADT volumes provided by the County were used to perform the existing conditions analysis for the three MPAH amendment segments in Planning Area 2.

2.2 TAZ System and Highway Network

OCTA's traffic model OCTAM 5.0 was used as the starting point for the traffic modeling. OCTAM has an existing year of 2016 and a Future Buildout year of 2045.

The Traffic Analysis Zone (TAZ) system for OCTAM is shown in **Figure 2-1**. This level of detail is generally adequate to perform the level of traffic analysis required to study the four MPAH amendments. While disaggregation of the TAZ system was beyond the scope of work for this project, it was determined that some additional level of zone detail would provide additional granularity. During review of the model, it was noted that there were numerous TAZs in the vicinity of the study area representing open space with no land uses assumed in OCTAM. These empty TAZ were therefore "recycled" and used in a quasi-disaggregation process whereby the two original TAZs in Planning Area 2 were split into six TAZs and the two original TAZs in Planning Area 3 were split into seven TAZs. The revised TAZ system is shown in **Figure 2-2** and the split of the original TAZ into the new TAZ is shown in **Table 2-1.**

Additional network detail in PA2 and PA3 was coded in to support the refined TAZ system and other minor changes to the network were made to adjust centroid connector loading locations to better reflect on the ground conditions. The OCTAM network also includes four future MPAH improvements in the vicinity of the study area:

- San Juan Creek Road Extension to Avenida La Pata
- Camino Las Ramblas extension to Avenida La Pata
- Widening of Ortega Highway (SR-74) to the Riverside County line
- Extension of Crown Valley Parkway to Coto de Caza

County staff indicated that the likelihood of Ortega Highway being widened to four lanes east of Antonio Parkway to the Riverside County line was extremely low and requested the analysis be performed for scenarios with Ortega Highway coded as both a two-lane highway (same as existing conditions) and a four-lane highway to the Riverside County line (the MPAH scenario).

Figure 2-1: Original OCTAM Traffic Analysis Zone (TAZ) System

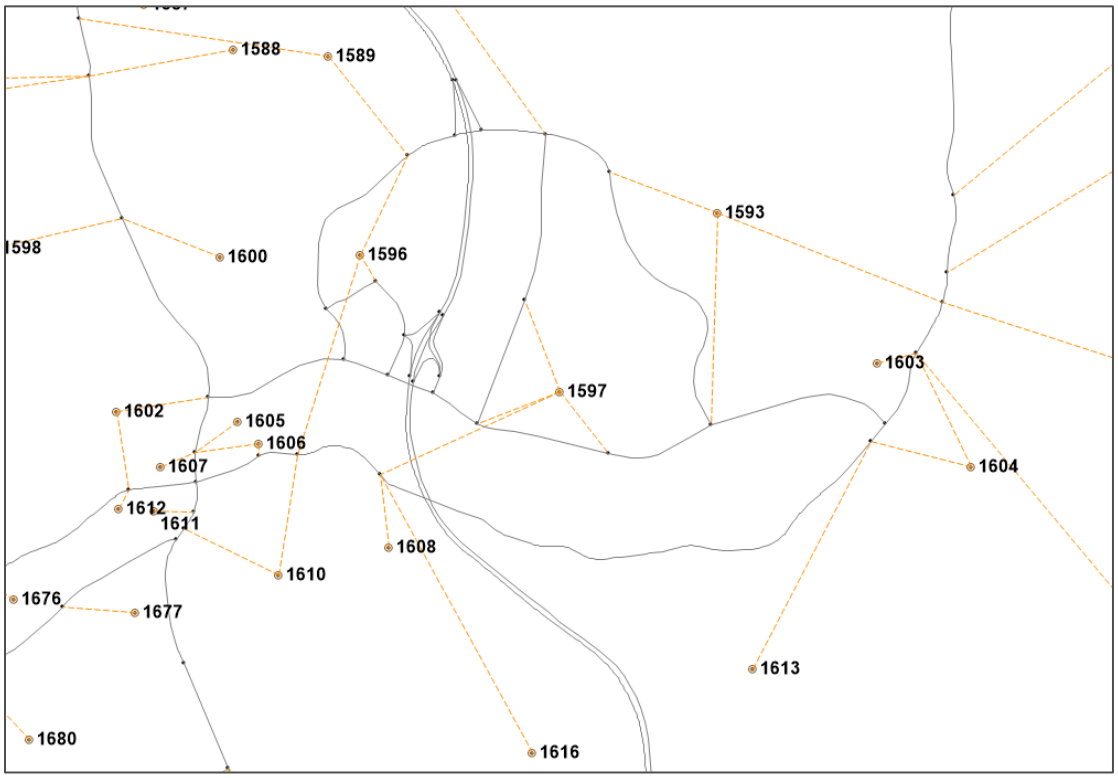


Figure 2-2: Revised OCTAM Traffic Analysis Zone (TAZ) System

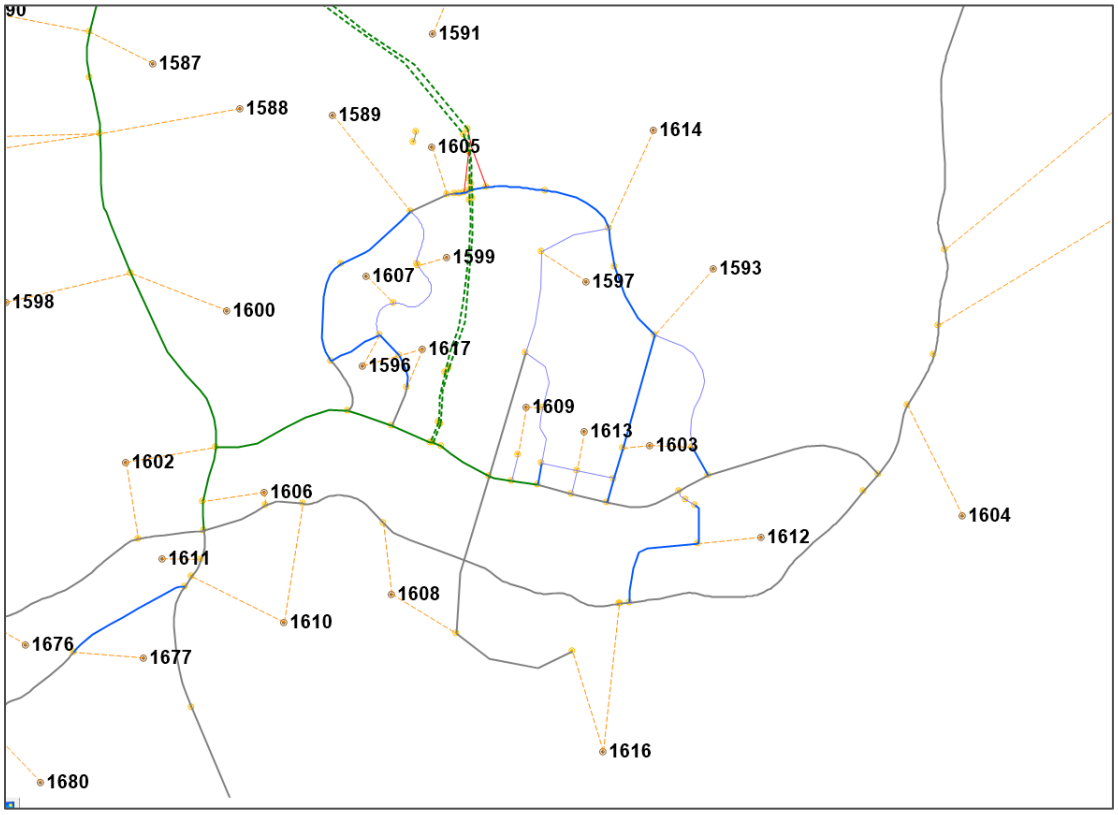


Table 2-1: OCTAM Traffic Analysis Zone (TAZ) Splits

PA	Original TAZ	Revised TAZ
PA 2	1589	1589
		1605
	1596	1596
		1599
		1607
		1617
PA 3	1593	1593
		1614
	1597	1597
		1609
		1612
		1613
		1603

2.3 Socioeconomic Data and Trip Generation

OCTAM is a socioeconomic-based traffic model which uses population and employment data to generate trips. Socioeconomic data variables include: total population, employed population, dwelling units, median income, retail employment, service employment, other employment, school and university enrollment.

The County of Orange Land Development Division provided estimated residential and non-residential land uses by OCTAM TAZ. These values were compared to what was currently being assumed in OCTAM. **Table 2-2** shows the comparison of total dwelling units by Planning Area. The Ranch Plan contains 14,000 units, however, an additional 1,329 affordable housing units and 960 senior living units (total 2,289) were included for this analysis which represent the Ranch Plan Affordable Housing Implementation Agreements as well as County of Orange affordable housing units.

Table 2-2: Comparison of Total Dwelling Units by Planning Area Comparison

Planning Area (PA)	County of Orange	OCTAM	Difference
PA1	1,834	1,936	-102
PA2	2,872	2,831	41
PA3	8,365	6,938	1,427
PA4	575	530	45
PA5[1]	1,393	1,746	-353
PA8[1]	1,250	731	519
All	**16,289**	**14,712**	**1,577**

[1] Split between PA8/PA5 per Rancho Mission Viejo

Dwelling units and population in OCTAM were adjusted to be consistent with County of Orange Land Development Division at the TAZ level.

Total employment for each land use was calculated by multiplying the total square footage for that land use in each TAZ by the mid-point of the land use-to-employee conversion rate using the Orange County Subarea Modeling Guidelines Manual shown in **Table 2-3.** For example for the Commercial land use 2.5 employees/TSF was used (mid-point of 2.25 and 2.75). For the warehouse land use category the mid-point rate of 1.5 employees/TSF was considered to be overly conservative given innovations and automation in the warehouse industry since the conversion factors were developed in 2001, so the lower end rate of 1.0 employee/TSF was utilized.

Table 2-3: Land Use to Employment Conversion Factors

Orange County Subarea Modeling Guidelines Manual August 2019

TYPICAL EMPLOYMENT CONVERSION FACTORS
(June 2001)

Land Use Category	Conversion Rates Range	Employment Type (Percentage Ranges)		
		Retail	Service	Other
Commercial	2.25 –2.75 employees/TSF[1]	60% - 90%	10% - 40%	0% – 5%
Office/Office Park	3.00 – 4.00 employees/TSF	0% – 5%	20% – 30%	65% - 80%
R&D/Light Industrial/Business Park	2.50 – 3.50 employees/TSF	0% – 5%	0% - 30%	60% - 100%
Heavy Industrial	2.00 – 2.50 employees/TSF	0%	0%	100%
Warehouse	1.00 – 2.00 employees/TSF	0%	0%	100%
Restaurant	3.00 – 5.00 employees/TSF	100%	0%	0%
Medical Office/Post-Office/Bank	3.50 – 4.50 employees/TSF	0% - 10%	70% - 100%	0% – 20%
Government Office/Civic Center	3.00 – 4.00 employees/TSF	0% – 5%	50% - 70%	25% – 50%
Hospital	2.50 – 3.00 employees/TSF	0%	70% - 80%	20% – 30%
Library/Museum	1.50 – 2.50 employees/TSF	0%	100%	0%
Hotel/Motel	0.75 – 1.25 employees/room	0% - 10%	70% - 80%	10% – 30%
Schools	0.08 – 0.12 employees/student	0%	0%	100%
Golf Course	0.50 – 0.70 employees/acre	0% - 10%	90% - 100%	0%
Developed Park/Athletic Fields	0.20 – 0.40 employees/acre	0%	80% - 100%	0% – 20%
Park	0.05 – 0.10 employees/acre	0%	80% - 100%	0% – 20%
Agricultural	0.01 – 0.05 employees/acre	0%	0%	100%

[1] Thousands of Square Feet

Table 2-4 shows a comparison between total calculated estimated jobs by Planning Area and those assumed in OCTAM. This study assumes roughly the same number of jobs in the area as a whole compared to OCTAM. While there are differences by Planning Area, these are acceptable for MPAH planning purposes.

Table 2-4: Comparison of Total Jobs by Planning Area Comparison of Totals

Planning Area (PA)	County of Orange	OCTAM	Difference
PA1	822	688	134
PA2	1,524	8,637	-7,113
PA3	6,896	3,746	3,150
PA4	1,672	119	1,553
PA5	300	287	13
PA8	2,680	424	2,256
All Planning Areas	**13,894**	**13,901**	**-7**

For Planning Areas 1 to 5, the main employment areas affected by the MPAH amendments, the total employment numbers are shown in Table 2-5.

Table 2-5: Comparison of Jobs in Planning Areas 1 to 5

Planning Area	County of Orange	OCTAM	Difference
PA1 through PA5	11,214	13,477	2,263

Socioeconomic data from the original OCTAM TAZ system was then disaggregated into the new TAZ system for each land use category by using the split percentages derived from a traffic study for Planning Area 3 and 4 performed by Fehr and Peers (F&P) in 2019 which developed land use using a more refined zone system in Planning Areas 2,3 and 4.

For example, for retail employment, if Iteris split the OCTAM TAZ into two (2) zones and F&P split the TAZ into four (4) zones, and each Iteris TAZ corresponds to two (2) F&P TAZs, the retail employment for the Iteris TAZ would be the total retail employment multiplied by the percentage of retail employment in the two (2) corresponding F&P TAZs:

- OCTAM (1TAZ): 100%
- F&P (4 TAZs): (10%, 20%), (30%, 40%)
- Iteris (2 TAZs): (30%), (70%)

3 TRAFFIC OPERATIONS ANALYSIS METHODOLOGY

Traffic operations analysis was conducted for the study arterials and intersections using methodologies consistent with the prior traffic studies for MPAH. Signalized intersections were analyzed using the ICU methodology. Caltrans locations at Ortega Highway and Antonio Parkway and Ortega Highway and Cow Camp Road were also analyzed using the HCM methodology.

The efficiency of traffic operations on a facility is described in this traffic impact analysis in terms of Level-of-Service (LOS). The LOS concept is a measure of average operating conditions at a location over a period of time. For intersections this is typically for a peak hour while for roadway segments this is typically at the daily level. Levels range from A to F, with LOS A representing excellent (free-flow) conditions and LOS F representing extreme congestion.

3.1 Arterial Analysis Methodology

MPAH level of service volume thresholds for arterial operations are summarized in **Table 3-1.**

Table 3-1: MPAH Arterial Level of Service Volume Thresholds

Facility Type	Level of Service by Daily Traffic Volume					
	A	B	C	D	E	F
Primary (8 lanes divided)	45,000	52,500	60,000	67,500	75,000	>75,000
Major (6 lanes divided)	33,900	39,400	45,000	50,600	56,300	>56,300
Primary (4 Lanes divided)	22,500	26,300	30,000	33,800	37,500	>37,500
Secondary (4 lanes undivided)	15,000	17,500	20,000	22,500	25,000	>25,000
Divided Collector (2 Lanes divided)	9,000	12,000	15,000	20,000	22,000	>22,000
Collector (2 Lanes undivided)	7,500	8,800	10,000	11,300	12,500	>12,500

Source: OCTA MPAH Guidelines Table A-4-1.

3.2 Intersection Capacity Utilization (ICU) Methodology

The lane configurations of study intersections for Future Year were based on known County plans. Where no plans were available assumptions were made regarding the number of turn lanes based on forecast traffic volumes. The ICU methodology defines LOS at a signalized intersection by the volume-to-capacity ratio of key conflicting movements and intersection characteristics. The ICU values were determined by summing the V/C ratio of key conflicting movements at the intersection adjusted for the impact of yellow clearance intervals. **Table 3-2** presents both the V/C ratio and average delay associated with each LOS grade as well as a qualitative description of intersection operations at that grade. This study assumes a capacity of 1,700 vehicles per lane/hour and a yellow clearance interval of 0.05.

Table 3-2: Intersection Level-of-Service V/C Definitions

LOS	Description	Signalized Intersection V/C Ratio
A	• Free flowing, virtually no delay. • Minimal traffic.	≤ 0.60
B	• Free flow and choice of lanes. • Delays are minimal. • All cars clear intersection easily.	> 0.60 to 0.70
C	• Good operation. • Delays starting to become a factor but still within acceptable limits.	> 0.70 to 0.80

LOS	Description	Signalized Intersection V/C Ratio
D	• Approaching unstable flow. • Queues at intersection are quite long but most cars clear intersection on their green signal. • Occasionally, several vehicles must wait for a second green signal. • Congestion is moderate.	> 0.80 to 0.90
E	• Severe congestion and delay. • Most of the available capacity is used. • Many cars must wait through a complete signal cycle to clear the intersection.	> 0.90 to 1.00
F	• Excessive delay and congestion. • Most cars must wait through more than one on one signal cycle. • Queues are very long and drivers are obviously irritated.	> 1.00

3.3 Highway Capacity Manual (HCM) Methodology

Highway Capacity Manual (HCM) 6th Edition methodology defines the LOS by the average vehicle delay experienced by all vehicles traveling through the intersection. Traffic operation analysis for HCM analysis was completed using *Synchro 10* software. For the purpose of evaluating project related impacts, signal timing splits are optimized under future scenarios as timing will likely be updated to accommodate changing demand over time. **Table 3-3** presents the average delay associated with each LOS grade as well as a qualitative description of intersection operations at that grade.

Table 3-3: Intersection Level-of-Service Delay Definitions

Level of Service	Description	Signalized Intersection Delay (seconds)	Unsignalized Intersection Delay (Seconds)
A	• Free flowing, virtually no delay. • Minimal traffic.	≤ 10.0	≤ 10.0
B	• Free flow and choice of lanes. • Delays are minimal. • All cars clear intersection easily.	> 10.0 to 20.0	> 10.0 to 15.0
C	• Good operation. • Delays starting to become a factor but still within acceptable limits.	> 20.0 to 35.0	> 15.0 to 25.0
D	• Approaching unstable flow. • Queues at intersection are quite long but most cars clear intersection on their green signal. • Occasionally, several vehicles must wait for a second green signal. • Congestion is moderate.	> 35.0 to 55.0	> 25.0 to 35.0
E	• Severe congestion and delay. • Most of the available capacity is used. • Many cars must wait through a complete signal cycle to clear the intersection.	> 55.0 to 80.0	> 35.0 to 50.0
F	• Excessive delay and congestion. • Most cars must wait through more than one on one signal cycle. • Queues are very long and drivers are obviously irritated.	> 80.0	> 50.0

Source: Highway Capacity Manual 2010

3.4 Evaluation Criteria

Each study intersection has been analyzed and evaluated in accordance with the impact criteria established by the MPAH guidelines. MPAH level of service thresholds for arterial and intersection operations are summarized in **Table 3-4**. A LOS C shall be the lowest acceptable LOS on arterials. A LOS D (V/C ratio of 0.90) shall be the lowest acceptable LOS at intersections.

Table 3-4: MPAH LOS Thresholds

With Project Conditions	
ICU LOS	**Lowest Acceptable LOS**
Arterials	C
Intersections	D

3.4.1 Caltrans Criteria

Under Caltrans' Traffic Impact Study Guideline, the HCM methodology is the standard operational analysis method. Caltrans impact criteria states that a target LOS at the transition between LOS C and LOS D is recommended. If a State highway facility is operating worse than the appropriate target LOS under the No Build conditions, the same LOS should be maintained under the Build conditions.

3.5 Roundabout Analysis

The intersection of Cow Camp road and Ortega Highway is being proposed as a roundabout. While the roundabout design is still being finalized a provisional analysis of the intersections using *Synchro 10* was performed. The assumptions made are that the 2045 configuration would be a 2-lane roundabout in both the 2-lane Ortega Highway and 4-lane Ortega Highway scenarios since both scenarios assume full buildout of land uses and even in the 2-lane Ortega Highway scenario the roadway would presumably need to be widened at the approaches and departures to the roundabout to accommodate the future volumes.

4 EXISTING YEAR ANALYSIS

Arterial ADT analysis was conducted to evaluate operations at the segments under consideration for MPAH amendment. **Table 4-1** illustrates the weekday daily volumes, V/C ratios, and LOS for the proposed MPAH amendment segments.

One (1) of the MPAH amendment segments is a future roadway and does not have existing volumes. The other three (3) segments currently operate at LOS A.

Table 4-1: Existing Year Arterial V/C and LOS

#	Arterial Location	Facility	Lanes	Capacity	2019 Counts		
					Volume	V/C	LOS
13	Chiquita Canyon Drive between Fauna Drive and Airoso Street]	Divided Collector	2	22,000	6,100	0.28	A
13	Chiquita Canyon Drive between Airosoa Street and Esencia Drive	Divided Collector	2	22,000	4,150	0.19	A
24	Fauna Drive between Chiquita Canyon Drive to Esencia Drive [1]	Collector	2	12,500	2,200	0.18	A
23	Esencia Drive between Cow Camp Road and Fauna Drive	Collector	2	12,500	5,500	0.44	A
19	Cristianitos Road extension south of Cow Camp Road	N/A	N/A	N/A	N/A	N/A	N/A

[1] Segment is divided by median but undivided Collector capacity assumed for analysis.

5 YEAR 2045 ANALYSIS – 2-LANE ORTEGA HIGHWAY

This section provides results of analysis assuming the existing lane configuration for Ortega Highway east of Gateway Plaza, which is around half a mile east of Antonio Parkway.

5.1 Arterial Analysis

Figure 5-1 shows the change in ADT between the With Project and No Project scenarios. Volume reductions are observed on Ortega Highway, on Avenida La Pata north of Los Patrones Parkway, on Cow Camp Road west of Los Patrones Parkway and on the Interstate 5 (I-5). Volume increases are observed on Los Patrones Parkway, Avenida La Pata south of Los Patrones Parkway and on Avenida Vista Hermosa.

Figure 5-1: Change in Daily Volume between With Project and No Project

(Red = Volume Increase, Green = Volume Decrease)

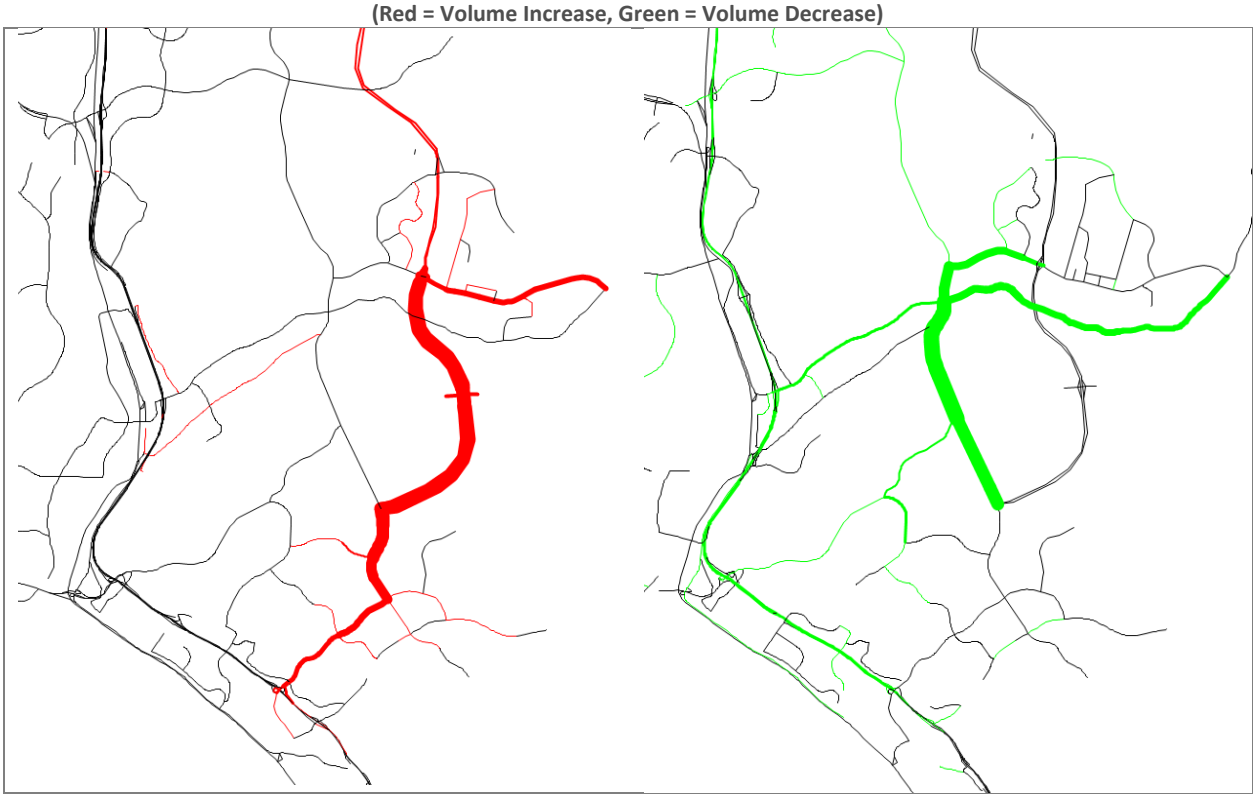


Table 5-1 and **Table 5-2** summarizes the weekday daily volumes, V/C ratios, and LOS for Future Year No Project and With Project scenarios, respectively.

Table 5-1: Future Year 2045 (2-Lane Ortega Highway) No Project Arterial Roadway Segment Daily LOS

#	Arterial	Extent	Facility Type	Volume	V/C	LOS
1	Antonio Parkway	Sweetwater to Oso Parkway	Major	33,900	0.60	A
2	Antonio Parkway	Avendale Boulevard to O'Neill Drive	Major	45,400	0.81	D
3	Avenida La Pata	Sierra Pasture Road to Stallion Ridge	Primary	21,100	0.56	A
4	Avenida La Pata	Prima Deshecha Bridge to Camino Del Rio	Primary	17,500	0.47	A
45	Avenida La Pata	Los Patrones to Camino Del Rio	Primary	17,000	0.45	A
46	Avenida La Pata	Camino Del Rio to Ave Vista Hermosa	Primary	24,800	0.66	B
47	Avenida La Pata	Ave Vista Hermosa to Ave Pico	Major	7,000	0.12	A
5	Avenida Pico	Calle Frontera/Avenida Presidio to Calle Del Cerro	Major	35,300	0.63	B
6	Avenida Vista Hermosa	Calle Frontera to Camino Faro/Laurel	Primary	20,300	0.54	A
7	Avenida Vista Hermosa	Camino Vera Cruz to Sports Park	Primary	20,700	0.55	A
8	Camino Del Rio	Camino Del Los Mares to Calle Sarmentoso	Secondary	7,600	0.30	A
9	Camino Las Ramblas	West of Camino De Los Mares	Secondary	3,600	0.14	A
10	Chiquita Canyon Drive	Los Patrones Parkway SB Off-Ramp to Airoso Street	Secondary	12,000	0.48	A
11	Chiquita Canyon Drive	Airoso Street North to Esencia Drive	Secondary	11,000	0.44	A
12	Chiquita Canyon Drive	Esencia Drive to Airoso Street South	Secondary	4,300	0.17	A
13	Chiquita Canyon Drive	Airoso Street to Fauna Drive	Secondary	4,300	0.17	A
14	Chiquita Canyon Drive	Fauna Drive to Cow Camp Drive	Secondary	9,000	0.36	A
15	Cow Camp Road	Antonio Parkway to Chiquita Canyon Drive	Major	36,300	0.65	B
16	Cow Camp Road	Coyotes to Bucker Way	Primary	16,700	0.45	A
17	Cow Camp Road	Bucker Way to Ortega Highway	Primary	12,800	0.34	A
18	Coyotes	South of Bucker Way	Divided Collector	8,300	0.38	A
19	Cristianitos Road South	Cow Camp Road to Ortega Highway	Primary	3,300	0.09	A
20	Esencia Drive	Chiquita Canyon Drive to Risilla Drive	Collector	4,400	0.35	A
21	Esencia Drive	South of Fauna Drive	Secondary	1,100	0.04	A
22	Esencia Drive	South of Andaza	Secondary	1,100	0.04	A
23	Esencia Drive	North of Cow Camp Road	Secondary	3,900	0.16	A
24	Fauna Drive	Chiquita Canyon Drive to Esencia Drive	Secondary	4,800	0.19	A
25	Gibby Street	North of Ortega Highway	Secondary	1,700	0.07	A
26	Bucker Way	Los Patrones Parkway SB and NB On-Ramps	Secondary	15,900	0.64	B
27	Bucker Way	Los Patrones Parkway NB On-Ramp to Ranch Canyon	Secondary	20,200	0.81	D
28	Bucker Way	North of Cow Camp Road	Secondary	4,400	0.18	A
29	Legado Road	North of Cow Camp Road	Secondary	3,800	0.15	A
30	Los Patrones Parkway NB	North of Chiquita Canyon Drive Ramps	Secondary [1]	16,700	0.67	B
31	Los Patrones Parkway SB	North of Chiquita Canyon Drive Ramps	Secondary [1]	17,800	0.71	C
32	Los Patrones Parkway NB	South of Chiquita Canyon Drive Ramps	Secondary [1]	6,100	0.24	A
33	Los Patrones Parkway SB	South of Chiquita Canyon Drive Ramps	Secondary [1]	6,600	0.26	A
34	Ortega Highway	West of Cow Camp Road	Rural [2]	11,300	0.42	A
35	Los Patrones Parkway	South of Cow Camp Road	-			
36	Los Patrones Parkway	East of Avenida La Pata	-			
37	Ortega Highway	Shadetree Lane/Avenida Siega to Reata Road	Primary	31,600	0.84	D
38	Ortega Highway	Antonio Parkway/La Pata Ave to Gateway Place	Primary	21,200	0.57	A
39	Ortega Highway	Cristianitos to Gibby Road	Rural [2]	11,300	0.42	A
40	Ortega Highway	West of Caspers Park Road	Rural [2]	17,200	0.64	B
41	Oso Parkway	Meandering Trail to SB SR-241 Off-Ramp	Major	35,600	0.63	B
42	Oso Parkway	NB SR-241 On-Ramp to Solano	Secondary	15,100	0.60	A
43	Ranch Canyon	North of Cow Camp Road	Primary	2,900	0.08	A
44	San Juan Creek Road	West of Avenida La Pata	Secondary	9,500	0.38	A
48	Camino las Ramblas	West of Avenida La Pata	Secondary	3,600	0.14	A
0.81 D	*Deficient location*					

[1] Although the existing Los Patrones Parkway is designated in the MPAH as a secondary, the roadway functions at a higher capacity because there are no conflicting movements (i.e., cross streets, driveway breaks, or signals). These characteristics increase the functional characteristics by allowing a greater volume of traffic to be carried than the typical roadway with this MPAH classification. Therefore, for traffic modeling and operational purposes, the roadway is assumed to operate at a higher capacity (25,000 vehicles/day per direction) than a typical secondary arterial.

[2] Segment is a collector but considered a rural highway. Capacity assumed from FHWA Simplified Highway Capacity Calculation Method for the Highway Performance Monitoring System October 2017 (55 mph, 2-lane in flat/rolling terrain), daily capacity of 26,800 vehicles.

Table 5-2: Future Year 2045 (2-Lane Ortega Highway) With Project Arterial Roadway Segment Daily LOS

#	Arterial	Extent	Facility Type	Volume	V/C	LOS
1	Antonio Parkway	Sweetwater to Oso Parkway	Major	32,200	0.57	A
2	Antonio Parkway	Avendale Boulevard to O'Neill Drive	Major	45,000	0.80	C
3	Avenida La Pata	Sierra Pasture Road to Stallion Ridge	Primary	8,700	0.23	A
4	Avenida La Pata	Prima Deshecha Bridge to Camino Del Rio	Primary	6,800	0.18	A
45	Avenida La Pata	Los Patrones to Camino Del Rio	Primary	28,300	0.75	C
46	Avenida La Pata	Camino Del Rio to Ave Vista Hermosa	Primary	32,500	0.87	D
47	Avenida La Pata	Ave Vista Hermosa to Ave Pico	Major	8,200	0.15	A
5	Avenida Pico	Calle Frontera/Avenida Presidio to Calle Del Cerro	Major	35,200	0.63	B
6	Avenida Vista Hermosa	Calle Frontera to Camino Faro/Laurel	Primary	24,000	0.64	B
7	Avenida Vista Hermosa	Camino Vera Cruz to Sports Park	Primary	26,000	0.69	B
8	Camino Del Rio	Camino Del Los Mares to Calle Sarmentoso	Secondary	8,500	0.34	A
9	Camino Las Ramblas	West of Camino De Los Mares	Secondary	2,000	0.08	A
10	Chiquita Canyon Drive	Los Patrones Parkway SB Off-Ramp to Airoso Street	Secondary	11,800	0.47	A
11	Chiquita Canyon Drive	Airoso Street North to Esencia Drive	Secondary	10,900	0.44	A
12	Chiquita Canyon Drive	Esencia Drive to Airoso Street South	Divided Collector	3,600	0.16	A
13	Chiquita Canyon Drive	Airoso Street to Fauna Drive	Divided Collector	3,600	0.16	A
14	Chiquita Canyon Drive	Fauna Drive to Cow Camp Drive	Secondary	8,000	0.32	A
15	Cow Camp Road	Antonio Parkway to Chiquita Canyon Drive	Major	30,000	0.53	A
16	Cow Camp Road	Coyotes to Bucker Way	Primary	21,100	0.56	A
17	Cow Camp Road	Bucker Way to Ortega Highway	Primary	17,300	0.46	A
18	Coyotes	South of Bucker Way	Divided Collector	8,400	0.38	A
19	Cristianitos Road South	Cow Camp Road to Ortega Highway	Removed			
20	Esencia Drive	Chiquita Canyon Drive to Risilla Drive	Collector	5,000	0.40	A
21	Esencia Drive	South of Fauna Drive	Collector	2,000	0.16	A
22	Esencia Drive	South of Andaza Street	Secondary	2,100	0.08	A
23	Esencia Drive	North of Cow Camp Road	Secondary	4,900	0.20	A
24	Fauna Drive	Chiquita Canyon Drive to Esencia Drive	Collector	4,400	0.35	A
25	Gibby Street	North of Ortega Highway	Secondary	1,700	0.07	A
26	Bucker Way	Los Patrones Parkway SB and NB On-Ramps	Secondary	15,700	0.63	B
27	Bucker Way	Los Patrones Parkway NB On-Ramp to Ranch Canyon	Secondary	19,800	0.79	C
28	Bucker Way	North of Cow Camp Road	Secondary	4,400	0.18	A
29	Legado Road	North of Cow Camp Road	Secondary	4,000	0.16	A
30	Los Patrones Parkway NB	North of Chiquita Canyon Drive Ramps	Secondary	18,100	0.72	C
31	Los Patrones Parkway SB	North of Chiquita Canyon Drive Ramps	Secondary	19,300	0.77	C
32	Los Patrones Parkway NB	South of Chiquita Canyon Drive Ramps	Secondary	7,600	0.30	A
33	Los Patrones Parkway SB	South of Chiquita Canyon Drive Ramps	Secondary	8,100	0.32	A
34	Ortega Highway	West of Cow Camp Road	Rural [2]	7,000	0.26	A
35	Los Patrones Parkway	South of Cow Camp Road	Primary	22,100	0.59	A
36	Los Patrones Parkway	East of Avenida La Pata	Primary	21,500	0.57	A
37	Ortega Highway	Shadetree Lane/Avenida Siega to Reata Road	Primary	29,000	0.77	C
38	Ortega Highway	Antonio Parkway/La Pata Ave to Gateway Place	Primary	15,300	0.41	A
39	Ortega Highway	Cristianitos to Gibby Road	Rural [2]	7,000	0.26	A
40	Ortega Highway	West of Caspers Park Road	Rural [2]	17,300	0.65	B
41	Oso Parkway	Meandering Trail to SB SR-241 Off-Ramp	Major	34,400	0.61	B
42	Oso Parkway	NB SR-241 On-Ramp to Solano	Secondary	15,200	0.61	B
43	Ranch Canyon	North of Cow Camp Road	Primary	3,300	0.09	A
44	San Juan Creek Road	West of Avenida La Pata	Secondary	9,700	0.39	A
48	Camino las Ramblas	West of Avenida La Pata	Secondary	2,000	0.08	A
0.81 D	*Deficient location*					

[1] Although the existing Los Patrones Parkway is designated in the MPAH as a secondary, the roadway functions at a higher capacity because there are no conflicting movements (i.e., cross streets, driveway breaks, or signals). These characteristics increase the functional characteristics by allowing a greater volume of traffic to be carried than the typical roadway with this MPAH classification. Therefore, for traffic modeling and operational purposes, the roadway is assumed to operate at a higher capacity (25,000 vehicles/day per direction) than a typical secondary.
{2] Segment is a collector but considered a rural highway. Capacity assumed from FHWA Simplified Highway Capacity Calculation Method for the Highway Performance Monitoring System October 2017 (55 mph, 2-lane in flat/rolling terrain), daily capacity of 26,800 vehicles.

Table 5 -3 summarizes the change in daily V/C ratio between Future Year No Project and Future Year With Project scenarios. There are three (3) deficient locations at LOS D in the No project scenario. :

- Antonio Parkway from Avendale Boulevard to O'Neill Drive;
- Bucker Way between Los Patrones Parkway NB On-Ramp and Ranch Canyon;
- Ortega Highway between Shadetree Lane/Avenida Siega to Reata Road

The diversion of traffic onto Los Patrones Parkway extension and Cow Camp Road in the With Project scenario eliminates these three deficiencies. Among 48 tested segments (excluding the one to be deleted), one will experience a deterioration of LOS to LOS D.

- Avenida La Pata from Camino Del Rio to Avenida Vista Hermosa – LOS B to LOS D

Peak hour analysis of this segment is performed in **Section 7.**

Table 5-3: Future Year 2045 (2-Lane Ortega Highway) Arterial Roadway Segment Daily V/C and LOS Summary

#	Arterial	Extent	No Project		With Project		Δ In V/C
			V/C	LOS	V/C	LOS	
1	Antonio Parkway	Sweetwater to Oso Parkway	0.60	A	0.57	A	-0.03
2	Antonio Parkway	Avendale Boulevard to O'Neill Drive	0.81	D	0.80	C	-0.01
3	Avenida La Pata	Sierra Pasture Road to Stallion Ridge	0.56	A	0.23	A	-0.33
4	Avenida La Pata	Prima Deshecha Bridge to Camino Del Rio	0.47	A	0.18	A	-0.29
45	Avenida La Pata	Los Patrones to Camino Del Rio	0.45	A	0.75	C	0.30
46	Avenida La Pata	Camino Del Rio to Ave Vista Hermosa	0.66	B	0.87	D	0.21
47	Avenida La Pata	Ave Vista Hermosa to Ave Pico	0.12	A	0.15	A	0.03
5	Avenida Pico	Calle Frontera/Avenida Presidio to Calle Del Cerro	0.63	B	0.63	B	0.00
6	Avenida Vista Hermosa	Calle Frontera to Camino Faro/Laurel	0.54	A	0.64	B	0.10
7	Avenida Vista Hermosa	Camino Vera Cruz to Sports Park	0.55	A	0.69	B	0.14
8	Camino Del Rio	Camino Del Los Mares to Calle Sarmentoso	0.30	A	0.34	A	0.04
9	Camino Las Ramblas	West of Camino De Los Mares	0.14	A	0.08	A	-0.06
10	Chiquita Canyon Drive	Los Patrones Parkway SB Off-Ramp to Airoso Street	0.48	A	0.47	A	-0.01
11	Chiquita Canyon Drive	Airoso Street North to Esencia Drive	0.44	A	0.44	A	0.00
12	Chiquita Canyon Drive	Esencia Drive to Airoso Street South	0.17	A	0.16	A	-0.01
13	Chiquita Canyon Drive	Airoso Street to Fauna Drive	0.17	A	0.16	A	-0.01
14	Chiquita Canyon Drive	Fauna Drive to Cow Camp Drive	0.36	A	0.32	A	-0.04
15	Cow Camp Road	Antonio Parkway to Chiquita Canyon Drive	0.65	B	0.53	A	-0.12
16	Cow Camp Road	Coyotes to Bucker Way	0.45	A	0.56	A	0.11
17	Cow Camp Road	Bucker Way to Ortega Highway	0.34	A	0.46	A	0.12
18	Coyotes	South of Bucker Way	0.38	A	0.38	A	0.00
19	Cristianitos Road South	Cow Camp Road to Ortega Highway	0.09	A	Removed		
20	Esencia Drive	Chiquita Canyon Drive to Risilla Drive	0.35	A	0.40	A	0.05
21	Esencia Drive	South of Fauna Drive	0.04	A	0.16	A	0.12
22	Esencia Drive	South of Andaza Street	0.04	A	0.08	A	0.04
23	Esencia Drive	North of Cow Camp Road	0.16	A	0.20	A	0.04
24	Fauna Drive	Chiquita Canyon Drive to Esencia Drive	0.19	A	0.35	A	0.16
25	Gibby Street	North of Ortega Highway	0.07	A	0.07	A	0.00
26	Bucker Way	Los Patrones Parkway SB and NB On-Ramps	0.64	B	0.63	B	-0.01
27	Bucker Way	Los Patrones Parkway NB On-Ramp to Ranch Canyon	0.81	D	0.79	C	-0.02
28	Bucker Way	North of Cow Camp Road	0.18	A	0.18	A	0.00
29	Legado Road	North of Cow Camp Road	0.15	A	0.16	A	0.01
30	Los Patrones Parkway NB	North of Chiquita Canyon Drive Ramps	0.67	B	0.72	C	0.05
31	Los Patrones Parkway SB	North of Chiquita Canyon Drive Ramps	0.71	C	0.77	C	0.06
32	Los Patrones Parkway NB	South of Chiquita Canyon Drive Ramps	0.24	A	0.30	A	0.06

#	Arterial	Extent	No Project		With Project		Δ In V/C
			V/C	LOS	V/C	LOS	
33	Los Patrones Parkway SB	South of Chiquita Canyon Drive Ramps	0.26	A	0.32	A	0.06
34	Ortega Highway	West of Cow Camp Road	0.42	A	0.26	A	-0.16
35	Los Patrones Parkway	South of Cow Camp Road	-	-	0.59	A	0.59
36	Los Patrones Parkway	East of Avenida La Pata	-	-	0.57	A	0.57
37	Ortega Highway	Shadetree Lane/Avenida Siega to Reata Road	0.84	D	0.77	C	-0.07
38	Ortega Highway	Antonio Parkway/La Pata Ave to Gateway Place	0.57	A	0.41	A	-0.16
39	Ortega Highway	Cristianitos to Gibby Road	0.42	A	0.26	A	-0.16
40	Ortega Highway	West of Caspers Park Road	0.64	B	0.65	B	0.01
41	Oso Parkway	Meandering Trail to SB SR-241 Off-Ramp	0.63	B	0.61	B	-0.02
42	Oso Parkway	NB SR-241 On-Ramp to Solano	0.60	A	0.61	B	0.01
43	Ranch Canyon	North of Cow Camp Road	0.08	A	0.09	A	0.01
44	San Juan Creek Road	West of Avenida La Pata	0.38	A	0.39	A	0.01
48	Camino las Ramblas	West of Avenida La Pata	0.14	A	0.08	A	-0.06
0.81 D	*Deficient location*						

Table 5-4 shows the With Project daily V/C and LOS for the proposed MPAH amendment segments. All of the segments operate at LOS C or better.

Table 5-4: Future Year 2045 (2-Lane Ortega Highway) With Project MPAH Amendment Segments

ID	Arterial Location	Facility	Lanes	Capacity (LOS E)	2045 With Project		
					Volume	V/C	LOS
13	Chiquita Canyon Drive between Fauna Drive and Esencia Drive	Divided Collector	2	22,000	3,900	0.18	A
24	Fauna Drive between Chiquita Canyon Drive to Esencia Drive	Collector	2	12,500	4,000	0.32	A
21	Esencia Drive between Andaza Street and Fauna Drive	Secondary	2	25,000	4,900	0.20	A
35	Los Patrones Parkway extension south of Cow Camp Road	Primary	4	37,500	23,800	0.63	A
36	Los Patrones Parkway extension east of Avenida La Pata	Primary	4	37,500	23,200	0.62	A
0.81 D	*Deficient location*						

5.2 Intersection Analysis

AM and PM peak hour turning movements are shown in **Figure 5-2** for No Project and **Figure 5-3** for With Project conditions.

The future year lane configurations were taken from the F&P report and based on information provided by the County. Based on the current MPAH designation an improvement plans approved by the County it was assumed that Cow Camp Road will be six lanes in the future from Antonio Parkway to Ranch Canyon narrowing to four lanes east of Ranch Canyon. The lane configurations are shown in **Figure 5-4** for No Project and **Figure 5-5** for With Project conditions.

Using the peak hour traffic volumes and future lane configurations an ICU analysis was performed. **Table 5-5** summarizes the intersection traffic conditions in the study area under the 2045 No Project and With Project conditions. Detailed ICU calculations are provided in **Appendix A**.

All intersections are forecast to operate at LOS D or better in both the No Project and With Project conditions as shown in **Figure 5-6** to **Figure 5-9**. The implementation of the Los Patrones extension improves the LOS at the majority of the study locations.

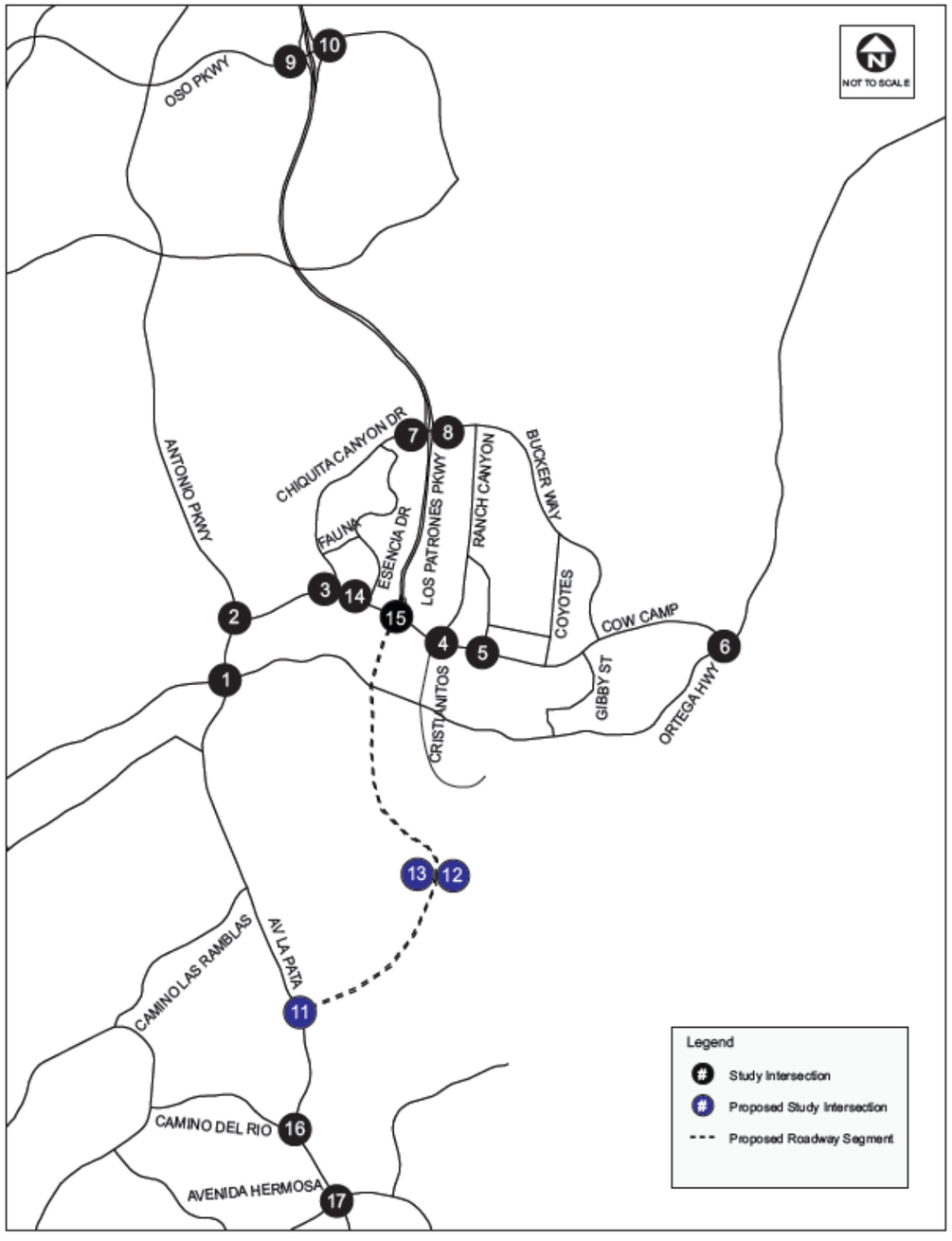
Table 5-5: Future Year 2045 (Ortega Highway 2-Lanes) Intersection ICU LOS Summary

ID	Intersection Location (E-W Street / N-S Street)	2045 No Project					2045 With Project					Δ In V/C	
		AM Peak Hour		PM Peak Hour		Deficient? (Yes/No)[2]	AM Peak Hour		PM Peak Hour		Deficient? (Yes/No)[2]		
		V/C /Delay[1]	LOS	V/C /Delay[1]	LOS		V/C /Delay[1]	LOS	V/C /Delay[1]	LOS		AM	PM
1	Ortega Highway/Antonio Parkway	0.81	**D**	0.72	C	No	0.63	B	0.60	A	No	(0.18)	(0.12)
2	Cow Camp Road/Antonio Parkway	0.66	B	0.59	A	No	0.53	A	0.42	A	No	(0.13)	(0.17)
3	Cow Camp Road/Chiquita Canyon Drive	0.64	B	0.48	A	No	0.55	A	0.39	A	No	(0.09)	(0.09)
4	Cow Camp Road/Ranch Canyon	0.71	C	0.55	A	No	0.58	A	0.48	A	No	(0.13)	(0.07)
5	Cow Camp Road/Ledago Road	0.69	B	0.41	A	No	0.71	C	0.44	A	No	0.02	0.03
6	Cow Camp Road/Ortega Highway	0.61	B	0.61	B	No	0.63	B	0.55	A	No	0.02	(0.06)
7	Chiquita Canyon Drive/Los Patrones Parkway SB Ramp	0.53	A	0.58	A	No	0.52	A	0.57	A	No	(0.01)	(0.01)
8	Chiquita Canyon Drive/Los Patrones Parkway NB Ramp	0.64	B	0.57	A	No	0.64	B	0.56	A	No	0.00	(0.01)
9	Oso Parkway/Los Patrones Parkway & SR-241 SB Ramp	0.50	A	0.89	**D**	No	0.47	A	0.82	**D**	No	(0.03)	(0.07)
10	Oso Parkway/Los Patrones Parkway & SR-241 NB Ramp	0.67	B	0.46	A	No	0.64	B	0.44	A	No	(0.03)	(0.02)
11	Los Patrones/La Pata	Project Intersection				No	0.69	B	0.69	B	No	N/A	N/A
12	PA5 Future Road / Los Patrones Parkway NB Ramp	Project Intersection				No	0.20	A	0.13	A	No	N/A	N/A
13	PA5 Future Road / Los Patrones Parkway SB Ramp	Project Intersection				No	0.13	A	0.16	A	No	N/A	N/A
14	Cow Camp/Essencia	0.54	A	0.43	A	0.69	0.49	A	0.39	A	No	(0.05)	(0.04)
15	Cow Camp / Los Patrones Parkway	0.71	C	0.58	A	No	No Project Only					N/A	N/A
15S	Cow Camp / Los Patrones Parkway SB Ramp	Project Intersection					0.65	B	0.64	B	No	N/A	N/A
15N	Cow Camp / Los Patrones Parkway NB Ramp	Project Intersection					0.63	B	0.56	A	No	N/A	N/A
16	Avenida La Pata/Camino Del Rio	0.49	A	0.50	A	No	0.69	B	0.75	C	No	0.20	0.25
17	Avenida La Pata/Avenida Vista Hermosa	0.61	B	0.54	A	No	0.68	B	0.67	B	No	0.07	0.13

Notes:

1. V/C or volume-to-capacity ratios are calculated for County intersections using the ICU methodology. Delays are calculated for Caltrans intersection using the HCM methodology.
2. LOS D is the County's and Caltrans' lowest acceptable LOS for arterial intersections.

Figure 5-2: Future Year 2045 (2-Lane Ortega Highway) No Project Peak Hour Intersection Volumes



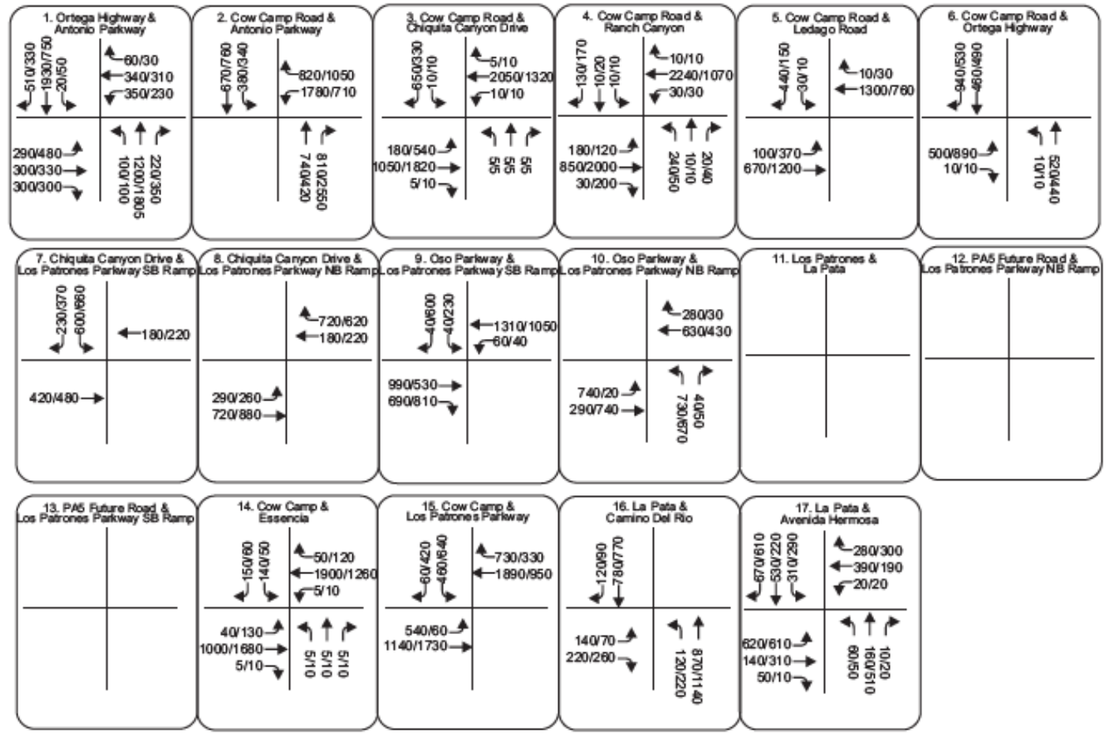


Figure 5-3: Future Year (2-Lane Ortega Highway) With Project Peak Hour Intersection Volumes

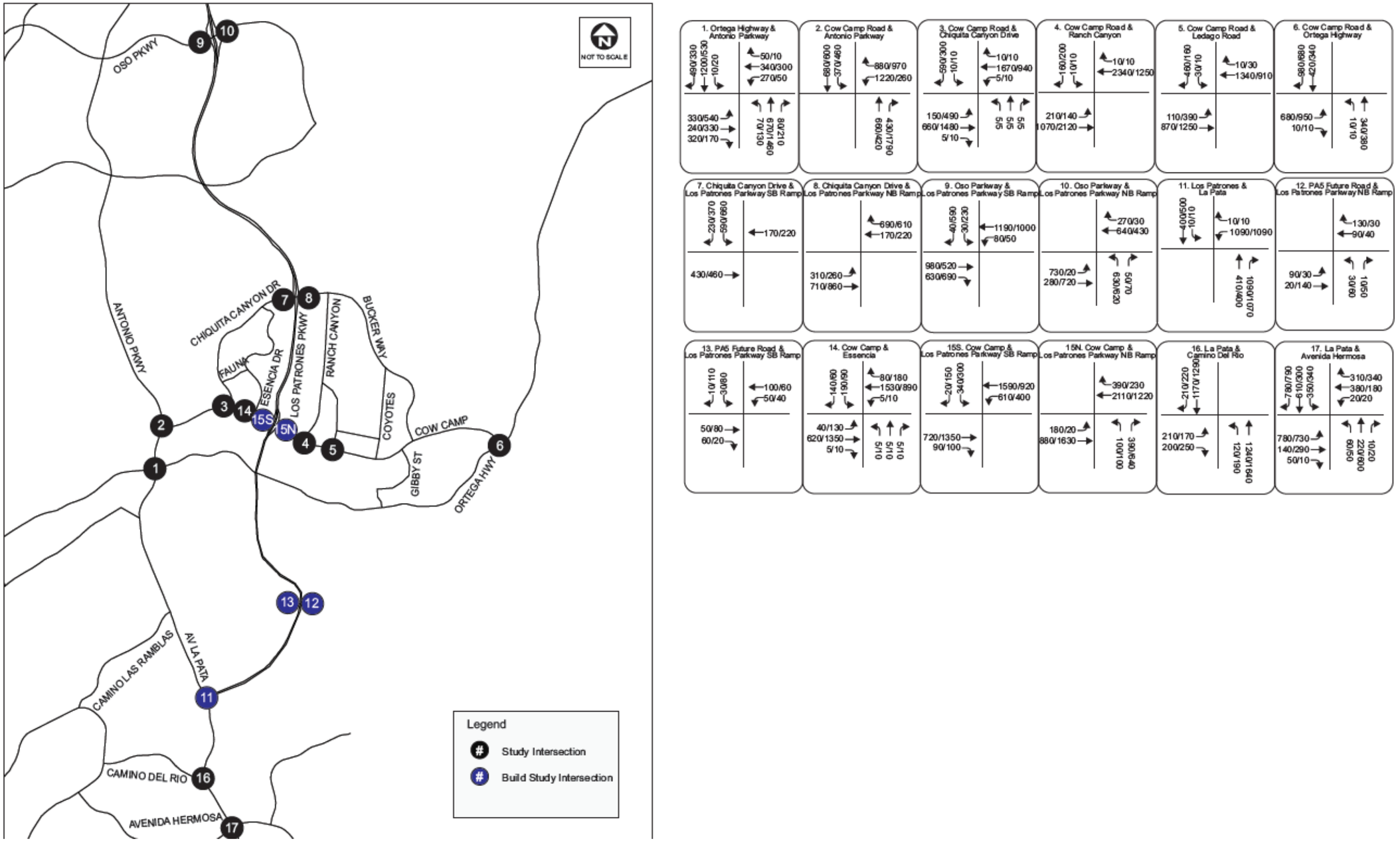
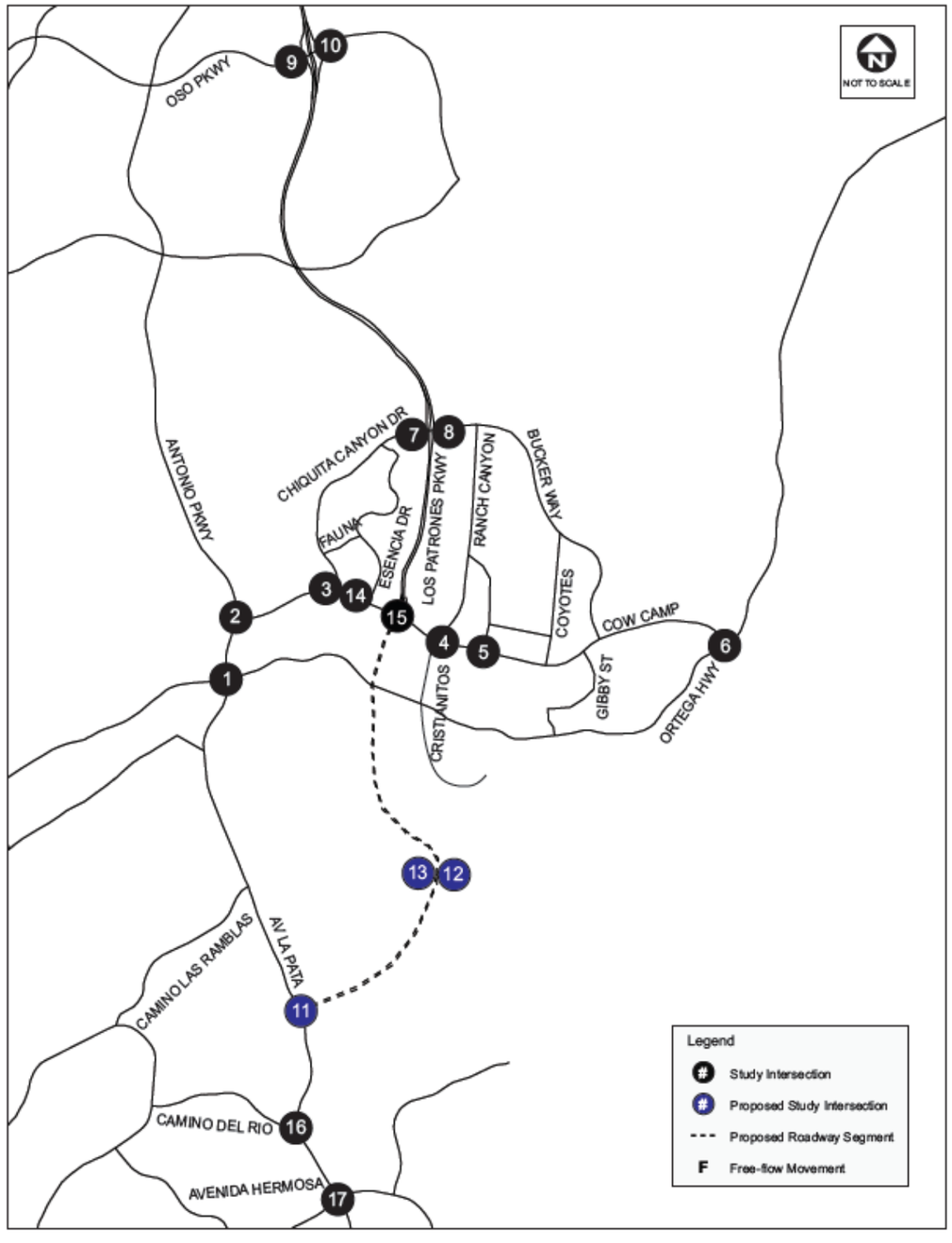


Figure 5-4: Future Year (2-Lane Ortega Highway) No Project Intersection Lane Configurations



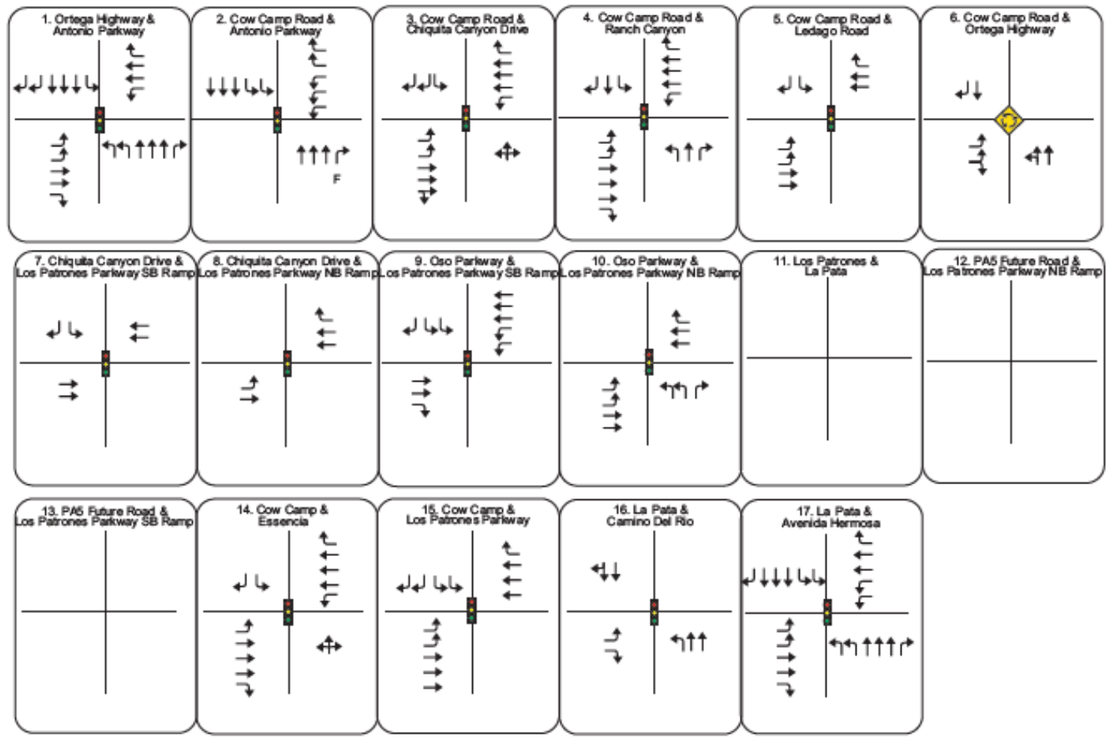


Figure 5-5: Future Year (2-Lane Ortega Highway) With Project Intersection Lane Configurations

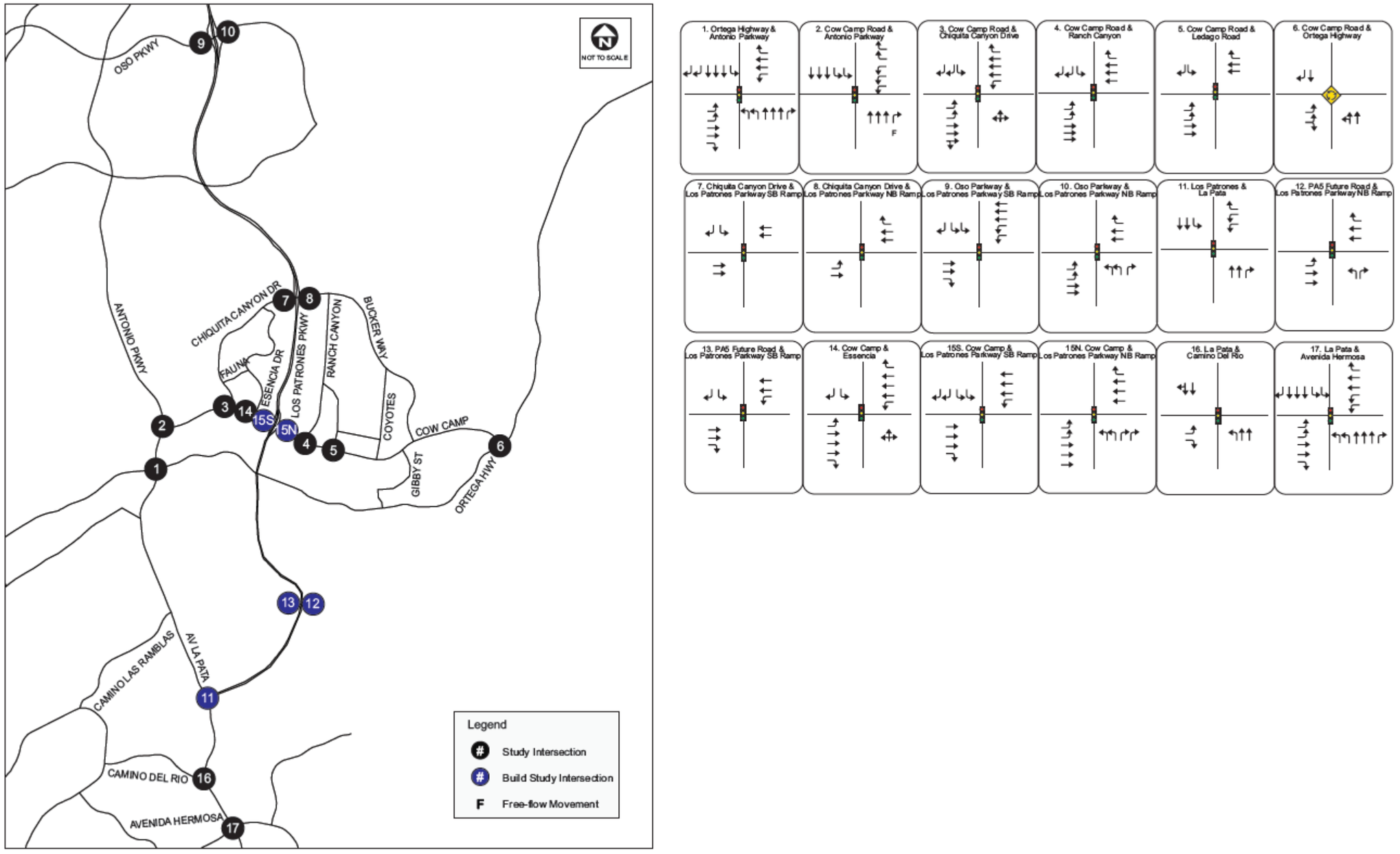


Figure 5-6: Future Year (2-Lane Ortega Highway) No Project AM Peak Hour Intersection ICU LOS

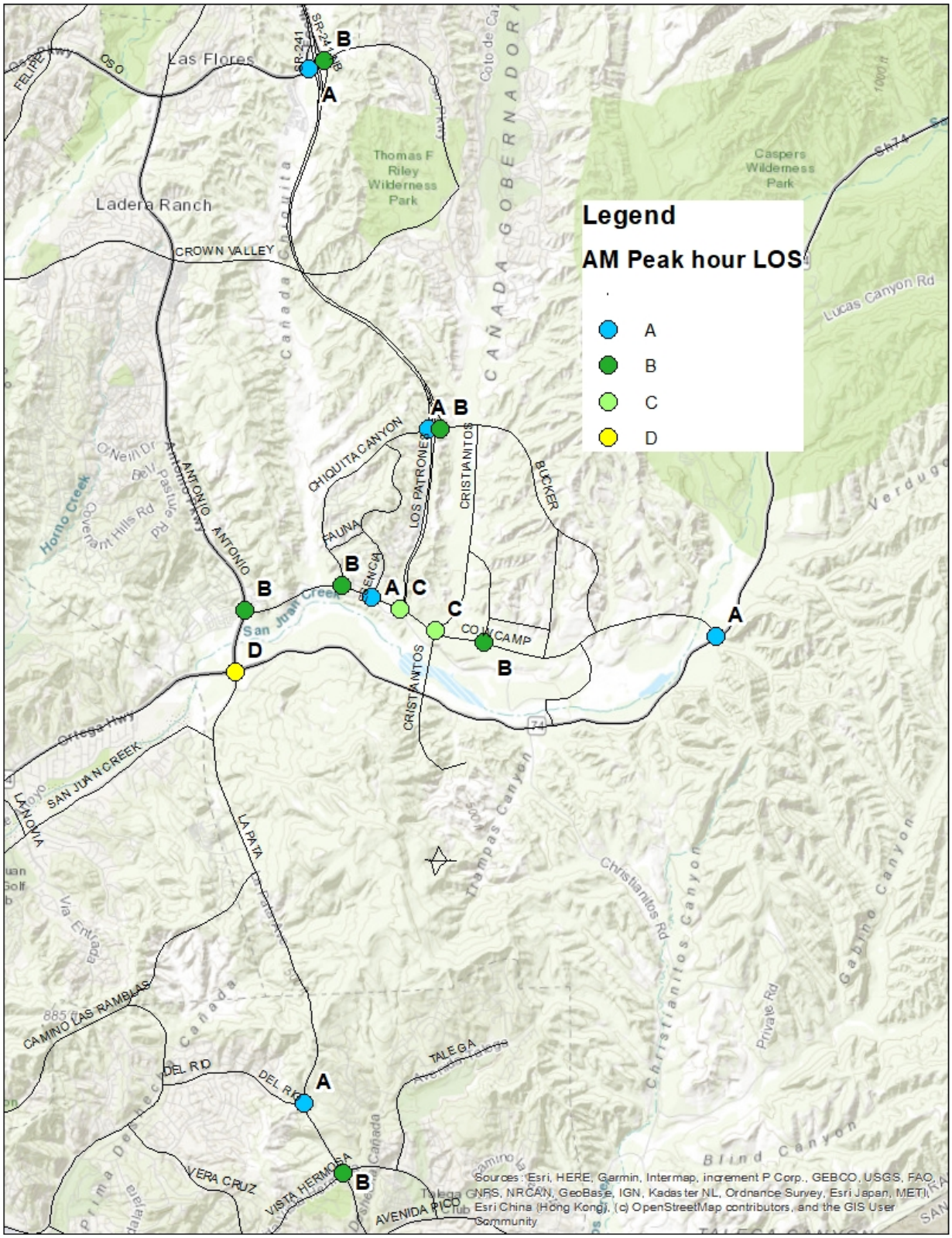


Figure 5-7: Future Year (2-Lane Ortega Highway) No Project PM Peak Hour Intersection ICU LOS

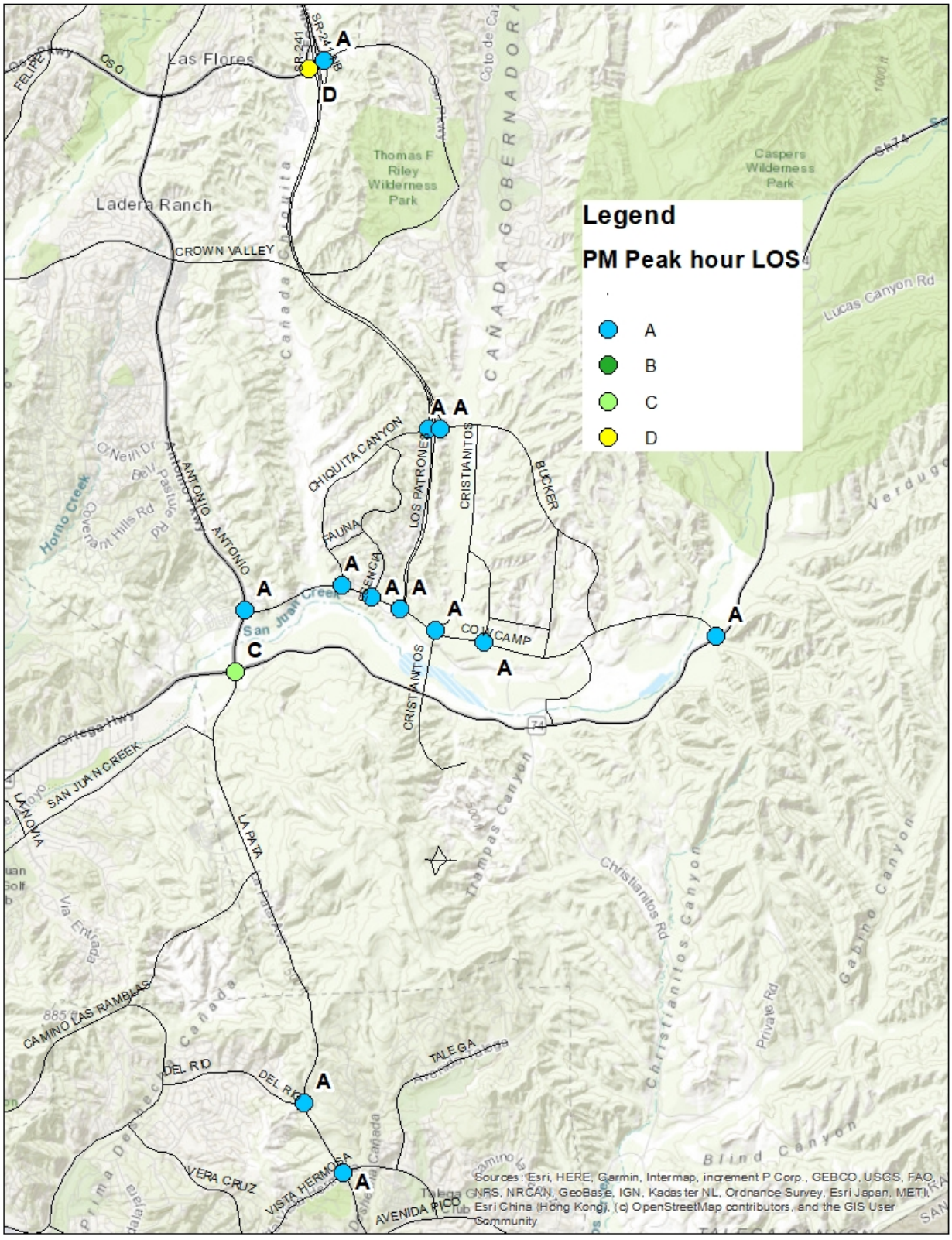


Figure 5-8: Future Year (2-Lane Ortega Highway) With Project AM Peak Hour Intersection ICU LOS

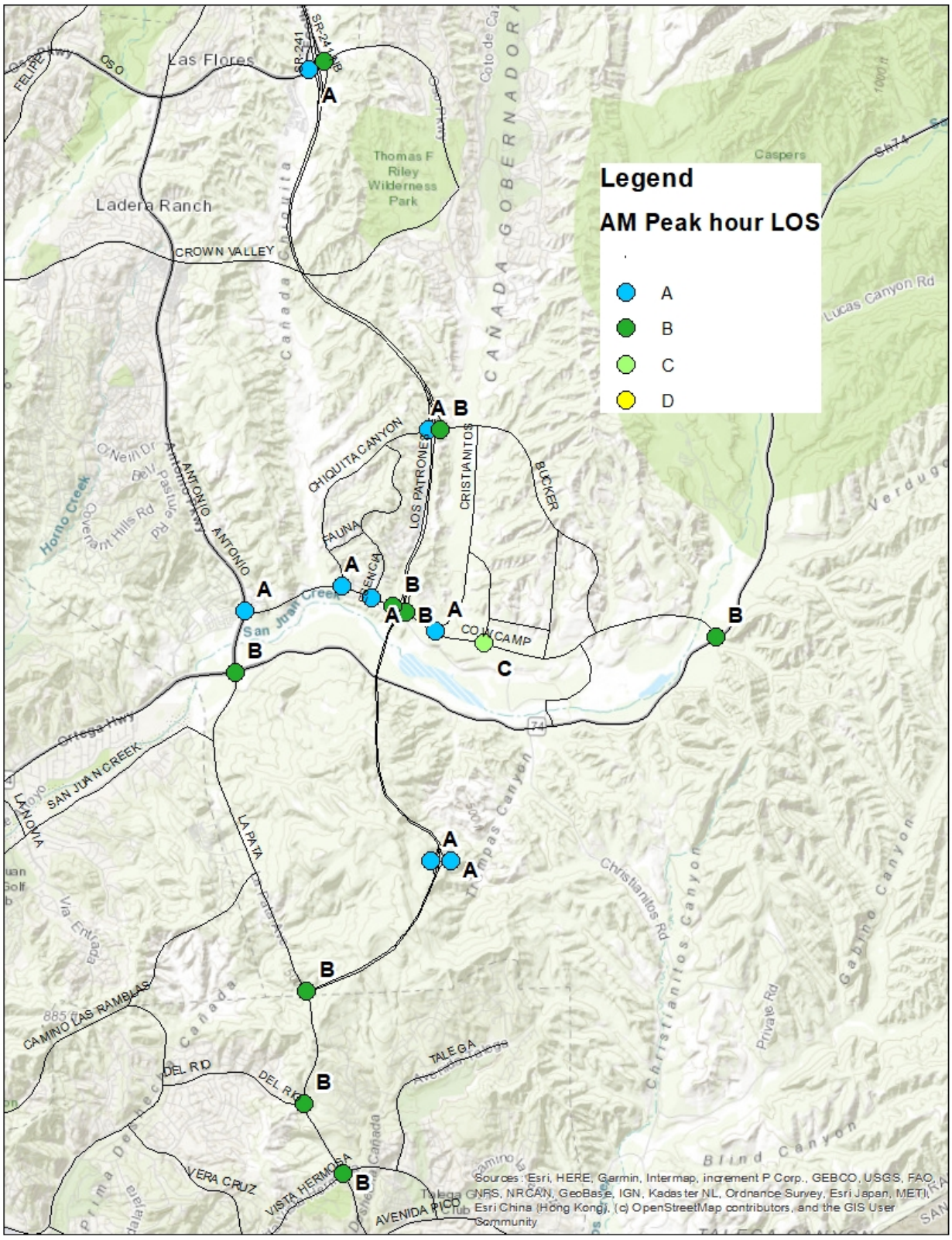
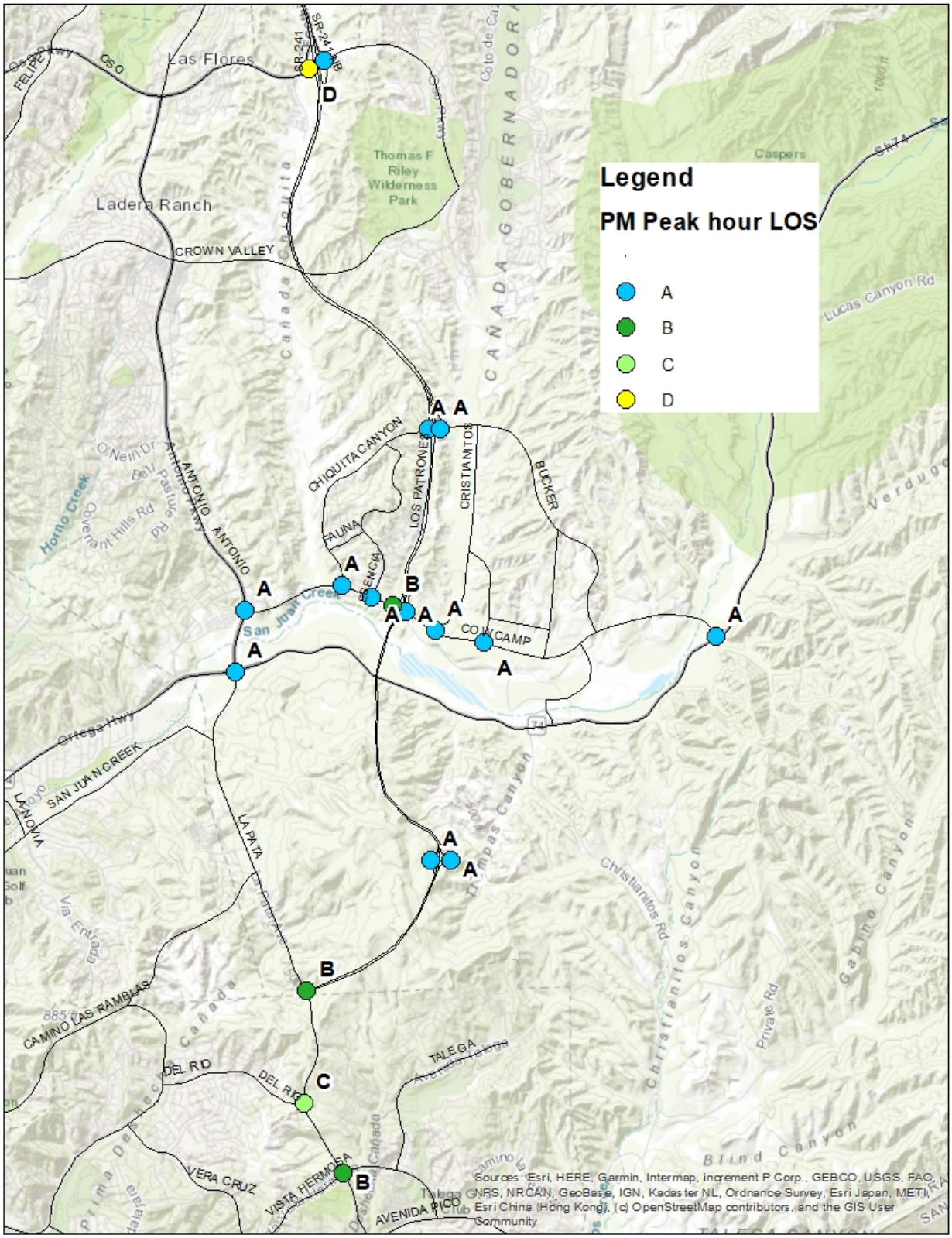


Figure 5-9: Future Year (2-Lane Ortega Highway) With Project PM Peak Hour Intersection ICU LOS



In addition to ICU analysis the following four (4) Caltrans locations (as shown in **Table 5-6** and **Table 5-7**) were analyzed using Highway Capacity Manual (HCM) methodology. Detailed HCM analysis worksheets are provided in **Appendix B**.

Table 5-6: Future Year 2045 No Project Intersection HCM LOS

#	Intersection Location	Control	AM Peak Hour		PM Peak Hour		Deficient?
			Delay	LOS	Delay	LOS	(Yes/No)
1	Ortega Highway/Antonio Parkway	Signalized	55.1	E	41.6	D	Yes
6	Cow Camp Road/Ortega Highway	Roundabout	9.8	A	10.5	B	No
9	Oso Parkway/Los Patrones Parkway & SR-241 SB Ramp	Signalized	34.5	C	110.8	F	Yes
10	Oso Parkway/Los Patrones Parkway & SR-241 NB Ramp	Signalized	51.2	D	18.5	B	No

Table 5-7: Future Year 2045 With Project Intersection HCM LOS

#	Intersection Location	Control	AM Peak Hour		PM Peak Hour		Deficient?
			Delay	LOS	Delay	LOS	(Yes/No)
1	Ortega Highway/Antonio Parkway	Signalized	35.6	D	29.4	C	No
6	Cow Camp Road/Ortega Highway	Roundabout	10.7	B	9.7	A	No
9	Oso Parkway/Los Patrones Parkway & SR-241 SB Ramp	Signalized	7.2	A	76.2	E	Yes
10	Oso Parkway/Los Patrones Parkway & SR-241 NB Ramp	Signalized	50.3	D	18.5	B	No

In the With Project Scenario, Oso Parkway/Los Patrones Parkway & SR-241 SB Ramp is forecast to operate at LOS E in the PM peak although the delay is reduced compared to the No Project scenario where the intersection operates at LOS F. The deficiently is mainly caused by heavy forecast eastbound right-turn volumes from Oso Parkway to southbound Los Patrones Parkway.

The bridge over Los Patrones Parkway at Oso Parkway is currently being widened and the County advised that the future eastbound configuration would have two (2) through lanes and one (1) exclusive right-turn lane with a Class 2 bike-lane in the middle. However, the eastbound approach lane configuration prior to bridge construction was one (1) through lane, one (1) shared through-right lane, and one (1) right turn lane. If this existing configuration were assumed instead, the LOS would become D. The LOS would also operate satisfactorily using one (1) eastbound through lane and two (2) right-turn lanes, so the intersection does appear to have more than sufficient capacity to accommodate future traffic volumes.

In the No Project Scenario, Ortega Highway at Antonio Parkway is forecast to operate at LOS E in the AM peak and LOS D in the PM peak. However, the reduction in volumes on Ortega Highway due to the Los Patrones Parkway extension eliminates the deficiency in the With Project scenario.

Cow Camp Road and Ortega Highway is assumed to operate as a 2-lane roundabout (i.e. two lanes entering and departing the roundabout). Even though this is the 2-lane Ortega Highway alternative with only one lane in each direction on the arterial it is assumed that the full 2045 configuration is built in order to support the adjacent development and that localized widening at the roundabout approaches and departures occurs.

6 YEAR 2045 ANALYSIS – 4-LANE ORTEGA HIGHWAY

This analysis uses the assumption of a four lane Ortega Highway east of Antonio Parkway to the Riverside County line. This assumes the MPAH amendment of widening Ortega Highway from two (2) lanes to four (4) lanes east of Antonio Parkway occurs by 2045. While the likelihood of this widening happening is low, this is a necessary assumption for the MPAH amendment analysis since without it, the removal of the Ortega highway widening would effectively become a part of the amendment itself.

6.1 Arterial Analysis

Figure 6-1 shows the change in ADT volumes between the With Project and No Project Scenario. Volume reductions are observed on Ortega Highway, on Avenida La Pata north of Los Patrones Parkway, on Cow Camp Road west of Los Patrones Parkway and on I-5. Volume increases are observed on Los Patrones Parkway, Avenida La Pata south of Los Patrones Parkway and on Avenida Vista Hermosa.

Figure 6-1: Change in Daily Volume between With Project and No Project

(Red = Volume Increase, Green = Volume Decrease)

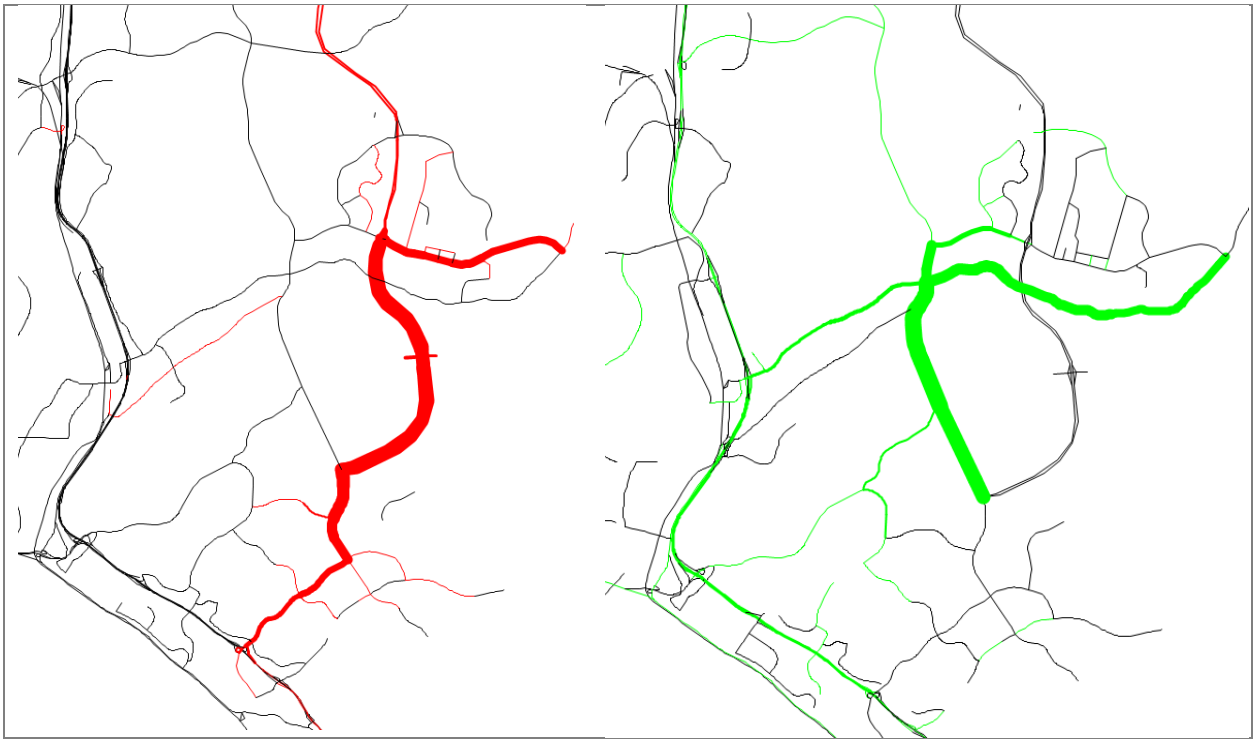


Table 6-1 and **Table 6-2** summarize the weekday daily volumes, V/C ratios, and LOS under Future Year No Project and With Project scenarios, respectively.

Table 6-1: Future Year 2045 (4-Lane Ortega Highway) No Project Arterial Roadway Segment Daily LOS

#	Arterial	Extent	Facility Type	Volume	V/C	LOS
1	Antonio Parkway	Sweetwater to Oso Parkway	Major	33,900	0.60	A
2	Antonio Parkway	Avendale Boulevard to O'Neill Drive	Major	45,500	0.81	D
3	Avenida La Pata	Sierra Pasture Road to Stallion Ridge	Primary	21,200	0.57	A
4	Avenida La Pata	Prima Deshecha Bridge to Camino Del Rio	Primary	17,600	0.47	A
45	Avenida La Pata	Los Patrones to Camino Del Rio	Primary	17,000	0.45	A
46	Avenida La Pata	Camino Del Rio to Ave Vista Hermosa	Primary	25,000	0.67	B
47	Avenida La Pata	Ave Vista Hermosa to Ave Pico	Major	7,000	0.12	A
5	Avenida Pico	Calle Frontera/Avenida Presidio to Calle Del Cerro	Major	35,200	0.63	B
6	Avenida Vista Hermosa	Calle Frontera to Camino Faro/Laurel	Primary	20,400	0.54	A
7	Avenida Vista Hermosa	Camino Vera Cruz to Sports Park	Primary	20,700	0.55	A
8	Camino Del Rio	Camino Del Los Mares to Calle Sarmentoso	Secondary	7,600	0.30	A
9	Camino Las Ramblas	West of Camino De Los Mares	Secondary	3,700	0.15	A
10	Chiquita Canyon Drive	Los Patrones Parkway SB Off-Ramp to Airoso Street	Secondary	12,000	0.48	A
11	Chiquita Canyon Drive	Airoso Street North to Esencia Drive	Secondary	11,000	0.44	A
12	Chiquita Canyon Drive	Esencia Drive to Airoso Street South	Secondary	4,200	0.17	A
13	Chiquita Canyon Drive	Airoso Street to Fauna Drive	Secondary	4,200	0.17	A
14	Chiquita Canyon Drive	Fauna Drive to Cow Camp Drive	Secondary	9,000	0.36	A
15	Cow Camp Road	Antonio Parkway to Chiquita Canyon Drive	Major	34,100	0.61	B
16	Cow Camp Road	Coyotes to Bucker Way	Primary	15,200	0.41	A
17	Cow Camp Road	Bucker Way to Ortega Highway	Primary	11,300	0.30	A
18	Coyotes	South of Bucker Way	Divided Collector	8,300	0.38	A
19	Cristianitos Road South	Cow Camp Road to Ortega Highway	Primary	2,700	0.07	A
20	Esencia Drive	Chiquita Canyon Drive to Risilla Drive	Collector	4,400	0.35	A
21	Esencia Drive	South of Fauna Drive	Secondary	1,100	0.04	A
22	Esencia Drive	South of Andaza	Secondary	1,100	0.04	A
23	Esencia Drive	North of Cow Camp Road	Secondary	3,900	0.16	A
24	Fauna Drive	Chiquita Canyon Drive to Esencia Drive	Secondary	4,800	0.19	A
25	Gibby Street	North of Ortega Highway	Secondary	1,800	0.07	A
26	Bucker Way	Los Patrones Parkway SB and NB On-Ramps	Secondary	15,900	0.64	B
27	Bucker Way	Los Patrones Parkway NB On-Ramp to Ranch Canyon	Secondary	20,200	0.81	D
28	Bucker Way	North of Cow Camp Road	Secondary	4,600	0.18	A
29	Legado Road	North of Cow Camp Road	Secondary	3,500	0.14	A
30	Los Patrones Parkway NB	North of Chiquita Canyon Drive Ramps	Secondary [1]	16,700	0.67	B
31	Los Patrones Parkway SB	North of Chiquita Canyon Drive Ramps	Secondary [1]	17,800	0.71	C
32	Los Patrones Parkway NB	South of Chiquita Canyon Drive Ramps	Secondary [1]	6,000	0.24	A
33	Los Patrones Parkway SB	South of Chiquita Canyon Drive Ramps	Secondary [1]	6,500	0.26	A
34	Ortega Highway	West of Cow Camp Road	Primary	14,300	0.38	A
35	Los Patrones Parkway	South of Cow Camp Road	-			
36	Los Patrones Parkway	East of Avenida La Pata	-			
37	Ortega Highway	Shadetree Lane/Avenida Siega to Reata Road	Primary	32,200	0.86	D
38	Ortega Highway	Antonio Parkway/La Pata Ave to Gateway Place	Primary	24,800	0.66	B
39	Ortega Highway	Cristianitos to Gibby Road	Primary	14,300	0.38	A
40	Ortega Highway	West of Caspers Park Road	Primary	18,700	0.50	A
41	Oso Parkway	Meandering Trail to SB SR-241 Off-Ramp	Major	35,600	0.63	B
42	Oso Parkway	NB SR-241 On-Ramp to Solano	Secondary	15,100	0.60	A
43	Ranch Canyon	North of Cow Camp Road	Primary	3,000	0.08	A
44	San Juan Creek Road	West of Avenida La Pata	Secondary	9,600	0.38	A
48	Camino las Ramblas	West of Avenida La Pata	Secondary	3,600	0.14	A
0.81 D	*Deficient location*					

[1] Although the existing Los Patrones Parkway is designated in the MPAH as a secondary, the roadway functions at a higher capacity because there are no conflicting movements (i.e., cross streets, driveway breaks, or signals). These characteristics increase the functional characteristics by allowing a greater volume of traffic to be carried than the typical roadway with this MPAH classification. Therefore, for traffic modeling and operational purposes, the roadway is assumed to operate at a higher capacity (25,000 vehicles/day per direction) than a typical secondary arterial.

Table 6-2: Future Year 2045 (4-Lane Ortega Highway) With Project Arterial Roadway Segment Daily LOS

#	Arterial	Extent	Facility Type	Volume	V/C	LOS
1	Antonio Parkway	Sweetwater to Oso Parkway	Major	32,200	0.57	A
2	Antonio Parkway	Avendale Boulevard to O'Neill Drive	Major	45,100	0.80	C
3	Avenida La Pata	Sierra Pasture Road to Stallion Ridge	Primary	8,800	0.23	A
4	Avenida La Pata	Prima Deshecha Bridge to Camino Del Rio	Primary	6,700	0.18	A
45	Avenida La Pata	Los Patrones to Camino Del Rio	Primary	28,200	0.75	C
46	Avenida La Pata	Camino Del Rio to Ave Vista Hermosa	Primary	32,600	0.87	D
47	Avenida La Pata	Ave Vista Hermosa to Ave Pico	Primary	8,200	0.15	A
5	Avenida Pico	Calle Frontera/Avenida Presidio to Calle Del Cerro	Major	35,100	0.62	B
6	Avenida Vista Hermosa	Calle Frontera to Camino Faro/Laurel	Primary	24,100	0.64	B
7	Avenida Vista Hermosa	Camino Vera Cruz to Sports Park	Primary	26,100	0.70	B
8	Camino Del Rio	Camino Del Los Mares to Calle Sarmentoso	Secondary	8,300	0.33	A
9	Camino Las Ramblas	West of Camino De Los Mares	Secondary	2,200	0.09	A
10	Chiquita Canyon Drive	Los Patrones Parkway SB Off-Ramp to Airoso Street	Secondary	11,800	0.47	A
11	Chiquita Canyon Drive	Airoso Street North to Esencia Drive	Secondary	10,900	0.44	A
12	Chiquita Canyon Drive	Esencia Drive to Airoso Street South	Divided Collector	3,600	0.16	A
13	Chiquita Canyon Drive	Airoso Street to Fauna Drive	Divided Collector	3,600	0.16	A
14	Chiquita Canyon Drive	Fauna Drive to Cow Camp Drive	Secondary	8,000	0.32	A
15	Cow Camp Road	Antonio Parkway to Chiquita Canyon Drive	Major	30,000	0.53	A
16	Cow Camp Road	Coyotes to Bucker Way	Primary	21,400	0.57	A
17	Cow Camp Road	Bucker Way to Ortega Highway	Primary	17,800	0.47	A
18	Coyotes	South of Bucker Way	Divided Collector	8,400	0.38	A
19	Cristianitos Road South	Cow Camp Road to Ortega Highway	N/A	Removed		
20	Esencia Drive	Chiquita Canyon Drive to Risilla Drive	Collector	5,000	0.40	A
21	Esencia Drive	South of Fauna Drive	Collector	2,000	0.16	A
22	Esencia Drive	South of Andaza	Secondary	2,100	0.08	A
23	Esencia Drive	North of Cow Camp Road	Secondary	4,900	0.20	A
24	Fauna Drive	Chiquita Canyon Drive to Esencia Drive	Collector	4,400	0.35	A
25	Gibby Street	North of Ortega Highway	Secondary	1,700	0.07	A
26	Bucker Way	Los Patrones Parkway SB and NB On-Ramps	Secondary	15,700	0.63	B
27	Bucker Way	Los Patrones Parkway NB On-Ramp to Ranch Canyon	Secondary	19,900	0.80	C
28	Bucker Way	North of Cow Camp Road	Secondary	4,600	0.18	A
29	Legado Road	North of Cow Camp Road	Secondary	4,100	0.16	A
30	Los Patrones Parkway NB	North of Chiquita Canyon Drive Ramps	Secondary [1]	18,200	0.73	C
31	Los Patrones Parkway SB	North of Chiquita Canyon Drive Ramps	Secondary [1]	19,400	0.78	C
32	Los Patrones Parkway NB	South of Chiquita Canyon Drive Ramps	Secondary [1]	7,600	0.30	A
33	Los Patrones Parkway SB	South of Chiquita Canyon Drive Ramps	Secondary [1]	8,200	0.33	A
34	Ortega Highway	West of Cow Camp Road	Primary	7,900	0.28	A
35	Los Patrones Parkway	South of Cow Camp Road	Primary	22,000	0.59	A
36	Los Patrones Parkway	East of Avenida La Pata	Primary	21,600	0.58	A
37	Ortega Highway	Shadetree Lane/Avenida Siega to Reata Road	Primary	29,400	0.78	C
38	Ortega Highway	Antonio Parkway/La Pata Ave to Gateway Place	Primary	16,300	0.43	A
39	Ortega Highway	Cristianitos to Gibby Road	Primary	7,900	0.28	A
40	Ortega Highway	West of Caspers Park Road	Primary	18,900	0.66	B
41	Oso Parkway	Meandering Trail to SB SR-241 Off-Ramp	Major	34,400	0.61	B
42	Oso Parkway	NB SR-241 On-Ramp to Solano	Secondary	15,200	0.61	B
43	Ranch Canyon	North of Cow Camp Road	Primary	3,300	0.09	A
44	San Juan Creek Road	West of Avenida La Pata	Secondary	9,900	0.40	A
48	Camino las Ramblas	West of Avenida La Pata	Secondary	2,200	0.09	A
0.81 D	*Deficient location*					

[1] Although the existing Los Patrones Parkway is designated in the MPAH as a secondary, the roadway functions at a higher capacity because there are no conflicting movements (i.e., cross streets, driveway breaks, or signals). These characteristics increase the functional characteristics by allowing a greater volume of traffic to be carried than the typical roadway with this MPAH classification. Therefore, for traffic modeling and operational purposes, the roadway is assumed to operate at a higher capacity (25,000 vehicles/day per direction) than a typical secondary arterial.

Table 6 -3 summarizes the change in daily V/C ratio between Future Year No Project and Future Year With Project scenarios. There are three (3) deficient locations at LOS D in the No project scenario.

- Antonio Parkway from Avendale Boulevard to O'Neill Drive;
- Bucker Way between Los Patrones Parkway NB On-Ramp and Ranch Canyon;
- Ortega Highway between Shadetree Lane/Avenida Siega to Reata Road

The diversion of traffic onto Los Patrones Parkway extension and Cow Camp Road in the With Project scenario eliminates these three deficiencies. Among 48 tested segments (excluding the one to be deleted), one will experience a deterioration of LOS to LOS D.

- Avenida La Pata from Camino Del Rio to Avenida Vista Hermosa – LOS B to LOS D

Peak hour analysis of this segment is performed in **Section 7**

Table 6-3: Future Year 2045 (4-Lane Ortega Highway) Arterial Roadway Segment Daily V/C and LOS Summary

#	Arterial	Extent	No Project		With Project		Δ In V/C
			V/C	LOS	V/C	LOS	
1	Antonio Parkway	Sweetwater to Oso Parkway	0.60	A	0.57	A	-0.03
2	Antonio Parkway	Avendale Boulevard to O'Neill Drive	0.81	D	0.80	C	-0.01
3	Avenida La Pata	Sierra Pasture Road to Stallion Ridge	0.57	A	0.23	A	-0.34
4	Avenida La Pata	Prima Deshecha Bridge to Camino Del Rio	0.47	A	0.18	A	-0.29
45	Avenida La Pata	Los Patrones to Camino Del Rio	0.45	A	0.75	C	0.30
46	Avenida La Pata	Camino Del Rio to Ave Vista Hermosa	0.67	B	0.87	D	0.20
47	Avenida La Pata	Ave Vista Hermosa to Ave Pico	0.12	A	0.15	A	0.03
5	Avenida Pico	Calle Frontera/Avenida Presidio to Calle Del Cerro	0.63	B	0.62	B	-0.01
6	Avenida Vista Hermosa	Calle Frontera to Camino Faro/Laurel	0.54	A	0.64	B	0.10
7	Avenida Vista Hermosa	Camino Vera Cruz to Sports Park	0.55	A	0.70	B	0.15
8	Camino Del Rio	Camino Del Los Mares to Calle Sarmentoso	0.30	A	0.33	A	0.03
9	Camino Las Ramblas	West of Camino De Los Mares	0.15	A	0.09	A	-0.06
10	Chiquita Canyon Drive	Los Patrones Parkway SB Off-Ramp to Airoso Street	0.48	A	0.47	A	-0.01
11	Chiquita Canyon Drive	Airoso Street North to Esencia Drive	0.44	A	0.44	A	0.00
12	Chiquita Canyon Drive	Esencia Drive to Airoso Street South	0.17	A	0.16	A	-0.01
13	Chiquita Canyon Drive	Airoso Street to Fauna Drive	0.17	A	0.16	A	-0.01
14	Chiquita Canyon Drive	Fauna Drive to Cow Camp Drive	0.36	A	0.32	A	-0.04
15	Cow Camp Road	Antonio Parkway to Chiquita Canyon Drive	0.61	B	0.53	A	-0.08
16	Cow Camp Road	Coyotes to Bucker Way	0.41	A	0.57	A	0.16
17	Cow Camp Road	Bucker Way to Ortega Highway	0.30	A	0.47	A	0.17
18	Coyotes	South of Bucker Way	0.38	A	0.38	A	0.00
19	Cristianitos Road South	Cow Camp Road to Ortega Highway	0.07	A	Removed		
20	Esencia Drive	Chiquita Canyon Drive to Risilla Drive	0.35	A	0.40	A	0.05
21	Esencia Drive	South of Fauna Drive	0.04	A	0.16	A	0.12
22	Esencia Drive	South of Andaza Street	0.04	A	0.08	A	0.04
23	Esencia Drive	North of Cow Camp Road	0.16	A	0.20	A	0.04
24	Fauna Drive	Chiquita Canyon Drive to Esencia Drive	0.19	A	0.35	A	0.16
25	Gibby Street	North of Ortega Highway	0.07	A	0.07	A	0.00
26	Bucker Way	Los Patrones Parkway SB and NB On-Ramps	0.64	B	0.63	B	-0.01
27	Bucker Way	Los Patrones Parkway NB On-Ramp to Ranch Canyon	0.81	D	0.80	C	-0.01
28	Bucker Way	North of Cow Camp Road	0.18	A	0.18	A	0.00
29	Legado Road	North of Cow Camp Road	0.14	A	0.16	A	0.02
30	Los Patrones Parkway NB	North of Chiquita Canyon Drive Ramps	0.67	B	0.73	C	0.06

#	Arterial	Extent	No Project		With Project		Δ In V/C
			V/C	LOS	V/C	LOS	
31	Los Patrones Parkway SB	North of Chiquita Canyon Drive Ramps	0.71	C	0.78	C	0.07
32	Los Patrones Parkway NB	South of Chiquita Canyon Drive Ramps	0.24	A	0.30	A	0.06
33	Los Patrones Parkway SB	South of Chiquita Canyon Drive Ramps	0.26	A	0.33	A	0.07
34	Ortega Highway	West of Cow Camp Road	0.38	A	0.28	A	-0.10
35	Los Patrones Parkway	South of Cow Camp Road	-	-	0.59	A	0.59
36	Los Patrones Parkway	East of Avenida La Pata	-	-	0.58	A	0.58
37	Ortega Highway	Shadetree Lane/Avenida Siega to Reata Road	0.86	D	0.78	C	-0.08
38	Ortega Highway	Antonio Parkway/La Pata Ave to Gateway Place	0.66	B	0.43	A	-0.23
39	Ortega Highway	Cristianitos to Gibby Road	0.38	A	0.28	A	-0.10
40	Ortega Highway	West of Caspers Park Road	0.50	A	0.66	B	0.16
41	Oso Parkway	Meandering Trail to SB SR-241 Off-Ramp	0.63	B	0.61	B	-0.02
42	Oso Parkway	NB SR-241 On-Ramp to Solano	0.60	A	0.61	B	0.01
43	Ranch Canyon	North of Cow Camp Road	0.08	A	0.09	A	0.01
44	San Juan Creek Road	West of Avenida La Pata	0.38	A	0.40	A	0.02
48	Camino las Ramblas	West of Avenida La Pata	0.14	A	0.09	A	-0.05
0.81D	*Deficient location*						

Table 6-4 shows the With Project daily V/C and LOS for the proposed MPAH amendment segments. All of the segments except for one operate at LOS C or better.

Table 6-4: Future Year 2045 (4-Lane Ortega Highway) With Project MPAH Amendment Segments

ID	Arterial Location	Facility	Lanes	Capacity (LOS E)	2045 With Project		
					Volume	V/C	LOS
13	Chiquita Canyon Drive between Fauna Drive and Esencia Drive	Divided Collector	2	22,000	3,600	0.16	A
24	Fauna Drive between Chiquita Canyon Drive to Esencia Drive	Collector	2	12,500	4,400	0.35	A
21	Esencia Drive between Andaza Street and Fauna Drive	Secondary	2	25,000	4,900	0.20	A
17	Cow Camp Road between Bucker Way and Ortega Highway	Primary	4	37,500	17,800	0.47	A
35	Los Patrones Parkway extension south of Cow Camp Road	Primary	4	37,500	22,000	0.59	A
36	Los Patrones Parkway extension east of Avenida La Pata	Primary	4	37,500	21,600	0.58	A

6.2 Intersection Analysis

AM and PM peak hour turning movements are shown in **Figure 6-2** for No Project and **Figure 6-3** for With Project.

The future year lane configurations were taken from the F&P report and discussions with the County. Based on the current MPAH designation and improvement plans approved by the County it was assumed that Cow Camp Road will be six (6) lanes in the future from Antonio Parkway to Ranch Canyon and narrows to four (4) lanes east of Ranch Canyon. The lane configurations are shown in **Figure 6-4** for No Project and **Figure 6-5** for With Project. Using the peak hour traffic volumes and future lane configurations an ICU analysis was performed. **Table 6-5** summarizes the intersection traffic conditions in the study area under the 2045 No Project and With Project conditions. Detailed ICU calculations are provided in **Appendix A**.

All intersections are forecast to operate at LOS D or better in both the With Project conditions. The implementation of the Los Patrones extension actually improves the LOS at the majority of the study locations and shown in **Figure 6-6** to **Figure 6-9**.

Table 6-5: Future Year 2045 (4-Lane Ortega Highway) Intersection ICU LOS Summary

ID	Intersection Location (E-W Street / N-S Street)	2045 No Project					2045 With Project					Δ In V/C	
		AM Peak Hour		PM Peak Hour		Deficient? (Yes/No)[2]	AM Peak Hour		PM Peak Hour		Deficient? (Yes/No)[2]		
		V/C /Delay[1]	LOS	V/C /Delay[1]	LOS		V/C /Delay[1]	LOS	V/C /Delay[1]	LOS		AM	PM
1	Ortega Highway/Antonio Parkway	0.90	**D**	0.85	**D**	No	0.63	B	0.58	A	No	(0.27)	(0.27)
2	Cow Camp Road/Antonio Parkway	0.50	A	0.71	C	No	0.42	A	0.51	A	No	(0.08)	(0.20)
3	Cow Camp Road/Chiquita Canyon Drive	0.58	A	0.47	A	No	0.55	A	0.40	A	No	(0.03)	(0.07)
4	Cow Camp Road/Ranch Canyon	0.60	A	0.49	A	No	0.57	A	0.49	A	No	(0.03)	0.00
5	Cow Camp Road/Ledago Road	0.60	A	0.35	A	No	0.71	C	0.45	A	No	0.11	0.10
6	Cow Camp Road/Ortega Highway	0.48	A	0.48	A	No	0.64	B	0.49	A	No	0.16	0.01
7	Chiquita Canyon Drive/Los Patrones Parkway SB Ramp	0.53	A	0.58	A	No	0.52	A	0.58	A	No	(0.01)	0.00
8	Chiquita Canyon Drive/Los Patrones Parkway NB Ramp	0.64	B	0.57	A	No	0.64	B	0.56	A	No	0.00	(0.01)
9	Oso Parkway/Los Patrones Parkway & SR-241 SB Ramp	0.49	A	0.89	**D**	No	0.47	A	0.82	**D**	No	(0.02)	(0.07)
10	Oso Parkway/Los Patrones Parkway & SR-241 NB Ramp	0.66	B	0.46	A	No	0.64	B	0.44	A	No	(0.02)	(0.02)
11	Los Patrones/La Pata	Project Intersection				No	0.70	B	0.69	B	No	N/A	N/A
12	PA5 Future Road / Los Patrones Parkway NB Ramp	Project Intersection				No	0.18	A	0.12	A	No	N/A	N/A
13	PA5 Future Road / Los Patrones Parkway SB Ramp	Project Intersection				No	0.13	A	0.16	A	No	N/A	N/A
14	Cow Camp/Essencia	0.47	A	0.41	A	No	0.50	A	0.39	A	No	0.03	(0.02)
15	Cow Camp / Los Patrones Parkway	0.66	B	0.52	A	No	No Project Only					N/A	N/A
15S	Cow Camp / Los Patrones Parkway SB Ramp	Project Intersection					0.65	B	0.65	B	No	N/A	N/A
15N	Cow Camp / Los Patrones Parkway NB Ramp	Project Intersection					0.63	B	0.56	A	No	N/A	N/A
16	Avenida La Pata/Camino Del Rio	0.48	A	0.54	A	No	0.66	B	0.77	C	No	0.18	0.23
17	Avenida La Pata/Avenida Vista Hermosa	0.60	A	0.55	A	No	0.68	B	0.67	B	No	0.08	0.12

Notes:

1. V/C or volume-to-capacity ratios are calculated for County intersections using the ICU methodology. Delays are calculated for Caltrans intersection using the HCM methodology.
2. LOS D is the County's and Caltrans' lowest acceptable LOS for arterial intersections.

Figure 6-2: Future Year (4-Lane Ortega Highway) No Project Peak Hour Intersection Volumes

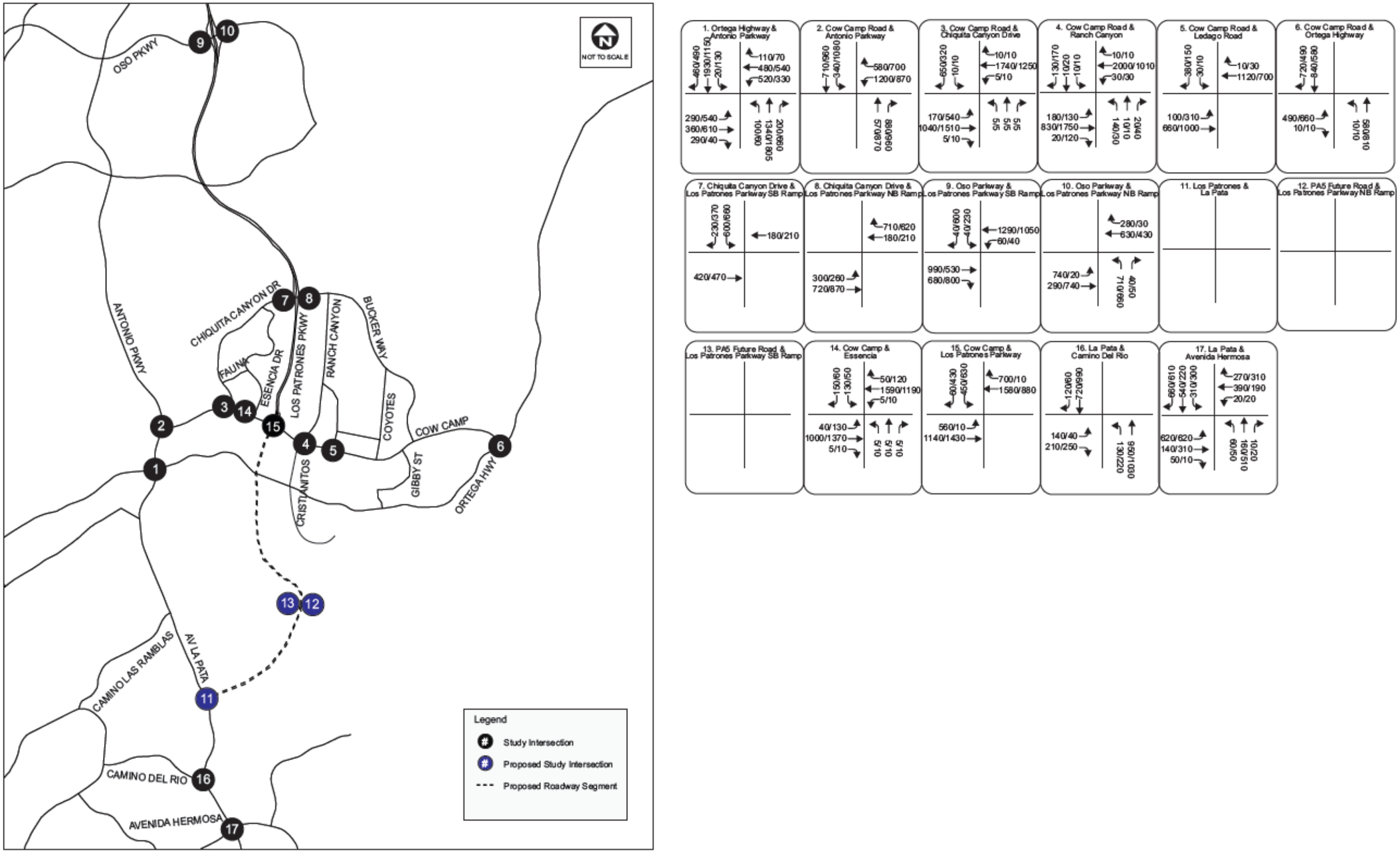


Figure 6-3: Future Year (4-Lane Ortega Highway) With Project Peak Hour Intersection Volumes

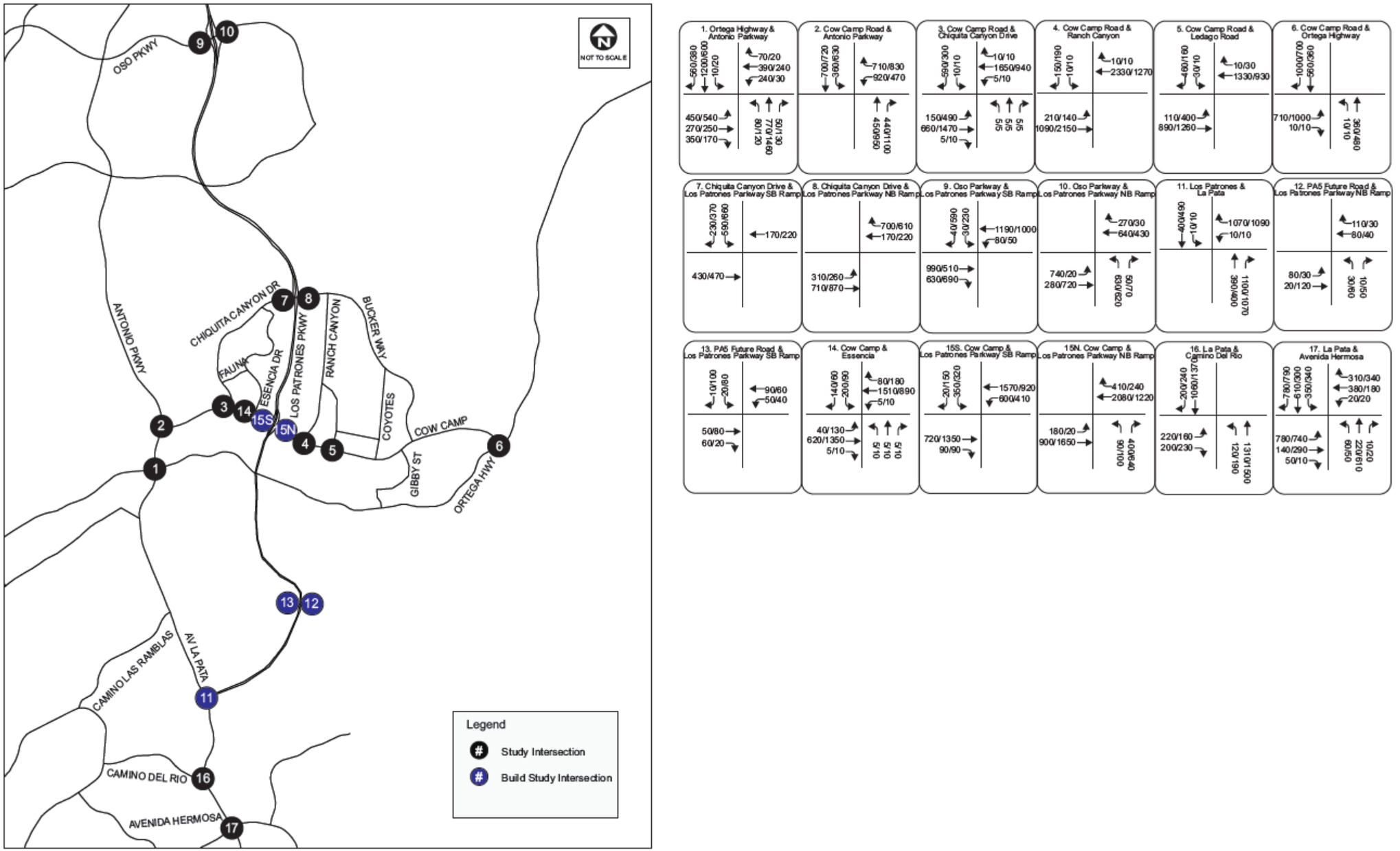
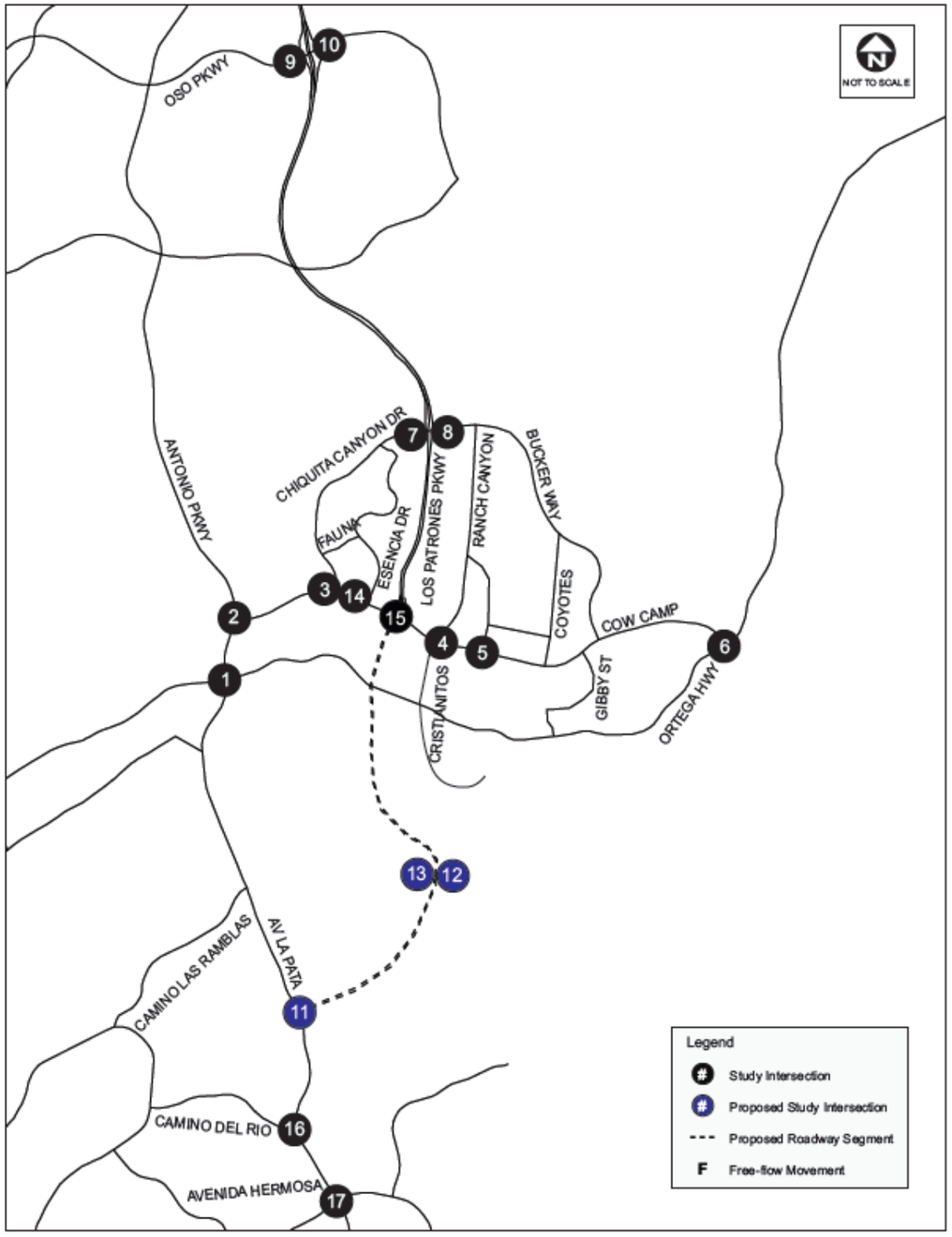


Figure 6-4: Future Year (4-Lane Ortega Highway) No Project Intersection Lane Configurations



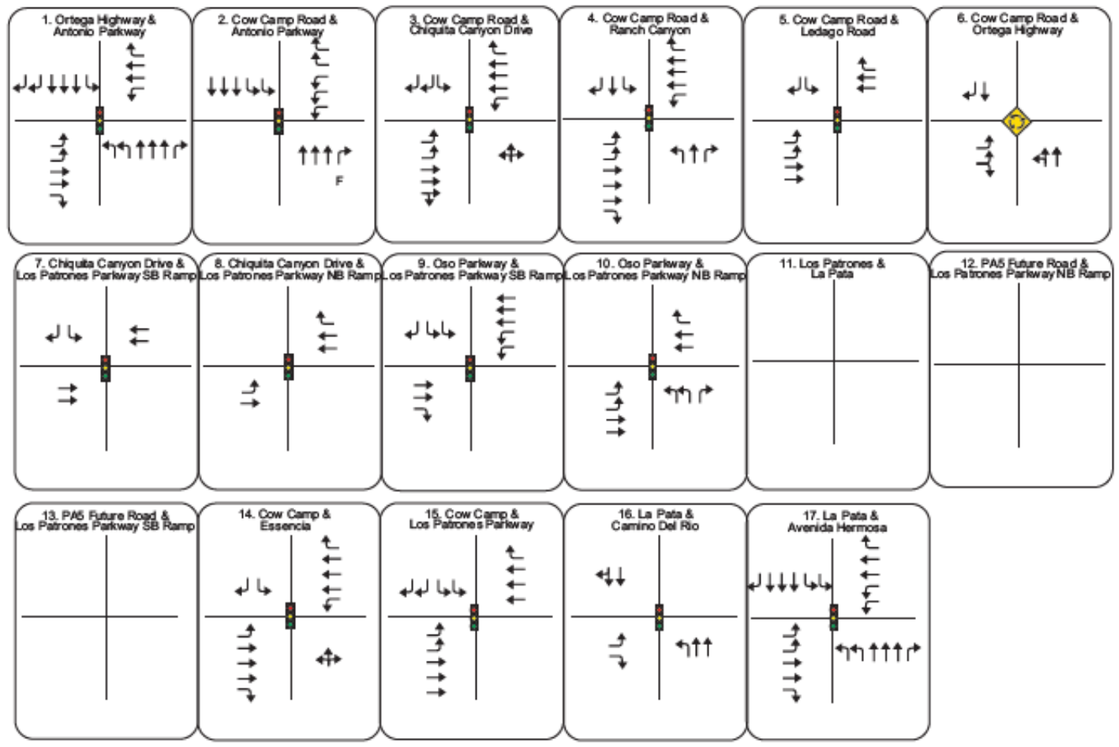
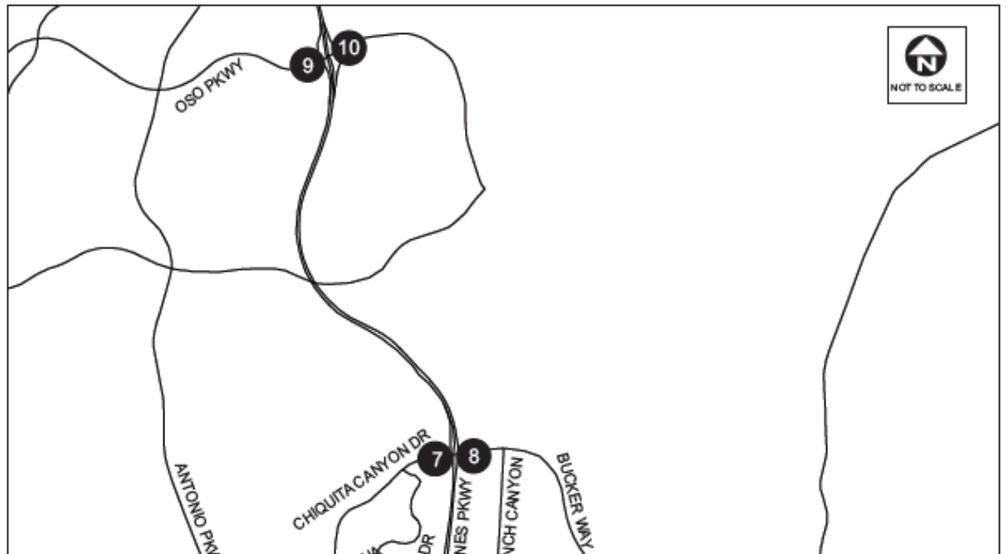


Figure 6-5 Future Year (4-Lane Ortega Highway) With Project Intersection Lane Configurations



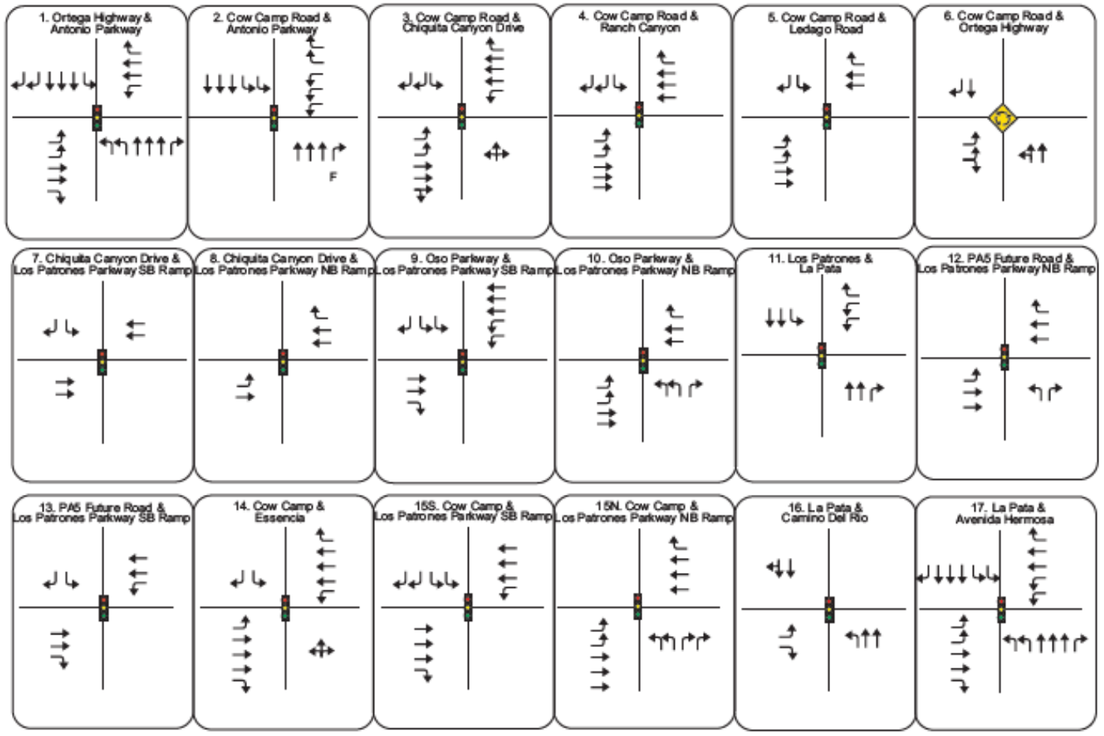


Figure 6-6: Future Year (4-Lane Ortega Highway) No Project AM Peak Hour Intersection LOS

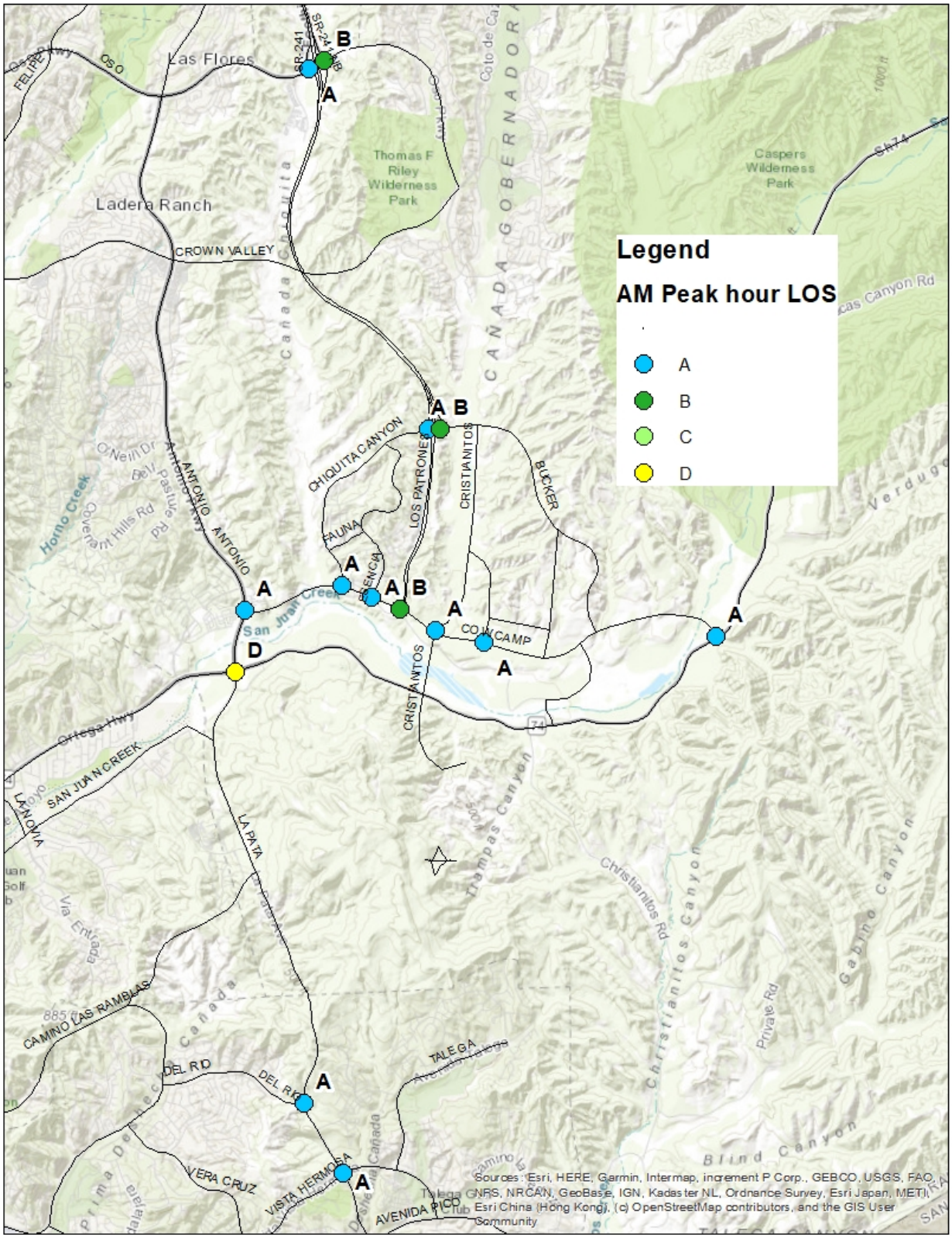


Figure 6-7: Future Year (4-Lane Ortega Highway) No Project PM Peak Hour Intersection LOS

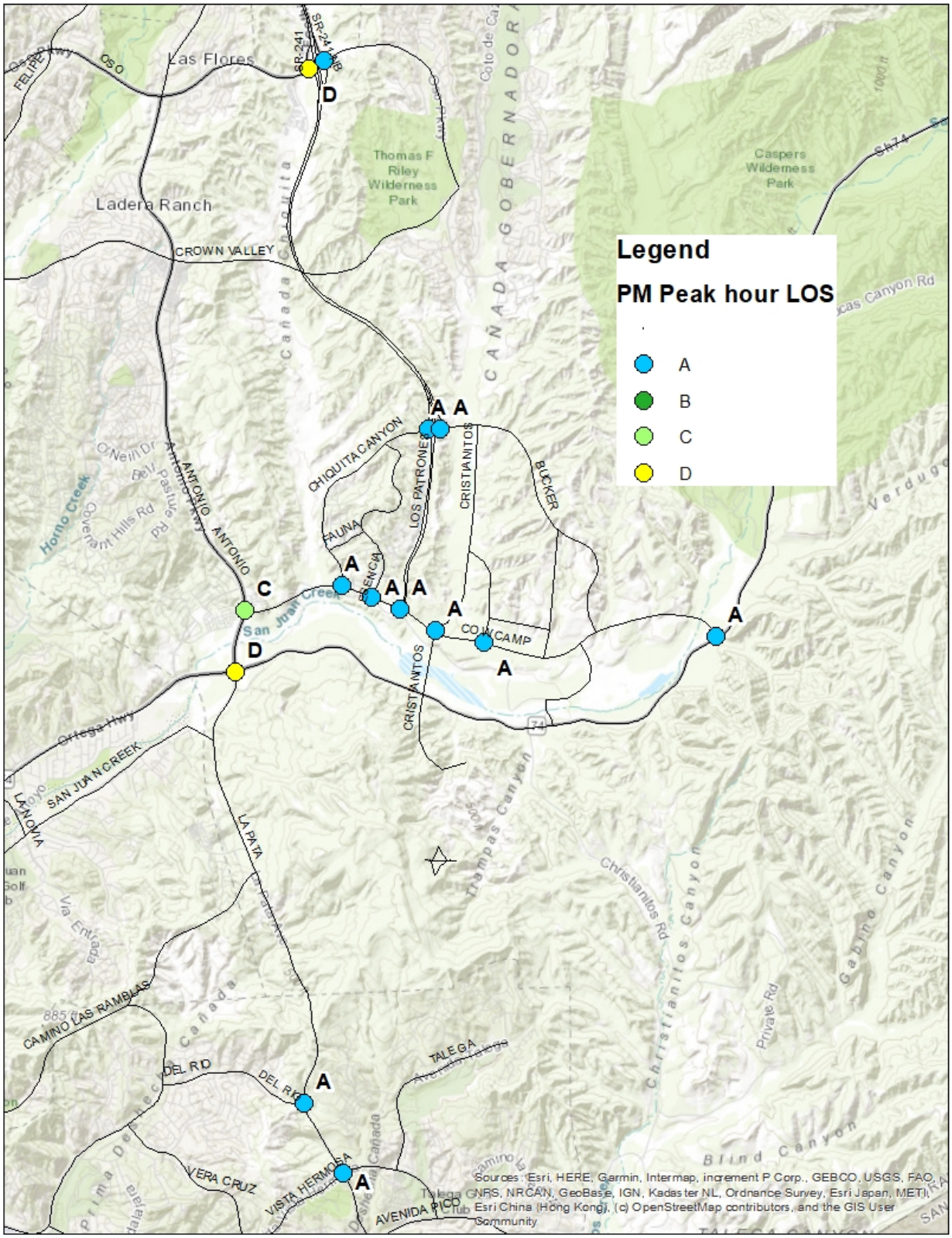


Figure 6-8: Future Year (4-Lane Ortega Highway) With Project AM Peak Hour Intersection V/C Ratio

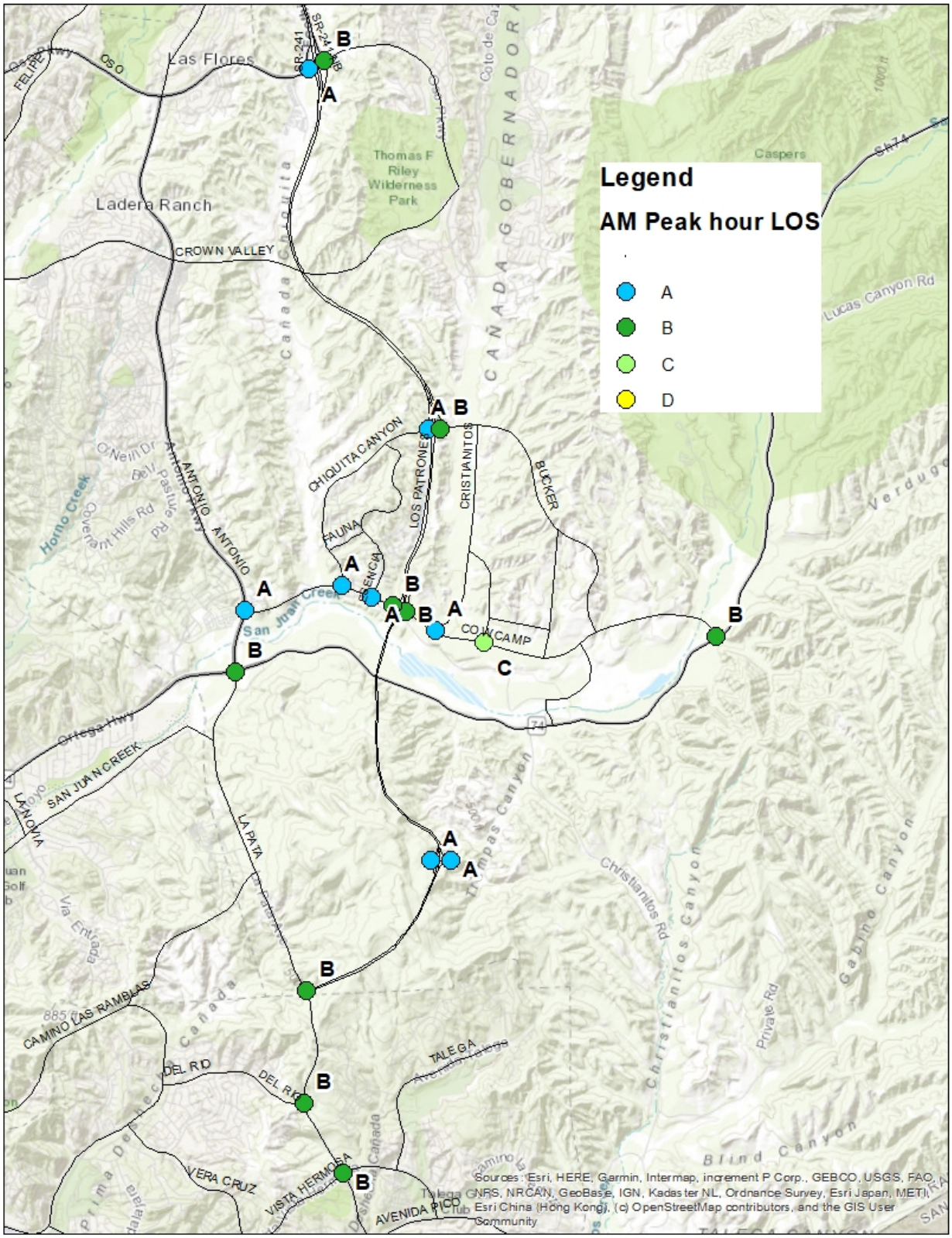
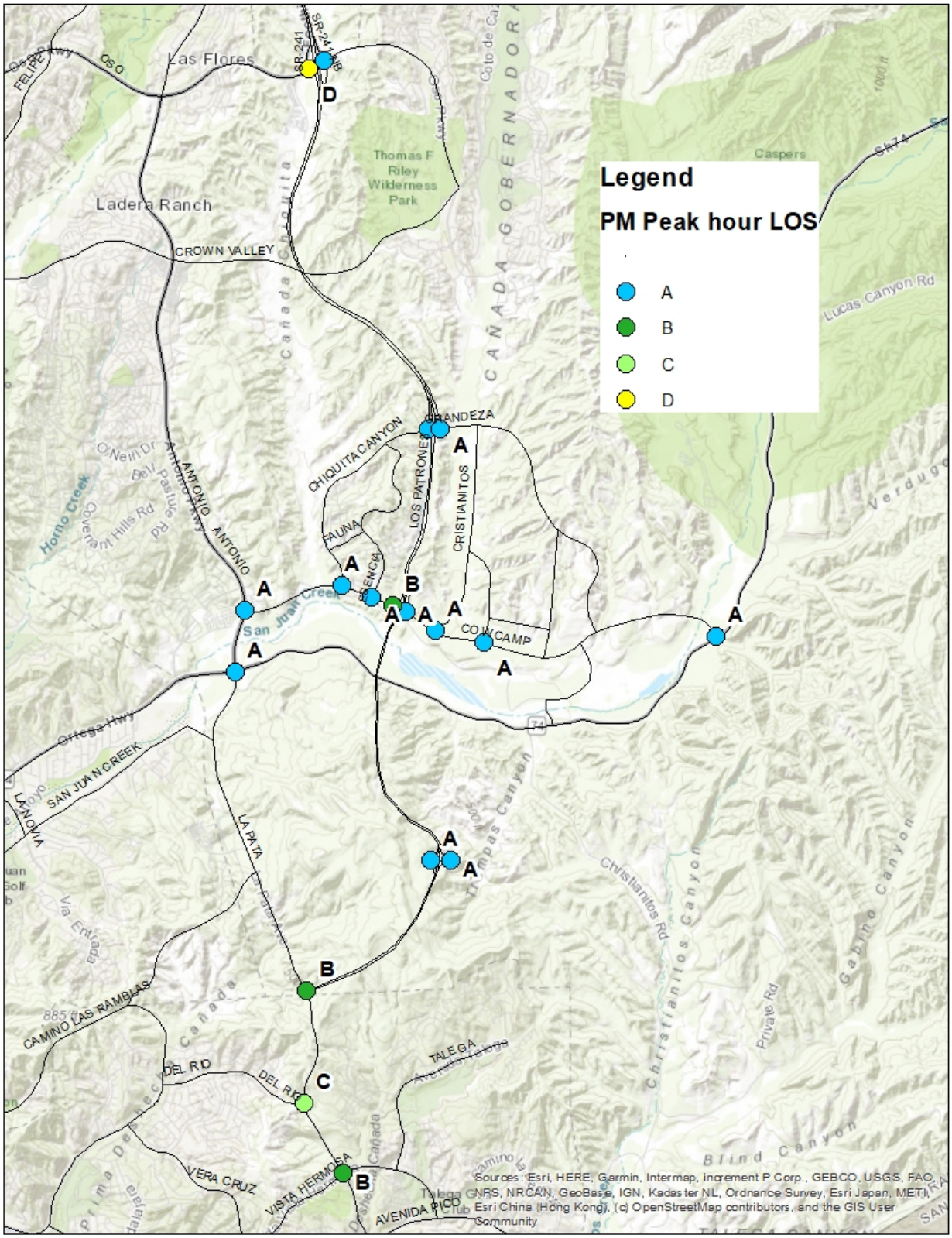


Figure 6-9: Future Year (4-Lane Ortega Highway) With Project PM Peak Hour Intersection V/C Ratio



In addition to ICU analysis, the following four (4) Caltrans locations were analyzed using HCM methodology as shown in **Table 6-6** and **Table 6-7.** Detailed HCM analysis worksheets are included in **Appendix B**.

Table 6-6: Future Year (4-Lane Ortega Highway) No Project Intersection HCM LOS

#	Intersection Location	Control	AM Peak Hour		PM Peak Hour		Deficient?
			Delay	LOS	Delay	LOS	(Yes/No)
1	Ortega Highway/Antonio Parkway	Signalized	76.5	E	64.2	E	Yes
6	Cow Camp Road/Ortega Highway	Roundabout	10.8	B	11.1	B	No
9	Oso Parkway/Los Patrones Parkway & SR-241 SB Ramp	Signalized	32.9	C	107.8	F	Yes
10	Oso Parkway/Los Patrones Parkway & SR-241 NB Ramp	Signalized	51.4	D	18.6	B	No

Table 6-7: Future Year (4-Lane Ortega Highway) With Project Intersection HCM LOS

#	Intersection Location	Control	AM Peak Hour		PM Peak Hour		Deficient?
			Delay	LOS	Delay	LOS	(Yes/No)
1	Ortega Highway/Antonio Parkway	Signalized	39.0	D	26.8	C	No
6	Cow Camp Road/Ortega Highway	Roundabout	11.9	B	11.1	B	No
9	Oso Parkway/Los Patrones Parkway & SR-241 SB Ramp	Signalized	7.2	A	76.4	E	Yes
10	Oso Parkway/Los Patrones Parkway & SR-241 NB Ramp	Signalized	52.1	D	18.5	B	No

In the With Project scenario, Oso Parkway/Los Patrones Parkway & SR-241 SB Ramp is forecast to operate at LOS E in the PM peak although the delay is reduced compared to the No Project scenario where the intersection operates at LOS F. The deficiently is mainly due to heavy forecast eastbound right-turn volumes from Oso Parkway to southbound Los Patrones Parkway.

The bridge over Los Patrones Parkway at Oso Parkway is currently being widened and the County advised that the future eastbound configuration would have two (2) through lanes and one (1) exclusive right-turn lane with a Class 2 bike-lane in the middle. However, the eastbound approach lane configuration prior to bridge construction was one (1) through lane, one (1) shared through-right lane, and one (1) right turn lane. If this existing configuration were assumed instead, the LOS would become D. The LOS would also operate satisfactorily using one (1) eastbound through lane and two (2) right-turn lanes, so the intersection does appear to have more than sufficient capacity to accommodate future traffic volumes.

In the No Project scenario, Ortega Highway at Antonio Parkway is forecast to operate at LOS E in the AM peak and PM peak. However, the reduction in volumes on Ortega Highway due to the Los Patrones Parkway extension eliminates the deficiency in the With Project scenario.

Cow Camp Road and Ortega Highway is assumed to operate as a 2-lane roundabout (i.e. two lanes entering and departing the roundabout).

7 PEAK HOUR SEGMENT ANALYSIS

OCTAs primary screening criteria for identifying deficiencies for the MPAH is based on V/C using a daily capacity. While daily capacity provides a good overall sense of "how busy" a segment is, it is a somewhat subjective metric and open to interpretation. It does not necessarily represent the maximum daily throughput of traffic on the segment and also it does not represent how the segment will perform during peak hours. **Table 7-1** shows the one roadway segment that is forecast to operate at a deficient level of service at the daily level along with the peak hour volumes, which is Avenida La Pata between Camino del Rio and Avenida Vista Hermosa.

The peak hour maximum directional volume (higher of AM or PM) was used to calculate the maximum peak hour V/C ratio using an assumed peak hour arterial capacity of 1,700 vehicles per lane, per hour, based on the saturation flow rate from OCTA's 2019 Congestion Management Program (CMP).

Using this assumed capacity, the segment is forecast to operate at an acceptable level of service during the peak hour in the With Project condition. In addition, since the intersection analysis has shown that the two intersections adjacent to this segment are forecast to operate at LOS D or better it can be concluded that the segment would function satisfactorily in peak hour conditions.

Table 7-1 Peak Hour Arterial Analysis

					Daily				AM Peak		PM Peak Hour		Max Peak Hour		
ID	Segment	Between	Ortega	Scenario	Volume	Capacity	V/C	LOS	NB/EB	WB/SB	NB/EB	WB/SB	Capacity [1]	Max V/C	LOS
46	Avenida La Pata	Camino Del Rio and Avenida Vista Hermosa	2-lanes	No Project	25,300	37,500	0.67	B	1,560	1,000	1,110	1,500	3,400	0.46	A
				With Project	32,500	37,500	0.87	D	1,750	1,310	1,430	1,680	3,400	0.51	A
			4-lanes	No Project	25,500	37,500	0.68	B	1,570	1,000	1,120	1,520	3,400	0.46	A
				With Project	32,600	37,500	0.87	D	1,750	1,310	1,440	1,690	3,400	0.51	A

[1] Notes: Peak hour arterial capacity assumed at 1,700 per hour per lane, consistent with OCTA'S Congestion Management Program (CMP), 2019

0.81 = Deficient LOS D

8 FINDINGS AND RECOMMENDATIONS

- Findings for the two-lane Ortega Highway alternatives and the four-lane Ortega Highway alternatives are broadly similar.
- The addition of the Los Patrones Parkway extension causes a reassignment of traffic and results in the following:
  - Reduction in traffic on Ortega Highway, Avenida La Pata and Antonio Parkway north of Los Patrones Parkway; and
  - Increase in traffic on Cow Camp Road west of Ortega Highway and on Avenida La Pata south of Los Patrones Parkway. The increase in volumes on Avenida La Pata results in a segment of Avenida La Pata between Camino del Rio and Avenida Vista Hermosa degrading from LOS B in the No Project scenario to LOS D in the With Project Scenario. However, both adjacent intersections for this segment operate satisfactorily during peak hours and peak hour segment analysis supports the conclusion that this segment will operate satisfactorily in the With Project conditions.
- Using the ICU methodology, all study intersections are forecast to operate at LOS D or better in both the No Project and With Project scenarios for both Ortega Highway alternatives.
- Using the HCM methodology, all Caltrans intersections operate at a satisfactory LOS in the With Project scenarios with the following exception:
  - At the intersection of Oso Parkway and Los Patrones, the heavy eastbound right-turn movement results in LOS E in the PM peak hour, although this is actually an improvement compared to the No Project scenario where the intersection operates at LOS F. However, using alternative striping on the eastbound approach would permit the intersection to operate at a satisfactory LOS without needing to widen the intersection.

APPENDIX A

Intersection ICU Analysis Worksheets

Project:	**South County MPAH**									
Scenario:	**2045 No Project (2L Ortega Hwy)**									
ID:	**1**									
Intersection:	**Ortega Highway/Antonio Parkway**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL	2.0		3,400	100	0.03	*	3,400	100	0.03	
NBT	3.0		5,100	1,200	0.24		5,100	1,805	0.35	*
NBR	1.0		1,700	220	0.13		1,700	350	0.21	
SBL	1.0		1,700	20	0.01		1,700	50	0.03	*
SBT	3.0		5,100	1,930	0.38	*	5,100	750	0.15	
SBR	2.0		3,400	510	0.15		3,400	330	0.10	
EBL	2.0		3,400	290	0.09		3,400	480	0.14	
EBT	2.0		3,400	300	0.09	*	3,400	330	0.10	
EBR	1.0		1,700	300	0.18	*	1,700	300	0.18	*
WBL	1.0		1,700	350	0.21	*	1,700	230	0.14	
WBT	2.0		3,400	340	0.10		3,400	310	0.09	
WBR	1.0		1,700	60	0.04		1,700	30	0.02	
				N/S Movements	0.41			N/S Movements	0.38	
				E/W Movements	0.35			E/W Movements	0.28	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.81**				**0.72**	
LEVEL OF SERVICE (LOS)					**D**				**C**	

Project:	**South County MPAH**									
Scenario:	**2045 No Project (2L Ortega Hwy)**									
ID:	**2**									
Intersection:	**Cow Camp Road/Antonio Parkway**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL										*
NBT	3.0		5,100	740	0.15	*	5,100	420	0.08	
NBR	1.0	Yes	1,700	810			1,700	2,550		
SBL	2.0		3,400	380	0.11	*	3,400	340	0.10	
SBT	3.0		5,100	670	0.13		5,100	760	0.33	*
SBR								910		
EBL										
EBT						*				*
EBR										
WBL	3.0		5,100	1,780	0.35	*	5,100	710	0.14	*
WBT										
WBR	2.0		3,400	820	0.24	*	3,400	1,050	0.31	*
				N/S Movements	0.26			N/S Movements	0.33	
				E/W Movements	0.35			E/W Movements	0.21	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.66**				**0.59**	
LEVEL OF SERVICE (LOS)					**B**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 No Project (2L Ortega Hwy)**									
ID:	**3**									
Intersection:	**Cow Camp Road/Chiquita Canyon Drive**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL				5				5		
NBT	1.0		1,700	5	0.01	*	1,700	5	0.01	*
NBR				5				5		
SBL	1.0		1,700	10	0.01	*	1,700	10	0.01	*
SBT										
SBR	2.0		3,400	650	0.19	*	3,400	330	0.10	
EBL	2.0		3,400	180	0.05	*	3,400	540	0.16	*
EBT	3.0		5,100	1,050	0.21		5,100	1,820	0.36	
EBR				5				10		
WBL	1.0		1,700	5	0.00		1,700	10	0.01	
WBT	3.0		5,100	2,050	0.40	*	5,100	1,320	0.26	*
WBR	1.0		1,700	10	0.01		1,700	10	0.01	
				N/S Movements	0.14			N/S Movements	0.01	
				E/W Movements	0.45			E/W Movements	0.42	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.64**				**0.48**	
LEVEL OF SERVICE (LOS)					**B**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 No Project (2L Ortega Hwy)**									
ID:	**4**									
Intersection:	**Cow Camp Road/Ranch Canyon**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL	1.0		1,700	240	0.14	*	1,700	50	0.03	*
NBT	1.0		1,700	10	0.01		1,700	10	0.01	
NBR	1.0		1,700	20	0.01		1,700	40	0.02	
SBL	1.0		1,700	10	0.01		1,700	10	0.01	
SBT	1.0		1,700	10	0.01	*	1,700	20	0.01	*
SBR	1.0		1,700	130	0.08	*	1,700	170	0.10	*
EBL	2.0		3,400	180	0.05	*	3,400	120	0.04	
EBT	3.0		5,100	850	0.17		5,100	2,000	0.39	*
EBR	1.0		1,700	30	0.02		1,700	200	0.12	
WBL	1.0		1,700	30	0.02		1,700	30	0.02	*
WBT	3.0		5,100	2,240	0.44	*	5,100	1,070	0.21	
WBR	1.0		1,700	10	0.01		1,700	10	0.01	
				N/S Movements	0.16			N/S Movements	0.09	
				E/W Movements	0.49			E/W Movements	0.41	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.71**				**0.55**	
LEVEL OF SERVICE (LOS)					**C**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 No Project (2L Ortega Hwy)**									
ID:	**5**									
Intersection:	**Cow Camp Road/Ledago Road**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL										
NBT						*				*
NBR										
SBL	1.0		1,700	30	0.02	*	1,700	10	0.01	*
SBT										
SBR	1.0		1,700	440	0.26	*	1,700	150	0.09	
EBL	2.0		3,400	100	0.03	*	3,400	370	0.11	
EBT	2.0		3,400	670	0.20		3,400	1,200	0.35	*
EBR										
WBL										*
WBT	2.0		3,400	1,300	0.38	*	3,400	760	0.22	
WBR	1.0		1,700	10	0.01		1,700	30	0.02	
				N/S Movements	0.23			N/S Movements	0.01	
				E/W Movements	0.41			E/W Movements	0.35	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.69**				**0.41**	
LEVEL OF SERVICE (LOS)					**B**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 No Project (2L Ortega Hwy)**									
ID:	**6**									
Intersection:	**Cow Camp Road/Ortega Highway**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL	1.0		1,700	10	0.01		1,700	10	0.01	*
NBT	1.0		1,700	520	0.31	*	1,700	440	0.26	
NBR										
SBL						*				
SBT	1.0		1,700	460	0.27		1,700	490	0.29	*
SBR	1.0		1,700	940	0.55	*	1,700	530	0.31	
EBL	2.0		3,400	500	0.15	*	3,400	890	0.26	*
EBT										
EBR	1.0		1,700	10	0.01		1,700	10	0.01	
WBL										
WBT						*				*
WBR										
				N/S Movements	0.41			N/S Movements	0.29	
				E/W Movements	0.15			E/W Movements	0.26	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.61**				**0.61**	
LEVEL OF SERVICE (LOS)					**B**				**B**	

Project:	**South County MPAH**									
Scenario:	**2045 No Project (2L Ortega Hwy)**									
ID:	**7**									
Intersection:	**Chiquita Canyon Drive/Los Patrones Parkway SB Ramp**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL										
NBT						*				*
NBR										
SBL	1.0		1,700	600	0.35	*	1,700	660	0.39	*
SBT										
SBR	1.0		1,700	230	0.14	*	1,700	370	0.22	*
EBL										
EBT	2.0		3,400	420	0.12	*	3,400	480	0.14	*
EBR										
WBL						*				*
WBT	2.0		3,400	180	0.05		3,400	220	0.06	
WBR										
				N/S Movements	0.35			N/S Movements	0.39	
				E/W Movements	0.12			E/W Movements	0.14	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.53**				**0.58**	
LEVEL OF SERVICE (LOS)					**A**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 No Project (2L Ortega Hwy)**									
ID:	**8**									
Intersection:	**Chiquita Canyon Drive/Los Patrones Parkway NB Ramp**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL										
NBT										
NBR										
SBL										
SBT										
SBR										
EBL	1.0		1,700	290	0.17		1,700	260	0.15	
EBT	1.0		1,700	720	0.42	*	1,700	880	0.52	*
EBR										
WBL						*				*
WBT	2.0		3,400	180	0.05		3,400	220	0.06	
WBR	1.0		1,700	720	0.42	*	1,700	620	0.36	*
				N/S Movements	0.00			N/S Movements	0.00	
				E/W Movements	0.59			E/W Movements	0.52	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.64**				**0.57**	
LEVEL OF SERVICE (LOS)					**B**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 No Project (2L Ortega Hwy)**									
ID:	**9**									
Intersection:	**Oso Parkway/Los Patrones Parkway & SR-241 SB Ramp**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL										
NBT						*				*
NBR										
SBL	2.0		3,400	40	0.01	*	3,400	230	0.07	*
SBT										
SBR	1.0		1,700	40	0.02	*	1,700	600	0.35	*
EBL										*
EBT	2.0		3,400	990	0.29	*	3,400	530	0.16	
EBR	1.0		1,700	690	0.41	*	1,700	810	0.48	*
WBL	2.0		3,400	60	0.02	*	3,400	40	0.01	
WBT	3.0		5,100	1,310	0.26		5,100	1,050	0.21	*
WBR										
				N/S Movements	0.02			N/S Movements	0.35	
				E/W Movements	0.42			E/W Movements	0.49	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.50**				**0.89**	
LEVEL OF SERVICE (LOS)					**A**				**D**	

Project:	**South County MPAH**									
Scenario:	**2045 No Project (2L Ortega Hwy)**									
ID:	**10**									
Intersection:	**Oso Parkway/Los Patrones Parkway & SR-241 NB Ramp**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL	2.0		3,400	730	0.21	*	3,400	670	0.20	*
NBT										
NBR	1.0		1,700	40	0.02	*	1,700	50	0.03	*
SBL										
SBT						*				*
SBR										
EBL	2.0		3,400	740	0.22	*	3,400	20	0.01	
EBT	2.0		3,400	290	0.09		3,400	740	0.22	*
EBR										
WBL										*
WBT	2.0		3,400	630	0.19	*	3,400	430	0.13	
WBR	1.0		1,700	280	0.16		1,700	30	0.02	
				N/S Movements	0.21			N/S Movements	0.20	
				E/W Movements	0.40			E/W Movements	0.22	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.67**				**0.46**	
LEVEL OF SERVICE (LOS)					**B**				**A**	

Project:	**South County MPAH**							
Scenario:	**2045 No Project (2L Ortega Hwy)**							
ID:	**11**							
Intersection:	**Los Patrones/La Pata**							
			AM PEAK HOUR			**PM PEAK HOUR**		
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**	**CAPACITY**	**VOLUME**	**V/C**
NBL								
NBT								
NBR								
SBL								
SBT								
SBR								
EBL								
EBT								
EBR								
WBL								
WBT								
WBR								
				N/S Movements	0.00		N/S Movements	0.00
				E/W Movements	0.00		E/W Movements	0.00
				Yellow Clearance	0.05		Yellow Clearance	0.05
TOTAL CAPACITY UTILIZATION								
LEVEL OF SERVICE (LOS)					**#N/A**			**#N/A**

Project:	**South County MPAH**							
Scenario:	**2045 No Project (2L Ortega Hwy)**							
ID:	**12**							
Intersection:	**PA5 Future Road / Los Patrones Parkway NB Ramp**							
			AM PEAK HOUR			**PM PEAK HOUR**		
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**	**CAPACITY**	**VOLUME**	**V/C**
NBL								
NBT								
NBR								
SBL								
SBT								
SBR								
EBL								
EBT								
EBR								
WBL								
WBT								
WBR								
				N/S Movements	0.00		N/S Movements	0.00
				E/W Movements	0.00		E/W Movements	0.00
				Yellow Clearance	0.05		Yellow Clearance	0.05
TOTAL CAPACITY UTILIZATION								
LEVEL OF SERVICE (LOS)					**#N/A**			**#N/A**

Project:	**South County MPAH**
Scenario:	**2045 No Project (2L Ortega Hwy)**
ID:	**13**
Intersection:	**PA5 Future Road / Los Patrones Parkway SB Ramp**

			AM PEAK HOUR			PM PEAK HOUR		
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**	**CAPACITY**	**VOLUME**	**V/C**
NBL								
NBT								
NBR								
SBL								
SBT								
SBR								
EBL								
EBT								
EBR								
WBL								
WBT								
WBR								
				N/S Movements	0.00		N/S Movements	0.00
				E/W Movements	0.00		E/W Movements	0.00
				Yellow Clearance	0.05		Yellow Clearance	0.05
TOTAL CAPACITY UTILIZATION								
LEVEL OF SERVICE (LOS)					**#N/A**			**#N/A**

Project:	**South County MPAH**									
Scenario:	**2045 No Project (2L Ortega Hwy)**									
ID:	**14**									
Intersection:	**Cow Camp/Essencia**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL				5				10		
NBT	1.0		1,700	5	0.01	*	1,700	10	0.02	*
NBR				5				10		
SBL	1.0		1,700	140	0.08	*	1,700	50	0.03	*
SBT										
SBR	1.0		1,700	150	0.09	*	1,700	60	0.04	
EBL	1.0		1,700	40	0.02	*	1,700	130	0.08	
EBT	3.0		5,100	1,000	0.20		5,100	1,680	0.33	*
EBR				5				10		
WBL	1.0		1,700	5	0.00		1,700	10	0.01	*
WBT	3.0		5,100	1,900	0.37	*	5,100	1,260	0.25	
WBR	1.0		1,700	50	0.03		1,700	120	0.07	
				N/S Movements	0.09			N/S Movements	0.05	
				E/W Movements	0.40			E/W Movements	0.34	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.54**				**0.43**	
LEVEL OF SERVICE (LOS)					**A**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 No Project (2L Ortega Hwy)**									
ID:	**15**									
Intersection:	**Cow Camp / Las Patrones Parkway**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL										
NBT						*				*
NBR										
SBL	2.0		3,400	460	0.14	*	3,400	640	0.19	*
SBT										
SBR	2.0		3,400	60	0.02		3,400	420	0.12	*
EBL	2.0		3,400	540	0.16	*	3,400	60	0.02	
EBT	3.0		5,100	1,140	0.22		5,100	1,730	0.34	*
EBR										
WBL										*
WBT	3.0		5,100	1,890	0.37	*	5,100	950	0.19	
WBR	1.0		1,700	730	0.43		1,700	330	0.19	
				N/S Movements	0.14			N/S Movements	0.19	
				E/W Movements	0.53			E/W Movements	0.34	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.71**				**0.58**	
LEVEL OF SERVICE (LOS)					**C**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 No Project (2L Ortega Hwy)**									
ID:	**16**									
Intersection:	**La Pata/Camino Del Rio**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL	1.0		1,600	120	0.08	*	1,600	220	0.14	*
NBT	2.0		3,200	870	0.27		3,200	1,140	0.36	
NBR										
SBL										
SBT	2.0		3,200	780	0.28	*	3,200	770	0.27	*
SBR				120				90		
EBL	1.0		1,600	140	0.09	*	1,600	70	0.04	*
EBT										
EBR	1.0		1,600	220	0.14	*	1,600	260	0.16	*
WBL										
WBT						*				*
WBR										
				N/S Movements	0.36			N/S Movements	0.41	
				E/W Movements	0.09			E/W Movements	0.04	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.49**				**0.50**	
LEVEL OF SERVICE (LOS)					**A**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 No Project (2L Ortega Hwy)**									
ID:	**17**									
Intersection:	**La Pata/Avenida Hermosa**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL	2.0		3,200	60	0.02		3,200	50	0.02	
NBT	3.0		4,800	160	0.03	*	4,800	510	0.11	*
NBR	1.0		1,600	10	0.01		1,600	20	0.01	
SBL	2.0		3,200	310	0.10	*	3,200	290	0.09	*
SBT	3.0		4,800	530	0.11		4,800	220	0.05	
SBR	1.0		1,600	670	0.42	*	1,600	610	0.38	*
EBL	2.0		3,200	620	0.19	*	3,200	610	0.19	*
EBT	2.0		3,200	140	0.04		3,200	310	0.10	
EBR	1.0		1,600	50	0.03		1,600	10	0.01	
WBL	2.0		3,200	20	0.01		3,200	20	0.01	
WBT	2.0		3,200	390	0.12	*	3,200	190	0.06	*
WBR	1.0		1,600	280	0.18		1,600	300	0.19	*
				N/S Movements	0.24			N/S Movements	0.21	
				E/W Movements	0.32			E/W Movements	0.29	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.61**				**0.54**	
LEVEL OF SERVICE (LOS)					**B**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (2L Ortega Hwy)**									
ID:	**1**									
Intersection:	**Ortega Highway/Antonio Parkway**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL	2.0		3,400	70	0.02	*	3,400	130	0.04	
NBT	3.0		5,100	670	0.13		5,100	1,460	0.29	*
NBR	1.0		1,700	80	0.05		1,700	210	0.12	
SBL	1.0		1,700	10	0.01		1,700	20	0.01	*
SBT	3.0		5,100	1,200	0.24	*	5,100	530	0.10	
SBR	2.0		3,400	490	0.14		3,400	330	0.10	
EBL	2.0		3,400	330	0.10		3,400	540	0.16	*
EBT	2.0		3,400	240	0.07	*	3,400	330	0.10	
EBR	1.0		1,700	320	0.19	*	1,700	170	0.10	
WBL	1.0		1,700	270	0.16	*	1,700	50	0.03	
WBT	2.0		3,400	340	0.10		3,400	300	0.09	*
WBR	1.0		1,700	50	0.03		1,700	10	0.01	
				N/S Movements	0.26			N/S Movements	0.30	
				E/W Movements	0.33			E/W Movements	0.25	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.63**				**0.60**	
LEVEL OF SERVICE (LOS)					**B**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (2L Ortega Hwy)**									
ID:	**2**									
Intersection:	**Cow Camp Road/Antonio Parkway**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL										
NBT	3.0		5,100	660	0.13	*	5,100	420	0.08	*
NBR	1.0	Yes	1,700	430			1,700	1,790		
SBL	2.0		3,400	370	0.11	*	3,400	460	0.14	*
SBT	3.0		5,100	680	0.13		5,100	600	0.12	
SBR										
EBL										
EBT						*				*
EBR										
WBL	3.0		5,100	1,220	0.24	*	5,100	260	0.05	*
WBT										
WBR	2.0		3,400	880	0.26	*	3,400	970	0.29	*
				N/S Movements	0.24			N/S Movements	0.22	
				E/W Movements	0.24			E/W Movements	0.15	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.53**				**0.42**	
LEVEL OF SERVICE (LOS)					**A**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (2L Ortega Hwy)**									
ID:	**3**									
Intersection:	**Cow Camp Road/Chiquita Canyon Drive**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL				5				5		
NBT	1.0		1,700	5	0.01	*	1,700	5	0.01	*
NBR				5				5		
SBL	1.0		1,700	10	0.01	*	1,700	10	0.01	*
SBT										
SBR	2.0		3,400	590	0.17	*	3,400	300	0.09	
EBL	2.0		3,400	150	0.04	*	3,400	490	0.14	*
EBT	3.0		5,100	660	0.13		5,100	1,480	0.29	
EBR				5				10		
WBL	1.0		1,700	5	0.00		1,700	10	0.01	
WBT	3.0		5,100	1,670	0.33	*	5,100	940	0.18	*
WBR	1.0		1,700	10	0.01		1,700	10	0.01	
				N/S Movements	0.13			N/S Movements	0.01	
				E/W Movements	0.37			E/W Movements	0.33	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.55**				**0.39**	
LEVEL OF SERVICE (LOS)					**A**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (2L Ortega Hwy)**									
ID:	**4**									
Intersection:	**Cow Camp Road/Ranch Canyon**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL										
NBT						*				*
NBR										
SBL	1.0		1,700	10	0.01	*	1,700	10	0.01	*
SBT										
SBR	2.0		3,400	160	0.05		3,400	200	0.06	*
EBL	2.0		3,400	210	0.06	*	3,400	140	0.04	
EBT	3.0		5,100	1,070	0.21		5,100	2,120	0.42	*
EBR										
WBL										*
WBT	3.0		5,100	2,340	0.46	*	5,100	1,250	0.25	
WBR	1.0		1,700	10	0.01		1,700	10	0.01	
				N/S Movements	0.01			N/S Movements	0.02	
				E/W Movements	0.52			E/W Movements	0.42	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.58**				**0.48**	
LEVEL OF SERVICE (LOS)					**A**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (2L Ortega Hwy)**									
ID:	**5**									
Intersection:	**Cow Camp Road/Ledago Road**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL										
NBT						*				*
NBR										
SBL	1.0		1,700	30	0.02	*	1,700	10	0.01	*
SBT										
SBR	1.0		1,700	460	0.27	*	1,700	160	0.09	
EBL	2.0		3,400	110	0.03	*	3,400	390	0.11	*
EBT	2.0		3,400	870	0.26		3,400	1,250	0.37	
EBR										
WBL										
WBT	2.0		3,400	1,340	0.39	*	3,400	910	0.27	*
WBR	1.0		1,700	10	0.01		1,700	30	0.02	
				N/S Movements	0.24			N/S Movements	0.01	
				E/W Movements	0.43			E/W Movements	0.38	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.71**				**0.44**	
LEVEL OF SERVICE (LOS)					**C**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (2L Ortega Hwy)**									
ID:	**6**									
Intersection:	**Cow Camp Road/Ortega Highway**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL	1.0		1,700	10	0.01	*	1,700	10	0.01	
NBT	1.0		1,700	340	0.20		1,700	380	0.22	*
NBR										
SBL										*
SBT	1.0		1,700	420	0.25	*	1,700	340	0.20	
SBR	1.0		1,700	980	0.58	*	1,700	680	0.40	
EBL	2.0		3,400	680	0.20	*	3,400	950	0.28	*
EBT										
EBR	1.0		1,700	10	0.01		1,700	10	0.01	
WBL										
WBT						*				*
WBR										
				N/S Movements	0.38			N/S Movements	0.22	
				E/W Movements	0.20			E/W Movements	0.28	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.63**				**0.55**	
LEVEL OF SERVICE (LOS)					**B**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (2L Ortega Hwy)**									
ID:	**7**									
Intersection:	**Chiquita Canyon Drive/Los Patrones Parkway SB Ramp**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL										
NBT						*				*
NBR										
SBL	1.0		1,700	590	0.35	*	1,700	660	0.39	*
SBT										
SBR	1.0		1,700	230	0.14	*	1,700	370	0.22	*
EBL										
EBT	2.0		3,400	430	0.13	*	3,400	460	0.14	*
EBR										
WBL						*				*
WBT	2.0		3,400	170	0.05		3,400	220	0.06	
WBR										
				N/S Movements	0.35			N/S Movements	0.39	
				E/W Movements	0.13			E/W Movements	0.14	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.52**				**0.57**	
LEVEL OF SERVICE (LOS)					**A**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (2L Ortega Hwy)**									
ID:	**8**									
Intersection:	**Chiquita Canyon Drive/Los Patrones Parkway NB Ramp**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL										
NBT										
NBR										
SBL										
SBT										
SBR										
EBL	1.0		1,700	310	0.18		1,700	260	0.15	
EBT	1.0		1,700	710	0.42	*	1,700	860	0.51	*
EBR										
WBL						*				*
WBT	2.0		3,400	170	0.05		3,400	220	0.06	
WBR	1.0		1,700	690	0.41	*	1,700	610	0.36	*
				N/S Movements	0.00			N/S Movements	0.00	
				E/W Movements	0.59			E/W Movements	0.51	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.64**				**0.56**	
LEVEL OF SERVICE (LOS)					**B**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (2L Ortega Hwy)**									
ID:	**9**									
Intersection:	**Oso Parkway/Los Patrones Parkway & SR-241 SB Ramp**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL										
NBT						*				*
NBR										
SBL	2.0		3,400	30	0.01	*	3,400	230	0.07	*
SBT										
SBR	1.0		1,700	40	0.02	*	1,700	590	0.35	*
EBL										*
EBT	2.0		3,400	980	0.29	*	3,400	520	0.15	
EBR	1.0		1,700	630	0.37	*	1,700	690	0.41	*
WBL	2.0		3,400	80	0.02	*	3,400	50	0.01	
WBT	3.0		5,100	1,190	0.23		5,100	1,000	0.20	*
WBR										
				N/S Movements	0.02			N/S Movements	0.35	
				E/W Movements	0.39			E/W Movements	0.42	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.47**				**0.82**	
LEVEL OF SERVICE (LOS)					**A**				**D**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (2L Ortega Hwy)**									
ID:	**10**									
Intersection:	**Oso Parkway/Los Patrones Parkway & SR-241 NB Ramp**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL	2.0		3,400	630	0.19	*	3,400	620	0.18	*
NBT										
NBR	1.0		1,700	50	0.03	*	1,700	70	0.04	*
SBL										
SBT						*				*
SBR										
EBL	2.0		3,400	730	0.21	*	3,400	20	0.01	
EBT	2.0		3,400	280	0.08		3,400	720	0.21	*
EBR										
WBL										*
WBT	2.0		3,400	640	0.19	*	3,400	430	0.13	
WBR	1.0		1,700	270	0.16		1,700	30	0.02	
				N/S Movements	0.19			N/S Movements	0.18	
				E/W Movements	0.40			E/W Movements	0.21	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.64**				**0.44**	
LEVEL OF SERVICE (LOS)					**B**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (2L Ortega Hwy)**									
ID:	**11**									
Intersection:	**Los Patrones/La Pata**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL										*
NBT	2.0		3,400	410	0.12	*	3,400	400	0.12	
NBR	1.0		1,700	1,090	0.64	*	1,700	1,070	0.63	*
SBL	1.0		1,700			*	1,700	10	0.01	
SBT	2.0		3,400	400	0.12		3,400	500	0.15	*
SBR										
EBL										
EBT						*				*
EBR				-				-		
WBL	2.0		3,400	1,090	0.32	*	3,400	1,090	0.32	*
WBT										
WBR	1.0		1,700				1,700			
				N/S Movements	0.32			N/S Movements	0.31	
				E/W Movements	0.32			E/W Movements	0.32	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.69**				**0.69**	
LEVEL OF SERVICE (LOS)					**B**				**B**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (2L Ortega Hwy)**									
ID:	**12**									
Intersection:	**PA5 Future Road / Los Patrones Parkway NB Ramp**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL	1.0		1,700	30	0.02	*	1,700	60	0.04	*
NBT										
NBR	1.0		1,700	10	0.01	*	1,700	50	0.03	*
SBL										
SBT						*				*
SBR										
EBL	1.0		1,700	90	0.05	*	1,700	30	0.02	
EBT	2.0		3,400	20	0.01		3,400	140	0.04	*
EBR										
WBL										*
WBT	2.0		3,400	90	0.03	*	3,400	40	0.01	
WBR	1.0		1,700	130	0.08	*	1,700	30	0.02	*
				N/S Movements	0.02			N/S Movements	0.04	
				E/W Movements	0.13			E/W Movements	0.04	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.20**				**0.13**	
LEVEL OF SERVICE (LOS)					**A**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (2L Ortega Hwy)**									
ID:	**13**									
Intersection:	**PA5 Future Road / Los Patrones Parkway SB Ramp**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL										
NBT						*				*
NBR										
SBL	1.0		1,700	30	0.02	*	1,700	80	0.05	*
SBT										
SBR	1.0		1,700	10	0.01	*	1,700	110	0.06	*
EBL										
EBT	2.0		3,400	50	0.01	*	3,400	80	0.02	*
EBR	1.0		1,700	60	0.04	*	1,700	20	0.01	
WBL	1.0		1,700	50	0.03	*	1,700	40	0.02	*
WBT	2.0		3,400	100	0.03		3,400	60	0.02	
WBR										
				N/S Movements	0.02			N/S Movements	0.06	
				E/W Movements	0.06			E/W Movements	0.05	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.13**				**0.16**	
LEVEL OF SERVICE (LOS)					**A**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (2L Ortega Hwy)**									
ID:	**14**									
Intersection:	**Cow Camp/Essencia**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL				5				10		
NBT	1.0		1,700	5	0.01	*	1,700	10	0.02	*
NBR				5				10		
SBL	1.0		1,700	190	0.11	*	1,700	90	0.05	*
SBT										
SBR	1.0		1,700	140	0.08	*	1,700	60	0.04	
EBL	1.0		1,700	40	0.02	*	1,700	130	0.08	
EBT	3.0		5,100	620	0.12		5,100	1,350	0.27	*
EBR				5				10		
WBL	1.0		1,700	5	0.00		1,700	10	0.01	*
WBT	3.0		5,100	1,530	0.30	*	5,100	890	0.17	
WBR	1.0		1,700	80	0.05		1,700	180	0.11	
				N/S Movements	0.12			N/S Movements	0.07	
				E/W Movements	0.32			E/W Movements	0.27	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.49**				**0.39**	
LEVEL OF SERVICE (LOS)					**A**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (2L Ortega Hwy)**									
ID:	**15S**									
Intersection:	**Cow Camp / Las Patrones Parkway SB Ramp**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL										
NBT						*				*
NBR										
SBL	2.0		3,400	340	0.10	*	3,400	300	0.09	*
SBT										
SBR	2.0		3,400	20	0.01	*	3,400	150	0.04	*
EBL										
EBT	3.0		5,100	720	0.14	*	5,100	1,350	0.26	*
EBR	1.0		1,700	90	0.05		1,700	100	0.06	
WBL	1.0		1,700	610	0.36	*	1,700	400	0.24	*
WBT	3.0		5,100	1,590	0.31		5,100	920	0.18	
WBR										
				N/S Movements	0.10			N/S Movements	0.09	
				E/W Movements	0.50			E/W Movements	0.50	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.65**				**0.64**	
LEVEL OF SERVICE (LOS)					**B**				**B**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (2L Ortega Hwy)**									
ID:	**15N**									
Intersection:	**Cow Camp / Las Patrones Parkway NB Ramp**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL	2.0		3,400	100	0.03	*	3,400	100	0.03	*
NBT										
NBR	2.0		3,400	390	0.11	*	3,400	640	0.19	*
SBL										
SBT						*				*
SBR										
EBL	2.0		3,400	180	0.05	*	3,400	20	0.01	
EBT	3.0		5,100	880	0.17		5,100	1,630	0.32	*
EBR										
WBL										*
WBT	3.0		5,100	2,110	0.41	*	5,100	1,220	0.24	
WBR	1.0		1,700	390	0.23		1,700	230	0.14	
				N/S Movements	0.11			N/S Movements	0.19	
				E/W Movements	0.47			E/W Movements	0.32	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.63**				**0.56**	
LEVEL OF SERVICE (LOS)					**B**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (2L Ortega Hwy)**									
ID:	**16**									
Intersection:	**La Pata/Camino Del Rio**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL	1.0		1,600	120	0.08	*	1,600	190	0.12	*
NBT	2.0		3,200	1,240	0.39		3,200	1,640	0.51	
NBR										
SBL										
SBT	2.0		3,200	1,170	0.43	*	3,200	1,290	0.47	*
SBR				210				220		
EBL	1.0		1,600	210	0.13	*	1,600	170	0.11	*
EBT										
EBR	1.0		1,600	200	0.13	*	1,600	250	0.16	*
WBL										
WBT						*				*
WBR										
				N/S Movements	0.51			N/S Movements	0.59	
				E/W Movements	0.13			E/W Movements	0.11	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.69**				**0.75**	
LEVEL OF SERVICE (LOS)					**B**				**C**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (2L Ortega Hwy)**									
ID:	**17**									
Intersection:	**La Pata/Avenida Hermosa**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL	2.0		3,200	60	0.02		3,200	50	0.02	
NBT	3.0		4,800	220	0.05	*	4,800	600	0.13	*
NBR	1.0		1,600	10	0.01		1,600	20	0.01	
SBL	2.0		3,200	350	0.11	*	3,200	340	0.11	*
SBT	3.0		4,800	610	0.13		4,800	300	0.06	
SBR	1.0		1,600	780	0.49	*	1,600	790	0.49	*
EBL	2.0		3,200	780	0.24	*	3,200	730	0.23	*
EBT	2.0		3,200	140	0.04		3,200	290	0.09	
EBR	1.0		1,600	50	0.03		1,600	10	0.01	
WBL	2.0		3,200	20	0.01		3,200	20	0.01	
WBT	2.0		3,200	380	0.12	*	3,200	180	0.06	*
WBR	1.0		1,600	310	0.19		1,600	340	0.21	*
				N/S Movements	0.26			N/S Movements	0.28	
				E/W Movements	0.36			E/W Movements	0.33	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.68**				**0.67**	
LEVEL OF SERVICE (LOS)					**B**				**B**	

Project:	**South County MPAH**									
Scenario:	**2045 No Project (4L Ortega Hwy)**									
ID:	**1**									
Intersection:	**Ortega Highway/Antonio Parkway**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL	2.0		3,400	100	0.03	*	3,400	60	0.02	
NBT	3.0		5,100	1,340	0.26		5,100	1,805	0.35	*
NBR	1.0		1,700	200	0.12		1,700	660	0.39	
SBL	1.0		1,700	20	0.01		1,700	130	0.08	*
SBT	3.0		5,100	1,930	0.38	*	5,100	1,150	0.23	
SBR	2.0		3,400	460	0.14		3,400	490	0.14	
EBL	2.0		3,400	290	0.09		3,400	540	0.16	
EBT	2.0		3,400	360	0.11	*	3,400	610	0.18	*
EBR	1.0		1,700	290	0.17	*	1,700	40	0.02	
WBL	1.0		1,700	520	0.31	*	1,700	330	0.19	*
WBT	2.0		3,400	480	0.14		3,400	540	0.16	
WBR	1.0		1,700	110	0.06		1,700	70	0.04	
				N/S Movements	0.41			N/S Movements	0.43	
				E/W Movements	0.45			E/W Movements	0.37	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.90**				**0.85**	
LEVEL OF SERVICE (LOS)					**D**				**D**	

Project:	**South County MPAH**									
Scenario:	**2045 No Project (4L Ortega Hwy)**									
ID:	**2**									
Intersection:	**Cow Camp Road/Antonio Parkway**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL										
NBT	3.0		5,100	570	0.11	*	5,100	870	0.17	*
NBR	1.0	Yes	1,700	880			1,700	960		
SBL	2.0		3,400	340	0.10	*	3,400	1,080	0.32	*
SBT	3.0		5,100	710	0.14		5,100	960	0.19	
SBR										
EBL										
EBT						*				*
EBR										
WBL	3.0		5,100	1,200	0.24	*	5,100	870	0.17	*
WBT										
WBR	2.0		3,400	580	0.17	*	3,400	700	0.21	
				N/S Movements	0.21			N/S Movements	0.49	
				E/W Movements	0.24			E/W Movements	0.17	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.50**				**0.71**	
LEVEL OF SERVICE (LOS)					**A**				**C**	

Project:	**South County MPAH**									
Scenario:	**2045 No Project (4L Ortega Hwy)**									
ID:	**3**									
Intersection:	**Cow Camp Road/Chiquita Canyon Drive**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL				5				5		
NBT	1.0		1,700	5	0.01	*	1,700	5	0.01	*
NBR				5				5		
SBL	1.0		1,700	10	0.01	*	1,700	10	0.01	*
SBT										
SBR	2.0		3,400	650	0.19	*	3,400	320	0.09	
EBL	2.0		3,400	170	0.05	*	3,400	540	0.16	*
EBT	3.0		5,100	1,040	0.20		5,100	1,510	0.30	
EBR				5				10		
WBL	1.0		1,700	5	0.00		1,700	10	0.01	
WBT	3.0		5,100	1,740	0.34	*	5,100	1,250	0.25	*
WBR	1.0		1,700	10	0.01		1,700	10	0.01	
				N/S Movements	0.14			N/S Movements	0.01	
				E/W Movements	0.39			E/W Movements	0.40	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.58**				**0.47**	
LEVEL OF SERVICE (LOS)					**A**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 No Project (4L Ortega Hwy)**									
ID:	**4**									
Intersection:	**Cow Camp Road/Ranch Canyon**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL	1.0		1,700	140	0.08	*	1,700	30	0.02	*
NBT	1.0		1,700	10	0.01		1,700	10	0.01	
NBR	1.0		1,700	20	0.01		1,700	40	0.02	
SBL	1.0		1,700	10	0.01		1,700	10	0.01	
SBT	1.0		1,700	10	0.01	*	1,700	20	0.01	*
SBR	1.0		1,700	130	0.08	*	1,700	170	0.10	*
EBL	2.0		3,400	180	0.05	*	3,400	130	0.04	
EBT	3.0		5,100	830	0.16		5,100	1,750	0.34	*
EBR	1.0		1,700	20	0.01		1,700	120	0.07	
WBL	1.0		1,700	30	0.02		1,700	30	0.02	*
WBT	3.0		5,100	2,000	0.39	*	5,100	1,010	0.20	
WBR	1.0		1,700	10	0.01		1,700	10	0.01	
				N/S Movements	0.11			N/S Movements	0.08	
				E/W Movements	0.45			E/W Movements	0.36	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.60**				**0.49**	
LEVEL OF SERVICE (LOS)					**A**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 No Project (4L Ortega Hwy)**									
ID:	**5**									
Intersection:	**Cow Camp Road/Ledago Road**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL										
NBT						*				*
NBR										
SBL	1.0		1,700	30	0.02	*	1,700	10	0.01	*
SBT										
SBR	1.0		1,700	380	0.22	*	1,700	150	0.09	
EBL	2.0		3,400	100	0.03	*	3,400	310	0.09	*
EBT	2.0		3,400	660	0.19		3,400	1,000	0.29	
EBR										
WBL										
WBT	2.0		3,400	1,120	0.33	*	3,400	700	0.21	*
WBR	1.0		1,700	10	0.01		1,700	30	0.02	
				N/S Movements	0.19			N/S Movements	0.01	
				E/W Movements	0.36			E/W Movements	0.30	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.60**				**0.35**	
LEVEL OF SERVICE (LOS)					**A**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 No Project (4L Ortega Hwy)**									
ID:	**6**									
Intersection:	**Cow Camp Road/Ortega Highway**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL	1.0		1,700	10	0.01	*	1,700	10	0.01	
NBT	2.0		3,400	580	0.17		3,400	810	0.24	*
NBR										
SBL										*
SBT	2.0		3,400	840	0.25	*	3,400	580	0.17	
SBR	1.0		1,700	720	0.42	*	1,700	490	0.29	
EBL	2.0		3,400	490	0.14	*	3,400	660	0.19	*
EBT										
EBR	1.0		1,700	10	0.01		1,700	10	0.01	
WBL										
WBT						*				*
WBR										
				N/S Movements	0.29			N/S Movements	0.24	
				E/W Movements	0.14			E/W Movements	0.19	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.48**				**0.48**	
LEVEL OF SERVICE (LOS)					**A**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 No Project (4L Ortega Hwy)**									
ID:	**7**									
Intersection:	**Chiquita Canyon Drive/Los Patrones Parkway SB Ramp**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL										
NBT						*				*
NBR										
SBL	1.0		1,700	600	0.35	*	1,700	660	0.39	*
SBT										
SBR	1.0		1,700	230	0.14	*	1,700	370	0.22	*
EBL										
EBT	2.0		3,400	420	0.12	*	3,400	470	0.14	*
EBR										
WBL						*				*
WBT	2.0		3,400	180	0.05		3,400	210	0.06	
WBR										
				N/S Movements	0.35			N/S Movements	0.39	
				E/W Movements	0.12			E/W Movements	0.14	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.53**				**0.58**	
LEVEL OF SERVICE (LOS)					**A**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 No Project (4L Ortega Hwy)**									
ID:	**8**									
Intersection:	**Chiquita Canyon Drive/Los Patrones Parkway NB Ramp**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL										
NBT										
NBR										
SBL										
SBT										
SBR										
EBL	1.0		1,700	300	0.18		1,700	260	0.15	
EBT	1.0		1,700	720	0.42	*	1,700	870	0.51	*
EBR										
WBL						*				*
WBT	2.0		3,400	180	0.05		3,400	210	0.06	
WBR	1.0		1,700	710	0.42	*	1,700	620	0.36	*
				N/S Movements	0.00			N/S Movements	0.00	
				E/W Movements	0.59			E/W Movements	0.52	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.64**				**0.57**	
LEVEL OF SERVICE (LOS)					**B**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 No Project (4L Ortega Hwy)**									
ID:	**9**									
Intersection:	**Oso Parkway/Los Patrones Parkway & SR-241 SB Ramp**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL										
NBT						*				*
NBR										
SBL	2.0		3,400	40	0.01	*	3,400	230	0.07	*
SBT										
SBR	1.0		1,700	40	0.02	*	1,700	600	0.35	*
EBL										*
EBT	2.0		3,400	990	0.29	*	3,400	530	0.16	
EBR	1.0		1,700	680	0.40	*	1,700	800	0.47	*
WBL	2.0		3,400	60	0.02	*	3,400	40	0.01	
WBT	3.0		5,100	1,290	0.25		5,100	1,050	0.21	*
WBR										
				N/S Movements	0.02			N/S Movements	0.35	
				E/W Movements	0.42			E/W Movements	0.48	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.49**				**0.89**	
LEVEL OF SERVICE (LOS)					**A**				**D**	

Project:	**South County MPAH**									
Scenario:	**2045 No Project (4L Ortega Hwy)**									
ID:	**10**									
Intersection:	**Oso Parkway/Los Patrones Parkway & SR-241 NB Ramp**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL	2.0		3,400	710	0.21	*	3,400	660	0.19	*
NBT										
NBR	1.0		1,700	40	0.02	*	1,700	50	0.03	*
SBL										
SBT						*				*
SBR										
EBL	2.0		3,400	740	0.22	*	3,400	20	0.01	
EBT	2.0		3,400	290	0.09		3,400	740	0.22	*
EBR										
WBL										*
WBT	2.0		3,400	630	0.19	*	3,400	430	0.13	
WBR	1.0		1,700	280	0.16		1,700	30	0.02	
				N/S Movements	0.21			N/S Movements	0.19	
				E/W Movements	0.40			E/W Movements	0.22	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.66**				**0.46**	
LEVEL OF SERVICE (LOS)					**B**				**A**	

Project:	**South County MPAH**							
Scenario:	**2045 No Project (4L Ortega Hwy)**							
ID:	**11**							
Intersection:	**Los Patrones/La Pata**							
			AM PEAK HOUR			**PM PEAK HOUR**		
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**	**CAPACITY**	**VOLUME**	**V/C**
NBL								
NBT								
NBR								
SBL								
SBT								
SBR								
EBL								
EBT								
EBR								
WBL								
WBT								
WBR								
				N/S Movements	0.00		N/S Movements	0.00
				E/W Movements	0.00		E/W Movements	0.00
				Yellow Clearance	0.05		Yellow Clearance	0.05
TOTAL CAPACITY UTILIZATION								
LEVEL OF SERVICE (LOS)					**#N/A**			**#N/A**

Project:	**South County MPAH**							
Scenario:	**2045 No Project (4L Ortega Hwy)**							
ID:	**12**							
Intersection:	**PA5 Future Road / Los Patrones Parkway NB Ramp**							
			AM PEAK HOUR			**PM PEAK HOUR**		
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**	**CAPACITY**	**VOLUME**	**V/C**
NBL								
NBT								
NBR								
SBL								
SBT								
SBR								
EBL								
EBT								
EBR								
WBL								
WBT								
WBR								
				N/S Movements	0.00		N/S Movements	0.00
				E/W Movements	0.00		E/W Movements	0.00
				Yellow Clearance	0.05		Yellow Clearance	0.05
TOTAL CAPACITY UTILIZATION								
LEVEL OF SERVICE (LOS)					**#N/A**			**#N/A**

Project:	**South County MPAH**							
Scenario:	**2045 No Project (4L Ortega Hwy)**							
ID:	**13**							
Intersection:	**PA5 Future Road / Los Patrones Parkway SB Ramp**							
			AM PEAK HOUR			**PM PEAK HOUR**		
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**	**CAPACITY**	**VOLUME**	**V/C**
NBL								
NBT								
NBR								
SBL								
SBT								
SBR								
EBL								
EBT								
EBR								
WBL								
WBT								
WBR								
				N/S Movements	0.00		N/S Movements	0.00
				E/W Movements	0.00		E/W Movements	0.00
				Yellow Clearance	0.05		Yellow Clearance	0.05
TOTAL CAPACITY UTILIZATION								
LEVEL OF SERVICE (LOS)					**#N/A**			**#N/A**

Project:	**South County MPAH**									
Scenario:	**2045 No Project (4L Ortega Hwy)**									
ID:	**14**									
Intersection:	**Cow Camp/Essencia**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL				5				10		
NBT	1.0		1,700	5	0.01	*	1,700	10	0.02	*
NBR				5				10		
SBL	1.0		1,700	130	0.08	*	1,700	50	0.03	*
SBT										
SBR	1.0		1,700	150	0.09	*	1,700	60	0.04	
EBL	1.0		1,700	40	0.02	*	1,700	130	0.08	*
EBT	3.0		5,100	1,000	0.20		5,100	1,370	0.27	
EBR				5				10		
WBL	1.0		1,700	5	0.00		1,700	10	0.01	
WBT	3.0		5,100	1,590	0.31	*	5,100	1,190	0.23	*
WBR	1.0		1,700	50	0.03		1,700	120	0.07	
				N/S Movements	0.09			N/S Movements	0.05	
				E/W Movements	0.34			E/W Movements	0.31	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.47**				**0.41**	
LEVEL OF SERVICE (LOS)					**A**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 No Project (4L Ortega Hwy)**									
ID:	**15**									
Intersection:	**Cow Camp / Las Patrones Parkway**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL										
NBT						*				*
NBR										
SBL	2.0		3,400	450	0.13	*	3,400	630	0.19	*
SBT										
SBR	2.0		3,400	60	0.02		3,400	430	0.13	*
EBL	2.0		3,400	560	0.16	*	3,400	10	0.00	
EBT	3.0		5,100	1,140	0.22		5,100	1,430	0.28	*
EBR										
WBL										*
WBT	3.0		5,100	1,580	0.31	*	5,100	880	0.17	
WBR	1.0		1,700	700	0.41		1,700	10	0.01	
				N/S Movements	0.13			N/S Movements	0.19	
				E/W Movements	0.47			E/W Movements	0.28	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.66**				**0.52**	
LEVEL OF SERVICE (LOS)					**B**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 No Project (4L Ortega Hwy)**									
ID:	**16**									
Intersection:	**La Pata/Camino Del Rio**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL	1.0		1,600	130	0.08	*	1,600	220	0.14	*
NBT	2.0		3,200	950	0.30		3,200	1,030	0.32	
NBR										
SBL										
SBT	2.0		3,200	720	0.26	*	3,200	990	0.33	*
SBR				120				60		
EBL	1.0		1,600	140	0.09	*	1,600	40	0.03	*
EBT										
EBR	1.0		1,600	210	0.13	*	1,600	250	0.16	*
WBL										
WBT						*				*
WBR								10		
				N/S Movements	0.34			N/S Movements	0.47	
				E/W Movements	0.09			E/W Movements	0.03	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.48**				**0.54**	
LEVEL OF SERVICE (LOS)					**A**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 No Project (4L Ortega Hwy)**									
ID:	**17**									
Intersection:	**La Pata/Avenida Hermosa**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL	2.0		3,200	60	0.02	*	3,200	50	0.02	
NBT	3.0		4,800	160	0.03		4,800	510	0.11	*
NBR	1.0		1,600	10	0.01		1,600	20	0.01	
SBL	2.0		3,200	310	0.10		3,200	300	0.09	*
SBT	3.0		4,800	540	0.11	*	4,800	220	0.05	
SBR	1.0		1,600	660	0.41	*	1,600	610	0.38	*
EBL	2.0		3,200	620	0.19	*	3,200	620	0.19	*
EBT	2.0		3,200	140	0.04		3,200	310	0.10	
EBR	1.0		1,600	50	0.03		1,600	10	0.01	
WBL	2.0		3,200	20	0.01		3,200	20	0.01	
WBT	2.0		3,200	390	0.12	*	3,200	190	0.06	*
WBR	1.0		1,600	270	0.17		1,600	310	0.19	*
				N/S Movements	0.24			N/S Movements	0.20	
				E/W Movements	0.32			E/W Movements	0.29	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.60**				**0.55**	
LEVEL OF SERVICE (LOS)					**A**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (4L Ortega Hwy)**									
ID:	**1**									
Intersection:	**Ortega Highway/Antonio Parkway**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL	2.0		3,400	80	0.02	*	3,400	120	0.04	
NBT	3.0		5,100	770	0.15		5,100	1,460	0.29	*
NBR	1.0		1,700	50	0.03		1,700	130	0.08	
SBL	1.0		1,700	10	0.01		1,700	20	0.01	*
SBT	3.0		5,100	1,200	0.24	*	5,100	600	0.12	
SBR	2.0		3,400	560	0.16		3,400	380	0.11	
EBL	2.0		3,400	450	0.13	*	3,400	540	0.16	*
EBT	2.0		3,400	270	0.08		3,400	250	0.07	
EBR	1.0		1,700	350	0.21	*	1,700	170	0.10	
WBL	1.0		1,700	240	0.14		1,700	30	0.02	
WBT	2.0		3,400	390	0.11	*	3,400	240	0.07	*
WBR	1.0		1,700	70	0.04		1,700	20	0.01	
				N/S Movements	0.26			N/S Movements	0.30	
				E/W Movements	0.32			E/W Movements	0.23	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.63**				**0.58**	
LEVEL OF SERVICE (LOS)					**B**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (4L Ortega Hwy)**									
ID:	**2**									
Intersection:	**Cow Camp Road/Antonio Parkway**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL										
NBT	3.0		5,100	450	0.09	*	5,100	950	0.19	*
NBR	1.0	Yes	1,700	440			1,700	1,100		
SBL	2.0		3,400	360	0.11	*	3,400	630	0.19	*
SBT	3.0		5,100	700	0.14		5,100	720	0.14	
SBR										
EBL										
EBT						*				*
EBR										
WBL	3.0		5,100	920	0.18	*	5,100	470	0.09	*
WBT										
WBR	2.0		3,400	710	0.21	*	3,400	830	0.24	*
				N/S Movements	0.19			N/S Movements	0.37	
				E/W Movements	0.18			E/W Movements	0.09	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.42**				**0.51**	
LEVEL OF SERVICE (LOS)					**A**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (4L Ortega Hwy)**									
ID:	**3**									
Intersection:	**Cow Camp Road/Chiquita Canyon Drive**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL				5				5		
NBT	1.0		1,700	5	0.01	*	1,700	5	0.01	*
NBR				5				5		
SBL	1.0		1,700	10	0.01	*	1,700	10	0.01	*
SBT										
SBR	2.0		3,400	590	0.17	*	3,400	300	0.09	
EBL	2.0		3,400	150	0.04	*	3,400	490	0.14	*
EBT	3.0		5,100	660	0.13		5,100	1,470	0.29	
EBR				5				10		
WBL	1.0		1,700	5	0.00		1,700	10	0.01	
WBT	3.0		5,100	1,650	0.33	*	5,100	940	0.19	*
WBR				10				10		
				N/S Movements	0.13			N/S Movements	0.01	
				E/W Movements	0.37			E/W Movements	0.33	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.55**				**0.40**	
LEVEL OF SERVICE (LOS)					**A**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (4L Ortega Hwy)**									
ID:	**4**									
Intersection:	**Cow Camp Road/Ranch Canyon**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL										
NBT						*				*
NBR										
SBL	1.0		1,700	10	0.01	*	1,700	10	0.01	*
SBT										
SBR	2.0		3,400	150	0.04		3,400	190	0.06	*
EBL	2.0		3,400	210	0.06	*	3,400	140	0.04	
EBT	3.0		5,100	1,090	0.21		5,100	2,150	0.42	*
EBR										
WBL										*
WBT	3.0		5,100	2,330	0.46	*	5,100	1,270	0.25	
WBR	1.0		1,700	10	0.01		1,700	10	0.01	
				N/S Movements	0.01			N/S Movements	0.01	
				E/W Movements	0.52			E/W Movements	0.42	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.57**				**0.49**	
LEVEL OF SERVICE (LOS)					**A**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (4L Ortega Hwy)**									
ID:	**5**									
Intersection:	**Cow Camp Road/Ledago Road**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL										
NBT						*				*
NBR										
SBL	1.0		1,700	30	0.02	*	1,700	10	0.01	*
SBT										
SBR	1.0		1,700	460	0.27	*	1,700	160	0.09	
EBL	2.0		3,400	110	0.03	*	3,400	400	0.12	*
EBT	2.0		3,400	890	0.26		3,400	1,260	0.37	
EBR										
WBL										
WBT	2.0		3,400	1,330	0.39	*	3,400	930	0.27	*
WBR	1.0		1,700	10	0.01		1,700	30	0.02	
				N/S Movements	0.24			N/S Movements	0.01	
				E/W Movements	0.42			E/W Movements	0.39	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.71**				**0.45**	
LEVEL OF SERVICE (LOS)					**C**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (4L Ortega Hwy)**									
ID:	**6**									
Intersection:	**Cow Camp Road/Ortega Highway**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL	1.0		1,700	10	0.01	*	1,700	10	0.01	
NBT	2.0		3,400	360	0.11		3,400	480	0.14	*
NBR										
SBL										*
SBT	2.0		3,400	560	0.16	*	3,400	360	0.11	
SBR	1.0		1,700	1,000	0.59	*	1,700	700	0.41	*
EBL	2.0		3,400	710	0.21	*	3,400	1,000	0.29	*
EBT										
EBR	1.0		1,700	10	0.01		1,700	10	0.01	
WBL										
WBT						*				*
WBR										
				N/S Movements	0.39			N/S Movements	0.14	
				E/W Movements	0.21			E/W Movements	0.29	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.64**				**0.49**	
LEVEL OF SERVICE (LOS)					**B**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (4L Ortega Hwy)**									
ID:	**7**									
Intersection:	**Chiquita Canyon Drive/Los Patrones Parkway SB Ramp**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL										
NBT						*				*
NBR										
SBL	1.0		1,700	590	0.35	*	1,700	660	0.39	*
SBT										
SBR	1.0		1,700	230	0.14	*	1,700	370	0.22	*
EBL										
EBT	2.0		3,400	430	0.13	*	3,400	470	0.14	*
EBR										
WBL						*				*
WBT	2.0		3,400	170	0.05		3,400	220	0.06	
WBR										
				N/S Movements	0.35			N/S Movements	0.39	
				E/W Movements	0.13			E/W Movements	0.14	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.52**				**0.58**	
LEVEL OF SERVICE (LOS)					**A**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (4L Ortega Hwy)**									
ID:	**8**									
Intersection:	**Chiquita Canyon Drive/Los Patrones Parkway NB Ramp**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL										
NBT										
NBR										
SBL										
SBT										
SBR										
EBL	1.0		1,700	310	0.18		1,700	260	0.15	
EBT	1.0		1,700	710	0.42	*	1,700	870	0.51	*
EBR										
WBL						*				*
WBT	2.0		3,400	170	0.05		3,400	220	0.06	
WBR	1.0		1,700	700	0.41	*	1,700	610	0.36	*
				N/S Movements	0.00			N/S Movements	0.00	
				E/W Movements	0.59			E/W Movements	0.51	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.64**				**0.56**	
LEVEL OF SERVICE (LOS)					**B**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (4L Ortega Hwy)**									
ID:	**9**									
Intersection:	**Oso Parkway/Los Patrones Parkway & SR-241 SB Ramp**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL										
NBT						*				*
NBR										
SBL	2.0		3,400	30	0.01	*	3,400	230	0.07	*
SBT										
SBR	1.0		1,700	40	0.02	*	1,700	590	0.35	*
EBL										*
EBT	2.0		3,400	990	0.29	*	3,400	510	0.15	
EBR	1.0		1,700	630	0.37	*	1,700	690	0.41	*
WBL	2.0		3,400	80	0.02	*	3,400	50	0.01	
WBT	3.0		5,100	1,190	0.23		5,100	1,000	0.20	*
WBR										
				N/S Movements	0.02			N/S Movements	0.35	
				E/W Movements	0.39			E/W Movements	0.42	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.47**				**0.82**	
LEVEL OF SERVICE (LOS)					**A**				**D**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (4L Ortega Hwy)**									
ID:	**10**									
Intersection:	**Oso Parkway/Los Patrones Parkway & SR-241 NB Ramp**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL	2.0		3,400	630	0.19	*	3,400	620	0.18	*
NBT										
NBR	1.0		1,700	50	0.03	*	1,700	70	0.04	*
SBL										
SBT						*				*
SBR										
EBL	2.0		3,400	740	0.22	*	3,400	20	0.01	
EBT	2.0		3,400	280	0.08		3,400	720	0.21	*
EBR										
WBL										*
WBT	2.0		3,400	640	0.19	*	3,400	430	0.13	
WBR	1.0		1,700	270	0.16		1,700	30	0.02	
				N/S Movements	0.19			N/S Movements	0.18	
				E/W Movements	0.41			E/W Movements	0.21	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.64**				**0.44**	
LEVEL OF SERVICE (LOS)					**B**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (4L Ortega Hwy)**									
ID:	**11**									
Intersection:	**Los Patrones/La Pata**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL						*				*
NBT	2.0		3,400	390	0.11		3,400	400	0.12	
NBR	1.0		1,700	1,100	0.65	*	1,700	1,070	0.63	*
SBL	1.0		1,700				1,700	10	0.01	
SBT	2.0		3,400	400	0.12	*	3,400	490	0.14	*
SBR										
EBL										
EBT						*				*
EBR				-				-		
WBL	2.0		3,400	1,070	0.31	*	3,400	1,090	0.32	*
WBT										
WBR	1.0		1,700				1,700			
				N/S Movements	0.33			N/S Movements	0.31	
				E/W Movements	0.31			E/W Movements	0.32	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.70**				**0.69**	
LEVEL OF SERVICE (LOS)					**B**				**B**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (4L Ortega Hwy)**									
ID:	**12**									
Intersection:	**PA5 Future Road / Los Patrones Parkway NB Ramp**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL	1.0		1,700	30	0.02	*	1,700	60	0.04	*
NBT										
NBR	1.0		1,700	10	0.01	*	1,700	50	0.03	*
SBL										
SBT						*				*
SBR										
EBL	1.0		1,700	80	0.05	*	1,700	30	0.02	
EBT	2.0		3,400	20	0.01		3,400	120	0.04	*
EBR										
WBL										*
WBT	2.0		3,400	80	0.02	*	3,400	40	0.01	
WBR	1.0		1,700	110	0.06	*	1,700	30	0.02	*
				N/S Movements	0.02			N/S Movements	0.04	
				E/W Movements	0.11			E/W Movements	0.04	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.18**				**0.12**	
LEVEL OF SERVICE (LOS)					**A**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (4L Ortega Hwy)**									
ID:	**13**									
Intersection:	**PA5 Future Road / Los Patrones Parkway SB Ramp**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL										
NBT						*				*
NBR										
SBL	1.0		1,700	20	0.01	*	1,700	80	0.05	*
SBT										
SBR	1.0		1,700	10	0.01	*	1,700	100	0.06	*
EBL										
EBT	2.0		3,400	50	0.01	*	3,400	80	0.02	*
EBR	1.0		1,700	60	0.04	*	1,700	20	0.01	
WBL	1.0		1,700	50	0.03	*	1,700	40	0.02	*
WBT	2.0		3,400	90	0.03		3,400	60	0.02	
WBR										
				N/S Movements	0.01			N/S Movements	0.06	
				E/W Movements	0.06			E/W Movements	0.05	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.13**				**0.16**	
LEVEL OF SERVICE (LOS)					**A**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (4L Ortega Hwy)**									
ID:	**14**									
Intersection:	**Cow Camp/Essencia**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL				5				10		
NBT	1.0		1,700	5	0.01	*	1,700	10	0.02	*
NBR				5				10		
SBL	1.0		1,700	200	0.12	*	1,700	90	0.05	*
SBT										
SBR	1.0		1,700	140	0.08	*	1,700	60	0.04	
EBL	1.0		1,700	40	0.02	*	1,700	130	0.08	
EBT	3.0		5,100	620	0.12		5,100	1,350	0.27	*
EBR				5				10		
WBL	1.0		1,700	5	0.00		1,700	10	0.01	*
WBT	3.0		5,100	1,510	0.30	*	5,100	890	0.17	
WBR	1.0		1,700	80	0.05		1,700	180	0.11	
				N/S Movements	0.13			N/S Movements	0.07	
				E/W Movements	0.32			E/W Movements	0.27	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.50**				**0.39**	
LEVEL OF SERVICE (LOS)					**A**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (4L Ortega Hwy)**									
ID:	**15S**									
Intersection:	**Cow Camp / Las Patrones Parkway SB Ramp**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL										
NBT						*				*
NBR										
SBL	2.0		3,400	350	0.10	*	3,400	320	0.09	*
SBT										
SBR	2.0		3,400	20	0.01	*	3,400	150	0.04	*
EBL										
EBT	3.0		5,100	720	0.14	*	5,100	1,350	0.26	*
EBR	1.0		1,700	90	0.05		1,700	90	0.05	
WBL	1.0		1,700	600	0.35	*	1,700	410	0.24	*
WBT	3.0		5,100	1,570	0.31		5,100	920	0.18	
WBR										
				N/S Movements	0.10			N/S Movements	0.09	
				E/W Movements	0.49			E/W Movements	0.51	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.65**				**0.65**	
LEVEL OF SERVICE (LOS)					**B**				**B**	

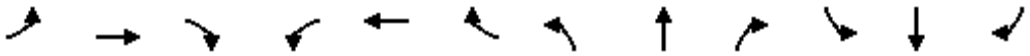
Project:	**South County MPAH**									
Scenario:	**2045 With Project (4L Ortega Hwy)**									
ID:	**15N**									
Intersection:	**Cow Camp / Las Patrones Parkway NB Ramp**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL	2.0		3,400	90	0.03	*	3,400	100	0.03	*
NBT										
NBR	2.0		3,400	400	0.12	*	3,400	640	0.19	*
SBL										
SBT						*				*
SBR										
EBL	2.0		3,400	180	0.05	*	3,400	20	0.01	
EBT	3.0		5,100	900	0.18		5,100	1,650	0.32	*
EBR										
WBL										*
WBT	3.0		5,100	2,080	0.41	*	5,100	1,220	0.24	
WBR	1.0		1,700	410	0.24		1,700	240	0.14	
				N/S Movements	0.12			N/S Movements	0.19	
				E/W Movements	0.46			E/W Movements	0.32	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.63**				**0.56**	
LEVEL OF SERVICE (LOS)					**B**				**A**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (4L Ortega Hwy)**									
ID:	**16**									
Intersection:	**La Pata/Camino Del Rio**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL	1.0		1,600	120	0.08	*	1,600	190	0.12	*
NBT	2.0		3,200	1,310	0.41		3,200	1,500	0.47	
NBR										
SBL										
SBT	2.0		3,200	1,060	0.39	*	3,200	1,370	0.50	*
SBR				200				240		
EBL	1.0		1,600	220	0.14	*	1,600	160	0.10	*
EBT										
EBR	1.0		1,600	200	0.13	*	1,600	230	0.14	*
WBL										
WBT						*				*
WBR										
				N/S Movements	0.47			N/S Movements	0.62	
				E/W Movements	0.14			E/W Movements	0.10	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.66**				**0.77**	
LEVEL OF SERVICE (LOS)					**B**				**C**	

Project:	**South County MPAH**									
Scenario:	**2045 With Project (4L Ortega Hwy)**									
ID:	**17**									
Intersection:	**La Pata/Avenida Hermosa**									
			AM PEAK HOUR				**PM PEAK HOUR**			
MOVEMENT	**LANES**	**Free?**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL	2.0		3,200	60	0.02		3,200	50	0.02	
NBT	3.0		4,800	220	0.05	*	4,800	610	0.13	*
NBR	1.0		1,600	10	0.01		1,600	20	0.01	
SBL	2.0		3,200	350	0.11	*	3,200	340	0.11	*
SBT	3.0		4,800	610	0.13		4,800	300	0.06	
SBR	1.0		1,600	780	0.49	*	1,600	790	0.49	*
EBL	2.0		3,200	780	0.24	*	3,200	740	0.23	*
EBT	2.0		3,200	140	0.04		3,200	290	0.09	
EBR	1.0		1,600	50	0.03		1,600	10	0.01	
WBL	2.0		3,200	20	0.01		3,200	20	0.01	
WBT	2.0		3,200	380	0.12	*	3,200	180	0.06	*
WBR	1.0		1,600	310	0.19		1,600	340	0.21	*
				N/S Movements	0.26			N/S Movements	0.28	
				E/W Movements	0.36			E/W Movements	0.34	
				Yellow Clearance	0.05			Yellow Clearance	0.05	
TOTAL CAPACITY UTILIZATION					**0.68**				**0.67**	
LEVEL OF SERVICE (LOS)					**B**				**B**	

APPENDIX B

Intersection HCM Analysis Worksheets

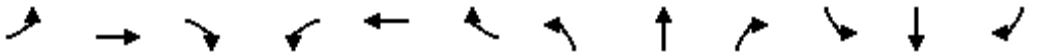


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	315	326	326	380	370	65	109	1304	239	22	2098	554
v/c Ratio	0.37	0.46	0.81	1.09	0.69	0.20	0.76	0.58	0.29	0.30	1.01	0.28
Control Delay	39.0	43.4	45.3	118.8	55.4	2.7	88.8	28.2	4.2	69.2	58.2	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.0	43.4	45.3	118.8	55.4	2.7	88.8	28.2	4.2	69.2	58.2	1.2
Queue Length 50th (ft)	103	116	163	~330	144	0	43	289	0	17	~604	6
Queue Length 95th (ft)	154	160	270	#594	206	9	#104	399	55	48	#847	23
Internal Link Dist (ft)		1533			1559			1500			1768	
Turn Bay Length (ft)	590		360	300		260	240		395	345		345
Base Capacity (vph)	845	1638	791	350	1710	821	144	2250	833	74	2076	1989
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.20	0.41	1.09	0.22	0.08	0.76	0.58	0.29	0.30	1.01	0.28

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	290	300	300	350	340	60	100	1200	220	20	1930	510
Future Volume (veh/h)	290	300	300	350	340	60	100	1200	220	20	1930	510
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	315	326	326	380	370	65	109	1304	239	22	2098	554
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	999	854	381	335	495	221	138	1980	615	71	1980	1888
Arrive On Green	0.29	0.24	0.24	0.19	0.14	0.14	0.04	0.39	0.39	0.04	0.39	0.39
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	5106	1585	1781	5106	2790
Grp Volume(v), veh/h	315	326	326	380	370	65	109	1304	239	22	2098	554
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1702	1585	1781	1702	1395
Q Serve(g_s), s	8.9	9.6	24.6	23.5	12.5	4.6	3.9	26.3	7.8	1.5	48.5	2.4
Cycle Q Clear(g_c), s	8.9	9.6	24.6	23.5	12.5	4.6	3.9	26.3	7.8	1.5	48.5	2.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	999	854	381	335	495	221	138	1980	615	71	1980	1888
V/C Ratio(X)	0.32	0.38	0.86	1.14	0.75	0.29	0.79	0.66	0.39	0.31	1.06	0.29
Avail Cap(c_a), veh/h	999	1563	697	335	1631	727	138	1980	615	71	1980	1888
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	34.8	39.7	45.4	50.8	51.7	48.3	59.5	31.5	9.1	58.4	38.3	2.8
Incr Delay (d2), s/veh	0.2	0.3	5.6	91.1	2.3	0.7	25.7	1.7	1.9	2.4	38.2	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	3.8	4.2	10.2	18.9	5.7	1.9	2.2	11.1	2.9	0.7	26.8	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.0	40.0	51.0	141.9	54.0	49.0	85.2	33.2	11.0	60.8	76.4	3.2
LnGrp LOS	C	D	D	F	D	D	F	C	B	E	F	A
Approach Vol, veh/h		967			815			1652			2674	
Approach Delay, s/veh		42.1			94.6			33.4			61.2	
Approach LOS		D			F			C			E	

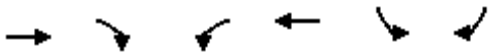
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	53.0	28.0	34.6	9.5	53.0	40.6	21.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	48.5	23.5	55.0	5.0	48.5	21.1	57.4
Max Q Clear Time (g_c+I1), s	3.5	28.3	25.5	26.6	5.9	50.5	10.9	14.5
Green Ext Time (p_c), s	0.0	10.6	0.0	3.5	0.0	0.0	0.8	2.9

Intersection Summary	
HCM 6th Ctrl Delay	55.1
HCM 6th LOS	E

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

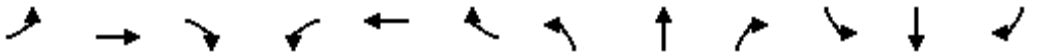
Approach	EB	NB	SB
Entry Lanes	2	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	554	576	1522
Demand Flow Rate, veh/h	565	587	1552
Vehicles Circulating, veh/h	510	554	11
Vehicles Exiting, veh/h	1053	521	1130
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	7.8	8.3	11.0
Approach LOS	A	A	B

Lane	Left	Right	Left	Right	Left	Right
Designated Moves	L	LTR	LT	TR	LT	R
Assumed Moves	L	LTR	LT	TR	LT	R
RT Channelized						
Lane Util	0.529	0.471	0.470	0.530	0.329	0.671
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	299	266	276	311	510	1042
Cap Entry Lane, veh/h	844	921	811	887	1336	1407
Entry HV Adj Factor	0.982	0.979	0.980	0.981	0.980	0.981
Flow Entry, veh/h	294	260	271	305	500	1022
Cap Entry, veh/h	829	901	795	870	1310	1380
V/C Ratio	0.354	0.289	0.340	0.351	0.382	0.741
Control Delay, s/veh	8.5	7.1	8.5	8.1	6.3	13.3
LOS	A	A	A	A	A	B
95th %tile Queue, veh	2	1	2	2	2	7



Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	1076	750	65	1424	43	43
v/c Ratio	0.73	0.68	0.21	0.55	0.04	0.07
Control Delay	18.2	5.1	27.1	10.0	14.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.2	5.1	27.1	10.0	14.8	0.2
Queue Length 50th (ft)	172	0	11	105	5	0
Queue Length 95th (ft)	242	60	27	138	14	1
Internal Link Dist (ft)	1915			620		
Turn Bay Length (ft)			200			315
Base Capacity (vph)	1511	1105	312	3048	1122	591
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.68	0.21	0.47	0.04	0.07

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	990	690	60	1310	0	0	0	0	40	0	40
Future Volume (veh/h)	0	990	690	60	1310	0	0	0	0	40	0	40
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
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	0	1870	1870	1870	1870	0				1870	0	1870
Adj Flow Rate, veh/h	0	1076	750	65	1424	0				43	0	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	0	2
Cap, veh/h	0	1434	639	193	2739	0				1068	0	490
Arrive On Green	0.00	0.40	0.40	0.06	0.54	0.00				0.31	0.00	0.31
Sat Flow, veh/h	0	3647	1585	3456	5274	0				3456	0	1585
Grp Volume(v), veh/h	0	1076	750	65	1424	0				43	0	43
Grp Sat Flow(s),veh/h/ln	0	1777	1585	1728	1702	0				1728	0	1585
Q Serve(g_s), s	0.0	15.1	23.5	1.1	10.4	0.0				0.5	0.0	1.1
Cycle Q Clear(g_c), s	0.0	15.1	23.5	1.1	10.4	0.0				0.5	0.0	1.1
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1434	639	193	2739	0				1068	0	490
V/C Ratio(X)	0.00	0.75	1.17	0.34	0.52	0.00				0.04	0.00	0.09
Avail Cap(c_a), veh/h	0	1434	639	297	2893	0				1068	0	490
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	14.9	17.4	26.5	8.7	0.0				14.1	0.0	14.3
Incr Delay (d2), s/veh	0.0	2.3	93.7	1.0	0.2	0.0				0.1	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
%ile BackOfQ(50%),veh/ln	0.0	5.7	23.9	0.4	3.1	0.0				0.2	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	17.1	111.1	27.5	8.8	0.0				14.2	0.0	14.6
LnGrp LOS	A	B	F	C	A	A				B	A	B
Approach Vol, veh/h		1826			1489						86	
Approach Delay, s/veh		55.7			9.6						14.4	
Approach LOS		E			A						B	

Timer - Assigned Phs		2	3	4				8				
Phs Duration (G+Y+Rc), s		22.5	7.8	28.0				35.8				
Change Period (Y+Rc), s		4.5	4.5	4.5				4.5				
Max Green Setting (Gmax), s		18.0	5.0	23.5				33.0				
Max Q Clear Time (g_c+I1), s		3.1	3.1	25.5				12.4				
Green Ext Time (p_c), s		0.2	0.0	0.0				10.8				

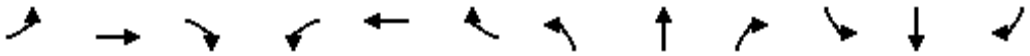
Intersection Summary												
HCM 6th Ctrl Delay			34.5									
HCM 6th LOS			C									

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	804	315	685	304	793	43
v/c Ratio	1.14	0.18	0.84	0.51	0.56	0.05
Control Delay	112.0	13.3	44.0	6.9	22.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	112.0	13.3	44.0	6.9	22.0	0.1
Queue Length 50th (ft)	~277	50	195	0	173	0
Queue Length 95th (ft)	#391	75	#282	64	229	0
Internal Link Dist (ft)		620	2893			
Turn Bay Length (ft)	200			305	100	
Base Capacity (vph)	708	1738	829	603	1417	933
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.14	0.18	0.83	0.50	0.56	0.05

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	740	290	0	0	630	280	730	0	40	0	0	0
Future Volume (veh/h)	740	290	0	0	630	280	730	0	40	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
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	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	804	315	0	0	685	304	793	0	43			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	719	1714	0	0	795	355	1439	779	660			
Arrive On Green	0.21	0.48	0.00	0.00	0.22	0.22	0.42	0.00	0.42			
Sat Flow, veh/h	3456	3647	0	0	3647	1585	3456	1870	1585			
Grp Volume(v), veh/h	804	315	0	0	685	304	793	0	43			
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1777	1585	1728	1870	1585			
Q Serve(g_s), s	18.5	4.5	0.0	0.0	16.5	16.4	15.5	0.0	1.4			
Cycle Q Clear(g_c), s	18.5	4.5	0.0	0.0	16.5	16.4	15.5	0.0	1.4			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	719	1714	0	0	795	355	1439	779	660			
V/C Ratio(X)	1.12	0.18	0.00	0.00	0.86	0.86	0.55	0.00	0.07			
Avail Cap(c_a), veh/h	719	1759	0	0	840	375	1439	779	660			
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	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	35.2	13.1	0.0	0.0	33.2	33.1	19.6	0.0	15.6			
Incr Delay (d2), s/veh	70.8	0.1	0.0	0.0	8.8	17.0	1.5	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			
%ile BackOfQ(50%),veh/ln	14.6	1.7	0.0	0.0	7.9	7.8	6.2	0.0	0.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	106.0	13.1	0.0	0.0	42.0	50.2	21.2	0.0	15.8			
LnGrp LOS	F	B	A	A	D	D	C	A	B			
Approach Vol, veh/h		1119			989			836				
Approach Delay, s/veh		79.8			44.5			20.9				
Approach LOS		E			D			C				

Timer - Assigned Phs	2	4	7	8
Phs Duration (G+Y+Rc), s	41.5	47.4	23.0	24.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	37.0	44.0	18.5	21.0
Max Q Clear Time (g_c+I1), s	17.5	6.5	20.5	18.5
Green Ext Time (p_c), s	3.2	2.2	0.0	1.4

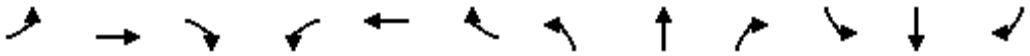
Intersection Summary	
HCM 6th Ctrl Delay	51.2
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Queues
1: Ortega Hwy & Antonio Pkwy

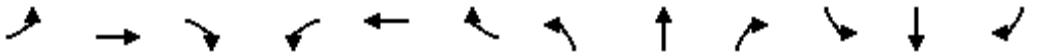
09/28/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	522	359	326	250	337	33	109	1962	380	54	815	359
v/c Ratio	0.77	0.52	0.79	0.76	0.52	0.09	0.74	0.93	0.45	0.64	0.38	0.18
Control Delay	53.7	43.9	40.5	62.1	45.1	0.5	84.4	42.2	7.3	89.7	24.9	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.7	43.9	40.5	62.1	45.1	0.5	84.4	42.2	7.3	89.7	24.9	1.3
Queue Length 50th (ft)	189	126	144	178	121	0	42	500	30	40	150	0
Queue Length 95th (ft)	#298	173	249	#347	166	0	#101	#735	118	#118	221	21
Internal Link Dist (ft)		1533			1559			1500			1768	
Turn Bay Length (ft)	590		360	300		260	240		395	345		345
Base Capacity (vph)	698	1745	845	329	1683	793	148	2111	840	84	2133	1966
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.21	0.39	0.76	0.20	0.04	0.74	0.93	0.45	0.64	0.38	0.18

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	480	330	300	230	310	30	100	1805	350	50	750	330
Future Volume (veh/h)	480	330	300	230	310	30	100	1805	350	50	750	330
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	522	359	326	250	337	33	109	1962	380	54	815	359
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	591	868	387	278	816	364	145	2091	649	69	2076	1611
Arrive On Green	0.17	0.24	0.24	0.16	0.23	0.23	0.04	0.41	0.41	0.04	0.41	0.41
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	5106	1585	1781	5106	2790
Grp Volume(v), veh/h	522	359	326	250	337	33	109	1962	380	54	815	359
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1702	1585	1781	1702	1395
Q Serve(g_s), s	17.6	10.1	23.3	16.4	9.6	2.0	3.7	43.9	22.2	3.6	13.4	7.4
Cycle Q Clear(g_c), s	17.6	10.1	23.3	16.4	9.6	2.0	3.7	43.9	22.2	3.6	13.4	7.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	591	868	387	278	816	364	145	2091	649	69	2076	1611
V/C Ratio(X)	0.88	0.41	0.84	0.90	0.41	0.09	0.75	0.94	0.59	0.78	0.39	0.22
Avail Cap(c_a), veh/h	681	1698	757	321	1639	731	145	2091	649	82	2076	1611
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	48.3	37.9	42.9	49.4	39.1	36.1	56.5	33.8	27.3	56.8	25.0	12.2
Incr Delay (d2), s/veh	11.9	0.3	5.0	24.3	0.3	0.1	19.6	9.7	3.8	31.8	0.6	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	8.5	4.5	9.6	9.2	4.3	0.8	2.0	19.6	9.0	2.2	5.5	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.2	38.2	47.9	73.7	39.4	36.3	76.2	43.5	31.2	88.6	25.5	12.5
LnGrp LOS	E	D	D	E	D	D	E	D	C	F	C	B
Approach Vol, veh/h		1207			620			2451			1228	
Approach Delay, s/veh		50.3			53.1			43.0			24.5	
Approach LOS		D			D			D			C	

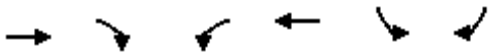
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	53.3	23.1	33.6	9.5	53.0	24.9	31.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.5	48.0	21.5	57.0	5.0	48.5	23.5	55.0
Max Q Clear Time (g_c+I1), s	5.6	45.9	18.4	25.3	5.7	15.4	19.6	11.6
Green Ext Time (p_c), s	0.0	1.9	0.2	3.8	0.0	8.7	0.8	2.5

Intersection Summary	
HCM 6th Ctrl Delay	41.6
HCM 6th LOS	D

Intersection	
Intersection Delay, s/veh	10.5
Intersection LOS	B

Approach	EB	NB	SB
Entry Lanes	2	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	978	489	1109
Demand Flow Rate, veh/h	997	499	1132
Vehicles Circulating, veh/h	544	986	11
Vehicles Exiting, veh/h	599	555	1474
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	13.5	13.2	6.6
Approach LOS	B	B	A

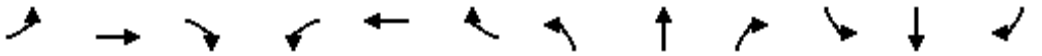
Lane	Left	Right	Left	Right	Left	Right
Designated Moves	L	LTR	LT	TR	LT	R
Assumed Moves	L	LTR	LT	TR	LT	R
RT Channelized						
Lane Util	0.530	0.470	0.471	0.529	0.481	0.519
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	528	469	235	264	544	588
Cap Entry Lane, veh/h	818	894	545	614	1336	1407
Entry HV Adj Factor	0.982	0.980	0.979	0.983	0.980	0.980
Flow Entry, veh/h	518	460	230	259	533	576
Cap Entry, veh/h	803	876	533	603	1310	1378
V/C Ratio	0.645	0.524	0.431	0.430	0.407	0.418
Control Delay, s/veh	15.5	11.2	13.9	12.5	6.7	6.6
LOS	C	B	B	B	A	A
95th %tile Queue, veh	5	3	2	2	2	2



Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	576	880	43	1141	250	652
v/c Ratio	0.50	0.79	0.14	0.54	0.17	0.89
Control Delay	19.0	8.5	28.9	13.9	11.7	32.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.0	8.5	28.9	13.9	11.7	32.1
Queue Length 50th (ft)	99	0	8	112	30	201
Queue Length 95th (ft)	145	#144	22	147	52	#411
Internal Link Dist (ft)	1915			620		
Turn Bay Length (ft)			200			315
Base Capacity (vph)	1241	1126	307	2639	1659	817
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.78	0.14	0.43	0.15	0.80

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



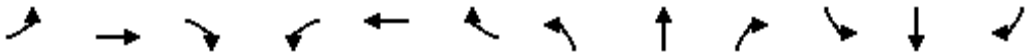
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	530	810	40	1050	0	0	0	0	230	0	600
Future Volume (veh/h)	0	530	810	40	1050	0	0	0	0	230	0	600
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
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	0	1870	1870	1870	1870	0				1870	0	1870
Adj Flow Rate, veh/h	0	576	880	43	1141	0				250	0	652
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	0	2
Cap, veh/h	0	1107	494	145	2173	0				1488	0	683
Arrive On Green	0.00	0.31	0.31	0.04	0.43	0.00				0.43	0.00	0.43
Sat Flow, veh/h	0	3647	1585	3456	5274	0				3456	0	1585
Grp Volume(v), veh/h	0	576	880	43	1141	0				250	0	652
Grp Sat Flow(s),veh/h/ln	0	1777	1585	1728	1702	0				1728	0	1585
Q Serve(g_s), s	0.0	8.3	19.5	0.8	10.3	0.0				2.8	0.0	24.9
Cycle Q Clear(g_c), s	0.0	8.3	19.5	0.8	10.3	0.0				2.8	0.0	24.9
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1107	494	145	2173	0				1488	0	683
V/C Ratio(X)	0.00	0.52	1.78	0.30	0.53	0.00				0.17	0.00	0.96
Avail Cap(c_a), veh/h	0	1107	494	276	2366	0				1491	0	684
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	17.7	21.5	29.1	13.3	0.0				10.9	0.0	17.2
Incr Delay (d2), s/veh	0.0	0.4	359.9	1.1	0.2	0.0				0.1	0.0	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	0.0	3.2	55.9	0.3	3.5	0.0				1.0	0.0	12.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	18.1	381.4	30.2	13.5	0.0				11.0	0.0	41.1
LnGrp LOS	A	B	F	C	B	A				B	A	D
Approach Vol, veh/h		1456			1184						902	
Approach Delay, s/veh		237.7			14.1						32.8	
Approach LOS		F			B						C	

Timer - Assigned Phs		2	3	4				8				
Phs Duration (G+Y+Rc), s		31.4	7.1	24.0				31.1				
Change Period (Y+Rc), s		4.5	4.5	4.5				4.5				
Max Green Setting (Gmax), s		27.0	5.0	19.5				29.0				
Max Q Clear Time (g_c+I1), s		26.9	2.8	21.5				12.3				
Green Ext Time (p_c), s		0.0	0.0	0.0				7.6				

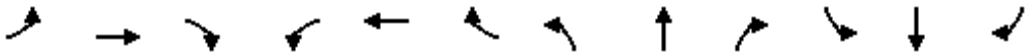
Intersection Summary	
HCM 6th Ctrl Delay	110.8
HCM 6th LOS	F

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	22	804	467	33	728	54
v/c Ratio	0.09	0.71	0.48	0.07	0.38	0.06
Control Delay	35.0	25.1	24.7	0.3	10.8	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.0	25.1	24.7	0.3	10.8	1.4
Queue Length 50th (ft)	4	163	84	0	88	0
Queue Length 95th (ft)	17	221	148	1	153	10
Internal Link Dist (ft)		620	2893			
Turn Bay Length (ft)	200			305	100	
Base Capacity (vph)	237	1519	1073	537	1901	913
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.53	0.44	0.06	0.38	0.06

Intersection Summary



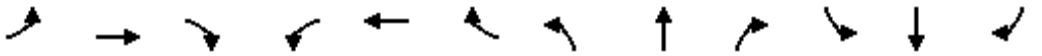
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	740	0	0	430	30	670	0	50	0	0	0
Future Volume (veh/h)	20	740	0	0	430	30	670	0	50	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking 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	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	22	804	0	0	467	33	728	0	54			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	86	1075	0	0	759	338	1968	1065	903			
Arrive On Green	0.02	0.30	0.00	0.00	0.21	0.21	0.57	0.00	0.57			
Sat Flow, veh/h	3456	3647	0	0	3647	1585	3456	1870	1585			
Grp Volume(v), veh/h	22	804	0	0	467	33	728	0	54			
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1777	1585	1728	1870	1585			
Q Serve(g_s), s	0.4	14.3	0.0	0.0	8.4	1.2	8.1	0.0	1.1			
Cycle Q Clear(g_c), s	0.4	14.3	0.0	0.0	8.4	1.2	8.1	0.0	1.1			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	86	1075	0	0	759	338	1968	1065	903			
V/C Ratio(X)	0.26	0.75	0.00	0.00	0.62	0.10	0.37	0.00	0.06			
Avail Cap(c_a), veh/h	246	1568	0	0	1088	485	1968	1065	903			
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	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	33.6	22.1	0.0	0.0	25.0	22.2	8.2	0.0	6.7			
Incr Delay (d2), s/veh	1.6	1.2	0.0	0.0	0.8	0.1	0.5	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			
%ile BackOfQ(50%),veh/ln	0.2	5.7	0.0	0.0	3.4	0.4	2.7	0.0	0.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.2	23.3	0.0	0.0	25.8	22.3	8.8	0.0	6.9			
LnGrp LOS	D	C	A	A	C	C	A	A	A			
Approach Vol, veh/h		826			500			782				
Approach Delay, s/veh		23.6			25.6			8.6				
Approach LOS		C			C			A				
Timer - Assigned Phs		2		4			7	8				
Phs Duration (G+Y+Rc), s		44.5		25.7			6.2	19.5				
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5				
Max Green Setting (Gmax), s		40.0		31.0			5.0	21.5				
Max Q Clear Time (g_c+I1), s		10.1		16.3			2.4	10.4				
Green Ext Time (p_c), s		3.1		4.9			0.0	2.4				
Intersection Summary												
HCM 6th Ctrl Delay			18.5									
HCM 6th LOS			B									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	359	261	348	293	370	54	76	728	87	11	1304	533
v/c Ratio	0.41	0.35	0.83	0.85	0.69	0.16	0.54	0.31	0.11	0.15	0.64	0.27
Control Delay	39.3	41.0	47.2	71.2	56.3	1.1	73.4	22.3	3.1	64.8	32.0	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.3	41.0	47.2	71.2	56.3	1.1	73.4	22.3	3.1	64.8	32.0	0.9
Queue Length 50th (ft)	119	91	183	222	145	0	30	121	0	8	293	2
Queue Length 95th (ft)	175	129	295	#436	210	0	#66	211	23	31	412	17
Internal Link Dist (ft)		1533			1559			1500			1768	
Turn Bay Length (ft)	590		360	300		260	240		395	345		345
Base Capacity (vph)	878	1613	781	344	1684	810	142	2373	797	73	2045	2007
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.16	0.45	0.85	0.22	0.07	0.54	0.31	0.11	0.15	0.64	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	330	240	320	270	340	50	70	670	80	10	1200	490
Future Volume (veh/h)	330	240	320	270	340	50	70	670	80	10	1200	490
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	359	261	348	293	370	54	76	728	87	11	1304	533
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1005	892	398	318	494	221	129	1985	616	66	1985	1895
Arrive On Green	0.29	0.25	0.25	0.18	0.14	0.14	0.04	0.39	0.39	0.04	0.39	0.39
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	5106	1585	1781	5106	2790
Grp Volume(v), veh/h	359	261	348	293	370	54	76	728	87	11	1304	533
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1702	1585	1781	1702	1395
Q Serve(g_s), s	10.3	7.4	26.3	20.2	12.5	3.8	2.7	12.7	2.6	0.7	26.2	2.2
Cycle Q Clear(g_c), s	10.3	7.4	26.3	20.2	12.5	3.8	2.7	12.7	2.6	0.7	26.2	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1005	892	398	318	494	221	129	1985	616	66	1985	1895
V/C Ratio(X)	0.36	0.29	0.87	0.92	0.75	0.24	0.59	0.37	0.14	0.17	0.66	0.28
Avail Cap(c_a), veh/h	1005	1566	699	335	1635	729	138	1985	616	71	1985	1895
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	35.0	37.8	44.8	50.4	51.6	47.9	59.1	27.2	8.6	58.2	31.3	2.8
Incr Delay (d2), s/veh	0.2	0.2	6.1	28.9	2.3	0.6	5.7	0.5	0.5	1.2	1.7	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	4.4	3.3	11.0	11.5	5.7	1.5	1.3	5.3	1.7	0.4	11.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.2	37.9	51.0	79.3	53.9	48.4	64.9	27.7	9.1	59.4	33.0	3.2
LnGrp LOS	D	D	D	E	D	D	E	C	A	E	C	A
Approach Vol, veh/h		968			717			891			1848	
Approach Delay, s/veh		41.6			63.9			29.1			24.6	
Approach LOS		D			E			C			C	

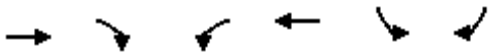
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	53.0	26.8	35.8	9.1	53.0	40.8	21.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	48.5	23.5	55.0	5.0	48.5	21.1	57.4
Max Q Clear Time (g_c+I1), s	2.7	14.7	22.2	28.3	4.7	28.2	12.3	14.5
Green Ext Time (p_c), s	0.0	6.1	0.1	3.0	0.0	12.1	0.9	2.9

Intersection Summary	
HCM 6th Ctrl Delay	35.6
HCM 6th LOS	D

Intersection	
Intersection Delay, s/veh	10.7
Intersection LOS	B

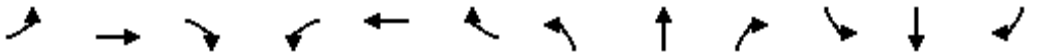
Approach	EB	NB	SB
Entry Lanes	2	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	750	381	1522
Demand Flow Rate, veh/h	765	388	1552
Vehicles Circulating, veh/h	466	754	11
Vehicles Exiting, veh/h	1097	477	1131
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	9.1	8.4	12.0
Approach LOS	A	A	B

Lane	Left	Right	Left	Right	Left	Right
Designated Moves	L	LTR	LT	TR	LT	R
Assumed Moves	L	LTR	LT	TR	LT	R
RT Channelized						
Lane Util	0.529	0.471	0.469	0.531	0.300	0.700
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	405	360	182	206	466	1086
Cap Entry Lane, veh/h	879	956	675	748	1336	1407
Entry HV Adj Factor	0.981	0.979	0.983	0.979	0.980	0.981
Flow Entry, veh/h	398	352	179	202	457	1065
Cap Entry, veh/h	863	936	663	733	1310	1380
V/C Ratio	0.461	0.377	0.270	0.275	0.349	0.772
Control Delay, s/veh	10.0	8.0	8.8	8.1	6.0	14.6
LOS	A	A	A	A	A	B
95th %tile Queue, veh	2	2	1	1	2	8



Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	1065	685	87	1293	33	43
v/c Ratio	0.43	0.52	0.17	0.31	0.05	0.12
Control Delay	7.5	2.6	20.0	2.6	18.6	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.5	2.6	20.0	2.6	18.6	1.1
Queue Length 50th (ft)	103	0	11	39	4	0
Queue Length 95th (ft)	156	42	28	58	13	3
Internal Link Dist (ft)	1915			620		
Turn Bay Length (ft)			200			315
Base Capacity (vph)	2338	1278	526	4121	1894	922
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.54	0.17	0.31	0.02	0.05

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	980	630	80	1190	0	0	0	0	30	0	40
Future Volume (veh/h)	0	980	630	80	1190	0	0	0	0	30	0	40
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
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	0	1870	1870	1870	1870	0				1870	0	1870
Adj Flow Rate, veh/h	0	1065	685	87	1293	0				33	0	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	0	2
Cap, veh/h	0	1871	834	264	3634	0				243	0	112
Arrive On Green	0.00	0.53	0.53	0.08	0.71	0.00				0.07	0.00	0.07
Sat Flow, veh/h	0	3647	1585	3456	5274	0				3456	0	1585
Grp Volume(v), veh/h	0	1065	685	87	1293	0				33	0	43
Grp Sat Flow(s),veh/h/ln	0	1777	1585	1728	1702	0				1728	0	1585
Q Serve(g_s), s	0.0	8.4	14.9	1.0	4.0	0.0				0.4	0.0	1.1
Cycle Q Clear(g_c), s	0.0	8.4	14.9	1.0	4.0	0.0				0.4	0.0	1.1
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1871	834	264	3634	0				243	0	112
V/C Ratio(X)	0.00	0.57	0.82	0.33	0.36	0.00				0.14	0.00	0.39
Avail Cap(c_a), veh/h	0	2021	902	418	4079	0				1506	0	691
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.6	8.2	18.1	2.3	0.0				18.0	0.0	18.3
Incr Delay (d2), s/veh	0.0	0.3	5.8	0.7	0.1	0.0				0.3	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.0	4.4	0.4	0.3	0.0				0.1	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	6.9	13.9	18.8	2.4	0.0				18.3	0.0	20.5
LnGrp LOS	A	A	B	B	A	A				B	A	C
Approach Vol, veh/h		1750			1380						76	
Approach Delay, s/veh		9.7			3.4						19.5	
Approach LOS		A			A						B	

Timer - Assigned Phs		2	3	4				8				
Phs Duration (G+Y+Rc), s		7.4	7.7	26.2				33.9				
Change Period (Y+Rc), s		4.5	4.5	4.5				4.5				
Max Green Setting (Gmax), s		18.0	5.0	23.5				33.0				
Max Q Clear Time (g_c+I1), s		3.1	3.0	16.9				6.0				
Green Ext Time (p_c), s		0.1	0.0	4.9				11.1				

Intersection Summary	
HCM 6th Ctrl Delay	7.2
HCM 6th LOS	A

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	793	304	696	293	685	54
v/c Ratio	1.12	0.18	0.85	0.50	0.48	0.06
Control Delay	106.7	13.2	44.9	6.9	20.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	106.7	13.2	44.9	6.9	20.8	0.1
Queue Length 50th (ft)	~271	48	199	0	143	0
Queue Length 95th (ft)	#384	73	#289	63	193	0
Internal Link Dist (ft)		620	2893			
Turn Bay Length (ft)	200			305	100	
Base Capacity (vph)	708	1737	828	595	1416	941
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.12	0.18	0.84	0.49	0.48	0.06

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

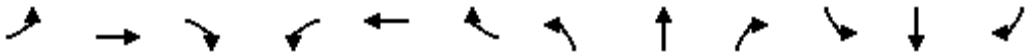
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	730	280	0	0	640	270	630	0	50	0	0	0
Future Volume (veh/h)	730	280	0	0	640	270	630	0	50	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
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	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	793	304	0	0	696	293	685	0	54			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	718	1718	0	0	800	357	1436	777	659			
Arrive On Green	0.21	0.48	0.00	0.00	0.23	0.23	0.42	0.00	0.42			
Sat Flow, veh/h	3456	3647	0	0	3647	1585	3456	1870	1585			
Grp Volume(v), veh/h	793	304	0	0	696	293	685	0	54			
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1777	1585	1728	1870	1585			
Q Serve(g_s), s	18.5	4.3	0.0	0.0	16.8	15.6	12.9	0.0	1.8			
Cycle Q Clear(g_c), s	18.5	4.3	0.0	0.0	16.8	15.6	12.9	0.0	1.8			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	718	1718	0	0	800	357	1436	777	659			
V/C Ratio(X)	1.10	0.18	0.00	0.00	0.87	0.82	0.48	0.00	0.08			
Avail Cap(c_a), veh/h	718	1756	0	0	838	374	1436	777	659			
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	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	35.3	13.0	0.0	0.0	33.2	32.8	19.0	0.0	15.7			
Incr Delay (d2), s/veh	65.9	0.0	0.0	0.0	9.5	13.2	1.1	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			
%ile BackOfQ(50%),veh/ln	14.1	1.7	0.0	0.0	8.1	7.1	5.2	0.0	0.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	101.2	13.0	0.0	0.0	42.8	46.0	20.1	0.0	16.0			
LnGrp LOS	F	B	A	A	D	D	C	A	B			
Approach Vol, veh/h		1097			989			739				
Approach Delay, s/veh		76.8			43.7			19.8				
Approach LOS		E			D			B				

Timer - Assigned Phs	2	4	7	8
Phs Duration (G+Y+Rc), s	41.5	47.5	23.0	24.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	37.0	44.0	18.5	21.0
Max Q Clear Time (g_c+I1), s	14.9	6.3	20.5	18.8
Green Ext Time (p_c), s	2.8	2.1	0.0	1.2

Intersection Summary	
HCM 6th Ctrl Delay	50.3
HCM 6th LOS	D

Notes

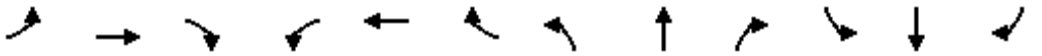
User approved pedestrian interval to be less than phase max green.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	587	359	185	54	326	11	141	1587	228	22	576	359
v/c Ratio	0.81	0.35	0.31	0.39	0.66	0.04	0.91	0.64	0.26	0.25	0.26	0.18
Control Delay	51.4	32.9	6.1	56.8	51.6	0.2	106.0	23.6	3.5	59.1	20.4	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.4	32.9	6.1	56.8	51.6	0.2	106.0	23.6	3.5	59.1	20.4	0.9
Queue Length 50th (ft)	205	108	0	37	116	0	52	271	0	15	92	0
Queue Length 95th (ft)	#302	156	54	80	164	0	#120	419	46	44	128	16
Internal Link Dist (ft)		1533			1559			1500			1768	
Turn Bay Length (ft)	590		360	300		260	240		395	345		345
Base Capacity (vph)	729	1825	906	344	1761	825	155	2489	891	88	2231	2039
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.20	0.20	0.16	0.19	0.01	0.91	0.64	0.26	0.25	0.26	0.18

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	540	330	170	50	300	10	130	1460	210	20	530	330
Future Volume (veh/h)	540	330	170	50	300	10	130	1460	210	20	530	330
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	587	359	185	54	326	11	141	1587	228	22	576	359
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	667	1006	449	70	460	205	164	2473	768	40	2347	1820
Arrive On Green	0.19	0.28	0.28	0.04	0.13	0.13	0.05	0.48	0.48	0.02	0.46	0.46
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	5106	1585	1781	5106	2790
Grp Volume(v), veh/h	587	359	185	54	326	11	141	1587	228	22	576	359
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1702	1585	1781	1702	1395
Q Serve(g_s), s	17.4	8.5	10.0	3.2	9.3	0.6	4.3	24.5	9.1	1.3	7.3	5.4
Cycle Q Clear(g_c), s	17.4	8.5	10.0	3.2	9.3	0.6	4.3	24.5	9.1	1.3	7.3	5.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	667	1006	449	70	460	205	164	2473	768	40	2347	1820
V/C Ratio(X)	0.88	0.36	0.41	0.77	0.71	0.05	0.86	0.64	0.30	0.55	0.25	0.20
Avail Cap(c_a), veh/h	769	1919	856	363	1852	826	164	2473	768	93	2347	1820
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	41.4	30.2	30.7	50.2	44.0	40.3	49.9	20.4	16.4	51.0	17.4	7.3
Incr Delay (d2), s/veh	10.4	0.2	0.6	15.8	2.0	0.1	34.4	1.3	1.0	11.2	0.2	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	8.3	3.6	3.9	1.7	4.2	0.3	2.6	9.7	3.5	0.7	2.9	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.8	30.4	31.3	66.0	46.0	40.4	84.3	21.6	17.4	62.2	17.6	7.6
LnGrp LOS	D	C	C	E	D	D	F	C	B	E	B	A
Approach Vol, veh/h		1131			391			1956			957	
Approach Delay, s/veh		41.7			48.6			25.7			14.9	
Approach LOS		D			D			C			B	

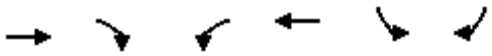
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	55.6	8.7	34.4	9.5	53.0	24.9	18.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.5	48.0	21.5	57.0	5.0	48.5	23.5	55.0
Max Q Clear Time (g_c+I1), s	3.3	26.5	5.2	12.0	6.3	9.3	19.4	11.3
Green Ext Time (p_c), s	0.0	13.3	0.1	3.3	0.0	6.4	0.9	2.4

Intersection Summary	
HCM 6th Ctrl Delay	29.4
HCM 6th LOS	C

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	2	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	1044	424	1109
Demand Flow Rate, veh/h	1065	432	1131
Vehicles Circulating, veh/h	377	1054	11
Vehicles Exiting, veh/h	765	388	1475
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	10.8	13.0	7.3
Approach LOS	B	B	A

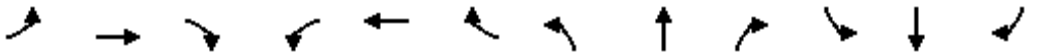
Lane	Left	Right	Left	Right	Left	Right
Designated Moves	L	LTR	LT	TR	LT	R
Assumed Moves	L	LTR	LT	TR	LT	R
RT Channelized						
Lane Util	0.530	0.470	0.470	0.530	0.333	0.667
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	564	501	203	229	377	754
Cap Entry Lane, veh/h	954	1031	512	580	1336	1407
Entry HV Adj Factor	0.981	0.979	0.981	0.981	0.980	0.980
Flow Entry, veh/h	553	491	199	225	370	739
Cap Entry, veh/h	936	1009	502	568	1310	1379
V/C Ratio	0.591	0.486	0.397	0.395	0.282	0.536
Control Delay, s/veh	12.2	9.3	13.8	12.4	5.2	8.3
LOS	B	A	B	B	A	A
95th %tile Queue, veh	4	3	2	2	1	3



Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	565	750	54	1087	250	641
v/c Ratio	0.50	0.74	0.17	0.52	0.17	0.88
Control Delay	18.9	7.0	29.0	13.5	11.6	30.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.9	7.0	29.0	13.5	11.6	30.5
Queue Length 50th (ft)	97	0	10	105	30	195
Queue Length 95th (ft)	142	82	26	139	52	#399
Internal Link Dist (ft)	1915			620		
Turn Bay Length (ft)			200			315
Base Capacity (vph)	1279	1050	318	2733	1718	842
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.71	0.17	0.40	0.15	0.76

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



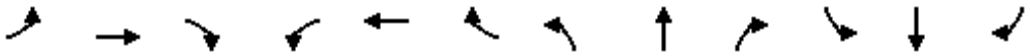
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	520	690	50	1000	0	0	0	0	230	0	590
Future Volume (veh/h)	0	520	690	50	1000	0	0	0	0	230	0	590
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
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	0	1870	1870	1870	1870	0				1870	0	1870
Adj Flow Rate, veh/h	0	565	750	54	1087	0				250	0	641
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	0	2
Cap, veh/h	0	1104	492	168	2201	0				1471	0	675
Arrive On Green	0.00	0.31	0.31	0.05	0.43	0.00				0.43	0.00	0.43
Sat Flow, veh/h	0	3647	1585	3456	5274	0				3456	0	1585
Grp Volume(v), veh/h	0	565	750	54	1087	0				250	0	641
Grp Sat Flow(s),veh/h/ln	0	1777	1585	1728	1702	0				1728	0	1585
Q Serve(g_s), s	0.0	8.2	19.5	0.9	9.7	0.0				2.8	0.0	24.5
Cycle Q Clear(g_c), s	0.0	8.2	19.5	0.9	9.7	0.0				2.8	0.0	24.5
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1104	492	168	2201	0				1471	0	675
V/C Ratio(X)	0.00	0.51	1.52	0.32	0.49	0.00				0.17	0.00	0.95
Avail Cap(c_a), veh/h	0	1104	492	275	2359	0				1487	0	682
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	17.7	21.6	28.9	12.9	0.0				11.2	0.0	17.4
Incr Delay (d2), s/veh	0.0	0.4	245.6	1.1	0.2	0.0				0.1	0.0	22.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.1	40.1	0.4	3.3	0.0				1.0	0.0	11.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	18.1	267.2	30.0	13.1	0.0				11.2	0.0	40.2
LnGrp LOS	A	B	F	C	B	A				B	A	D
Approach Vol, veh/h		1315			1141						891	
Approach Delay, s/veh		160.2			13.9						32.1	
Approach LOS		F			B						C	

Timer - Assigned Phs		2	3	4				8				
Phs Duration (G+Y+Rc), s		31.2	7.5	24.0				31.5				
Change Period (Y+Rc), s		4.5	4.5	4.5				4.5				
Max Green Setting (Gmax), s		27.0	5.0	19.5				29.0				
Max Q Clear Time (g_c+I1), s		26.5	2.9	21.5				11.7				
Green Ext Time (p_c), s		0.2	0.0	0.0				7.3				

Intersection Summary												
HCM 6th Ctrl Delay			76.2									
HCM 6th LOS			E									

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	22	783	467	33	674	76
v/c Ratio	0.09	0.69	0.49	0.07	0.35	0.08
Control Delay	34.9	24.8	24.9	0.3	10.4	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.9	24.8	24.9	0.3	10.4	2.7
Queue Length 50th (ft)	4	157	84	0	78	0
Queue Length 95th (ft)	17	214	148	1	140	18
Internal Link Dist (ft)		620	2893			
Turn Bay Length (ft)	200			305	100	
Base Capacity (vph)	238	1524	1073	537	1908	916
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.51	0.44	0.06	0.35	0.08

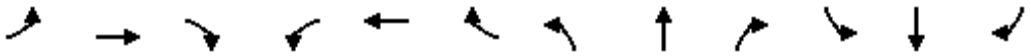
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	720	0	0	430	30	620	0	70	0	0	0
Future Volume (veh/h)	20	720	0	0	430	30	620	0	70	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
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	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	22	783	0	0	467	33	674	0	76			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	86	1055	0	0	737	329	1983	1073	910			
Arrive On Green	0.02	0.30	0.00	0.00	0.21	0.21	0.57	0.00	0.57			
Sat Flow, veh/h	3456	3647	0	0	3647	1585	3456	1870	1585			
Grp Volume(v), veh/h	22	783	0	0	467	33	674	0	76			
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1777	1585	1728	1870	1585			
Q Serve(g_s), s	0.4	13.8	0.0	0.0	8.4	1.2	7.2	0.0	1.5			
Cycle Q Clear(g_c), s	0.4	13.8	0.0	0.0	8.4	1.2	7.2	0.0	1.5			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	86	1055	0	0	737	329	1983	1073	910			
V/C Ratio(X)	0.26	0.74	0.00	0.00	0.63	0.10	0.34	0.00	0.08			
Avail Cap(c_a), veh/h	248	1581	0	0	1096	489	1983	1073	910			
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	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	33.3	22.1	0.0	0.0	25.2	22.4	7.9	0.0	6.6			
Incr Delay (d2), s/veh	1.5	1.1	0.0	0.0	0.9	0.1	0.5	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			
%ile BackOfQ(50%),veh/ln	0.2	5.5	0.0	0.0	3.4	0.4	2.4	0.0	0.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.9	23.1	0.0	0.0	26.1	22.5	8.3	0.0	6.8			
LnGrp LOS	C	C	A	A	C	C	A	A	A			
Approach Vol, veh/h		805			500			750				
Approach Delay, s/veh		23.5			25.9			8.2				
Approach LOS		C			C			A				
Timer - Assigned Phs		2		4			7	8				
Phs Duration (G+Y+Rc), s		44.5		25.2			6.2	19.0				
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5				
Max Green Setting (Gmax), s		40.0		31.0			5.0	21.5				
Max Q Clear Time (g_c+I1), s		9.2		15.8			2.4	10.4				
Green Ext Time (p_c), s		3.0		4.8			0.0	2.4				
Intersection Summary												
HCM 6th Ctrl Delay			18.5									
HCM 6th LOS			B									

Queues
1: Ortega Hwy & Antonio Pkwy

09/28/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	315	391	315	565	522	120	109	1457	217	22	2098	500
v/c Ratio	0.47	0.55	0.78	1.61	0.73	0.30	0.76	0.65	0.26	0.30	1.01	0.28
Control Delay	45.6	45.4	42.8	321.3	51.2	11.0	88.6	29.6	4.3	69.0	57.8	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.6	45.4	42.8	321.3	51.2	11.0	88.6	29.6	4.3	69.0	57.8	3.2
Queue Length 50th (ft)	111	143	153	~618	197	7	43	331	0	17	~586	23
Queue Length 95th (ft)	168	191	257	#945	268	57	#103	458	53	48	#844	52
Internal Link Dist (ft)		1533			1559			1500			1768	
Turn Bay Length (ft)	590		360	300		260	240		395	345		345
Base Capacity (vph)	673	1640	792	350	1711	821	144	2251	822	74	2078	1802
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.24	0.40	1.61	0.31	0.15	0.76	0.65	0.26	0.30	1.01	0.28

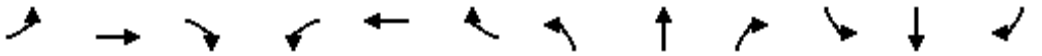
Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
1: Ortega Hwy & Antonio Pkwy

09/28/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	290	360	290	520	480	110	100	1340	200	20	1930	460
Future Volume (veh/h)	290	360	290	520	480	110	100	1340	200	20	1930	460
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	315	391	315	565	522	120	109	1457	217	22	2098	500
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	813	843	376	336	677	302	139	1989	617	72	1989	1743
Arrive On Green	0.24	0.24	0.24	0.19	0.19	0.19	0.04	0.39	0.39	0.04	0.39	0.39
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	5106	1585	1781	5106	2790
Grp Volume(v), veh/h	315	391	315	565	522	120	109	1457	217	22	2098	500
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1702	1585	1781	1702	1395
Q Serve(g_s), s	9.6	11.7	23.6	23.5	17.4	8.3	3.9	30.4	6.9	1.5	48.5	2.1
Cycle Q Clear(g_c), s	9.6	11.7	23.6	23.5	17.4	8.3	3.9	30.4	6.9	1.5	48.5	2.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	813	843	376	336	677	302	139	1989	617	72	1989	1743
V/C Ratio(X)	0.39	0.46	0.84	1.68	0.77	0.40	0.79	0.73	0.35	0.31	1.05	0.29
Avail Cap(c_a), veh/h	813	1570	700	336	1638	731	139	1989	617	72	1989	1743
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	40.1	40.7	45.2	50.5	47.8	44.1	59.2	32.5	8.8	58.1	38.0	4.3
Incr Delay (d2), s/veh	0.3	0.4	5.0	319.0	1.9	0.8	25.0	2.4	1.6	2.4	36.5	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	4.1	5.2	9.8	40.2	7.9	3.3	2.2	12.8	0.3	0.7	26.5	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.4	41.1	50.2	369.5	49.7	45.0	84.3	34.9	10.4	60.5	74.5	4.8
LnGrp LOS	D	D	D	F	D	D	F	C	B	E	F	A
Approach Vol, veh/h		1021			1207			1783			2620	
Approach Delay, s/veh		43.7			198.9			34.9			61.1	
Approach LOS		D			F			C			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	53.0	28.0	34.0	9.5	53.0	33.8	28.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	48.5	23.5	55.0	5.0	48.5	21.1	57.4
Max Q Clear Time (g_c+I1), s	3.5	32.4	25.5	25.6	5.9	50.5	11.6	19.4
Green Ext Time (p_c), s	0.0	10.1	0.0	4.0	0.0	0.0	0.8	4.4

Intersection Summary	
HCM 6th Ctrl Delay	76.5
HCM 6th LOS	E

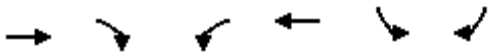
Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Intersection Delay, s/veh	10.8
Intersection LOS	B

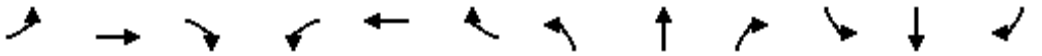
Approach	EB	NB	SB
Entry Lanes	2	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	544	641	1696
Demand Flow Rate, veh/h	555	654	1730
Vehicles Circulating, veh/h	931	544	11
Vehicles Exiting, veh/h	810	942	1187
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	13.7	8.8	10.7
Approach LOS	B	A	B

Lane	Left	Right	Left	Right	Left	Right
Designated Moves	L	LTR	LT	TR	LT	R
Assumed Moves	L	LTR	LT	TR	LT	R
RT Channelized						
Lane Util	0.530	0.470	0.469	0.531	0.538	0.462
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	294	261	307	347	931	799
Cap Entry Lane, veh/h	573	644	818	894	1336	1407
Entry HV Adj Factor	0.981	0.980	0.982	0.980	0.980	0.980
Flow Entry, veh/h	288	256	301	340	913	783
Cap Entry, veh/h	562	630	804	876	1310	1379
V/C Ratio	0.513	0.406	0.375	0.388	0.697	0.568
Control Delay, s/veh	15.5	11.6	9.0	8.6	12.3	8.8
LOS	C	B	A	A	B	A
95th %tile Queue, veh	3	2	2	2	6	4



Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	1076	739	65	1402	43	43
v/c Ratio	0.73	0.68	0.21	0.54	0.04	0.07
Control Delay	18.2	5.0	27.1	9.9	14.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.2	5.0	27.1	9.9	14.8	0.2
Queue Length 50th (ft)	172	0	11	103	5	0
Queue Length 95th (ft)	242	59	27	135	14	1
Internal Link Dist (ft)	1915			620		
Turn Bay Length (ft)						315
Base Capacity (vph)	1511	1099	312	3048	1122	591
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.67	0.21	0.46	0.04	0.07

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	990	680	60	1290	0	0	0	0	40	0	40
Future Volume (veh/h)	0	990	680	60	1290	0	0	0	0	40	0	40
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
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	0	1870	1870	1870	1870	0				1870	0	1870
Adj Flow Rate, veh/h	0	1076	739	65	1402	0				43	0	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	0	2
Cap, veh/h	0	1434	639	193	2739	0				1068	0	490
Arrive On Green	0.00	0.40	0.40	0.06	0.54	0.00				0.31	0.00	0.31
Sat Flow, veh/h	0	3647	1585	3456	5274	0				3456	0	1585
Grp Volume(v), veh/h	0	1076	739	65	1402	0				43	0	43
Grp Sat Flow(s),veh/h/ln	0	1777	1585	1728	1702	0				1728	0	1585
Q Serve(g_s), s	0.0	15.1	23.5	1.1	10.2	0.0				0.5	0.0	1.1
Cycle Q Clear(g_c), s	0.0	15.1	23.5	1.1	10.2	0.0				0.5	0.0	1.1
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1434	639	193	2739	0				1068	0	490
V/C Ratio(X)	0.00	0.75	1.16	0.34	0.51	0.00				0.04	0.00	0.09
Avail Cap(c_a), veh/h	0	1434	639	297	2893	0				1068	0	490
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	14.9	17.4	26.5	8.6	0.0				14.1	0.0	14.3
Incr Delay (d2), s/veh	0.0	2.3	86.9	1.0	0.1	0.0				0.1	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
%ile BackOfQ(50%),veh/ln	0.0	5.7	22.7	0.4	3.0	0.0				0.2	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	17.1	104.3	27.5	8.8	0.0				14.2	0.0	14.6
LnGrp LOS	A	B	F	C	A	A				B	A	B
Approach Vol, veh/h		1815			1467						86	
Approach Delay, s/veh		52.6			9.6						14.4	
Approach LOS		D			A						B	

Timer - Assigned Phs		2	3	4				8				
Phs Duration (G+Y+Rc), s		22.5	7.8	28.0				35.8				
Change Period (Y+Rc), s		4.5	4.5	4.5				4.5				
Max Green Setting (Gmax), s		18.0	5.0	23.5				33.0				
Max Q Clear Time (g_c+I1), s		3.1	3.1	25.5				12.2				
Green Ext Time (p_c), s		0.2	0.0	0.0				10.7				

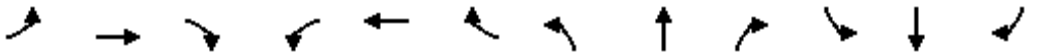
Intersection Summary	
HCM 6th Ctrl Delay	32.9
HCM 6th LOS	C

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	804	315	685	304	772	43
v/c Ratio	1.14	0.18	0.84	0.51	0.54	0.05
Control Delay	112.0	13.3	44.0	6.9	21.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	112.0	13.3	44.0	6.9	21.8	0.1
Queue Length 50th (ft)	~277	50	195	0	167	0
Queue Length 95th (ft)	#391	75	#282	64	222	0
Internal Link Dist (ft)		620	2893			
Turn Bay Length (ft)				305	100	
Base Capacity (vph)	708	1738	829	603	1417	933
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.14	0.18	0.83	0.50	0.54	0.05

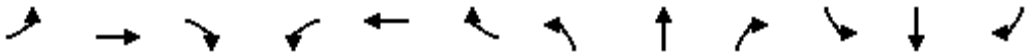
Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	740	290	0	0	630	280	710	0	40	0	0	0
Future Volume (veh/h)	740	290	0	0	630	280	710	0	40	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
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	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	804	315	0	0	685	304	772	0	43			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	719	1714	0	0	795	355	1439	779	660			
Arrive On Green	0.21	0.48	0.00	0.00	0.22	0.22	0.42	0.00	0.42			
Sat Flow, veh/h	3456	3647	0	0	3647	1585	3456	1870	1585			
Grp Volume(v), veh/h	804	315	0	0	685	304	772	0	43			
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1777	1585	1728	1870	1585			
Q Serve(g_s), s	18.5	4.5	0.0	0.0	16.5	16.4	14.9	0.0	1.4			
Cycle Q Clear(g_c), s	18.5	4.5	0.0	0.0	16.5	16.4	14.9	0.0	1.4			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	719	1714	0	0	795	355	1439	779	660			
V/C Ratio(X)	1.12	0.18	0.00	0.00	0.86	0.86	0.54	0.00	0.07			
Avail Cap(c_a), veh/h	719	1759	0	0	840	375	1439	779	660			
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	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	35.2	13.1	0.0	0.0	33.2	33.1	19.5	0.0	15.6			
Incr Delay (d2), s/veh	70.8	0.1	0.0	0.0	8.8	17.0	1.4	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			
%ile BackOfQ(50%),veh/ln	14.6	1.7	0.0	0.0	7.9	7.8	6.0	0.0	0.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	106.0	13.1	0.0	0.0	42.0	50.2	20.9	0.0	15.8			
LnGrp LOS	F	B	A	A	D	D	C	A	B			
Approach Vol, veh/h		1119			989			815				
Approach Delay, s/veh		79.8			44.5			20.7				
Approach LOS		E			D			C				
Timer - Assigned Phs		2		4			7	8				
Phs Duration (G+Y+Rc), s		41.5		47.4			23.0	24.4				
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5				
Max Green Setting (Gmax), s		37.0		44.0			18.5	21.0				
Max Q Clear Time (g_c+I1), s		16.9		6.5			20.5	18.5				
Green Ext Time (p_c), s		3.1		2.2			0.0	1.4				
Intersection Summary												
HCM 6th Ctrl Delay			51.4									
HCM 6th LOS			D									

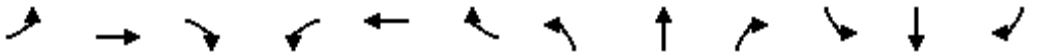


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	587	663	43	359	587	76	65	1962	717	141	1250	533
v/c Ratio	0.89	0.78	0.10	1.16	0.74	0.18	0.46	0.99	0.85	1.78	0.60	0.29
Control Delay	66.0	50.2	2.1	146.1	50.1	8.8	70.4	54.5	28.4	432.2	30.9	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.0	50.2	2.1	146.1	50.1	8.8	70.4	54.5	28.4	432.2	30.9	6.5
Queue Length 50th (ft)	236	259	0	~335	228	0	26	557	283	~167	286	54
Queue Length 95th (ft)	#373	327	8	#576	292	39	54	#766	#586	#322	378	103
Internal Link Dist (ft)		1533			1559			1500			1768	
Turn Bay Length (ft)	590		360	300		260	240		395	345		345
Base Capacity (vph)	658	1645	776	310	1587	752	140	1991	839	79	2095	1866
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.40	0.06	1.16	0.37	0.10	0.46	0.99	0.85	1.78	0.60	0.29

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	540	610	40	330	540	70	60	1805	660	130	1150	490
Future Volume (veh/h)	540	610	40	330	540	70	60	1805	660	130	1150	490
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	587	663	43	359	587	76	65	1962	717	141	1250	533
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	642	837	373	315	805	359	126	2015	625	81	2059	1643
Arrive On Green	0.19	0.24	0.24	0.18	0.23	0.23	0.04	0.39	0.39	0.05	0.40	0.40
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	5106	1585	1781	5106	2790
Grp Volume(v), veh/h	587	663	43	359	587	76	65	1962	717	141	1250	533
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1702	1585	1781	1702	1395
Q Serve(g_s), s	20.3	21.3	2.6	21.5	18.6	4.7	2.2	46.0	48.0	5.5	23.5	11.8
Cycle Q Clear(g_c), s	20.3	21.3	2.6	21.5	18.6	4.7	2.2	46.0	48.0	5.5	23.5	11.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	642	837	373	315	805	359	126	2015	625	81	2059	1643
V/C Ratio(X)	0.91	0.79	0.12	1.14	0.73	0.21	0.51	0.97	1.15	1.75	0.61	0.32
Avail Cap(c_a), veh/h	668	1665	743	315	1607	717	142	2015	625	81	2059	1643
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	48.6	43.7	36.5	50.1	43.6	38.2	57.6	36.2	36.8	58.1	28.7	12.7
Incr Delay (d2), s/veh	16.8	1.7	0.1	94.3	1.3	0.3	3.2	14.8	83.7	383.8	1.3	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	10.2	9.5	1.0	17.8	8.3	1.9	1.0	21.4	32.7	11.1	9.8	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.4	45.4	36.7	144.4	44.9	38.5	60.8	51.0	120.5	441.9	30.0	13.2
LnGrp LOS	E	D	D	F	D	D	E	D	F	F	C	B
Approach Vol, veh/h		1293			1022			2744			1924	
Approach Delay, s/veh		54.2			79.4			69.4			55.6	
Approach LOS		D			E			E			E	

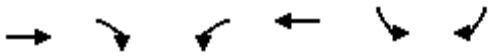
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	52.5	26.0	33.2	8.9	53.6	27.1	32.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.5	48.0	21.5	57.0	5.0	48.5	23.5	55.0
Max Q Clear Time (g_c+I1), s	7.5	50.0	23.5	23.3	4.2	25.5	22.3	20.6
Green Ext Time (p_c), s	0.0	0.0	0.0	5.3	0.0	12.6	0.3	4.8

Intersection Summary	
HCM 6th Ctrl Delay	64.2
HCM 6th LOS	E

Intersection	
Intersection Delay, s/veh	11.1
Intersection LOS	B

Approach	EB	NB	SB
Entry Lanes	2	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	728	891	1163
Demand Flow Rate, veh/h	742	909	1187
Vehicles Circulating, veh/h	643	731	11
Vehicles Exiting, veh/h	555	654	1629
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	11.4	16.3	7.0
Approach LOS	B	C	A

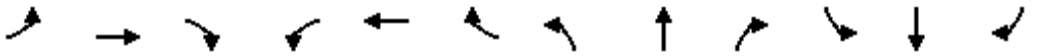
Lane	Left	Right	Left	Right	Left	Right
Designated Moves	L	LTR	LT	TR	LT	R
Assumed Moves	L	LTR	LT	TR	LT	R
RT Channelized						
Lane Util	0.530	0.470	0.470	0.530	0.542	0.458
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	393	349	427	482	643	544
Cap Entry Lane, veh/h	747	822	689	763	1336	1407
Entry HV Adj Factor	0.982	0.980	0.981	0.980	0.980	0.980
Flow Entry, veh/h	386	342	419	472	630	533
Cap Entry, veh/h	734	806	676	748	1310	1378
V/C Ratio	0.526	0.425	0.620	0.632	0.481	0.387
Control Delay, s/veh	12.9	9.8	16.7	15.9	7.7	6.2
LOS	B	A	C	C	A	A
95th %tile Queue, veh	3	2	4	5	3	2



Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	576	870	43	1141	250	652
v/c Ratio	0.50	0.79	0.14	0.54	0.17	0.89
Control Delay	19.0	8.4	28.9	13.9	11.7	32.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.0	8.4	28.9	13.9	11.7	32.1
Queue Length 50th (ft)	99	0	8	112	30	201
Queue Length 95th (ft)	145	#135	22	147	52	#411
Internal Link Dist (ft)	1915			620		
Turn Bay Length (ft)						315
Base Capacity (vph)	1241	1120	307	2639	1659	817
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.78	0.14	0.43	0.15	0.80

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



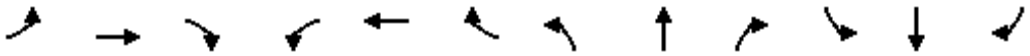
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	530	800	40	1050	0	0	0	0	230	0	600
Future Volume (veh/h)	0	530	800	40	1050	0	0	0	0	230	0	600
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
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	0	1870	1870	1870	1870	0				1870	0	1870
Adj Flow Rate, veh/h	0	576	870	43	1141	0				250	0	652
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	0	2
Cap, veh/h	0	1107	494	145	2173	0				1488	0	683
Arrive On Green	0.00	0.31	0.31	0.04	0.43	0.00				0.43	0.00	0.43
Sat Flow, veh/h	0	3647	1585	3456	5274	0				3456	0	1585
Grp Volume(v), veh/h	0	576	870	43	1141	0				250	0	652
Grp Sat Flow(s),veh/h/ln	0	1777	1585	1728	1702	0				1728	0	1585
Q Serve(g_s), s	0.0	8.3	19.5	0.8	10.3	0.0				2.8	0.0	24.9
Cycle Q Clear(g_c), s	0.0	8.3	19.5	0.8	10.3	0.0				2.8	0.0	24.9
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1107	494	145	2173	0				1488	0	683
V/C Ratio(X)	0.00	0.52	1.76	0.30	0.53	0.00				0.17	0.00	0.96
Avail Cap(c_a), veh/h	0	1107	494	276	2366	0				1491	0	684
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	17.7	21.5	29.1	13.3	0.0				10.9	0.0	17.2
Incr Delay (d2), s/veh	0.0	0.4	350.9	1.1	0.2	0.0				0.1	0.0	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	0.0	3.2	54.7	0.3	3.5	0.0				1.0	0.0	12.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	18.1	372.4	30.2	13.5	0.0				11.0	0.0	41.1
LnGrp LOS	A	B	F	C	B	A				B	A	D
Approach Vol, veh/h		1446			1184						902	
Approach Delay, s/veh		231.3			14.1						32.8	
Approach LOS		F			B						C	

Timer - Assigned Phs		2	3	4				8				
Phs Duration (G+Y+Rc), s		31.4	7.1	24.0				31.1				
Change Period (Y+Rc), s		4.5	4.5	4.5				4.5				
Max Green Setting (Gmax), s		27.0	5.0	19.5				29.0				
Max Q Clear Time (g_c+I1), s		26.9	2.8	21.5				12.3				
Green Ext Time (p_c), s		0.0	0.0	0.0				7.6				

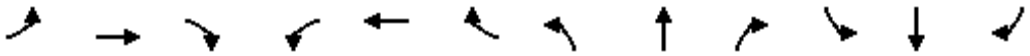
Intersection Summary												
HCM 6th Ctrl Delay			107.8									
HCM 6th LOS			F									

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	22	804	467	33	717	54
v/c Ratio	0.09	0.71	0.48	0.07	0.38	0.06
Control Delay	35.0	25.1	24.7	0.3	10.7	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.0	25.1	24.7	0.3	10.7	1.4
Queue Length 50th (ft)	4	163	84	0	86	0
Queue Length 95th (ft)	17	221	148	1	151	10
Internal Link Dist (ft)		620	2893			
Turn Bay Length (ft)				305	100	
Base Capacity (vph)	237	1519	1073	537	1901	913
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.53	0.44	0.06	0.38	0.06

Intersection Summary



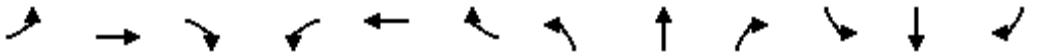
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	740	0	0	430	30	660	0	50	0	0	0
Future Volume (veh/h)	20	740	0	0	430	30	660	0	50	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking 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	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	22	804	0	0	467	33	717	0	54			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	86	1075	0	0	759	338	1968	1065	903			
Arrive On Green	0.02	0.30	0.00	0.00	0.21	0.21	0.57	0.00	0.57			
Sat Flow, veh/h	3456	3647	0	0	3647	1585	3456	1870	1585			
Grp Volume(v), veh/h	22	804	0	0	467	33	717	0	54			
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1777	1585	1728	1870	1585			
Q Serve(g_s), s	0.4	14.3	0.0	0.0	8.4	1.2	7.9	0.0	1.1			
Cycle Q Clear(g_c), s	0.4	14.3	0.0	0.0	8.4	1.2	7.9	0.0	1.1			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	86	1075	0	0	759	338	1968	1065	903			
V/C Ratio(X)	0.26	0.75	0.00	0.00	0.62	0.10	0.36	0.00	0.06			
Avail Cap(c_a), veh/h	246	1568	0	0	1088	485	1968	1065	903			
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	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	33.6	22.1	0.0	0.0	25.0	22.2	8.2	0.0	6.7			
Incr Delay (d2), s/veh	1.6	1.2	0.0	0.0	0.8	0.1	0.5	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			
%ile BackOfQ(50%),veh/ln	0.2	5.7	0.0	0.0	3.4	0.4	2.6	0.0	0.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.2	23.3	0.0	0.0	25.8	22.3	8.7	0.0	6.9			
LnGrp LOS	D	C	A	A	C	C	A	A	A			
Approach Vol, veh/h		826			500			771				
Approach Delay, s/veh		23.6			25.6			8.6				
Approach LOS		C			C			A				
Timer - Assigned Phs		2		4			7	8				
Phs Duration (G+Y+Rc), s		44.5		25.7			6.2	19.5				
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5				
Max Green Setting (Gmax), s		40.0		31.0			5.0	21.5				
Max Q Clear Time (g_c+I1), s		9.9		16.3			2.4	10.4				
Green Ext Time (p_c), s		3.1		4.9			0.0	2.4				
Intersection Summary												
HCM 6th Ctrl Delay			18.6									
HCM 6th LOS			B									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	489	293	380	261	424	76	87	837	54	11	1304	609
v/c Ratio	0.83	0.35	0.83	0.81	0.49	0.17	0.63	0.37	0.07	0.15	0.65	0.33
Control Delay	63.7	39.9	47.5	69.6	40.9	7.9	80.5	25.9	3.2	67.3	33.8	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.7	39.9	47.5	69.6	40.9	7.9	80.5	25.9	3.2	67.3	33.8	4.8
Queue Length 50th (ft)	198	104	214	202	152	0	36	153	0	9	311	35
Queue Length 95th (ft)	#338	143	332	#391	200	36	#85	260	17	32	438	86
Internal Link Dist (ft)		1533			1559			1500			1768	
Turn Bay Length (ft)	590		360	300		260	240		395	345		345
Base Capacity (vph)	589	1585	769	338	1654	780	139	2258	745	72	2008	1848
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.18	0.49	0.77	0.26	0.10	0.63	0.37	0.07	0.15	0.65	0.33

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	450	270	350	240	390	70	80	770	50	10	1200	560
Future Volume (veh/h)	450	270	350	240	390	70	80	770	50	10	1200	560
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	489	293	380	261	424	76	87	837	54	11	1304	609
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	544	967	431	288	982	438	134	2097	651	23	1964	1512
Arrive On Green	0.16	0.27	0.27	0.16	0.28	0.28	0.04	0.41	0.41	0.01	0.38	0.38
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	5106	1585	1781	5106	2790
Grp Volume(v), veh/h	489	293	380	261	424	76	87	837	54	11	1304	609
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1702	1585	1781	1702	1395
Q Serve(g_s), s	17.5	8.2	28.9	18.1	12.4	4.6	3.1	14.6	2.6	0.8	26.6	16.1
Cycle Q Clear(g_c), s	17.5	8.2	28.9	18.1	12.4	4.6	3.1	14.6	2.6	0.8	26.6	16.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	544	967	431	288	982	438	134	2097	651	23	1964	1512
V/C Ratio(X)	0.90	0.30	0.88	0.91	0.43	0.17	0.65	0.40	0.08	0.49	0.66	0.40
Avail Cap(c_a), veh/h	578	1550	691	332	1618	722	137	2097	651	71	1964	1512
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	36.4	43.9	51.9	37.5	34.7	59.8	26.2	22.7	61.8	32.1	16.9
Incr Delay (d2), s/veh	16.4	0.2	7.9	25.1	0.3	0.2	10.0	0.6	0.2	15.3	1.8	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	8.8	3.6	12.2	10.1	5.4	1.8	1.6	6.0	1.0	0.4	11.2	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.5	36.6	51.8	77.0	37.8	34.9	69.8	26.8	22.9	77.2	33.9	17.7
LnGrp LOS	E	D	D	E	D	C	E	C	C	E	C	B
Approach Vol, veh/h		1162			761			978			1924	
Approach Delay, s/veh		55.0			50.9			30.4			29.0	
Approach LOS		E			D			C			C	

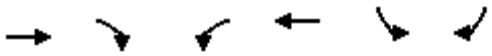
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.1	56.3	24.9	38.8	9.4	53.0	24.4	39.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	48.5	23.5	55.0	5.0	48.5	21.1	57.4
Max Q Clear Time (g_c+I1), s	2.8	16.6	20.1	30.9	5.1	28.6	19.5	14.4
Green Ext Time (p_c), s	0.0	7.0	0.3	3.4	0.0	12.3	0.3	3.4

Intersection Summary	
HCM 6th Ctrl Delay	39.0
HCM 6th LOS	D

Intersection	
Intersection Delay, s/veh	11.9
Intersection LOS	B

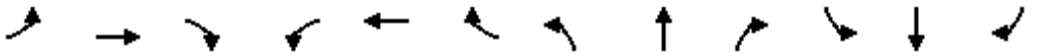
Approach	EB	NB	SB
Entry Lanes	2	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	783	402	1696
Demand Flow Rate, veh/h	798	410	1730
Vehicles Circulating, veh/h	621	787	11
Vehicles Exiting, veh/h	1120	632	1186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	11.9	9.0	12.6
Approach LOS	B	A	B

Lane	Left	Right	Left	Right	Left	Right
Designated Moves	L	LTR	LT	TR	LT	R
Assumed Moves	L	LTR	LT	TR	LT	R
RT Channelized						
Lane Util	0.530	0.470	0.471	0.529	0.359	0.641
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	423	375	193	217	621	1109
Cap Entry Lane, veh/h	762	838	654	727	1336	1407
Entry HV Adj Factor	0.981	0.981	0.979	0.982	0.980	0.980
Flow Entry, veh/h	415	368	189	213	609	1087
Cap Entry, veh/h	748	822	641	714	1310	1379
V/C Ratio	0.555	0.448	0.295	0.298	0.465	0.788
Control Delay, s/veh	13.4	10.1	9.4	8.7	7.4	15.4
LOS	B	B	A	A	A	C
95th %tile Queue, veh	3	2	1	1	3	9



Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	1076	685	87	1293	33	43
v/c Ratio	0.44	0.52	0.17	0.31	0.06	0.12
Control Delay	7.5	2.6	20.0	2.6	18.6	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.5	2.6	20.0	2.6	18.6	1.1
Queue Length 50th (ft)	104	0	11	39	4	0
Queue Length 95th (ft)	159	42	28	58	13	3
Internal Link Dist (ft)	1915			620		
Turn Bay Length (ft)			200			315
Base Capacity (vph)	2450	1306	515	4121	1853	904
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.52	0.17	0.31	0.02	0.05

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	990	630	80	1190	0	0	0	0	30	0	40
Future Volume (veh/h)	0	990	630	80	1190	0	0	0	0	30	0	40
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
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	0	1870	1870	1870	1870	0				1870	0	1870
Adj Flow Rate, veh/h	0	1076	685	87	1293	0				33	0	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	0	2
Cap, veh/h	0	1871	835	264	3635	0				243	0	112
Arrive On Green	0.00	0.53	0.53	0.08	0.71	0.00				0.07	0.00	0.07
Sat Flow, veh/h	0	3647	1585	3456	5274	0				3456	0	1585
Grp Volume(v), veh/h	0	1076	685	87	1293	0				33	0	43
Grp Sat Flow(s),veh/h/ln	0	1777	1585	1728	1702	0				1728	0	1585
Q Serve(g_s), s	0.0	8.5	14.9	1.0	4.0	0.0				0.4	0.0	1.1
Cycle Q Clear(g_c), s	0.0	8.5	14.9	1.0	4.0	0.0				0.4	0.0	1.1
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1871	835	264	3635	0				243	0	112
V/C Ratio(X)	0.00	0.57	0.82	0.33	0.36	0.00				0.14	0.00	0.39
Avail Cap(c_a), veh/h	0	2020	901	418	4076	0				1505	0	690
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.6	8.2	18.1	2.3	0.0				18.0	0.0	18.4
Incr Delay (d2), s/veh	0.0	0.3	5.7	0.7	0.1	0.0				0.3	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.0	4.4	0.4	0.3	0.0				0.1	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	7.0	13.9	18.8	2.4	0.0				18.3	0.0	20.5
LnGrp LOS	A	A	B	B	A	A				B	A	C
Approach Vol, veh/h		1761			1380						76	
Approach Delay, s/veh		9.7			3.4						19.6	
Approach LOS		A			A						B	

Timer - Assigned Phs		2	3	4				8				
Phs Duration (G+Y+Rc), s		7.4	7.7	26.3				33.9				
Change Period (Y+Rc), s		4.5	4.5	4.5				4.5				
Max Green Setting (Gmax), s		18.0	5.0	23.5				33.0				
Max Q Clear Time (g_c+I1), s		3.1	3.0	16.9				6.0				
Green Ext Time (p_c), s		0.1	0.0	4.9				11.1				

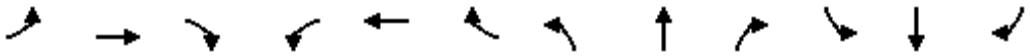
Intersection Summary	
HCM 6th Ctrl Delay	7.2
HCM 6th LOS	A

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	804	304	696	293	685	54
v/c Ratio	1.14	0.18	0.85	0.50	0.48	0.06
Control Delay	112.3	13.2	44.9	6.9	20.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	112.3	13.2	44.9	6.9	20.8	0.1
Queue Length 50th (ft)	~277	48	199	0	143	0
Queue Length 95th (ft)	#391	73	#289	63	193	0
Internal Link Dist (ft)		620	2893			
Turn Bay Length (ft)	200			305	100	
Base Capacity (vph)	708	1737	828	595	1416	941
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.14	0.18	0.84	0.49	0.48	0.06

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

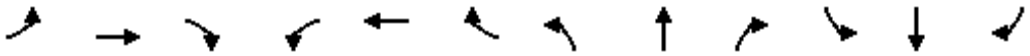
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	740	280	0	0	640	270	630	0	50	0	0	0
Future Volume (veh/h)	740	280	0	0	640	270	630	0	50	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
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	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	804	304	0	0	696	293	685	0	54			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	718	1718	0	0	800	357	1436	777	659			
Arrive On Green	0.21	0.48	0.00	0.00	0.23	0.23	0.42	0.00	0.42			
Sat Flow, veh/h	3456	3647	0	0	3647	1585	3456	1870	1585			
Grp Volume(v), veh/h	804	304	0	0	696	293	685	0	54			
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1777	1585	1728	1870	1585			
Q Serve(g_s), s	18.5	4.3	0.0	0.0	16.8	15.6	12.9	0.0	1.8			
Cycle Q Clear(g_c), s	18.5	4.3	0.0	0.0	16.8	15.6	12.9	0.0	1.8			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	718	1718	0	0	800	357	1436	777	659			
V/C Ratio(X)	1.12	0.18	0.00	0.00	0.87	0.82	0.48	0.00	0.08			
Avail Cap(c_a), veh/h	718	1756	0	0	838	374	1436	777	659			
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	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	35.3	13.0	0.0	0.0	33.2	32.8	19.0	0.0	15.7			
Incr Delay (d2), s/veh	71.6	0.0	0.0	0.0	9.5	13.2	1.1	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			
%ile BackOfQ(50%),veh/ln	14.7	1.7	0.0	0.0	8.1	7.1	5.2	0.0	0.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	106.9	13.0	0.0	0.0	42.8	46.0	20.1	0.0	16.0			
LnGrp LOS	F	B	A	A	D	D	C	A	B			
Approach Vol, veh/h		1108			989			739				
Approach Delay, s/veh		81.1			43.7			19.8				
Approach LOS		F			D			B				

Timer - Assigned Phs		2		4			7	8				
Phs Duration (G+Y+Rc), s		41.5		47.5			23.0	24.5				
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5				
Max Green Setting (Gmax), s		37.0		44.0			18.5	21.0				
Max Q Clear Time (g_c+I1), s		14.9		6.3			20.5	18.8				
Green Ext Time (p_c), s		2.8		2.1			0.0	1.2				

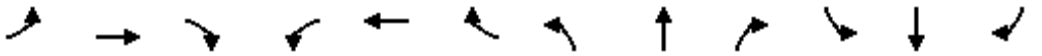
Intersection Summary												
HCM 6th Ctrl Delay			52.1									
HCM 6th LOS			D									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	587	272	185	33	261	22	130	1587	141	22	652	413
v/c Ratio	0.79	0.25	0.30	0.27	0.60	0.08	0.82	0.62	0.16	0.25	0.29	0.20
Control Delay	49.1	30.0	6.0	53.7	51.2	0.7	88.8	22.2	3.7	57.3	19.6	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.1	30.0	6.0	53.7	51.2	0.7	88.8	22.2	3.7	57.3	19.6	0.8
Queue Length 50th (ft)	199	78	0	22	91	0	46	259	0	15	102	0
Queue Length 95th (ft)	#277	117	53	54	134	0	#105	395	36	42	138	15
Internal Link Dist (ft)		1533			1559			1500			1768	
Turn Bay Length (ft)	590		360	300		260	240		395	345		345
Base Capacity (vph)	745	1863	921	351	1798	841	158	2541	861	89	2278	2090
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.15	0.20	0.09	0.15	0.03	0.82	0.62	0.16	0.25	0.29	0.20

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	540	250	170	30	240	20	120	1460	130	20	600	380
Future Volume (veh/h)	540	250	170	30	240	20	120	1460	130	20	600	380
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	587	272	185	33	261	22	130	1587	141	22	652	413
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	672	972	434	53	387	173	168	2546	790	40	2413	1861
Arrive On Green	0.19	0.27	0.27	0.03	0.11	0.11	0.05	0.50	0.50	0.02	0.47	0.47
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	5106	1585	1781	5106	2790
Grp Volume(v), veh/h	587	272	185	33	261	22	130	1587	141	22	652	413
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1702	1585	1781	1702	1395
Q Serve(g_s), s	16.9	6.2	9.9	1.9	7.2	1.3	3.8	23.2	5.0	1.3	7.9	5.9
Cycle Q Clear(g_c), s	16.9	6.2	9.9	1.9	7.2	1.3	3.8	23.2	5.0	1.3	7.9	5.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	672	972	434	53	387	173	168	2546	790	40	2413	1861
V/C Ratio(X)	0.87	0.28	0.43	0.62	0.67	0.13	0.77	0.62	0.18	0.54	0.27	0.22
Avail Cap(c_a), veh/h	791	1974	880	373	1905	850	168	2546	790	95	2413	1861
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	40.1	29.3	30.7	49.2	44.0	41.3	48.2	18.7	14.2	49.6	16.4	6.7
Incr Delay (d2), s/veh	9.5	0.2	0.7	11.4	2.1	0.3	19.5	1.2	0.5	10.9	0.3	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	8.0	2.6	3.8	1.0	3.3	0.5	2.1	9.0	1.9	0.7	3.1	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.6	29.5	31.3	60.6	46.0	41.6	67.8	19.9	14.6	60.5	16.6	7.0
LnGrp LOS	D	C	C	E	D	D	E	B	B	E	B	A
Approach Vol, veh/h		1044			316			1858			1087	
Approach Delay, s/veh		41.1			47.3			22.8			13.8	
Approach LOS		D			D			C			B	

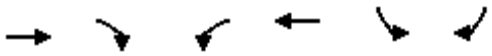
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	55.7	7.5	32.6	9.5	53.0	24.4	15.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.5	48.0	21.5	57.0	5.0	48.5	23.5	55.0
Max Q Clear Time (g_c+I1), s	3.3	25.2	3.9	11.9	5.8	9.9	18.9	9.2
Green Ext Time (p_c), s	0.0	13.4	0.0	2.6	0.0	7.5	1.0	1.9

Intersection Summary	
HCM 6th Ctrl Delay	26.8
HCM 6th LOS	C

Intersection	
Intersection Delay, s/veh	11.1
Intersection LOS	B

Approach	EB	NB	SB
Entry Lanes	2	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	1098	533	1152
Demand Flow Rate, veh/h	1120	543	1175
Vehicles Circulating, veh/h	399	1109	11
Vehicles Exiting, veh/h	787	410	1641
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	12.0	17.1	7.5
Approach LOS	B	C	A

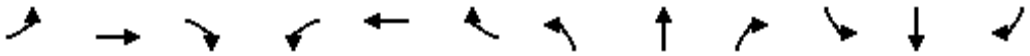
Lane	Left	Right	Left	Right	Left	Right
Designated Moves	L	LTR	LT	TR	LT	R
Assumed Moves	L	LTR	LT	TR	LT	R
RT Channelized						
Lane Util	0.530	0.470	0.470	0.530	0.340	0.660
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	594	526	255	288	399	776
Cap Entry Lane, veh/h	935	1012	487	553	1336	1407
Entry HV Adj Factor	0.980	0.981	0.982	0.980	0.980	0.981
Flow Entry, veh/h	582	516	250	282	391	761
Cap Entry, veh/h	916	992	478	542	1310	1380
V/C Ratio	0.635	0.520	0.524	0.521	0.299	0.552
Control Delay, s/veh	13.7	10.1	18.2	16.2	5.4	8.5
LOS	B	B	C	C	A	A
95th %tile Queue, veh	5	3	3	3	1	4



Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	554	750	54	1087	250	641
v/c Ratio	0.49	0.74	0.17	0.52	0.17	0.88
Control Delay	18.7	7.0	29.0	13.5	11.6	30.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.7	7.0	29.0	13.5	11.6	30.5
Queue Length 50th (ft)	94	0	10	105	30	195
Queue Length 95th (ft)	139	82	26	139	52	#399
Internal Link Dist (ft)	1915			620		
Turn Bay Length (ft)						315
Base Capacity (vph)	1279	1051	318	2734	1719	842
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.71	0.17	0.40	0.15	0.76

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



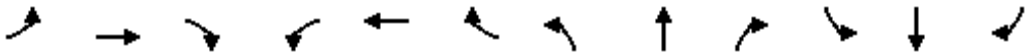
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	510	690	50	1000	0	0	0	0	230	0	590
Future Volume (veh/h)	0	510	690	50	1000	0	0	0	0	230	0	590
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
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	0	1870	1870	1870	1870	0				1870	0	1870
Adj Flow Rate, veh/h	0	554	750	54	1087	0				250	0	641
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	0	2
Cap, veh/h	0	1104	492	168	2201	0				1471	0	675
Arrive On Green	0.00	0.31	0.31	0.05	0.43	0.00				0.43	0.00	0.43
Sat Flow, veh/h	0	3647	1585	3456	5274	0				3456	0	1585
Grp Volume(v), veh/h	0	554	750	54	1087	0				250	0	641
Grp Sat Flow(s),veh/h/ln	0	1777	1585	1728	1702	0				1728	0	1585
Q Serve(g_s), s	0.0	8.0	19.5	0.9	9.7	0.0				2.8	0.0	24.5
Cycle Q Clear(g_c), s	0.0	8.0	19.5	0.9	9.7	0.0				2.8	0.0	24.5
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1104	492	168	2201	0				1471	0	675
V/C Ratio(X)	0.00	0.50	1.52	0.32	0.49	0.00				0.17	0.00	0.95
Avail Cap(c_a), veh/h	0	1104	492	275	2359	0				1487	0	682
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	17.7	21.6	28.9	12.9	0.0				11.2	0.0	17.4
Incr Delay (d2), s/veh	0.0	0.4	245.6	1.1	0.2	0.0				0.1	0.0	22.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.0	40.1	0.4	3.3	0.0				1.0	0.0	11.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	18.0	267.2	30.0	13.1	0.0				11.2	0.0	40.2
LnGrp LOS	A	B	F	C	B	A				B	A	D
Approach Vol, veh/h		1304			1141						891	
Approach Delay, s/veh		161.3			13.9						32.1	
Approach LOS		F			B						C	

Timer - Assigned Phs		2	3	4				8				
Phs Duration (G+Y+Rc), s		31.2	7.5	24.0				31.5				
Change Period (Y+Rc), s		4.5	4.5	4.5				4.5				
Max Green Setting (Gmax), s		27.0	5.0	19.5				29.0				
Max Q Clear Time (g_c+I1), s		26.5	2.9	21.5				11.7				
Green Ext Time (p_c), s		0.2	0.0	0.0				7.3				

Intersection Summary	
HCM 6th Ctrl Delay	76.4
HCM 6th LOS	E

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	22	783	467	33	674	76
v/c Ratio	0.09	0.69	0.49	0.07	0.35	0.08
Control Delay	34.9	24.8	24.9	0.3	10.4	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.9	24.8	24.9	0.3	10.4	2.7
Queue Length 50th (ft)	4	157	84	0	78	0
Queue Length 95th (ft)	17	214	148	1	140	18
Internal Link Dist (ft)		620	2893			
Turn Bay Length (ft)				305	100	
Base Capacity (vph)	238	1524	1073	537	1908	916
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.51	0.44	0.06	0.35	0.08

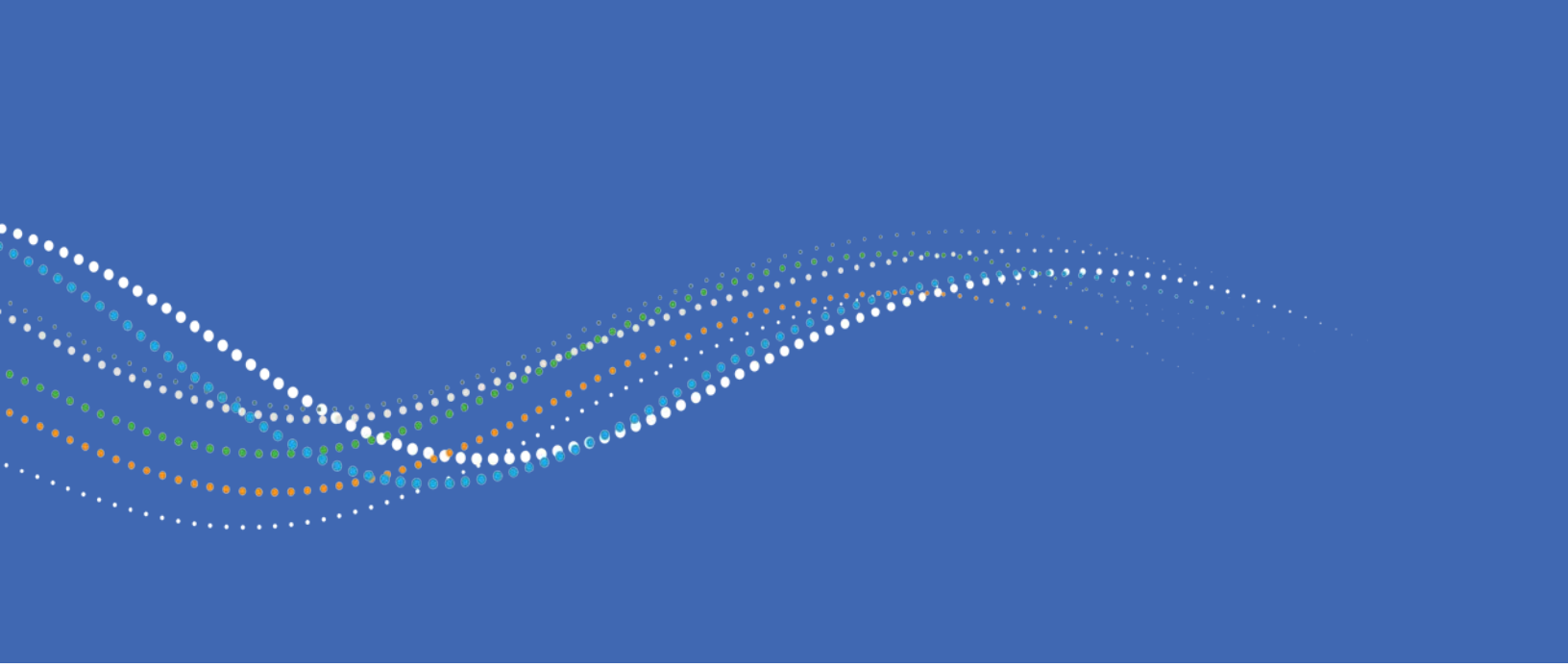
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	720	0	0	430	30	620	0	70	0	0	0
Future Volume (veh/h)	20	720	0	0	430	30	620	0	70	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
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	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	22	783	0	0	467	33	674	0	76			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	86	1055	0	0	737	329	1983	1073	910			
Arrive On Green	0.02	0.30	0.00	0.00	0.21	0.21	0.57	0.00	0.57			
Sat Flow, veh/h	3456	3647	0	0	3647	1585	3456	1870	1585			
Grp Volume(v), veh/h	22	783	0	0	467	33	674	0	76			
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1777	1585	1728	1870	1585			
Q Serve(g_s), s	0.4	13.8	0.0	0.0	8.4	1.2	7.2	0.0	1.5			
Cycle Q Clear(g_c), s	0.4	13.8	0.0	0.0	8.4	1.2	7.2	0.0	1.5			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	86	1055	0	0	737	329	1983	1073	910			
V/C Ratio(X)	0.26	0.74	0.00	0.00	0.63	0.10	0.34	0.00	0.08			
Avail Cap(c_a), veh/h	248	1581	0	0	1096	489	1983	1073	910			
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	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	33.3	22.1	0.0	0.0	25.2	22.4	7.9	0.0	6.6			
Incr Delay (d2), s/veh	1.5	1.1	0.0	0.0	0.9	0.1	0.5	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			
%ile BackOfQ(50%),veh/ln	0.2	5.5	0.0	0.0	3.4	0.4	2.4	0.0	0.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.9	23.1	0.0	0.0	26.1	22.5	8.3	0.0	6.8			
LnGrp LOS	C	C	A	A	C	C	A	A	A			
Approach Vol, veh/h		805			500			750				
Approach Delay, s/veh		23.5			25.9			8.2				
Approach LOS		C			C			A				

Timer - Assigned Phs		2		4			7	8				
Phs Duration (G+Y+Rc), s		44.5		25.2			6.2	19.0				
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5				
Max Green Setting (Gmax), s		40.0		31.0			5.0	21.5				
Max Q Clear Time (g_c+I1), s		9.2		15.8			2.4	10.4				
Green Ext Time (p_c), s		3.0		4.8			0.0	2.4				

Intersection Summary												
HCM 6th Ctrl Delay			18.5									
HCM 6th LOS			B									



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