

Transportation Element Amendment 20-2 Los Patrones Parkway Extension (Planning Application No. 20-0072)

Revised Addendum to:

Final Program Environmental Impact Report No. 575 (State Clearinghouse No. 99041035)

2001 Prima Deshecha General Development Plan
Landfill Component, Circulation Component, Recreation
Component

Final Program Environmental Impact Report No. 584 (State Clearinghouse No. 2006061140)

Southern Subregion Natural Community Conservation Plan/
Master Streambed Alteration Agreement/Habitat Conservation
Plan

and Final Environmental Impact Report No. 589 (State Clearinghouse No. 2003021141)

The Ranch Plan General Plan Amendment and Zone Change

Prepared for	OC Public Works 601 North Ross Street Santa Ana, California 92701
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Prepared by	Psomas 5 Hutton Centre Drive, Suite 300 Santa Ana, California 92707
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November 23, 2020

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LIST OF ACRONYMS

A

AADT	Annual Average Daily Trips
AB	Assembly Bill
ac	acre
ADT	Average Daily Trips
af	acre feet
AGT	Above Ground Tank
AHIA	Affordable Housing Implementation Plan
AM	Ante Meridiem (i.e., morning)
AMI	Area Median Income
AMP	Adaptive Management Program
AADT	Annual Average Daily Trips
AQMP	Air Quality Management Plan
ASTM	American Society for Testing and Materials
AT&T	AT&T Communications

B

BMPs	Best Management Practices
BRCP	Biological Resources Construction Plan

C

CAA	Community Analysis Areas
CAAQS	California Ambient Air Quality Standards
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CCAA	California Clean Air Act
CC&Rs	Conditions, Covenants, and Restrictions
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
Checklist	CEQA Guidelines Environmental Checklist
CIDH	Cast-In-Drilled Hole
CHP	California Highway Patrol
CMP	Corrugated Metal Pipe
CNDDB	California Natural Diversity Data Base
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	Carbon Monoxide
Corps	U.S. Army Corps of Engineers
CPUC	California Public Utilities Commission
CRHR	California Register of Historic Resources
CRM	Cultural Resources Management
CRPR	California Rare Plant Rank
CSS	Coastal Sage Scrub
CUSD	Capistrano Unified School District
CWA	Clean Water Act
CWRP	Chiquita Water Reclamation Plant

D

DAMP	Drainage Area Management Plan
dB	Decibel
dBA	A-weighted decibel scale
DOGGR	Division of Oil, Gas and Geothermal Resources
DPM	Diesel Particulate Matter
DSOD	Division of Safety of Dams
Dudek	Dudek & Associates, Inc.

E

EIR	Environmental Impact Report
EIS	Environmental Impact Statement
ESA	Environmental Site Assessment
ESCP	Erosion and Sediment Control Plan

F

FCAA	Federal Clean Air Act
FD/WQ	Flow Duration/Water Quality
FEIR	Final Environmental Impact Report
FESA	Federal Endangered Species Act
FMMP	Farmland Mapping and Monitoring Program
ft	feet
FTA	Federal Transit Administration
FTC-S	Foothill Transportation Corridor-South

G

GDP	General Development Plan
GERA	Gobernadora Ecological Restoration Area
GHG	Greenhouse Gas
GLA	Glenn Lukos Associates
GMP	Growth Management Plan
GPA	General Plan Amendment

H

HCM	Highway Capacity Manual
HCP	Habitat Conservation Plan
HHW	Household Hazardous Waste
HMMP	Habitat Mitigation and Monitoring Plan
HRMP	Habitat Reserve Management Program
HSCP	Health and Safety Contingency Plan

I

I-5	Interstate 5
IA	Implementation Agreement
ICU	Intersection Capacity Utilization
in/sec	Inches per Second
IOD	Irrevocable Offer of Dedication
IS	Initial Study
ITP	Incidental Take Permit

K

KMEP Kinder Morgan Energy Partners

L

L&B Landrum & Brown
LEQ Equivalent Noise Level
LID Low Impact Development
LOS Level of Service
LPIP Ranch Plan Planned Community Local Park Implementation Plan
LPPE Los Patrones Parkway Extension

M

MCAS Marine Corps Air Station
MCB Marine Corps Base
MM Mitigation Measure
MMRP Mitigation Monitoring and Reporting Program
MND Mitigated Negative Declaration
MPAH Master Plan of Arterial Highways
mph miles per hour
MPO Metropolitan Planning Organization
MRZ Mineral Resource Zone
MS4 Municipal Separate Storm Sewer System
MSAA Master Streambed Alteration Agreement
msl mean sea level

N

NA Not Applicable
NAHC Native American Heritage Commission
NAAQS National Ambient Air Quality Standards
NCCP Act Natural Community Conservation Planning Act
NCCP/MSAA/H Natural Community Conservation Plan/Master Streambed Alteration
CP Agreement/Habitat Conservation Plan
ND Negative Declaration
NEPA National Environmental Policy Act (of 1969)
NHPA National Historic Preservation Act
NOI Notice of Intent
NOP Notice of Preparation
NOx Oxides of Nitrogen
NPDES National Pollutant Discharge Elimination System
NRHP National Register of Historic Places

O

O&M Operations and Maintenance
OCFA Orange County Fire Authority
OC HCA OC Health Care Agency
OCIWMD Orange County Integrated Waste Management Department
OCP Orange County Projections
OCPW Orange County Public Works
OCSO Orange County Sheriff's Department
OCTA Orange County Transportation Authority
OCTAM Orange County Transportation Analysis Model
OCWR Orange County Waste and Recycling

OEHHA	Office of Environmental Health Hazard Assessment
ONIS	Oglebay-Norton Industrial Sands
OSHA	U.S. Department of Labor Occupational Health and Safety Administration

P

PA	Public Application
PA/ED	Project Approval/Environmental Document
PC	Planned Community
PDF	Project Design Feature
PDS	Planning and Development Services
PF&RD	Public Facilities and Resources Department
PFRD	Public Facilities and Resources Department
PM	Particulate Matter (Air Quality)
PM	Post Meridiem (i.e., afternoon) (Transportation)
PPM	Parts Per Million
PPV	Peak Particle Velocity
PRC	Public Resources Code

R

REC	Recognized Environmental Condition
ROC	Reactive Organic Compound
RMS	root-mean-square
RMV	Rancho Mission Viejo
ROMP	Runoff Management Plan
ROSA	Resource Organizations Settlement Agreement
RSA	Regional Statistical Areas
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
RWQCB	Regional Water Quality Control Board

S

S&G	Sand and Gravel
SAMP	Special Area Management Plan
SB	Senate Bill
SC	Standard Condition
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
SCE	Southern California Edison
SCORE	South County Outreach and Review Effort
SCRIP	South County Road Improvement Program
SCTRE	South County Traffic Relief Effort Project
SDG&E	San Diego Gas and Electric
SDRWQCB	San Diego Regional Water Quality Control Board
SEIR	Subsequent or Supplemental Environmental Impact Report
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SMARA	Surface Mining and Reclamation Act
SMWD	Santa Margarita Water District
SoCAB	South Coast Air Basin
SOCTIIP	South Orange County Transportation Infrastructure Improvement Project
SR	State Route
SOS	Supplemental Open Space
SRA	Subregional Area

SRRE	Source Reduction and Recycling Element
SSHCP	Southern Subregion Habitat Conservation Plan
SVOC	Semi-volatile Organic Compounds
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board

T

TAC	Toxic Air Contaminants
TAZ	Traffic Analysis Zones
TCA	Transportation Corridor Agencies

U

UAC	Urban Activity Center
UBC	Uniform Building Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
UST	Underground Storage Tanks
UWMP	Urban Water Management Plan

V

V/C	Volume to Capacity Ratio
VHD	Vehicle Hours of Delay
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds

W

WDID	Waste Discharge Identification
WFMP	Wildland Fire Management Plan
WQMP	Water Quality Management Plan
WSA	Water Supply Assessment

Z

ZC	Zone Change
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SECTION 1.0 PROJECT CONTEXT

1.1 PROJECT INTRODUCTION

The County of Orange, as the lead agency,¹ is considering an amendment to the Circulation Plan component of the *County of Orange General Plan, Transportation Element* (Transportation Element) and a request to Orange County Transportation Authority (OCTA) for an amendment to the Master Plan of Arterial Highways (MPAH) for a southern extension of Los Patrones Parkway from its current terminus at Cow Camp Road to Avenida La Pata.² The requested amendment to the Transportation Element would only entail a change to the Circulation Plan Map (i.e., no changes to policies or text of the Transportation Element).³ Based on the proposed alignment, these actions would also require an amendment to the Prima Deshecha Landfill General Development Plan (GDP). Following these amendments, the County would pursue design, construction, and operation of a southern extension of Los Patrones Parkway.

In February 2020, Rancho Mission Viejo (RMV) submitted a request to the County for an amendment to the Transportation Element and MPAH. The request addressed five roadways; however, only one request—realign the north-south arterial highway serving the Ranch Plan Planned Community (hereinafter referred to as the “Ranch Plan”)—involves the addition of a roadway to these planning documents. At the County’s request, RMV amended their letter in April 2020 to separate the four roadway amendments (Esencia, Fauna, Chiquita and Cow Camp) from the Los Patrones Parkway Extension. In September of 2020, the request was amended for third and final time, to exclude Cow Camp Road.

The Ranch Plan circulation network currently depicts Cristianitos Road as the major north-south arterial roadway. When the Cristianitos Road was included on the Circulation Plan Map and the MPAH, the alignment for State Route (SR)-241 was depicted as extending south from Oso Parkway along an alignment east of Planning Area 5 of the Ranch Plan and ultimately connecting to Interstate 5 (I-5). An interchange of SR-241 and Cristianitos Road was depicted on the planning documents. This alignment for SR-241 is no longer being evaluated and was removed from the MPAH;⁴ therefore, RMV proposed to realign the north-south arterial roadway in the Ranch Plan and to provide a more logical roadway terminus and improve connectivity with other roadways. This request is consistent with the recommendation the Foothill/Eastern Transportation Corridor Agency (TCA) made in March 2020 related to its study on South County Traffic Relief Effort Project (SCTRE).

¹ Section 21067 of the Public Resources Code provides the following definition of lead agency: “‘Lead agency’ means the public agency which has the principal responsibility for carrying out or approving a project which may have a significant effect upon the environment.” Other agencies would also be involved in approving or permitting elements of the Project. These are known as responsible agencies. Section 21069 of the Public Resources Code provides the following definition of responsible agency: “‘Responsible agency’ means a public agency, other than the lead agency, which has responsibility for carrying out or approving a project.” Consistent with Section 21002.1 of the Public Resources Code, “A responsible agency shall be responsible for considering only the effects of those activities involved in a project which it is required by law to carry out or approve.” The list of anticipated approvals for the Project is provided in Section 3.3 of this Addendum.

² The process for amending the MPAH is further discussed in Section 2.1.5, Master Plan of Arterial Highways.

³ For simplicity, this document references the proposal as an amendment to the “Circulation Plan Map” rather than the “Circulation Plan Map of the Circulation Plan component of the Transportation Element”.

⁴ The MPAH reflects State Routes for informational purposes. When the TCA abandoned the approved alignment, which was identified as the Green Alignment, the extension of SR-241 was removed from the MPAH. Section 2.2.2 provides a discussion of the SR-241. As explained in that Section, the conclusions of this Addendum regarding project impacts, in particular impacts on the City of San Clemente, assume no future extension of SR-241 south from Oso Parkway.

The Circulation Plan Map and the MPAH currently reflect Cristianitos Road as an unconstructed Primary Arterial Highway extending south from Grandeza (to be renamed Bucker Way) in Planning Area 3, crossing San Juan Creek and Ortega Highway (SR-74). The roadway curves to the east but has no connectivity to other roadways at the southern terminus.

RMV requests Los Patrones Parkway serve as the north-south arterial highway, by having it extend south from its current terminus at Cow Camp Road (in Planning Area 2) through Planning Area 5, then curve to the west, traversing a portion of the Prima Deshecha Landfill, and connect to Avenida La Pata. The segment of roadway in Planning Area 3 (currently depicted on the MPAH and Circulation Plan Map as a portion of Cristianitos Road) would terminate at Cow Camp Road. To avoid any confusion with the existing Cristianitos Road, a private ranch road south of Ortega Highway, the roadway in Planning Area 3 would be renamed Ranch Canyon Road. Since the alignment would traverse a portion of the Prima Deshecha Landfill, the General Development Plan (GDP) for the landfill would need to be amended, as well. The “Project” is defined as these proposed amendments to add LPPE to the County’s Transportation Element, the City’s Transportation Element, MPAH, and GDP. The Project also includes other discretionary approvals that may be subsequently required for the LPPE, such as amendments to the City of San Clemente General Plan’s Mobility and Complete Streets Element (i.e., the Centennial General Plan Mobility Element) to reflect the LPPE, as well as encroachment permits that may be issued by the City of San Clemente, or agreements between or among the County, OCTA, and/or the City of San Clemente, to allow the County to construct LPPE-related improvements within the City of San Clemente’s boundaries (e.g., at the intersection of Avenida La Pata.) Furthermore, this Addendum will be considered in determining whether additional CEQA documentation would be required for the eventual construction and operation of the LPPE. For example, during the design phase, it is possible that the conceptual alignment analyzed by this Addendum may be altered, and the County recognizes this may require additional environmental review. This Addendum evaluates the construction and operation impacts to the extent possible given the conceptual design available.

The County, as the lead agency under the California Environmental Quality Act (CEQA) (Sections 21000 et seq. of the California Public Resources Code), has determined that an Addendum to three previously certified Environmental Impact Reports (EIRs) is appropriate for addressing the Project. This document serves as an Addendum to:

(1) *Final Program Environmental Impact Report No. 575, 2001 Prima Deshecha General Development Plan—Landfill Component, Circulation Component, Recreation Component* (FEIR 575) (State Clearinghouse No. 99041035)⁵;

(2) *Final Program Environmental Impact Report (FEIR) 584* (State Clearinghouse No. 2006061140), which was the CEQA portion of the *NCCP/MSAA/HCP Joint Programmatic Environmental Impact Report/Environmental Impact Statement* (EIR/EIS) prepared for the

⁵ When FEIR 575 was prepared, the Orange County Integrated Waste Management Department (OCIWMD) was the lead agency. The agency has been renamed OC Waste and Recycling (OCWR). The reference citation for FEIR 575 uses the OCIWMD acronym; however, current references to the agency is OCWR.

Southern Subregion Natural Community Conservation Plan/Master Streambed Alteration Agreement/Habitat Conservation Plan (NCCP/MSAA/HCP) (FEIR 584); and,⁶

(3) the *Ranch Plan Final Program Environmental Impact Report No. 589* (FEIR 589) (State Clearinghouse No. 2003021141), which was prepared to address the approval of the General Plan Amendment and Zone Change for the Ranch Plan Planned Community; and

As discussed in Section 2.0, Background and History, the County was the CEQA lead agency for all three of these Program EIRs, which addressed environmental resources in southeast Orange County. FEIR 575 and FEIR 589, were incorporated by reference in FEIR 584.⁷ These documents are available for review on the County's website as follows:

- FEIR 575 is located on the County's website at: <http://www.oclandfills.com/civicax/filebank/blobdload.aspx?BlobID=74855> and <http://www.oclandfills.com/landfill/active/dimages>
- FEIR 584 is located on the Natural Communities Coalition website has the document available for download at <https://occonservation.org/mdocuments-library-2/>. The document is under the NCCP/HCP Documents folder and is contained in the NCCP_HCP Part III EIR/EIS link and the NCCP_HCP EIR Maps link.
- FEIR 589 is located on the County's website at: http://cms.ocgov.com/gov/pw/ds/planning/land_dev/docs.asp. See the link for EIR 589 The Ranch Plan.

All of these documents were identified as Program EIRs. FEIR 575 provides an analysis of the General Development Plan for the Prima Deshecha Landfill, which also addresses future transportation and recreation components for the site. FEIR 589 provided a substantial amount of detail on the uses and potential environmental impacts associated with the development of the Ranch Plan and went beyond a broad General Plan level of evaluation. FEIR 584, in addressing the SSHCP, evaluated both the Prima Deshecha Landfill GDP and the Ranch Plan Planned Community as Covered Activities.

These documents provided detailed information on the area of development, the amount and types of uses to be constructed; the sizing and location of infrastructure required to support the development (i.e., roads; drainage and water quality basins; electrical facilities; and water and wastewater storage and conveyance facilities). Particularly pertinent to this Project, both FEIR 584 and FEIR 589 evaluated an alternative stand-alone circulation network in the event that the construction of SR-241 was substantially delayed. The comprehensive evaluation of the potential impacts allowed the development of a mitigation program in FEIR 584 and FEIR 589 that identified standard conditions (SC) and mitigation measures (MM) applicable to subsequent grading permits and tract map approvals. The level of detail in FEIR 584 and FEIR 589 is of sufficient detail to support the issuance of regulatory permits for the Ranch Plan by federal and State regulatory

⁶ The distinction between the Draft Southern Subregion NCCP/MSAA /HCP and the Southern Subregion Habitat Conservation Plan (SSHCP) is important. The SSHCP, as the federal component of the NCCP/MSAA/HCP, is the federally approved Habitat Conservation Plan for which the Section 10(a)(1)(B) Incidental Take Permit (ITP) was issued. All impacts authorized by the SSHCP ITP are the same as those reported in the Southern Subregion NCCP/MSAA/HCP and these documents are fundamentally the same for this purpose. It should be noted that, although the USFWS approved the Southern Subregion HCP and the CDFW has approved an MSAA for the Ranch Plan Planned Community, an NCCP was not approved by CDFW for the Southern Subregion.

⁷ Section 15150 of the CEQA Guidelines allows the incorporation by reference of all or portions of another document that is a matter of public record or is generally available to the public.

agencies (this is discussed further in Sections 2.1.4, Special Area Management Plan, and 2.1.5, Master Plan of Arterial Highways).

1.2 USE OF A PROGRAM EIR

Consistent with the requirements of CEQA, FEIR 575, FEIR 584, and FEIR 589 were prepared as Program EIRs. Section 15168(a) of the State CEQA Guidelines (Title 14 California Code of Regulations Sections 15000, et seq.) states: “A program EIR is an EIR which may be prepared on a series of actions that can be characterized as one large project and are related ... (1) Geographically, ... (4) As individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways.”

When a Program EIR has been prepared, Section 15168(c) of the State CEQA Guidelines provides the following direction for use of that document with later activities:

Later activities in the program must be examined in light of the Program EIR to determine whether an additional environmental document must be prepared.

1. If a later activity would have effects that were not examined in the program EIR, a new Initial Study would need to be prepared, leading to either an EIR or a Negative Declaration (ND). That later analysis may tier from the program EIR as provided in Section 15152.
2. If the agency finds that, pursuant to Section 15162, no subsequent EIR would be required, the agency can approve the activity as being within the scope of the project covered by the Program EIR, and no new environmental document would be required. Whether a later activity is within the scope of a program EIR is a factual question that the lead agency determines based on substantial evidence in the record. Factors that an agency may consider in making that determination include, but are not limited to, consistency of the later activity with the type of allowable land use, overall planned density and building intensity, geographic area analyzed for environmental impacts, and covered infrastructure, as described in the program EIR.
3. An agency shall incorporate feasible mitigation measures and alternatives developed in the Program EIR into later activities in the program.
4. Where the later activities involve site-specific operations, the agency should use a written checklist or similar device to document the evaluation of the site and the activity to determine whether the environmental effects of the operation were within the scope of the Program EIR.
5. A Program EIR will be most helpful in dealing with later activities if it provides a description of planned activities that would implement the program and deals with the effects of the program as specifically and comprehensively as possible. With a good and detailed project description and analysis of the program, many later activities could be found to be within the scope of the project described in the Program EIR, and no further environmental documents would be required.

1.3 USE OF AN ADDENDUM

For projects where an EIR has previously been prepared, Section 21166 of the Public Resources Code addresses the three conditions that would trigger the need for a subsequent or supplemental EIR (SEIR). These conditions are also reflected and further articulated in the CEQA Guidelines, Sections 15162 and 15163. Specifically, one or more of the following events must occur to trigger the need for a subsequent or supplemental EIR:

1. Substantial changes are proposed in the project which will require major revisions of the environmental impact report.
2. Substantial changes occur with respect to the circumstances under which the project is being undertaken which will require major revisions in the environmental impact report.
3. New information, which was not known and could not have been known at the time the environmental impact report was certified as complete, becomes available.

If any of these three conditions apply, then subsequent environmental documentation would be required. The State CEQA Guidelines, specifically, Section 15162, provides more detail on how to assess the applicability of these standards. These parameters, summarized as follows, have been applied in the environmental analysis evaluation provided in Section 4, Environmental Analysis of this Addendum.

- (a) Substantial changes are proposed in the project which will require major revisions of the EIR.

The following four conditions must be found to exist for a finding that the first part of the test applies:

- The change in the project is substantial;
- The change involves new significant environmental impacts or a substantial increase in the severity of previously identified significant environmental impacts;
- The change will require major revisions to the previous EIR based on the new or more severe significant environmental impacts; and
- The new or more severe impacts were not considered in the previous EIR.

- (b) Substantial changes occur with respect to the circumstances under which the project is being undertaken which will require major revisions in the EIR.

Four conditions must be found to exist for a finding that the second part of the test applies:

- The change in circumstances is substantial;
- The change involves new significant environmental impacts or a substantial increase in the severity of previously identified significant environmental impacts;
- The change will require major revisions to the previous EIR based on the new or more severe significant environmental impacts; and
- The new or more severe impacts were not considered in the previous EIR

- (c) New information of substantial importance, which was not known and could not have been known at the time the EIR was certified, becomes available.

New information must show one of the following for the third part of the test to apply:

- The project will have significant effects not evaluated in the prior EIR;
- Significant effects previously examined will be substantially more severe than shown in the prior EIR;
- Mitigation measures or alternatives previously found infeasible are in fact feasible and would substantially reduce significant effects of the project, but the project proponent declines to adopt the mitigation measure or alternative; or
- Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce significant effects of the project, but the project proponent declines to adopt the mitigation measure or alternative.

If none of those conditions have occurred, but "some changes or additions are necessary", an addendum to the prior EIR shall be prepared by the agency (CEQA Guidelines, Section 15164).

With this guidance in mind, the County evaluated the previous Program EIRs to determine if the impacts associated with the proposed Project had been adequately evaluated as part of these documents and in the context of these three large scale projects, if the proposed Project would substantially change the context of the previous approvals. FEIR 575, FEIR 584 and FEIR 589 are further discussed in Section 2.1, Project History and Relevant Programs, of this Addendum.

Applying the criteria set forth in the Public Resources Code Section 21166 and State CEQA Guidelines Section 15162, the proposed Project would not result in any new significant environmental impacts not already addressed in the previously certified FEIRs and it would not substantially increase any previously addressed impacts. There are no substantial changes to the projects addressed in the FEIRs (Prima Deshecha Landfill GDP, SSHCP Covered Activities, and the Ranch Plan). There are no substantial changes to the circumstances under which the proposed Project would be undertaken that would result in a significant or substantially greater impact and there is no new information (as defined in State CEQA Guidelines Section 15162(a)(3)) requiring analysis of impacts in a subsequent or supplement to either or both FEIRs. Therefore, the County has determined that the proposed Project does not trigger any of the conditions requiring the preparation of a Supplemental EIR or a Subsequent EIR; as such, an Addendum is the appropriate method to document consistency with the certified documents and to address any modifications.

The purpose of this Addendum, which has been prepared in accordance with CEQA Guidelines Section 15164, is to analyze the potential differences between the impacts evaluated in FEIR 575, FEIR 584, and FEIR 589 and those that would be associated with the proposed modifications to the GDP, the Circulation Plan Map component of the Transportation Element, and MPAH. As described in detail herein, there are no new significant or substantially more severe impacts resulting from the proposed action.

1.4 ADDENDUM STRUCTURE

Section 1.0, Project Context, of this Addendum provides an overview of the requested action and the regulatory context associated with determining the type of CEQA documentation required. Section 2.0, Project Background and Setting, of this Addendum provides background on the major planning programs that have been approved and provide a framework for the implementation of

improvements in the Project study area. This includes the Prima Deshecha Landfill, the Ranch Plan, the SSHCP, the Special Area Management Plan (SAMP) and the MPAH. Additionally, this section provides a brief summary on other relevant projects in the Project area and a status of development of the Ranch Plan. Section 2.0, Project Background and Setting, also provides information on the environmental setting and the environmental baseline for evaluating the potential impacts associated with the proposed GDP, Circulation Plan Map, and MPAH Amendments.

Section 3.0, Project Description, provides a project description for the actions associated with the amendment to the GDP, Transportation Element, and the MPAH with a listing of approvals and permits associated with the proposed Project. Although the immediate proposed action is an amendment to the GDP, Circulation Plan Map, and MPAH, CEQA requires the evaluation consider the whole of a project, thus, the construction and operation of the roadway are analyzed to ensure the decisionmakers understand the full range of potential environmental impacts. This Addendum evaluates those impacts through utilizing a conceptual alignment. To that end, the project description outlines basic design assumptions that have been used for this analysis. Prior to construction of the Project, design level engineering would be required to further refine the conceptual alignment. An evaluation of the impacts associated with the design level engineering plans would be necessary. However, if design level engineering discloses or creates impacts not contemplated in this Addendum, the project would not be able to progress without further CEQA analysis. A description of the County's standard processes and criteria for roadway design and for establishing and setting posted speed limits has been incorporated into the project description and scope. This description was essential to the City's conclusions regarding project impacts and the use of this Addendum to document them. Approval of the roadway design plans would be a discretionary action pursuant to CEQA.

Section 4.0, Project Analysis, presents an environmental analysis of any incremental differences between the proposed Project and the analysis conducted as part of FEIR 575, FEIR 584, and FEIR 589. The State CEQA Guidelines Environmental Checklist (Appendix G) questions have been used as the basis for the analysis in this Addendum. It should be noted that the Environmental Checklist has been updated since the FEIRs were certified and the new Environmental Checklist has been used to prepare this document.⁸

As previously noted, to provide the decisionmaker with an understanding of the potential impacts associated with the LPPE, the analysis examines the anticipated impacts of the whole of a Project, including construction and operation. The Mitigation Program identified in Sections 4.1 through 4.20 carries forward the standard conditions and mitigation measures included in FEIR 575, FEIR 584, and FEIR 589, which would be applicable to all phases of the proposed Project.⁹ Not all measures in the three FEIRs would be applicable to the Project. Given the amount of development and diversity of impacts associated with the 2001 GDP, the Ranch Plan development, and the SSHCP, some measures adopted in conjunction with the certification of the respective EIRs would not apply to the proposed Project. Additionally, because there is overlap on the standard

⁸ The most recent update to the CEQA Guidelines was approved by the Secretary for Resources in November 2018 and approved by the Office of Administrative Law in December 2018. The updated CEQA Guidelines, including an update to Appendix G, was distributed by the California Natural Resources Agency in January 2019.

⁹ FEIR 589 identified a Mitigation Program, which included Project Design Features, Standard Conditions and Regulations, and Mitigation Measures. As described in Section 4.0 of FEIR 589, Project Design Features are specific design elements proposed by the project applicant that have been incorporated into the project to prevent the occurrence of, or reduce the significance of, potential environmental effects. Standard conditions and regulations are based on local, state, or federal regulations or laws that are frequently required independently of CEQA review, which also serve to offset or prevent specific impacts. These include provisions in the County's Standard Conditions of Approval; however, slight modifications may have been made to the condition in FEIR 589. Mitigation measures are project-specific measures developed to reduce impacts.

conditions and mitigation measures identified in the three FEIRs, the most comprehensive measure is included in the Mitigation Program for this Project and the FEIR number and mitigation measure number of the similar measure is identified. Any changes to the Mitigation Program from the FEIRs are explained in its respective section.¹⁰

Section 5.0, Conclusions, provides a conclusion on the consistency of the proposed Circulation Plan Map Amendment and MPAH Amendment with FEIR 575, FEIR 584 and FEIR 589 and the appropriateness of the use of an Addendum to these Program FEIRs.

Section 6.0, Report Preparers and Contributors is a list of preparers and persons consulted in the preparation of this Addendum EIR and Section 7.0, References, is a list of references used in the Addendum.

Appendix A is the Mitigation Monitoring and Reporting Program (MMRP) for the LPPE, which has been prepared in accordance with the requirements of CEQA Section 21081.6. The designation of the LPPE on the GDP, Circulation Plan Map, and the OCTA MPAH, by itself would not have physical impacts because these are planning documents. However, as noted above, to provide the decisionmakers with a comprehensive understanding of the environmental impacts that would result with roadway construction, the analysis in this Addendum identifies the reasonably foreseeable impacts resulting from implementation of the roadway improvements. Therefore, this MMRP identifies the measures that would be applicable to the future phase.

¹⁰ Changes may include revisions to the position title of the approving entity to reflect the current County structure or minor revisions to the timing of the measure to accurately reflect the approvals appropriate to a road project.

SECTION 2.0 PROJECT BACKGROUND AND SETTING

2.1 PROJECT HISTORY AND RELEVANT PROGRAMS

The following provides a summary of actions associated with the development, approval, and implementation of the multiple large-scale planning programs and infrastructure initiatives that were processed in an effort to provide a comprehensive vision for the development of unincorporated southeastern Orange County. Part of the vision, as it pertains to the Ranch Plan, was to evaluate future land uses and environmental resources together so as to provide a common framework for reasonable economic development and for the protection and long-term management of sensitive resources. To this end, the Ranch Plan was developed in coordination with the SSHCP and the San Juan Creek and Western San Mateo Creek Watersheds SAMP planning programs to ensure that future land uses were substantially consistent with the draft planning guidelines and principles formulated to address biological and water resources in the larger subregion. Exhibit 1 depicts the original boundaries of the Ranch Plan, the SSHCP study area, and the SAMP boundary. For context, the boundary of Prima Deshecha Landfill is also shown.

2.1.1 PRIMA DESHECHA LANDFILL AND FINAL PROGRAM EIR 575

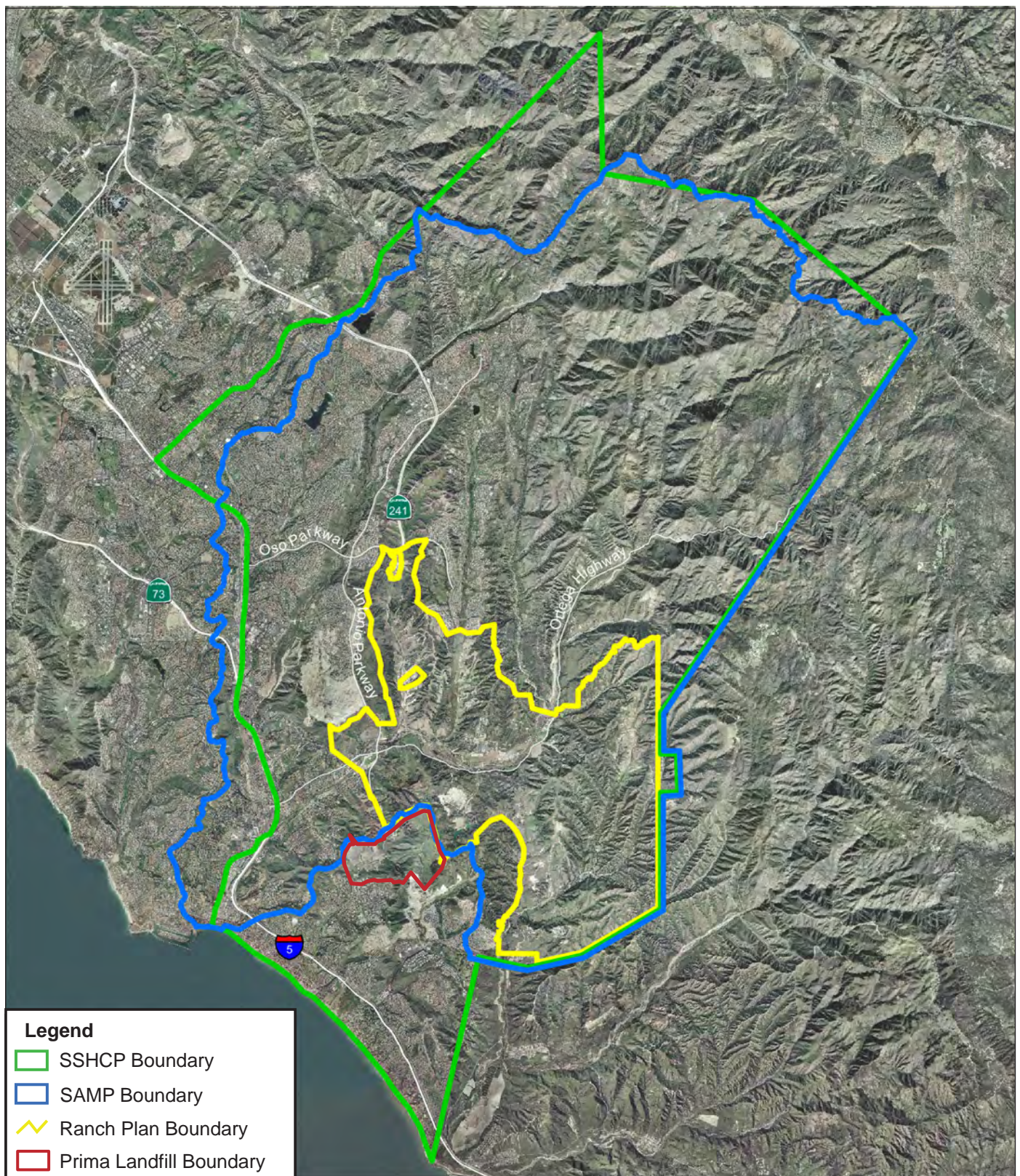
The 1,530-acre Prima Deshecha Landfill site is a Class III municipal solid waste landfill owned and operated by the County of Orange (OC Waste and Recycling). Disposal of municipal waste at the Prima Deshecha Landfill was initiated in 1976. The landfill is divided into five zones, with approximately 697 acres allocated for waste disposal in Zones 1 and 4. Zone 2 is identified for open space and potential trails. This zone is shown as surrounding the other zones. Zone 3 is intended to be retained in a native state, with possible opportunities for habitat enhancement to compensate for lost habitat associated with the development of the GDP or other development in Orange County. Zone 5 was designated for the construction of Avenida La Pata. The location of the landfill and the internal zones is depicted in Exhibit 2. Although most of the landfill site is located in unincorporated Orange County, it also includes acreage within the jurisdictions of the cities of San Juan Capistrano and San Clemente.

The GDP as amended, is the planning document for coordinated long-term implementation of both interim and ultimate site development uses. The GDP identifies the solid waste disposal needs as the most important function of the site. However, the GDP includes three elements: landfill, circulation, and recreation. These “three elements are considered together in the GDP in order to ensure compatibility of the existing, interim, and ultimate uses on the site as well as to achieve the goals and objectives of approved local and regional plans and policies.” (FEIR 575, page 3-5).

As noted, the solid waste disposal is the primary and dominant function of the site for the foreseeable future. The site is permitted to accept up to 4,000 tons per day of waste material. In 2001, when the GDP was prepared, the Prima Deshecha Landfill was projected to have remaining capacity for approximately 66 additional years, until 2067. Subsequently, this estimate has been revised and the Prima Deshecha Landfill is expected to have the capacity to serve residents and businesses of Orange County until approximately 2102 (OCWR 2018).¹¹

¹¹ Changes in regulations requiring a greater amount of recycling and diversion of materials away from the landfill, and more efficient methods have extended the life of the landfill to 2102. As a condition of the permit issued by CalRecycle, updates are provided every five years to discuss changes in site design, operations plan, and/or remaining life of the landfill. The most current permit (issued April 19, 2019) identifies 2102 as the projected closure date.

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Source: EDAW Inc. 2004

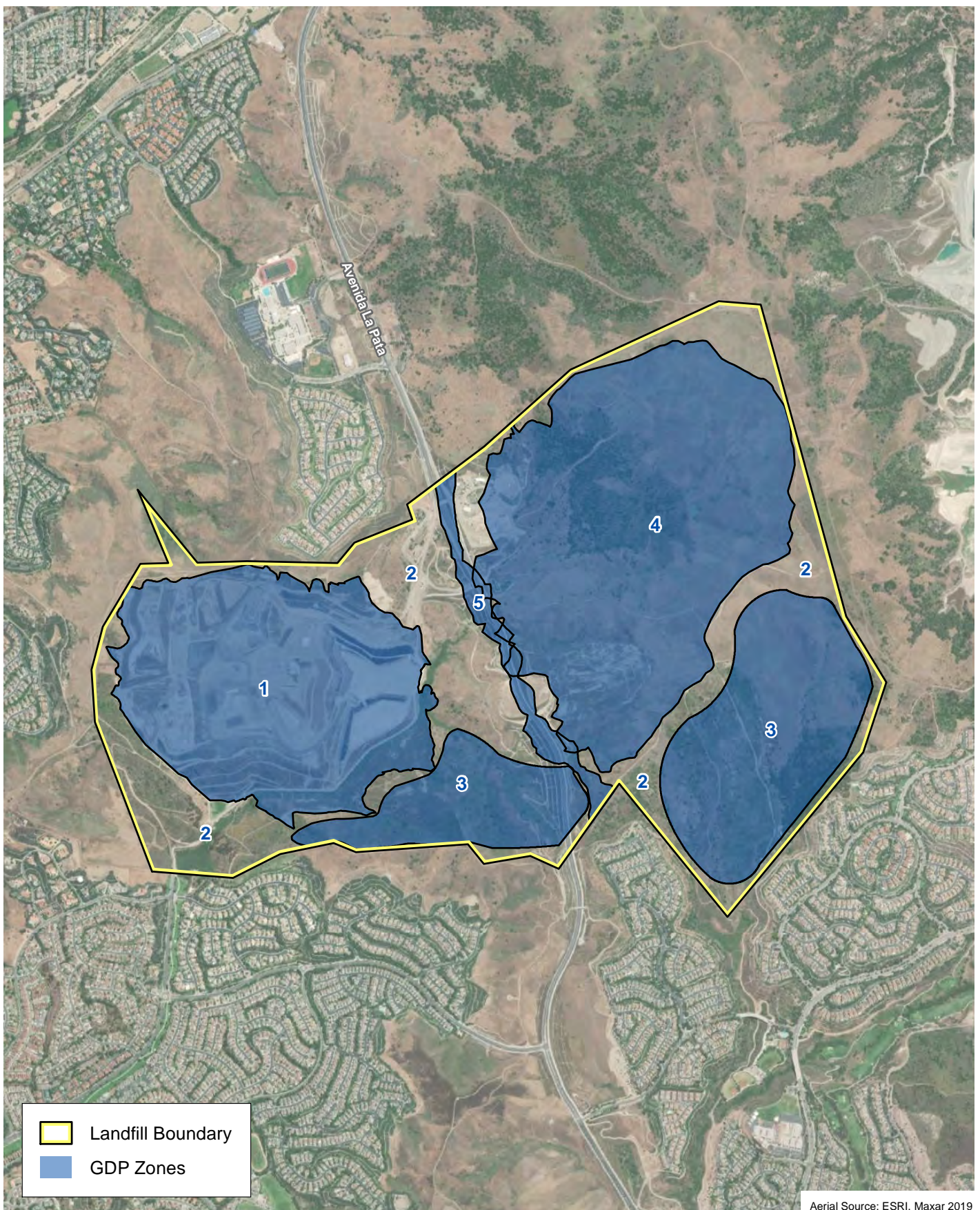
Original Boundaries for the Ranch Plan, SSHCP, SAMP, and Prima Landfill Exhibit 1

Los Patrones Parkway Extension



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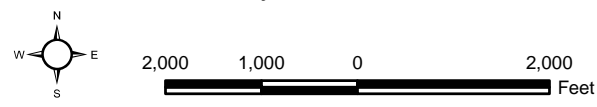


Aerial Source: ESRI, Maxar 2019



Prima Deshecha Landfill Location and Zones *Los Patrones Parkway Extension*

Exhibit 2



(Rev: 07/20/2020 RMB) R:\Projects\COO\3COO\10819\Graphics\lex_landfill_location_and_zones.pdf

The second component of the GDP was a circulation component. FEIR 575 identifies the circulation and roadways component as “improvements necessary to support the landfilling and recreation uses and to accommodate the arterial highway needs detailed in the MPAH, OCCP [Orange County Circulation Plan] and City Circulation Plans.” The project description included the (then) future construction of the extensions of Avenida La Pata, Camino De Los Mares, and Camino Las Ramblas through the landfill.¹² However, the FEIR 575 clarifies the roadways would not be built as part of the landfill development but they were included in the GDP so not to preclude the future development of the roadway extensions. The following were identified (page 3-24) as factors affecting circulation phasing:

- Timing and construction of other arterial or freeway improvements in the area.
- Availability of funding to construct the extension of La Pata Avenue through the site, to extend Camino De Los Mares and Camino Las Ramblas, and to construct the widened segment of La Pata Avenue north of the site
- Phasing of the recreational use and other demand for the extension of La Pata Avenue through the site.
- Amendments to arterial highway extensions in the MPAH and changes to City general plan circulation elements.

The circulation objectives identified in FEIR 575 (page 3-26) are:

- Provide for regional as well as local access to landfill operations and recreational activities on the site.
- Accommodate adopted MPAH arterial highway alignments through the site.

The third component identified in the GDP for the Prima Deshecha Landfill site is to provide interim opportunities and plan for the ultimate transition of the site to a future regional park. The GDP provides for the transition of Zone 1 to recreational use “when landfill operations have ceased, all closure activities have been completed, satisfactory access has been established, sufficient settlement has occurred, and landfilling has begun in Zone 4. When landfilling operation in Zone 4 are complete, the ultimate recreational uses can be developed for that site after closure activities have been completed and sufficient settlement has occurred.” (FEIR 575, page 1-3) (OCIWMD 2001). At the time FEIR 575 was prepared, it was estimated Zone 1 would take approximately 18 years to complete. Zone 1 is now projected to be completed in 2050. Although a golf course was identified as a potential recreational use when Zone 1 was closed, FEIR 575 stated the ultimate use would be based on a future needs analysis.

The GDP and the Master Plan of Riding and Hiking Trails Map designate a future riding and hiking trail and staging area located within the Prima Deshecha Landfill site on the eastside of Avenida La Pata. The GDP identified the trail as being accommodated in Zone 2 of the landfill. The FEIR identified that none of the trails are constructed and final alignments have not been determined for the majority of the trails. The County was coordinating with the cities of San Juan Capistrano and San Clemente on establishing alignments for the trails around Zone 1. FEIR 575 identified that the timing for the trails depicted along the perimeter of Zone 4 was uncertain. Although even if the trails were constructed and available as interim recreational use, these trails will be closed

¹² FEIR 575 indicated that the City of San Juan Capistrano passed a resolution on December 14, 1999 that stipulates the City’s intention of deleting the Camino Las Rambles extension to Avenida La Pata. If the deletion from the MPAH is approved, it would necessitate an amendment to the 2001 Circulation Component of the GDP. Currently, the MPAH still depicts the Camino Las Rambles extension to Avenida La Pata as an unconstructed secondary arterial highway.

to the public once work in Zone 4 is initiated. Based on subsequent planning efforts, it has been determined in the interest of public safety, that the trails in the vicinity Zone 4 will be constructed once fill operations are completed.

FEIR 575, which was prepared for the GDP and certified in November 2001, identified the following significant, unavoidable impacts associated with the GDP: changes to topography, short-term biological resources (coastal sage scrub and riparian habitat) until revegetation areas have matured, and aesthetics impacts to the visual character especially from views in the City of San Clemente.

Although FEIR 575 was certified prior to the approval of the SSHCP, FEIR 584 incorporated FEIR 575 by reference to address the impacts associated with the Prima Deshecha Landfill GDP. The inclusion of the landfill and its function in the overall conservation strategy of the SSHCP is discussed further below, in Section 2.1.3, Southern Subregion NCCP/MSAA/HCP, and Final Program EIR 584.

It should be noted, in June 2007, the Board of Supervisors certified Supplemental EIR 597 for the Second Amendment to the 2001 Prima Deshecha GDP. The Amendment includes the following elements (1) a change in the area of disturbance for the two landfill zones (1 and 4) from 800 acres (2001 GDP) to 1,078 acres to accommodate short-term impacts from installation of landslide remediation measures and landfill support features; (2) redesign of the desilting basin for Zone 4; (3) implementation of features to supplement water supply in Prima Deshecha Cañada stream channel, including the potential for a subsurface water storage feature beneath one or more of the relocated desilting basins; (4) modification of the potential excavation phasing limits for Zones 1 and 4 to construct landslide remediation features, and updated fill phasing limits for Zone 1; (5) coordination and implementation of a comprehensive pre-mitigation plan to mitigate for biological impacts through project buildout; and (6) development of a comprehensive conceptual plan identifying regional environmental enhancement opportunities on the site.

OCWR is currently preparing a second Supplemental to FEIR 575. The document will address the following elements:¹³

- The ability to allow landfilling operations to shift to Zone 4 during the during the warmer months of the year, since Zone 4 is located farther away from existing residential areas. Zone 1 and Zone 4 would not be accepting waste at the same time and the total amount of waste being accepted would not change. It is anticipated that OCWR will operate in Zone 4 for approximately six months per year before switching back over to Zone 1. There will be no additional off-site vehicle trips associated with this project component (i.e., the same amount of refuse will be coming to the site regardless of whether OCWR is landfilling in the Zone 1 or Zone 4 areas).
- The Zone 4 landfill area has approximately 9 million cubic yards of hard rock material called the San Onofre Breccia. The material will have to be excavated and then moved into a southerly area of Zone 4 called Phase C.¹⁴ Blasting will be required for a portion of the rock removal, identified in the northern portion of Zone 4 (east of the Prima Deshecha offices). The rock material will then be pulverized and the soil will be placed into a soil stockpile (also in the Zone 4 Phase C area) that will have the ability to accommodate 3.3 million cubic yards of soil. The stockpiled Breccia soil will be unsuitable for landfill daily

¹³ The NOP for the Supplement to FEIR 575 identified the development of a fully enclosed source separated organics recycling facility. However, based on potential limitations in the sewer line capacity, this element of the project is not moving forward at this time.

¹⁴ The LPPE would traverse the southern boundary of Phase C.

cover as it will be too permeable. However, this soil may be suitable for the construction industry. If the soil is deemed suitable for construction industry purposes, OCWR proposes to contract with a qualified vendor to have the stockpiled soil removed from the Prima Deshecha site. However, the material will have to be tested to determine if the soil has the correct permeability, consistency, etc. for construction industry uses, before OCWR can determine if all, some or none of the soil material can be exported off-site. If testing determines that the soil can be used for construction industry purposes, it is possible that the soil material could be used for local construction projects. In order to analyze the worst-case scenario in the Supplemental EIR, OCWR is assuming that all of the Breccia soil material will be exported off-site. The Breccia project will occur from approximately 2023-2042 (20 years) and would result in approximately 81 additional trucks visiting the landfill per day that will be distributed over a 10-hour working day, 6 days per week (i.e., Prima Deshecha is open Monday – Saturday, 7 AM – 5 PM, closed on Sundays and the six major holidays).

- During the construction of each new landfill development phase, OCWR has to import soil to the site that has the right permeability for the layers of soil that go below and on top of the liner during its installation. This will occur for all future Zone 4 development phases from 2023-2089, at approximate 10 year intervals. Each time, the imported soil trips for liner installation will last approximately one month in duration and will result in approximately 23 additional trucks visiting the landfill per day, distributed over a 10-hour working day, 6 days per week.

2.1.2 THE RANCH PLAN AND FINAL PROGRAM EIR 589

As noted above, the Ranch Plan was developed in coordination with the NCCP/MSAA/HCP and the SAMP planning programs to ensure that the Ranch Plan was substantially consistent with the draft planning guidelines and principles formulated to address biological and water resources in the larger subregion. In addition, a third process, the South County Outreach and Review Effort (SCORE), was developed by the County of Orange to seek input from the community on the Ranch Plan.

As part of the CEQA process, the County of Orange prepared and circulated a Notice of Preparation (NOP)/Initial Study (IS) for The Ranch Plan Program EIR 589 on February 24, 2003. The County received 52 comment letters. A revised NOP outlining minor changes in the Ranch Plan was sent on March 23, 2004, to the recipients of the original NOP and others who commented on the NOP and/or wished to be added to the notification list. The County of Orange Planning Commission held a public scoping meeting on the Ranch Plan and its associated Program EIR on April 23, 2003, at the City of Mission Viejo City Council chambers.

Recognizing the scope of the Ranch Plan Planned Community and the extensive public outreach program that was conducted, FEIR 589 addressed a full range of alternatives. The document provided an overview on three variations of the No Project Alternative that were not carried forward, four development alternatives that were formulated by the coordinated planning process that were eliminated from further consideration, and conducted a full alternatives analysis on nine development alternatives in addition to the project identified in Draft EIR 589 as the Proposed Project. As part of the project description for the Ranch Plan, an alternative circulation network was identified. FEIR 589 evaluated a circulation network utilizing an arterial highway along the SR-241 alignment in the event the toll road was not extended from its terminus at Oso Parkway. This scenario is depicted on Figures 166-M and Figure 187-R of FEIR 584 and Exhibit 3-24 in FEIR 589. FEIR 589 text states, “As previously discussed, the alignment for SR-241 is still under study; therefore, a circulation network that does not assume the extension of the toll road is evaluated in this Program EIR. In this scenario, Cristianitos Road would be extended north along

the alignment shown on the MPAH for SR-241 to an intersection with Chiquita Canyon Road.” The exhibit in FEIR 589 also shows a connection to Avenida Talega.¹⁵

The County of Orange released Draft Program EIR 589 (Draft EIR 589) for public review and comment on June 10, 2004, for a 61-day public review period. Copies of the Draft EIR were made available in the following branch libraries in south Orange County: Laguna Niguel, Rancho Santa Margarita, San Clemente, San Juan Capistrano Regional, Mission Viejo, and Ladera Ranch. The County received 193 written comments (letters and emails) during the public review period on Draft EIR 589. All these comments were responded to in writing and are part of FEIR 589. In addition, five public meetings were held before the Orange County Planning Commission.

On November 8, 2004, the Orange County Board of Supervisors approved a General Plan Amendment (Resolution No. 04-291), Zone Change (Resolution No. 04-292 and Ordinance No. 04-014), and Development Agreement (Resolution No. 04-293 and Ordinance No. 04-015) for the 22,815-acre Ranch Plan. The Board of Supervisors selected Alternative B-10 Modified, which established a blueprint for the long-term conservation, management, and development of the last large-scale, integrated landholding in south Orange County. This alternative allowed for the construction of 14,000 dwelling units, 3,480,000 square feet of Urban Activity Center (UAC) uses on 251 acres, 500,000 square feet of Neighborhood Center uses on 50 acres, and 1,220,000 square feet of business park uses on 80 acres, all of which were proposed to occur on approximately 7,683 acres of the Ranch Plan. The balance of the Ranch Plan, totaling approximately 15,132 gross acres (or approximately 66.32 percent), was identified for open space uses.

Concurrent with the foregoing approvals, the Board of Supervisors adopted Resolution No. 04 290, certifying FEIR 589 as complete, adequate, and in full compliance with the requirements of CEQA and the State CEQA Guidelines. A Findings of Fact and a Statement of Overriding Considerations were adopted as part of the approval process. The Findings of Fact for unavoidable adverse impacts were made for the following topical areas: land use and relevant planning, agricultural resources, water resources, air quality, noise, aesthetics and visual resources, mineral resources, fire protection services and facilities, traffic and circulation, and biological resources.

As a result of the Boards approval of the Ranch Plan, the site is zoned PC, Planned Community. The *Ranch Plan Planned Community Program Text* provides the regulations and procedures that apply to each of the land use categories approved as a part of the Ranch Plan project. The regulations and standards adopted as part of the *Ranch Plan Planned Community Program Text* apply to the development and implementation of the Ranch Plan project.

Ranch Plan Settlement Agreements

On December 8, 2004, the City of Mission Viejo and a coalition of concerned environmental groups (hereinafter referred to as “Resource Organizations”) filed separate actions in the County Superior Court challenging the County Board of Supervisors’ approval of the Ranch Plan and its certification of FEIR 589 (Orange County Superior Court Case Nos. 04CC11999 and

¹⁵ Although FEIR 584 and FEIR 589 identified an alternative circulation network in the event that the SR-241 was not extended, that concept presented in FEIR 589 depicted the new north-south arterial roadway as extending south along Cristianitos Road and connecting with Avenida Pico in the City of San Clemente. It did not provide for a connection to Avenida La Pata. As discussed later in this Addendum, the LPPE would impact a portion of areas identified for open space (Habitat Reserve and SOS). This would require an amendment to the SSHCP Implementation Agreement, a process that was provided for to address plan changes. Such an amendment would be required prior to the initiation of construction to demonstrate consistency with the RMV and County’s Incidental Take Permit (ITP) issued by the USFWS.

04CC01637). In summary, the individual actions raised questions concerning (1) potential local and regional transportation impacts associated with implementation of the Ranch Plan and (2) the appropriate/desired scope of biological resource protection to be implemented within the boundaries of the Ranch Plan. Following a series of meetings and negotiations between representatives of the County, the City, RMV, and the Resource Organizations, the parties achieved full settlement of the outstanding issues on June 9, 2005 (City), and August 16, 2005 (Resource Organizations), with dismissal of the individual lawsuits following thereafter.

The terms of the individual settlements were memorialized in separate settlement agreements executed by and among the parties on the identified dates. Notably, the provisions of the August 16, 2005, settlement agreement (Resource Organizations Settlement Agreement or ROSA) resulted in certain refinements to the Ranch Plan that, in effect, increased the amount of open space that will be permanently protected and managed (i.e., from approximately 15,132 gross acres to 16,942 gross acres) and reduced the acreage available for development activities (i.e., from approximately 7,683 acres to 5,873 acres).¹⁶ The refinements focused on further protection of resources by concentrating development in the areas with lower biological resource values while continuing to protect high resource values, including the vast majority of the western portion of the San Mateo Creek Watershed within the Ranch Plan limits.

The refinements as a result of the ROSA and further input received during the habitat planning process for the Ranch from the general public, the United States (U.S.) Army Corps of Engineers (Corps), the California Department of Fish and Wildlife (CDFW), and the U.S. Fish and Wildlife Service (USFWS) resulted in what is referred to as “the B-12 Alternative,” a plan that is consistent with the settlement agreements and formed the basis for the plan that was the subject of the SSHCP and MSA. The B-12 Alternative provides the same level of housing and nonresidential development as previously approved for the B-10 Modified Alternative.

The impact analysis of the B-12 Alternative, as evaluated in FEIR 584, overstated impacts for development in Planning Areas 4 and 8 and for the orchards in Planning Areas 6 and 7. The impact analysis is considered “overstated” as the final footprint of future development/orchards within these planning areas was undefined when the impact analysis was initially conducted. As discussed below, the impact area ultimately allowed for each of these planning areas is less than what is assumed in FEIR 584. For Planning Area 4, the B-12 Alternative assumed an “impact area” of approximately 1,127 acres; however, final approval limited the development area to 550 acres of development and 175 acres of reservoir uses in Planning Area 4.¹⁷ The impact analysis for Planning Area 8 assumed an “impact area” of approximately 1,349 acres; however, the ROSA limits the development area to 500 acres.¹⁸ FEIR 584 assumed impact areas in Planning Areas 6 and 7 of approximately 249 acres and 182 acres, respectively. However, the ROSA allows a total of 50 acres of orchards; which has been planted in Planning Area 7. Therefore, although the total

¹⁶ The Ranch Plan Planned Community, as addressed in FEIR 589, covered 22,815 acres. In January 2010, the City of San Juan Capistrano acquired the Rancho Mission Viejo Riding Park and surrounding open space area acres located in the southwestern quadrant of the Ortega Highway/Avenida La Pata Intersection. The Local Agency Formation Commission agreed to extend the San Juan Capistrano city limits east to Avenida La Pata on the south side of Ortega Highway. As a result of the purchase and annexation, the size of the Ranch Plan Planned Community was reduced to 22,683 acres

¹⁷ A SSHCP Covered Activity for the Santa Margarita Water District (SMWD) includes a 175-acre area for the development of a dam and water reservoir, called the East Ortega Reservoir. The Master Area Plan and Subarea Plan for Planning Area 4 provide for 503 acres of development.

¹⁸ The ROSA states the development area for Planning Areas 8 shall be defined after the completion of five years of monitoring and telemetry studies assessing population, habitat and home range for the arroyo toad, and the submittal of those studies and information to the Resource Organizations and the relevant Wildlife/Resource Agencies, as required by the Corps Special Conditions.

impact area for B-12 Alternative was approximately 7,788 acres, the actual impact area would be less.

All subsequent discussion of the “Ranch Plan” or the Ranch Plan Planned Community in this Addendum refers to the B-12 Alternative outlined in the settlement agreements, unless otherwise noted. The B-12 Alternative was evaluated in FEIR 584 prepared for the SSHCP and ultimately selected by the Board of Supervisors and USFWS.

Ranch Plan Development Implementation Status

Table 1, provided below, depicts the most current distribution of units within the Ranch Plan Planned Community at the Master Area Plan level of detail (County 2019). Exhibit 3 depicts the current Ranch Plan development areas, which reflects the provisions of the ROSA and minor subsequent adjustments. The following is a brief overview of the status of each of the development Planning Areas.

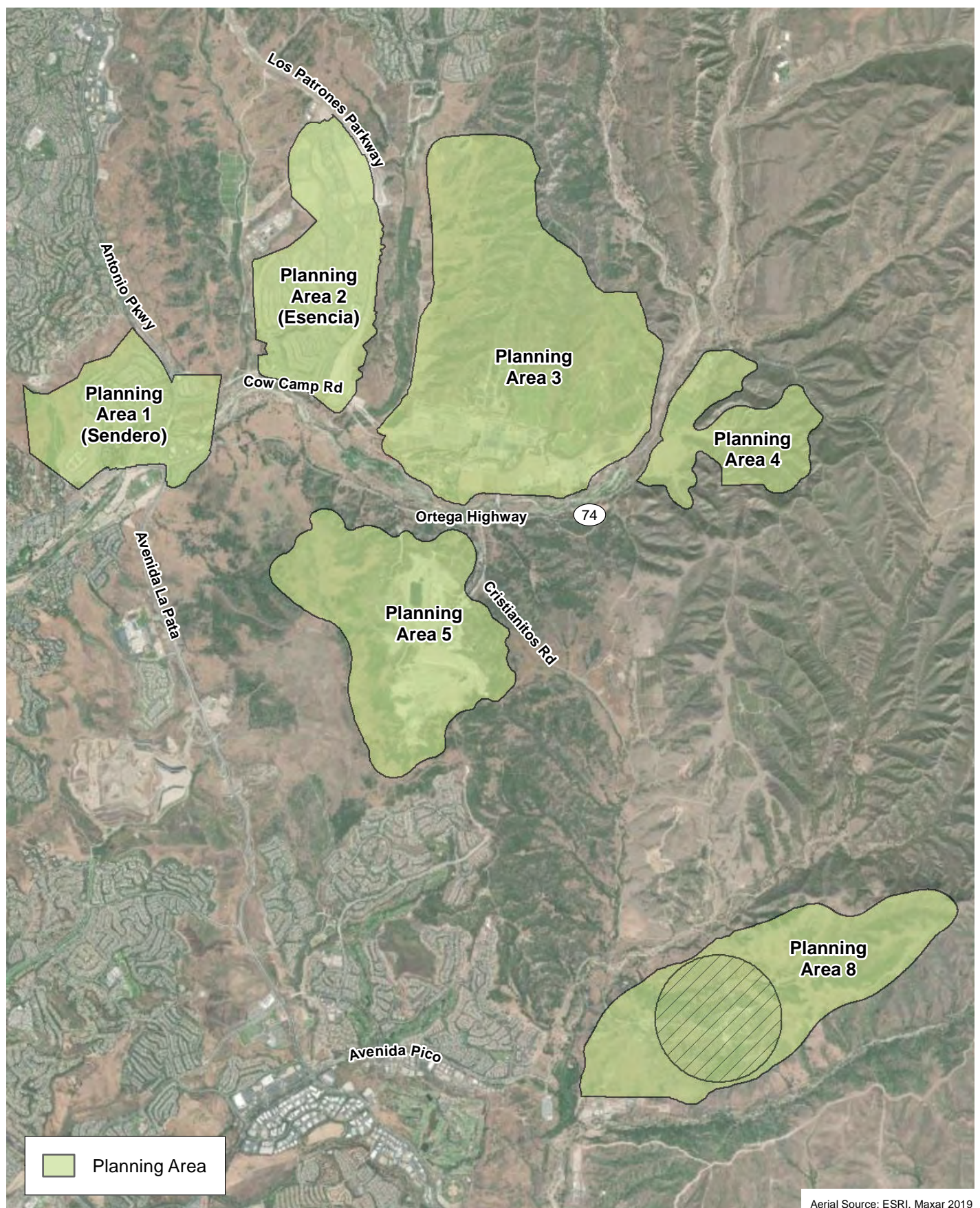
Planning Area 1

In July 2006, the County of Orange approved the Master Area Plan (PA06-0023) and five Subarea Plans (PA06-0024 through PA06-0028) for Planning Area 1, commonly known as the Village of Sendero. In conjunction with the Master Area Plan and Subarea Plans, the County approved Vesting tentative tract maps, grading permits, and associated infrastructure improvements. The Master Area Plan and Subarea Plans were updated in 2011 to reflect the sale of the Rancho Mission Viejo Riding Park. Planning Area 1, which is substantially complete, opened for sale in mid-summer of 2013.

Planning Area 2

In March 2013, the County of Orange approved the Master Area Plan (PA13001) and four Subarea Plans (PA130002, PA 130003, PA130004 and PA 130006) for Planning Area 2, commonly known as the Village of Esencia. In conjunction with the Master Area Plan and Subarea Plans, the County approved vesting tentative tract maps, grading permits, and associated infrastructure improvements. Planning Area 2 opened for sale in mid-summer of 2015 and is nearing completion. This planning area contains major infrastructure improvements, including the San Diego Gas and Electric Substation, a segment of Cow Camp Road, and Los Patrones Parkway, which are discussed below.

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Aerial Source: ESRI, Maxar 2019

Current Ranch Plan Development Area Boundaries

Exhibit 3

Los Patrones Parkway Extension



5,000 2,500 0 5,000
Feet



(Rev: 08/03/2020 RMB) R:\Projects\COO\3COO\10819\Graphics\ex_Current_Ranch_Plan_Development_Area_Boundaries.pdf

TABLE 1
RANCH PLAN PLANNED COMMUNITY STATISTICAL SUMMARY

Planning Area	Development Use											Open Space Use	Planning Area Totals
	Residential			Urban Activity Center (UAC)		Neighborhood Center		Business Park		Golf Resort	Total Gross Development Acres		
	Gross Acres	Maximum Dwelling Units	Maximum Non-Residential Square Footage (000)	Gross Acres	Maximum Square Footage of Non-Residential Uses (in thousands)	Gross Acres	Maximum Square Footage (in thousands)	Gross Acres	Maximum Square Footage (in thousands)	Gross Acres		Open Space Acres	Gross Acres
Planning Area 1	446	1,247	110	5	30	13	95				464	240	704
Planning Area 2	806	2,760	15	45	495	5	30				856	824	1,680
Planning Areas 3 and 4	2,396	7,500	120	201	2,830	19	145	50	305		2,666	647	3,313
Planning Areas 5 and 8	1,705	2,493				13	220	30	805	25	1,773	3,010	4,783
Planning Area 10												12,203	12,203
Subtotal	5,353	14,000	245	251	3,355	50	490	80	1,110	25			
Total											5,759	16,924	22,683
Revised July 26, 2006, per Planning Commission Resolution # 06-05. Revised February 23, 2011, per PA110003, PA110004, PA110005, and PA110006. Revised March 27, 2013, per Planning Commission. Revised February 26, 2015 per Planning Commission Revised September 11, 2019 per Planning Commission Source: PA-3 & 4 Master Area Plan 2019.													

Planning Areas 3 and 4

At their public meeting on February 26, 2015, the Orange County Planning Commission approved the Master Area Plans and Subarea Plans for Planning Areas 3 and 4 (PA140072 through PA 140081 and ST 140018 and ST140019). These Planning Areas were processed together because of the integral ties between the two development areas based on type of uses and circulation network. Subsequent to the initial approval of the Master Area and Subarea Plan, the Planning Commission approved modifications to the Master Area and Subarea Plans, with the most recent action being at the September 11, 2019 Planning Commission meeting (PA180030).

The Planning Area 3 Master Area and Subarea Plans identifies key infrastructure required to serve the future development. The construction of key infrastructure, such as the extension of Cow Camp Road, is ongoing; however, vertical construction (i.e., buildings) has not been initiated. "C" Street was identified in the Addendum prepared for the Master Area Plan and Subarea Plans as an arterial highway following an alignment comparable to Cristianitos Road as shown on the MPAH (County 2019). This alignment is still reflected on the MPAH (OCTA 2020). The impacts associated with the development of Planning Area 3, have been found to be consistent with the impacts identified in FEIR 584, FEIR 589, and the RMV Incidental Take Permit (ITP).

Planning Areas 5 and 8

The Master Area Plans and Subarea Plans for Planning Areas 5 and 8 have not been processed at this time.

Ranch Plan Infrastructure Implementation Status

In conjunction with the development of the Ranch Plan, a substantial amount of infrastructure improvements have been constructed. Two key improvements that are relevant to the LPPE is the construction of Los Patrones Parkway, as a north-south arterial highway, and Cow Camp Road as an east-west arterial highway. These roadways are briefly discussed below.

Los Patrones Parkway

At the time the Ranch Plan was processed, the County of Orange routinely required large projects to be evaluated with and without the SR-241 extension due to the uncertainty of if, or when, SR-241 would be extended to connect to I-5 South of San Clemente. As previously identified, a scenario utilizing an arterial highway as a stand-alone along the SR-241 alignment in the event the toll road was not extended from its terminus at Oso Parkway is depicted on Exhibit 3-24 in FEIR 589 and was analyzed therein.

In March 2015, the County of Orange approved the construction of Los Patrones Parkway (at the time, identified as "F" Street) as an arterial highway along the SR-241 alignment between Oso Parkway and Cow Camp Road. An addendum to FEIR 584 and FEIR 589 was prepared. That addendum found that the construction of the arterial highway along this alignment did not constitute new information because the uncertainty of the SR-241 extension was widely known and evaluated in FEIR 589. The County of Orange determined that the arterial highway, even in the absence of SR-241, would not result in new or substantially more severe beyond those analyzed in FEIR 584 and FEIR 589. No major revisions to the FEIR would be required. At the time Los Patrones Parkway was approved and the improvements constructed, Los Patrones Parkway did not have a direct connection to SR-241. Rather, local traffic was required to exit Los Patrones Parkway at Oso Parkway. Improvements were phased, allowing an initial segment of the roadway to be opened in 2018. The Los Patrones Parkway improvements were completed in 2019.

Cow Camp Road

Cow Camp Road, located entirely in the Ranch Plan Planned Community, is depicted on the MPAH as extending east from Antonio Parkway through Planning Areas 1 through 3, traversing San Juan Creek, and terminating in Planning Area 4, south of Ortega Highway. The roadway is being implemented in phases with the development of the Ranch Plan. Cow Camp Road from Antonio Parkway to the western edge of Gobernadora Creek is currently built. The roadway is currently being constructed in Planning Area 3. Cow Camp Road was evaluated in FEIR 589 and FEIR 584 as the major east-west facility serving the Ranch Plan. Cow Camp Road serves as the current southern terminus for Los Patrones Parkway.

2.1.3 SOUTHERN SUBREGION NCCP/MSAA/HCP AND FINAL PROGRAM EIR 584

The Southern Subregion NCCP/MSAA/HCP and EIR/EIS were prepared by the County of Orange in cooperation with the CDFW and the USFWS in accordance with the provisions of the NCCP Act, California Endangered Species Act (CESA), the Federal Endangered Species Act (FESA), and Section 1600 et seq. of the *California Fish and Game Code*. The Southern Subregion NCCP/MSAA/HCP was developed to provide for the conservation of designated State- and federally listed and unlisted species and associated habitats that are currently found within the 132,000-acre NCCP/MSAA/HCP study area. The NCCP/MSAA/HCP is a voluntary, collaborative planning program involving landowners, local governments, State and federal agencies, environmental organizations, and interested members of the public. The purpose of the NCCP Program is to provide long-term, large-scale protection of natural vegetation communities and wildlife diversity while allowing compatible land uses and appropriate development and growth. The NCCP process was initiated to provide an alternative to “single species” conservation efforts. The shift in focus from single species, project-by-project conservation efforts to large-scale conservation planning at the natural community level was intended to facilitate regional and subregional protection of a suite of species that inhabit a designated natural community or communities.

The Conservation Strategy of the plan “focuses on long-term protection and management of multiple natural communities that provide habitat essential to the survival of a broad array of wildlife and plant species” (County of Orange 2006). This approach also has the benefit of providing protection of sensitive wildlife species that may not have been identified at the time FEIR 584 was prepared but use the same habitat conserved as part of the Habitat Reserve. The NCCP/MSAA/HCP creates a permanent habitat reserve consisting of (1) 11,950 County of Orange-owned acres contained within existing County regional and wilderness parks (O’Neill Regional Park, Riley Wilderness Park, and Ralph W. Caspers Wilderness Park) and (2) 20,868 acres owned by RMV.

To address the potential impacts associated with the NCCP/MSAA/HCP, the Joint Programmatic EIR/EIS (of which FEIR 584 is the CEQA document), future projects were identified by the participating landowners (i.e., the County of Orange, Santa Margarita Water District [SMWD], and RMV), which upon approval of the SSHCP and issuance of the ITPs by USFWS became “Covered Activities”. The Ranch Plan Planned Community and associated infrastructure was identified as the RMV Covered Activity. One of the alternatives evaluated in FEIR 584, and ultimately adopted, is the B-12 Alternative, which reflects the provisions of the ROSA. The County’s Covered Activities

include, but are not limited to, the development of the Prima Deshecha Landfill and the La Pata Avenue Gap Closure and Del Rio Extension.¹⁹

The SSHCP addressed Covered Activities within the Prima Deshecha Landfill in the landfill development area and areas designated as Supplemental Open Space (SOS). The function of the SOS is identified here, and further addressed in Section 4.4, Biological Resources, because the LPPE would traverse the SOS in Zone 2 of the Prima Deshecha Landfill. As described in SSHCP Appendix M (County of Orange Covered Activities), construction and operation of the Prima Deshecha Landfill and future mitigation actions within SOS are County of Orange Covered Activities under the SSHCP (see SSHCP Figure 163-M). SOS associated with Prima Deshecha is described in the SSHCP as “those portions of the landfill site that approved GDP does not anticipate as being needed for landfill disposal operations”. While SOS is not part of the Habitat Reserve, it contributes to the SSHCP Conservation Strategy by providing additional open space supporting habitat for Covered Species and contributing to wildlife connectivity and refugia which supplement the overall function of the Habitat Reserve (see Section 10.4 of the SSHCP). However, as stated in the SSHCP, “The long-term function of the proposed Habitat Reserve does not depend on the SOS...” (p. 10-46 of the SSHCP). Notably, the SSHCP states that “the following activities would be permitted within the areas designated as SOS within the boundaries of the Prima Deshecha Landfill: Install, operate, maintain and/or replace roads, public utilities lines and associated improvements, and flood control, drainage and ancillary and appurtenant facilities”.

Supplemental EIR 597 was developed in 2006 for the second amendment to the Prima Deshecha GDP to address disturbance related to modifications to address site stabilization, water quality features, excavation phasing, and the biological pre-mitigation and regional environmental enhancement programs.

As specified in the SSHCP Implementation Agreement (IA) Section 7.4.2 (b) (2) and in Supplemental EIR 597, the County shall preserve SOS to the maximum extent practicable consistent with Prima Deshecha GDP operational requirements. The SSHCP IA further stipulates that:

Any County Covered Activities that involve the temporary removal of restored coastal sage scrub or southern needlegrass grassland within Supplemental Open Space will be restored through the application of the appropriate hydroseed mix over the disturbed areas during the next growing season following the completion of the permitted use activities. Any County Covered Activities that result in the temporary removal of restored riparian habitat in Supplemental Open Space will be restored on a 1:1 basis.

With respect to the CEQA document, the County of Orange Board of Supervisors certified the FEIR 584, on October 24, 2006. With respect to the documentation pursuant to the National Environmental Policy Act (NEPA), the USFWS distributed the Final EIS for public review on November 13, 2006. The Implementation Agreement (IA) was signed by the Participating Landowners (i.e., the County, RMV, and SMWD) in December 2006. The USFWS issued the Biological Opinion (the Opinion) (1-6-07-F-812.8) for the HCP component of the Draft Southern Subregion NCCP/MSAA/HCP, (referred to hereinafter as the Southern Subregion HCP or

¹⁹ The project description used for the defining the Prima Deshecha Landfill as a Covered Activity was based on the 2001 *Prima Deshecha General Development Plan* and its 2002 Amendment, which were collectively identified as the GDP in FEIR 584. FEIR 584 incorporated by reference, FEIR 575 prepared for the 2001 *Prima Deshecha General Development Plan*. The modified alignment for Avenida La Pata, included in the May 2005 NOP for the *La Pata Avenue Gap Closure and Del Rio Extension Project*, was used for the impact analysis in FEIR 584. In addition to Prima Deshecha Landfill and the Avenida La Pata and Camino Del Rio extensions, ongoing maintenance activities within County parks, including in the Habitat Reserve, and an alternate permitting mechanism for persons owning lots in Coto de Caza are identified in the SSHCP as County Covered activities.

SSHCP), issued a Record of Decision, signed the Implementation Agreements (IAs), approved the SSHCP, and issued FESA Section 10(a)(1)(B) ITPs to the County of Orange, RMV, and the SMWD for federally listed species on January 10, 2007 (TE144113-0, TE144140-0, and TE144105-0).

The Opinion states that proposed incidental take will occur as a result of habitat loss and disturbance associated with urban development and other proposed activities (i.e., Covered Activities) identified in the SSHCP. The Opinion further identifies “construction of residential, commercial, industrial and infrastructure facilities” as RMV-Covered Activities. The Opinion addresses 6 federally listed animals, 1 federally listed plant, and 25 unlisted plants and animals for a total of 32 species. The SSHCP includes an amendment process to accommodate changes as part of the project design or unforeseen circumstances. Through the amendment process, the USFWS evaluates if the proposed changes would result in a net loss of Habitat Reserve acres or a net loss of “Habitat Value”.²⁰ As part of an amendment process, a mitigation strategy is developed to establish that the change is consistent with the framework of the SSHCP and assembly of the Habitat Reserve.

The CDFW issued an MSAA for the Ranch Plan Planned Community on September 29, 2008. The MSAA covers the activities associated with implementation of the approved development. The covered activities include (1) development in Planning Areas 2, 3, 4, 5, and 8;²¹ (2) cultivation of orchards; (3) roadway improvements; (4) construction of bikeways and trails; (5) sewer and wastewater facilities; (6) drainage, flood-control, and water quality facilities; (7) maintenance of existing facilities within the Ranch Plan Planned Community boundary; (8) habitat restoration; (9) geotechnical investigations; and (10) relocation of the RMV headquarters.

2.1.4 SPECIAL AREA MANAGEMENT PLAN

A SAMP is a voluntary watershed-level planning and Corps permitting process involving local landowners and public agencies that seek permit coverage under Section 404 of the Federal Clean Water Act for future actions that affect jurisdictional “waters of the U.S.”. The purpose of a SAMP is to provide for reasonable economic development and the protection and long-term management of sensitive aquatic resources (biological and hydrological). Under a SAMP, to the extent feasible, federal “waters of the U.S.” (including wetlands) are avoided and unavoidable impacts are minimized and mitigated. The San Juan Creek and Western San Mateo Creek Watersheds SAMP provides a framework for permit coverage for the San Juan Creek Watershed (approximately 113,000 acres) and the western portion of the San Mateo Creek Watershed (approximately 15,104 acres). The SAMP study area includes the Ranch Plan Planned Community area.

The SAMP, which was approved by the Corps in 2007, establishes three regulatory permitting procedures: (1) Regional General Permit Procedures for Maintenance Activities Outside of the Ranch Plan Planned Community; (2) Letter of Permission Procedures for Future Qualifying Applicants Subject to Future Section 404 (b)(1) Guidelines Review Outside the Ranch Plan Planned Community; and (3) Long-Term Individual Permits/Letters of Permission for Dredge and Fill Activities within the Ranch Plan Planned Community. With respect to the Ranch Plan Planned Community, the Corps issued an Individual Permit of extended duration to specify allowable

²⁰ An SSHCP amendment would be required for the LPPE because the alignment would traverse areas identified in the SSHCP as open space. Although coordination with the USFWS has been initiated, the amendment process, which is a regulatory requirement, may not be completed until the design phase of the project. However, through this process the USFWS would evaluate the replacement habitat to ensure the Project would not result in a net loss of Habitat Reserve acres or a net loss of “Habitat Value”.

²¹ Planning Area 1 was permitted separately through a standard Streambed Alteration Agreement.

impacts to “waters of the U.S.” over the life of the Ranch Plan project. The long-term Individual Permit requires additional review and analysis as individual projects are proposed within the Ranch Plan to ensure consistency with allowable impacts and the terms and conditions of this long-term Individual Permit. The Corps will review specific activities under the Letter of Permission procedures for the geographic area covered by the Individual Permit as each activity is proposed for implementation.

The SAMP and MSAA provide for the construction of certain infrastructure projects in the Habitat Reserve/Aquatic Resource Conservation Areas, including a north-south arterial highway, identified as “Cristianitos Road”, which is depicted on SAMP Figure 8-1 and MSAA Exhibit D (SSHCP Figure 187-R).

2.1.5 MASTER PLAN OF ARTERIAL HIGHWAYS

The MPAH is a program administered by OCTA. The MPAH is a critical element of the overall transportation planning in Orange County because it defines a countywide circulation network in response to existing and planned land uses. OCTA, through its management of the MPAH, ensures that the County and the cities within the County are working cooperatively to achieve an adequate countywide circulation network.

OCTA has an established process for amending the MPAH, which is contained in Section 4.0 of the *Guidance for Administration of the Orange County Master Plan of Arterial Highways* (MPAH Guidance) (OCTA 2017). This process requires that the local agencies (in this case the County of Orange and City of San Clemente) forward the request to OCTA. When a request is submitted, OCTA staff shall (1) review the request for consistency with OCTA's adopted MPAH Guidance and confirm that the amendment would not result in significant impacts to the MPAH system, and (2) attempt to achieve concurrence with the affected/neighboring jurisdictions on the technical merit of the proposed amendments.²² Assuming this confirmation is obtained, in order for the MPAH Amendment to take effect, and after OCTA's conditional approval, each affected local agency must amend its General Plan Circulation Element in accordance with the MPAH Amendment process. In conjunction with these General Plan Amendments, the local agency the County of Orange is the lead agency for CEQA. Following the local General Plan Amendment approvals, the MPAH amendment would become final.

The MPAH Guidance includes other special considerations that influence designations of arterial highways on the MPAH (see Section 3.10 of the MPAH Guidance). One such consideration is arterial continuity. The MPAH Guidance states, “Arterials should be continuous between two connecting arterials. However, the classification may vary between the connecting arterials if actual and projected traffic volumes vary significantly and support different classifications.” As previously noted, with the deletion of the SR-241 from the MPAH, Cristianitos Road does not connect to another roadway at its southern terminus.²³

²² This mutual agreement is often achieved through a cooperative study. However, there is concurrence by the potentially affected jurisdictions on the merits of the proposed Project; therefore, a separate cooperative study is not required. OCTA provided Caltrans and the cities of San Clemente, San Juan Capistrano, and Dana Point a preliminary copy of the traffic impact study and the County provided the cities with a preliminary copy of this Addendum for review. A copy of concurrence letters from the Capistrano Unified School District (CUSD) and the cities of San Clemente, Dana Point, and San Juan Capistrano are included in Appendix B of this Addendum.

²³ State/Interstate freeways are shown on the MPAH map for reference.

2.2 OTHER RELEVANT PROJECTS

The following discussion is intended to provide context of the status of major ongoing projects in the study area and the immediate surrounding area.

2.2.1 OSO BRIDGE PROJECT

In 2016, the County of Orange approved the replacement of a portion of Oso Parkway that crossed the location of the future extension of SR-241/Los Patrones Parkway with a bridge structure. The bridge replaces the existing elevated roadway between the SR-241 on- and off-ramps at Oso Parkway. The Oso Bridge Project also connects the southern terminus of SR-241 and the northern terminus of Los Patrones Parkway. The existing Oso Parkway on- and off-ramps for SR-241 and on- and off-ramps for Los Patrones Parkway were not changed. This effectively allows the traffic utilizing SR-241 north of Oso Parkway to continue on Los Patrones Parkway (a non-tolled facility) to Cow Camp Road.²⁴ The County prepared an Addendum to FEIR 584 and FEIR 589 as the CEQA compliance document finding there was no substantial change in the Project or new circumstances that would result in new or substantially more severe impacts beyond those analyzed in FEIR 584 and FEIR 589. No major revisions to the FEIRs would be required. The Oso Parkway Bridge and associated SR-241 improvements are anticipated to open in 2020.

2.2.2 STATE ROUTE 241

SR-241 is designated on the California Freeway and Expressway System as a toll road, which currently extends from SR-91 in Anaheim to Oso Parkway, east of the community of Ladera Ranch. The Streets and Highways Code authorizes its construction from SR-91 in Anaheim to I-5 south of San Clemente. Although the California Department of Transportation (Caltrans) is responsible for the facilities on the State Freeway and Expressway Systems, in 1986 the Foothill/Eastern Transportation Corridor Agency (TCA) was formed as a joint power authority formed to plan, finance, construct, and operate the Foothill and Eastern Transportation Corridors (subsequently designated as SR-241 and SR-261, respectively).²⁵ Member agencies include the County of Orange and the cities of Anaheim, Dana Point, Irvine, Lake Forest, Mission Viejo, Orange, Rancho Santa Margarita, San Clemente, San Juan Capistrano, Santa Ana, Tustin and Yorba Linda. In addition to the collection of tolls, each of the member agencies assess development fees when new development is permitted.²⁶

In 1987, Senate Bill 1413 gave the TCA the authority to construct the new roads as toll facilities and issue bonds backed by future toll revenues and development impact fees. The development of a network of publicly owned toll roads as part of the state highway system was designed to meet Orange County's long-term circulation demand with a recognition of the lack of state funding for the planning and construction of the facilities.

²⁴ In 2018, the County of Orange and the City of San Clemente entered into a settlement agreement pertaining to the County's participation in a Freeway Agreement signed by the County and Caltrans and the Cooperative Agreement signed by the County and the F/ETCA. The settlement agreement clarifies the purpose of the Freeway Agreement and the Cooperative Agreement. Further the settlement agreement states: "The Freeway Agreement and the Cooperative Agreement do not permit the installation or operation of toll road or related facilities south of Oso Parkway and do not permit utilization of Los Patrones Parkway as a toll road, and do not alter the County's intended use of Los Patrones Parkway as a County arterial road benefiting South Orange County."

²⁵ There is also a San Joaquin Hills TCA, which oversees the tolled portion of SR-73.

²⁶ Information on the Development Impact Fee Program is available at <https://thetollroads.com/about/development>.

As previously noted, SR-241 has been constructed from the connection with SR-91 south to Oso Parkway. Studies to extend SR-241 to connect with I-5 have been ongoing since the early 1980s. This segment of road has been referenced as Foothill South. In 2016, the TCA entered into a settlement agreement with the California Attorney General, the California Park and Recreation Commission, the Native American Heritage Commission (NAHC), National Audubon Society, Natural Resources Defense Council, Inc., California State Parks Foundation, Defenders of Wildlife, Endangered Habitats League, Laguna Greenbelt, Inc., Orange County Coastkeeper, Sea and Sage Audubon Society, Sierra Club, Surfrider Foundation, WILDCOAST-COSTASALVAJE, the Save San Onofre Coalition, and California Coastal Protection Network (collectively identified as the “signatories”). The agreement limits transportation options to protect sensitive lands and cultural resources in the San Mateo Creek watershed. The agreement ended ongoing litigation associated with the TCA’s approvals of an alignment in 2006 and 2013. As part of the settlement, the TCA rescinded their 2006 approval of the “Green Alignment” and 2013 approval of the Tesoro Extension. The Green Alignment would have extended SR-241 south of SR-74 (Ortega Highway) on an alignment east of Cristianitos Road, then extending through the San Onofre State Beach and connecting with I-5. The 2013 Tesoro Extension proposed an initial phase of road construction, extending SR-241 from the Oso Parkway terminus to Cow Camp Road. AB 1426, enacted in 2020, codified that avoidance agreement.

South County Traffic Relief Effort Project

In December 2018, the TCA authorized the Project Approval/Environmental Document (PA/ED) Phase for the SCTRE, which was to evaluate improvements in north-south mobility in south Orange County. This included various options for the SR-241 extension. As part of that effort, the TCA, as the CEQA lead agency, conducted public scoping and alternatives screening analysis. At their meeting on March 12, 2020, the TCA recommended that only Alternative 1 (a No Build Alternative) and Alternative 22, a non-tolled extension of Los Patrones Parkway as a County arterial highway from its current terminus to Avenida La Pata,²⁷ be considered alternatives for the SCTRE Project. As a result of this action by the TCA Board, no other alternatives are being evaluated as a possible extension of the SR-241.

The TCA developed three alignment concepts for Alternative 22 as it traverses the Prima Deshecha landfill, each with differing levels of impact on Zone 4 operations. In addition, variations on design speed (i.e., 55 MPH and 70 MPH) were also considered. Based on preliminary conceptual plans, OCWR has estimated the alignment with the greatest impact on the landfill would result in a reduction of landfill capacity of approximately 14,136,000 cy to 14,448,000 cy. This could increase by up to an additional 8,500,000 cy if the portion of the landfill south of the road could not be utilized. The alignment with the least impact on the landfill would result in an estimated reduction of landfill capacity ranging from 171,000 cy to over 559,000 cy. Design speed and grade of the roadway are key factors in the range of impacts to the landfill capacity. In addition to loss of landfill capacity, the roadway would result in the loss of soil, which is used for daily cover.

Since Alternative 22 proposes the construction of an arterial highway in unincorporated Orange County and would not be directly connected to any State Highway and would not be a tolled roadway, the County of Orange is the lead agency for designating an extension of Los Patrones Parkway on the County Circulation Plan. The southerly segment of the arterial highway (approximately 700 feet) is in the City of San Clemente and would require the City to adopt an

²⁷ Historically, the roadway has been known as Avenida La Pata in the City of San Clemente and La Pata Avenue in unincorporated Orange County. The County of Orange renamed the segment in unincorporated Orange County to Avenida La Pata to provide consistency. The La Pata Avenue Gap Closure Project was completed prior to the change in the name of the roadway.

amendment to the *Mobility and Complete Streets Element* of its General Plan. OCTA is the lead agency for amending the MPAH to reflect the proposed extension. The current Project is consistent with this recommendation and the conceptual alignment for the LPPE that minimizes the impacts to the landfill.

2.2.3 AVENIDA LA PATA

Avenida La Pata is designated as a Primary Arterial Highway (4-lane divided highway) on the Orange County Master Plan of Arterial Highways. As previously noted, the construction of Avenida La Pata was evaluated in FEIR 584 because the roadway construction was a Covered Activity within the SSHCP, SAMP, and MSAA. Additionally, in 2010, the County of Orange certified the *La Pata Avenue Gap Closure and Camino Del Rio Extension EIR*, which evaluated the impacts associated with the roadway improvements. The roadway, which crosses the Prima Deshecha Landfill in unincorporated Orange County, is a component of a north-south inland route that extends from SR-241 in the City of Rancho Santa Margarita to I-5 in the City of San Clemente.²⁸ In 2018, the County of Orange, in cooperation with the City of San Clemente, completed the final phase of the Avenida La Pata improvements, which connects Avenida La Pata in the City of San Clemente with the segment of Avenida La Pata in the City of San Juan Capistrano/unincorporated Orange County.²⁹ Los Patrones Parkway would provide an additional north-south route with its terminus at Avenida La Pata in San Clemente.

2.2.4 TRAMPAS CANYON DAM AND RESERVOIR

The Trampas Canyon Dam and Reservoir, which was constructed from 1973 to 1975, is located in Planning Area 5 of the Ranch Plan Planned Community. The dam was constructed to meet the Division of Safety of Dams' (DSOD) safety standards with a 5,600 acre feet (af) capacity at the spillway crest at an elevation of 597 feet (ft) above mean sea level (msl).³⁰ This facility was used by the adjacent quarry for the washing of tailings.³¹ Prior to the acquisition of the dam and reservoir by SMWD in 2017, tailings in the reservoir occupied about 80 percent of the reservoir's available storage volume.

The SMWD acquired the Trampas Canyon Dam and Reservoir and is reconstructing the facility to increase the available recycled water storage capacity. The reconstruction of the existing dam allows for 5,000 af of recycled water storage. The reservoir will provide seasonal and operational storage for recycled water to meet demands for nondomestic water in South Orange County within SMWD's service area. It is anticipated that the majority of the recycled water would be supplied by the Chiquita Water Reclamation Plant (CWRP) and may be supplemented with other non-domestic supply sources. The facility is being constructed consistent with DSOD standards. Construction was completed in 2020.

Consistent with the SSHCP's Phased Dedication Program and the 2006 Open Space Agreement with the County of Orange, an open space dedication area was required for the reconstruction of the Trampas Canyon Dam and Reservoir. In coordination with USFWS and the County of Orange,

²⁸ North of Ortega Highway (SR-74) the name of the roadway changes to Antonio Parkway.

²⁹ An initial phase of the roadway, which provided a connection between the City of San Clemente and the City of San Juan Capistrano, was opened in 2016. Subsequent phases of the project included widening from three lanes to five lanes and inclusion of turning lanes and signals.

³⁰ In 1996, the DSOD restricted the impounded water level to an elevation of 585 ft above msl, which lowered capacity to approximately 4,700 af.

³¹ The quarry operations are conducted under a lease from RMV. At the time FEIR 584 and FEIR 589 were prepared, the operator was Oglebay-Norton Industrial Sands (ONIS). The current operator of the quarry is Lapeyre Industrial Sands; however, the nature of the operations is not substantially different from what was evaluated in FEIR 589.

208.65 acres of the open space surrounding the reservoir have been enrolled in the Habitat Reserve as part of the SSHCP's Phased Dedication Program. These acres include acres previously identified for development in Planning Area 5, and open space acres associated with Planning Area 5. The "development" acres that are now open space acres are in addition to what was approved in the SSHCP.

2.2.5 SAN DIEGO GAS AND ELECTRIC SUBSTATION

FEIR 589 identified the need for up to two electrical substations to serve the Ranch Plan; however, this was reduced to one electrical substation during the planning process of the initial electrical substation. San Diego Gas and Electric (SDG&E) has constructed the substation in Planning Area 2 south of Cow Camp Road in the vicinity of the northbound access ramp to Los Patrones Parkway. The substation property area is approximately 2.5 acres with a masonry screen wall along all sides of the substation. The facility has been designed and constructed consistent with the California Public Utilities Commission general orders and guidelines. All distribution circuits leaving the substation are underground in Cow Camp Road; however, the transmission lines entering the site are above ground. Additionally, there is a 12-foot SDG&E distribution easement that extends from the western edge of the substation. At the time the substation was approved a future extension of SR-241 was anticipated; therefore, the facilities have been designed to avoid any conflict with a future roadway extension. The substation has been operational since October 2011.

2.2.6 AFFORDABLE HOUSING IMPLEMENTATION PLAN

On July 18, 2006, the Affordable Housing Implementation Agreement (AHIA) was approved pursuant to the Development Agreement for the Ranch Plan. The initially approved AHIA generally requires that RMV provide the County with various sites that are between 2 and 10 acres in size, for a total of 60 gross acres of property (the "Dedicated Lands"), for the development of affordable housing for households qualifying as low or very-low income households, as defined in the Orange County Housing Element.³² The Affordable Housing developed on property provided pursuant to the AHIA is not counted against the 14,000 dwelling units approved as part of the Ranch Plan and analyzed in EIR 589; however, no additional acreage would be devoted to development. The Project would be within the graded development areas of the Ranch Plan. The AHIA sets forth the process, requirements and timeframes for RMV and the County to satisfy its obligations to provide Affordable Housing sites under the Development Agreement.

An Addendum to the AHIA was approved by the County Board of Supervisors that authorizes a Private-Sector Alternative method of development for affordable housing in Planning Areas 1 and 2 of the Ranch Plan. Under the Private-Sector Alternative, RMV would provide all required infrastructure at no cost to the County. In exchange, RMV would receive a Dedicated Lands credit that is equal to the actual gross acreage of the housing site(s) multiplied by a factor of two (for example, a five-gross-acre site that is developed under the Private-Sector Alternative would receive a Dedicated Lands Credit of ten gross acres). Under this mechanism, RMV implemented two affordable housing projects in Planning Areas 1 and 2. Combined, these projects will provide 219 affordable units on 7.8 gross acres. As a result, RMV is subject to a remaining Dedicated Lands obligation of 44.4 gross acres required under the AHIA.

³² The Orange County Housing Element defines Very Low Income as households earning 50 percent or less of the Area Median Income (AMI) and Low Income as households earning 51 to 80 percent of AMI. A "household" consists of all the people occupying a dwelling unit, whether or not they are related. The U.S. Census Bureau identifies the median household income for Orange County between 2014 and 2018 as \$85,398 (County of Orange 2013a; U.S. Census Bureau 2014).

In 2016, the AHIA was modified to allow, but not require, the use of private-sector resources to be used to develop affordable housing in other Ranch Plan Planning Areas (i.e., Planning Areas 3, 4, 5, or 8). Regardless of the financing method, the Affordable Housing sites will be developed at no less than 25 dwelling units per net acre. The development standards would comply with the *Ranch Plan Planned Community Program Text* which, as the applicable comprehensive zoning program, provides the guidance for conservation, management, and development of the Ranch Plan. RMV has identified potential affordable housing sites in Planning Area 3. FEIR 623, prepared for the modification to the AHIA to allow private-sector financing, evaluated a range of affordable units. An additional 1,110 affordable dwelling units would be built if only public-sector resources were used and an additional 555 affordable dwelling units would be built if only private-sector resources are. If the units are built with the private-sector resources, an Irrevocable Offer of Dedication (IOD) to the County would be recorded at the time of commencement of construction of the Affordable Housing Project. Prior to or concurrent with recordation of the IOD, RMV will record a covenant restricting the use of the Affordable Housing Project/Affordable Housing site for low, very-low and extremely-low income households for a period of 55 years.³³

2.3 **PROJECT SETTING**

The *Orange County General Plan Land Use Element* (Land Use Element) designates the Ranch Plan Planned Community as 1B-Suburban Residential, Employment (3), Urban Activity Center (UAC)(6), and Open Space (5). The Ranch Plan site is zoned PC (Planned Community). As indicated above, the *Ranch Plan Planned Community Program Text* provides the regulations and procedures that apply to each of the land use categories approved as a part of the Ranch Plan project.

The Circulation Plan Map of the Transportation Element reflects the major roadways serving the Ranch Plan. Currently, Antonio Parkway/Avenida La Pata and Los Patrones Parkway are the primary north-south routes. Ortega Highway and Cow Camp Road provide east-west movement. However, as noted above, currently Cow Camp Road is only constructed in Planning Areas 1 and 2 and construction in Planning Area 3 has been initiated. The current Circulation Plan Map and the proposed amended map are shown in Section 3.0 of this Addendum as part of the Project Description.

The LPPE site is not in a designated Alquist-Priolo Earthquake Fault Zone. The closest fault zone is the Cristianitos fault located to the east of the proposed LPPE conceptual alignment. This fault zone is not considered active or potentially active according to the Alquist-Priolo Earthquake Fault Zone Act.

Just north of Ortega Highway, San Juan Creek flows in a northeasterly to southwesterly direction. San Juan Creek is a major drainage facility that discharges into the Pacific Ocean in the vicinity of the City of Dana Point. Major tributaries to San Juan Creek are Arroyo Trabuco, Oso Creek, Cañada Chiquita, Cañada Gobernadora, Bell Canyon Creek, and Verdugo Canyon Creek. The portion of the Project is located in the Central San Juan and Trampas Sub-basins. The portion of the alignment in the Prima Deshecha Landfill is located in the Prima Deshecha Cañada watershed.

The Ranch Plan site contains a diverse population of flora and fauna species, including sensitive vegetation communities that provide habitat to sensitive species. Vegetation communities that

³³ Neither the AHIA nor Addendum Two requires the provision of housing for extremely low income households; however, the Addendum requests that housing to meet this need be explored.

occur in the vicinity of the proposed LPPE include coastal sage scrub, chaparral, grassland, riparian and open water, and oak woodland and forest.

The proposed LPPE site and surrounding area consists of both undeveloped and heavily disturbed land. The alignment would traverse open space in the City of San Clemente, which is protected by Measure V. The LPPE is consistent with the provisions of Measure V, which contains an exception for “public roadways” (Measure V is further discussed in Section 4.11, Land Use and Planning). The vicinity of the proposed alignment is not currently accessible to the public. Cristianitos Road is the closest roadway; however, this is a private ranch road. Cristianitos Road is used to provide access to the Lapeyre Industrial Sands quarry site, SMWD Trampas Dam and Reservoir site, and RMV ranch property. Exhibit 4 provides a regional location and local vicinity map.

Key existing and proposed land uses in the vicinity of the proposed alignment are discussed below. The distance identified to each of these uses is based on the conceptual alignment use for this Transportation Element Amendment and MPAH Amendment process. Recognizing the conceptual nature of the alignment, the precise distance could change during the design phase; however, the changes are not expected to be substantial. The location of each of these uses and the conceptual alignment is shown on Exhibit 5.

- The SDG&E substation is located south of Cow Camp Road by the access ramp to northbound Los Patrones Parkway. The proposed LPPE would be adjacent to the western boundary of the substation.
- Lapeyre Industrial Sands is a leased quarry operation located at 31302 Ortega Highway in unincorporated Orange County. Facilities include an open pit mine; a pond for processing and rinsing of tailings; a processing plant; an office complex; a scale house; a fueling facility; a maintenance shop; several storage buildings, sheds, and trailers; and open vehicle/equipment storage areas. The proposed LPPE alignment traverses the western edge of the leasehold although it is west of the current mining operation.
- The SMWD Trampas Canyon Dam and Reservoir is discussed above (see Section 2.2.4). The proposed LPPE alignment would traverse a slope easement and be located approximately 700 feet west of the reservoir at the closest point. Additionally, the alignment would traverse through approximately 9.0 acres of open space that is enrolled in the Habitat Reserve as mitigation for the reconstruction of the dam and reservoir.
- The Prima Deshecha Landfill is located at 32250 Avenida La Pata, San Juan Capistrano. The landfill accepts solid waste from commercial haulers and the public. However, public access is limited to Orange County residents. The landfill also operates a household hazardous waste center (HHW) on-site. The landfill is developed on both sides of Avenida La Pata; however, the proposed alignment would not impact locations where refuse has already been buried. Avenida La Pata provides the only access to the landfill. The main entrance to the landfill is approximately 0.75 mile north of the proposed LPPE intersection with Avenida La Pata.
- San Juan Hills High School is located at 29211 Stallion Ridge³⁴, San Juan Capistrano. The proposed LPPE intersection with Avenida La Pata is approximately 1.3 mile south of the Stallion Ridge intersection that provides access to the high school.
- The residential uses in the City of San Clemente closest to the LPPE alignment would be the Talega Valley development. At the closest location, the proposed LPPE alignment is located approximately 1,000 feet north of the residential uses. There is an intervening

³⁴ Stallion Ridge was previously called Vista Montana.



Regional Location and Local Vicinity

Exhibit 4

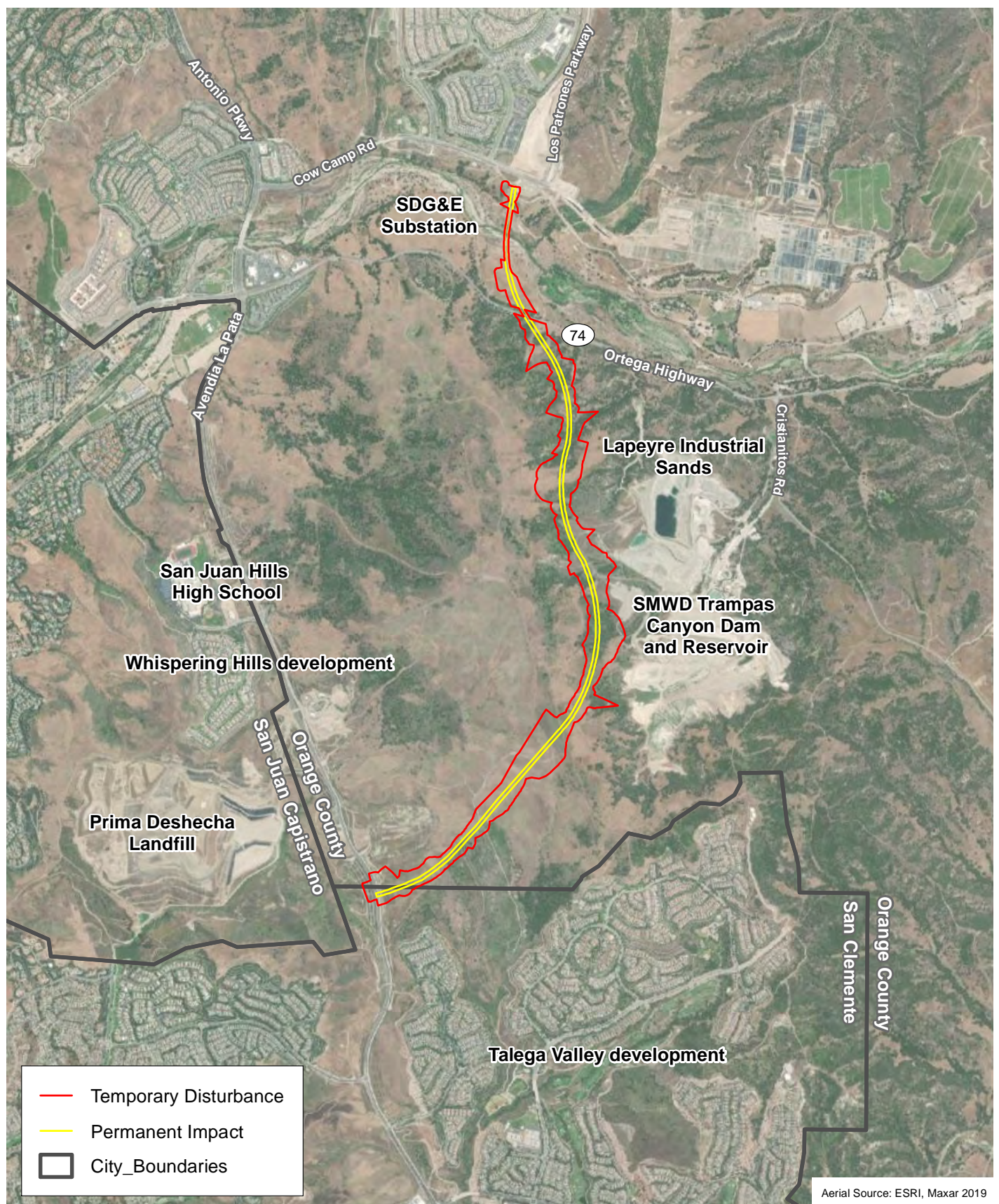
Los Patrones Parkway Extension



3,000 1,500 0 3,000
Feet



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Aerial Source: ESRI, Maxar 2019

Conceptual Los Patrones Parkway Extension Alignment and Surrounding Land Uses

Los Patrones Parkway Extension

Exhibit 5



3,000 1,500 0 3,000 Feet



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ridgeline and a swath of open space area between the roadway alignment and the residential uses. The Forester Ranch development is located west of Avenida La Pata and at the closest location would be approximately 0.5 mile from the LPPE/Avenida La Pata intersection.

- The residential uses in the City of San Juan Capistrano closest to the LPPE alignment would be the Whispering Hills development, which is located west of Avenida La Pata. At the closest location, the proposed LPPE alignment is located approximately 0.8 mile south of the residential uses. There is an intervening ridgeline and ongoing landfill operations between the roadway alignment and the residential uses.

2.4 **ALTERNATIVE ENVIRONMENTAL BASELINE**

Section 15125(a) of the CEQA Guidelines requires that an EIR include a description of the physical environmental conditions in the vicinity of the project. Further, it states that this environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant. Both FEIR 584 and FEIR 589 provided such a discussion and the analysis used the baseline existing at the time the Notice of Preparation was issued as the basis for determining impacts (i.e., an Existing Plus Project analysis).

Although use of an existing conditions baseline is commonly used in the preparation of environmental documents, such a baseline would be misleading in the evaluation of the impacts associated with the modification of the roadway network for the Ranch Plan. If the 2045 modified circulation network was evaluated compared to existing conditions, the evaluation would reflect the changes in trips associated with full build-out of the Ranch Plan (which was already approved and evaluated in the prior EIRs) and any regional growth. These trips will occur regardless of whether the LPPE is approved and this would mask the effect of the change in the MPAH and local General Plans (i.e., County of Orange Circulation Plan Map and San Clemente Roadway System Map), which is the project being evaluated. Therefore, comparison of the 2045 traffic projections with and without the LPPE provides a more accurate assessment of the impacts of the proposed Project. Use of this alternative baseline is consistent with the provisions of CEQA. Section 15125(a)(2) of the CEQA Guidelines allows a lead agency to use a future condition if the existing conditions would be misleading. Specifically, Section 15125(a)(2) states:

A lead agency may use projected future conditions (beyond the date of project operations) baseline as the sole baseline for analysis only if it demonstrates with substantial evidence that use of existing conditions would be either misleading or without informative value to decision-makers and the public. Use of projected future conditions as the only baseline must be supported by reliable projections based on substantial evidence in the record.

The Addendum does provide a summary of the impacts identified in FEIR 584 and FEIR 589 under each topical area in Section 4.0, Environmental Analysis. Additionally, an update to the setting has been provided above, which provides an overview of the Project history and relevant programs, relevant projects, and the updated setting.

As noted above (see Section 1.3, Use of an Addendum), this Addendum is being prepared pursuant to Section 15164 of the CEQA Guidelines. It provides a consistency analysis with FEIR 575, FEIR 584, and FEIR 589 pursuant to Section 21166 of the Public Resources Code and Section 15162 of the CEQA Guidelines; and provides some changes or additions that are necessary to fully address the proposed Project. Therefore, when determining if there would be any new significant or substantially more severe impacts, the environmental baseline is generally the impacts evaluated in FEIR 575, FEIR 584, and FEIR 589 (i.e., impacts identified as part of the approved GDP, SSHCP and the Ranch Plan, respectively).

For topical areas, such as traffic, an updated horizon year is used. The traffic analysis in FEIR 575 used a 2020 horizon year and FEIR 584 and FEIR 589 used a 2025 horizon year. Consistent with the OCTA and County of Orange traffic impact analysis protocols for evaluating an MPAH Amendment and Transportation Element Amendment, a 2045 horizon year is used. This ensures the analysis addresses the full cumulative impacts of projected growth and reflects any changes that have occurred to the circulation network since FEIR 584 and FEIR 589 were certified.

The impact analysis compares the 2045 with and without the proposed Amendment (i.e., 2045 traffic volumes with the LPPE compared to the 2045 network without having Los Patrones Parkway as a continuous route to Avenida La Pata [No LPPE]). The analysis anticipates no development of the SR-241 extension. The LPPE would serve the local north-south travel demand and would be in lieu of the extension of Cristianitos Road, which was assumed as part of the Ranch Plan and SSHCP. This allows the analysis to define the changes in circulation patterns associated with the proposed Project more clearly. The LPPE would not generate any additional trips because there are no changes in land uses and would not result in duplicative infrastructure improvements. The focus is the potential impacts associated with a redistribution of the trips as a result of the Project.

SECTION 3.0 PROJECT DESCRIPTION

3.1 PROJECT LOCATION

The proposed LPPE alignment would extend south from the current southern roadway terminus at Cow Camp Road on the eastern edge of the Village of Esencia (Planning Area 2) within the Ranch Plan Planned Community, cross San Juan Creek and Ortega Highway (SR-74) on bridge structures, and enter into Planning Area 5. The alignment is shown extending through the western edge of the Lapeyre Industrial Sands quarry operations and continuing in Planning Area 5 west of the SMWD Trampas Canyon Dam and Reservoir. The proposed alignment then crosses the ridge out of Planning Area 5 and enters into the Prima Deshecha Landfill site. Within the Prima Deshecha Landfill site, the alignment traverses open space and as it nears Avenida La Pata, an area designated for future landfill activities. The alignment traverses property owned by RMV and the County of Orange (the Prima Deshecha Landfill). The alignment is predominately in unincorporated Orange County; however, the southern segment (700 feet) and the intersection of the LPPE with Avenida La Pata are in the jurisdictional boundary of the City of San Clemente (on property owned by the County of Orange). The location of the LPPE alignment is presented in a regional and local context on Exhibit 4, provided in Section 2.0, Project Background and Setting.

3.2 PROJECT DESCRIPTION

As previously noted, the requested action at this time is a General Plan Amendment (Circulation Plan Map of the Transportation Element) and an MPAH Amendment for the realignment of Cristianitos Road to provide a proper logical termination. This would also necessitate an amendment to the approved Prima Deshecha Landfill GDP to reflect the roadway traversing a portion of Zone 2, Zone 4, and connecting to Avenida La Pata in Zone 5 of the landfill. Moreover, because the LPPE will extend into the City of San Clemente, the Project includes certain discretionary approvals that will be required from the City of San Clemente. These approvals include amendments to the *Mobility and Complete Streets Element* (i.e., the Centennial General Plan Mobility Element) of the City of San Clemente's General Plan to reflect the LPPE.

This Project description describes the requested General Plan and MPAH request, followed by a discussion of the conceptual alignment assumptions used as the basis for the analysis. The third component identifies the modifications to the GDP required to incorporate the LPPE as part of the circulation component of the GDP.

3.2.1 GENERAL PLAN AMENDMENTS/MPAH AMENDMENT

In 2010, when Cristianitos Road was added to the MPAH as an unconstructed Primary Arterial Highway, the alignment was depicted as extending from an interchange with SR-241 and extending north into Planning Area 3 and terminating at Grandeza (to be renamed Bucker Way). At that time, the MPAH reflected the "Green Alignment", which the TCA selected as the alignment for SR-241 in 2006. As discussed in Section 2.2.2, State Route 241, in 2016, the TCA agreed to rescind their 2006 approval of the "Green Alignment". As such, Cristianitos Road is shown as extending south of Ortega Highway but has no connectivity to other roadways. Therefore, Cristianitos Road, which was intended to provide the arterial highway complement to SR-241 in providing the critical north-south movement in south Orange County, lacks connectivity.

The proposed amendments (both General Plans and MPAH) would modify the roadway configuration to better accommodate the north-south travel movement by realigning the segment of Cristianitos Road planned south of Cow Camp Road to be an extension of Los Patrones Parkway connecting to Avenida La Pata, an arterial highway. The roadway would be designated

as an unconstructed Primary Arterial Highway in the County General Plan and MPAH. In revising the circulation network to extend Los Patrones Parkway from its current terminus at Cow Camp Road, the originally intended mobility goals would be achieved and would be consistent with Special Consideration 3.10.2 of the *Guidance for Administration of the Orange County Master Plan of Arterial Highways*, which states, “Arterials should be continuous between two connecting arterials.”

The name of the road extension would also be changed from Cristianitos Road to Los Patrones Parkway. Exhibit 6 depicts the current and proposed Circulation Plan Map and Exhibit 7 depicts the current and proposed MPAH map.

The following circulation refinements are requested:

- Terminate Cristianitos Road as an arterial highway at Cow Camp Road and rename the segment of the roadway in Planning Area 3 (north of Cow Camp Road) Ranch Canyon Road.³⁵
- Extend Los Patrones Parkway, as an unconstructed Primary Arterial Highway, south from Cow Camp Road and terminating at Avenida La Pata

The City General Plan Amendment would add Los Patrones Parkway to the Mobility and Complete Streets Element's Roadway System Map (Figure M-1).

In addition, consistent with the assumptions of this Addendum, the note shown on the Circulation Plan Map, that reads: “Future extension/transportation options currently under evaluation by TCA” would be removed from the map. Los Patrones Parkway and the LPPE would serve the transportation demand that would have been provided by the extension of the SR-241.

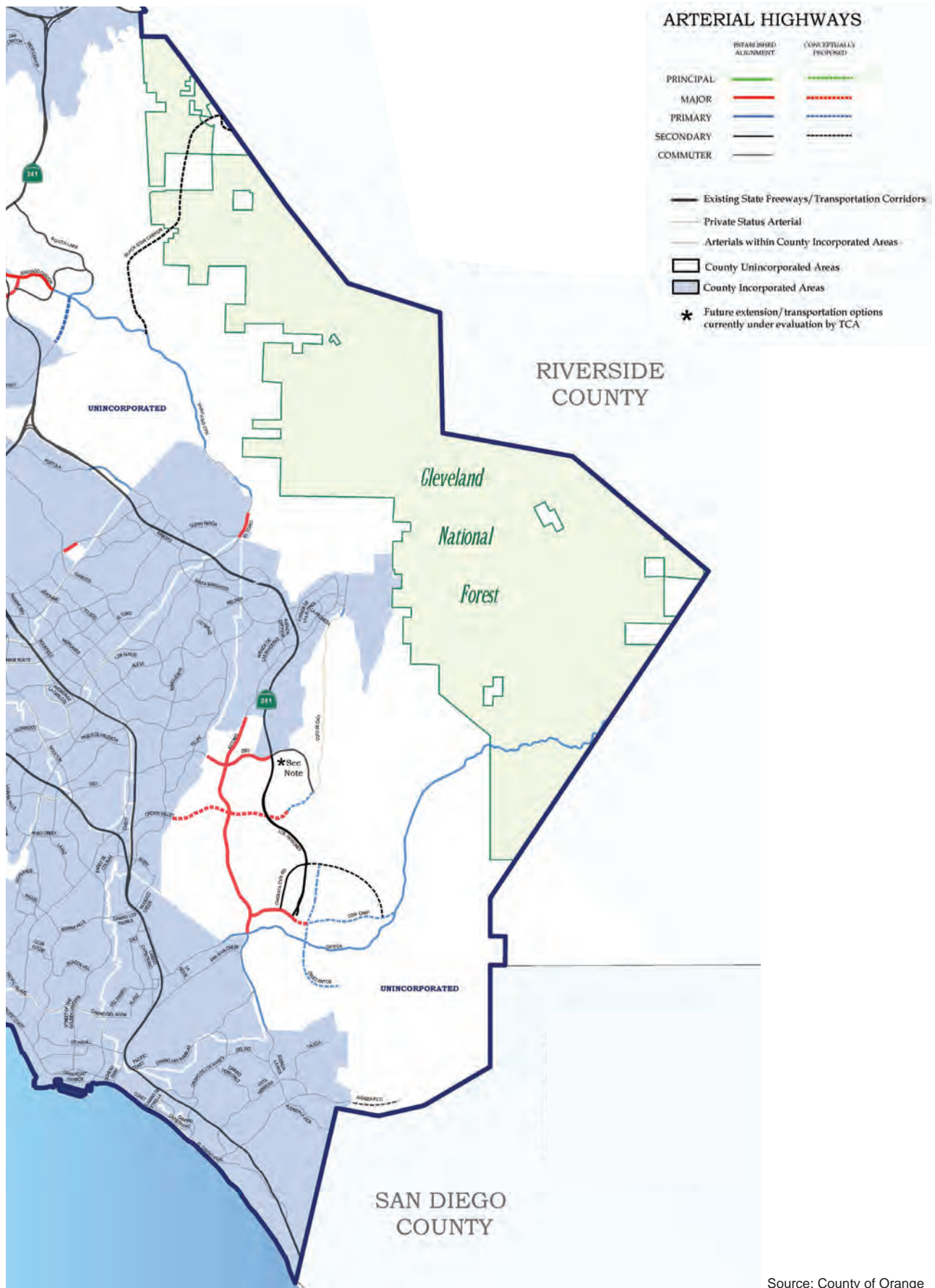
As noted in Section 2.1.5, Master Plan of Arterial Highways, once the County Board of Supervisors approves an amendment to the Circulation Plan Map component of the Transportation Element and the City Council approves an amendment to its Roadway System Map, the OCTA Board of Directors would finalize the MPAH amendment. An additional change that would be made to the MPAH is to rename Grandeza to Bucker Way from Los Patrones Parkway east to Cow Camp Road. This roadway is depicted as an unnamed arterial highway on the County Circulation Plan Map.

3.2.2 CONCEPTUAL DESIGN ASSUMPTIONS

As previously noted, the current Project includes the modification of the Prima Deshecha GDP, Circulation Plan Map (of the Circulation Plan component of the Transportation Element), and the MPAH. Subsequent action that would also be part of the Project include the discretionary approvals required from the City of San Clemente, such as amendments to the *Mobility and Complete Streets Element* (i.e., the Centennial General Plan Mobility Element) of the City of San Clemente's General Plan to reflect the LPPE. However, to provide the decisionmaker with an understanding of the potential impacts associated with the LPPE, the analysis examines the anticipated impacts of future phases of a Project, including construction and operation.

This analysis is based on a conceptual alignment that will be further refined during the design phase of the Project. This approach is consistent with the approach used in FEIR 584 and FEIR 589, which as recommended by CEQA, provides a substantial amount of detail on the uses and potential environmental impacts associated with the development of the Ranch Plan although the

³⁵ Cristianitos Road would be retained as a local private ranch road south of Ortega Highway.



Source: County of Orange

Current Circulation Plan Map

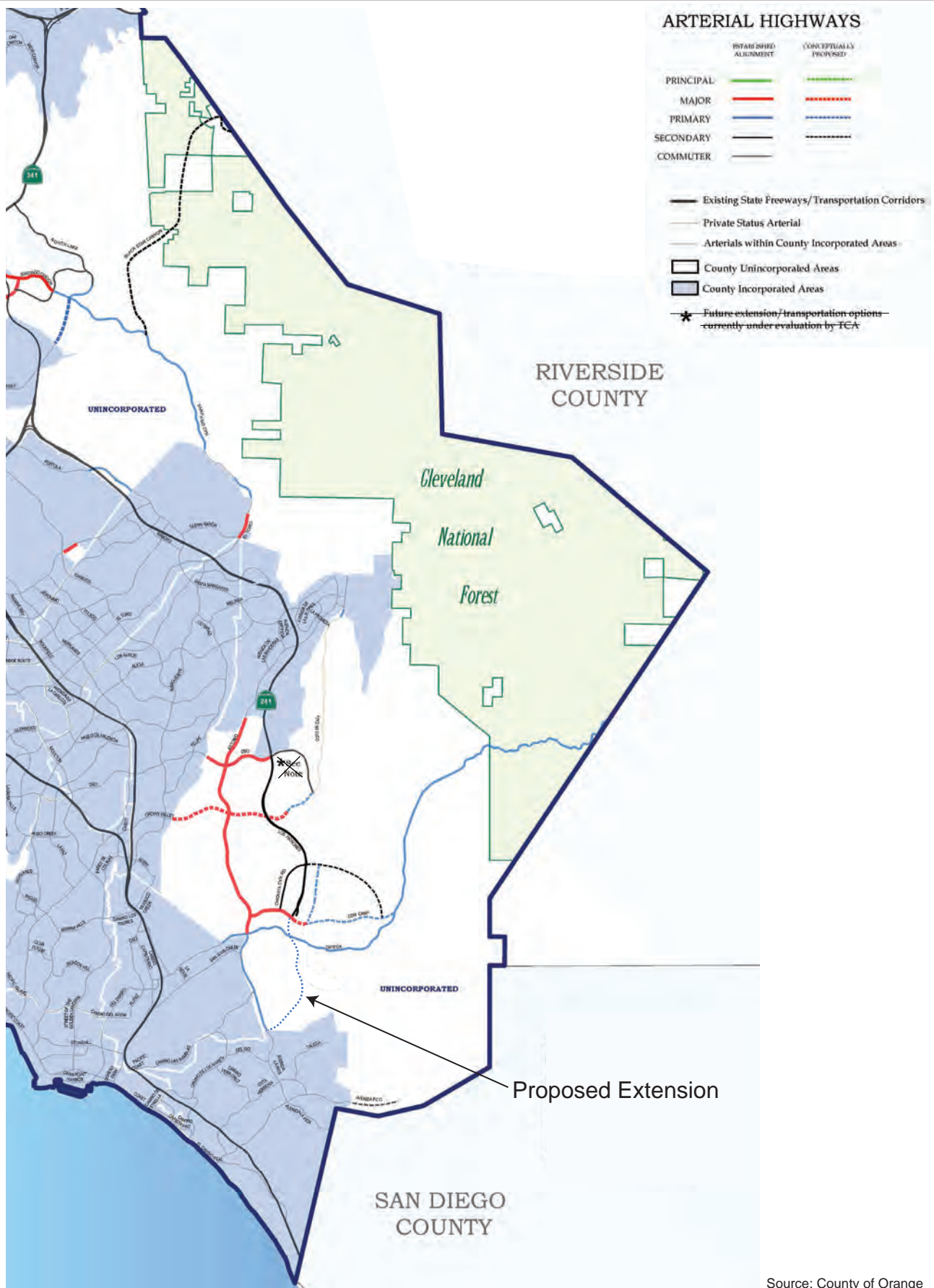
Los Patrones Parkway Extension

Exhibit 6a



PSOMAS

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Source: County of Orange

Proposed Circulation Plan Map

Los Patrones Parkway Extension

Exhibit 6b

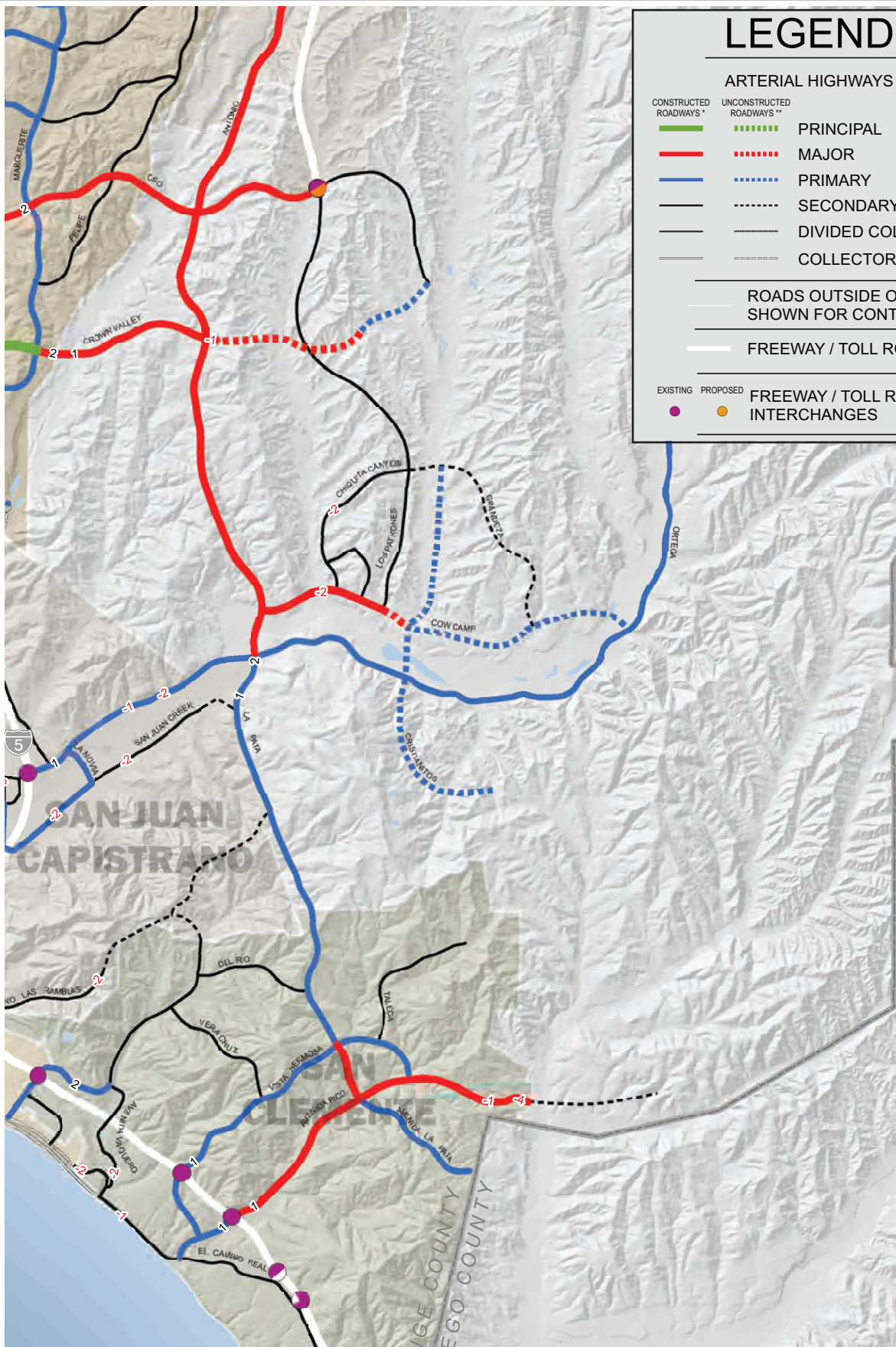


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LEGEND

ARTERIAL HIGHWAYS

CONSTRUCTED ROADWAYS *	UNCONSTRUCTED ROADWAYS **	
		PRINCIPAL
		MAJOR
		PRIMARY
		SECONDARY
		DIVIDED COLLECTOR
		COLLECTOR
ROADS OUTSIDE OF OC SHOWN FOR CONTINUITY		
FREEWAY / TOLL ROAD		
EXISTING	PROPOSED	FREEWAY / TOLL ROAD INTERCHANGES



Source: OCTA

Current Master Plan of Arterial Highways Map

Exhibit 7a

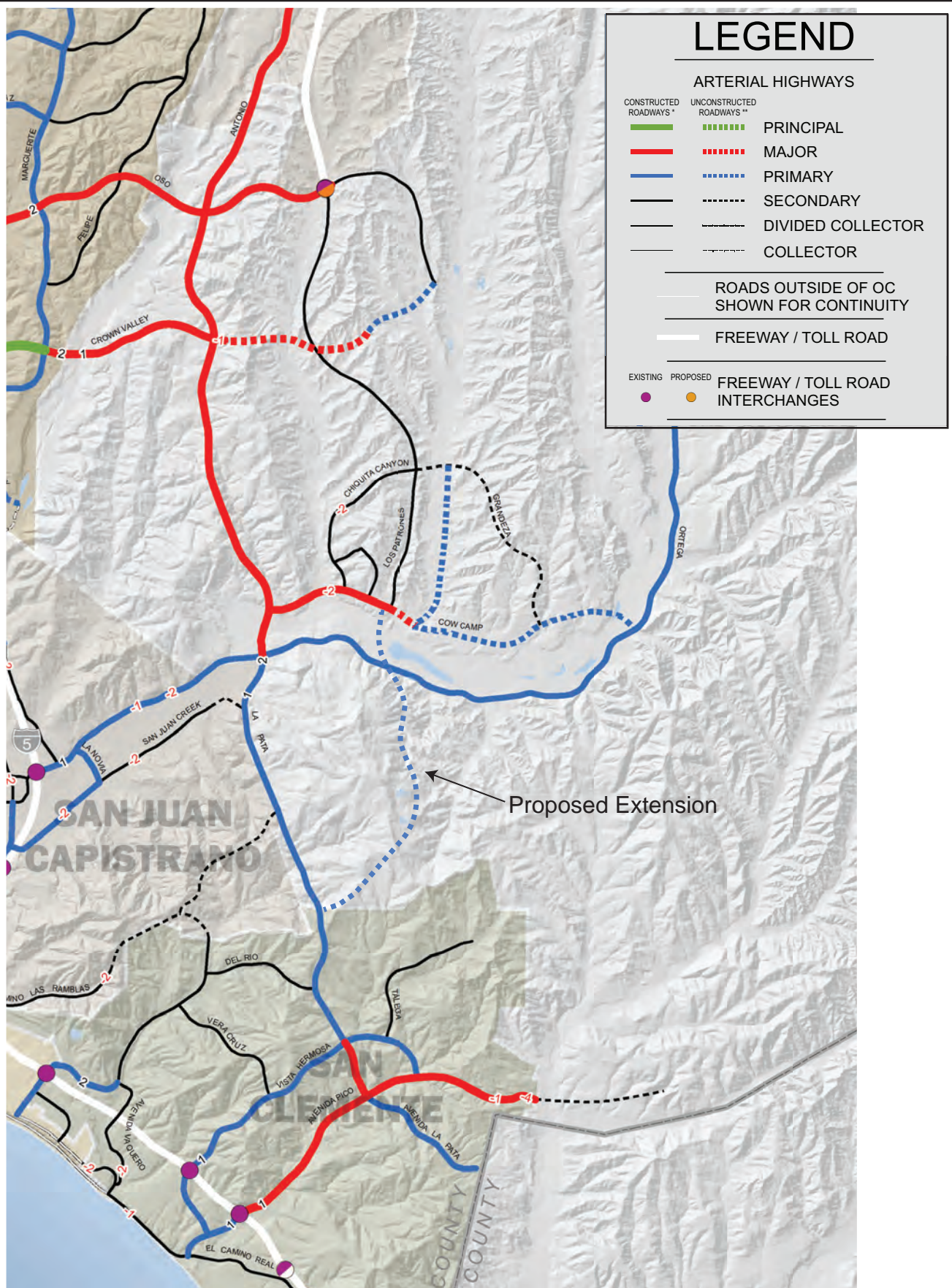
Los Patrones Parkway Extension



PSOMAS

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Source: OCTA

Proposed Master Plan of Arterial Highways Map

Exhibit 7b

Los Patrones Parkway Extension



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requested actions at the time were for General Plan and Zoning approvals. The following provides a key overview of the assumptions used in the analysis for this Addendum. For this analysis, specific design exceptions, including, criteria that would apply to set the roadway's posted speed lower than its design speed have not been developed. Design exceptions that would be considered to reduce impacts would include, but not be limited to, increasing the grade of the roadway, increasing the steepness of cut slopes, use of retaining walls to minimize grading, and reducing the design speed of the roadway.

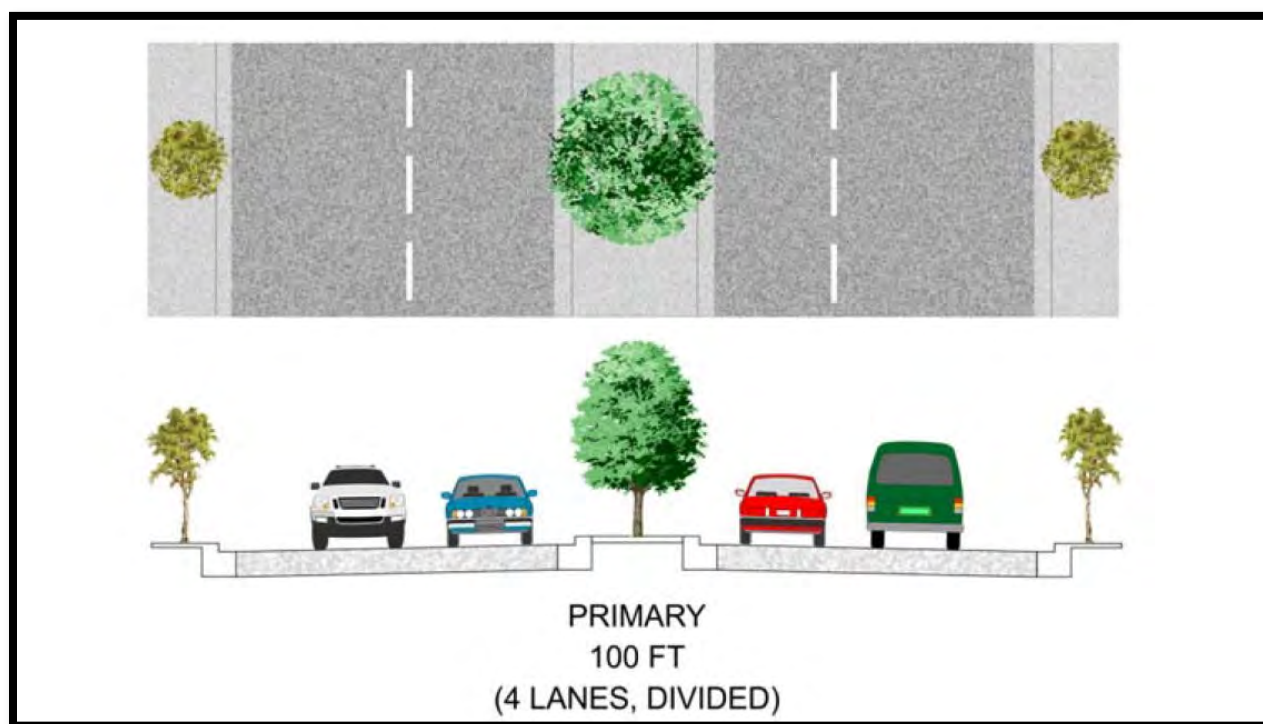
A Primary Arterial Highway is defined in both the MPAH and the Transportation Element of the County's General Plan as a 4-lane divided highway, typically with 100-feet of right-of-way.³⁶ Exhibit 8A provides an illustration of the cross-section for the typical Primary Arterial Highway, which consists of two 12-foot through lanes with 11-foot shoulders in both directions. A 14-foot median is provided. Additionally, an 8-foot area on both sides of the roadway is provided on the outside for drainage and sidewalks.³⁷ The median provides the opportunity for left-turn lanes at intersection roadways. At this time, the typical cross-section is assumed throughout the alignment; however, during the design phase exceptions may be recommended to minimize environmental impact or to improve the function of the roadway. The type of modifications could include reducing shoulder width in locations to minimize grading or avoid sensitive resources. Changes associated with function of the roadway could include truck climbing lanes or providing dual left-turn lanes, or free right-turn lanes when the traffic demand for a certain movement is high. This level of detail is determined during the design phase; however, sufficient information is available based on the conceptual alignment to provide a reasonable assessment of the potential impacts associated with construction and operation of LPPE.

A Primary Arterial Highway and a toll road freeway (e.g., the existing portion of SR-241) differ significantly in terms of their design, speed, capacity, purpose, utility, and environmental impacts. The latter presents distinct environmental impacts, including but not limited to traffic and circulation, noise, air quality, aesthetics, growth inducement, land use, and environmental justice. Exhibit 8B illustrates some of these distinctions.

³⁶ The road right-of-way is the area designated for use as a street. It includes the travel lanes, shoulders, curbs, gutters, and parkways.

³⁷ It should be noted that the existing segment of Los Patrones Parkway (between Oso Parkway and Cow Camp Road) does not have sidewalks. This segment of the roadway does not have at-grade roadways intersecting Los Patrones Parkway and there are no uses that have direct access; therefore, sidewalks were not deemed to be necessary. However, a multi-purpose trail is provided along the western side of Los Patrones Parkway (from Oso Parkway to Chiquita Canyon Drive) to accommodate pedestrians and bicyclist. The optimal method of accommodating non-vehicular traffic for the LPPE segment would be determined during roadway design.

EXHIBIT 8A
ILLUSTRATIVE PRIMARY ARTERIAL HIGHWAY CROSS-SECTION



Source: OCTA 2017

EXHIBIT 8B
ILLUSTRATIVE LOS PATRONES PARKWAY (FREE PRIMARY ARTERIAL) VS.
FREEWAY(E.G., SR-241) COMPARISON

Factor	Free Local Road	TCA Toll Road	Comments
Design Speed	60 mph to 70 mph	70 mph to 80 mph	<ul style="list-style-type: none"> TCA/State and Caltrans standards prefers 80 mph design speed Current LPP does not meet TCA/Caltrans standards for toll road based on 70 mph design speed
Typical Width	100' – 200'	165'	Future R/W would be restricted with conservation easements in Ranch Plan and Prima Deshecha open space
Right-of-Way/Ownership	County of Orange & San Clemente	Caltrans	<ul style="list-style-type: none"> As a Free Local Road, it is owned and operated by local agencies within applicable jurisdictions As a Toll, it is owned by Caltrans and operated by TCA
Posted Design Speed	50 mph to 60 mph	60 mph to 65 mph	Final posted speed limit based on "prima facia" post-construction evaluation, according to traffic engineering standards
Median	14' average	20' to 30'	
Roadway Designation	Primary Arterial on MPAH	Toll Road on State Highway Plan	<ul style="list-style-type: none"> As a Free Local Road, it is part of the OCTA Master Plan of Arterial Highway, concurred by local agencies As a Toll, it is part of the California Transportation Commission (CTC) California Highway System
Southerly Terminus	Approved by applicable local agency for termination at Avenida La Pata	Approved by TCA and Caltrans	<ul style="list-style-type: none"> As a Free Local Road, terminus is designated and approved by local agencies As a Toll, terminus is prescribed by TCA and Caltrans

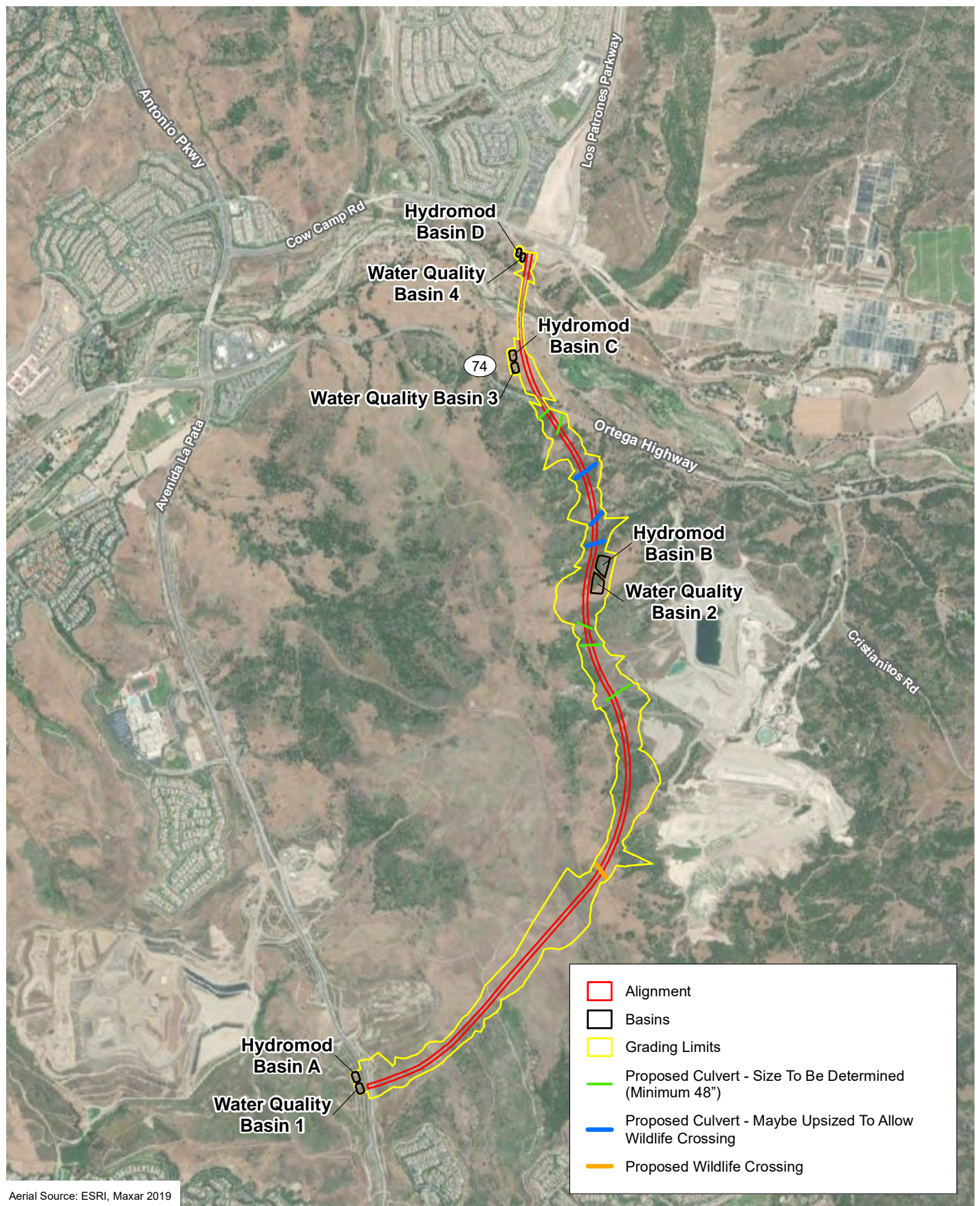
Source: City of San Clemente, 2020

Exhibit 9 depicts the conceptual alignment plan for the LPPE being evaluated in this Addendum.

The area of impact is larger than the 100-feet of right-of-way because the impact line needs to accommodate the necessary grading, drainage, and water quality requirements for the roadway. At this point in the process, the area of impact is conceptual because detailed engineering studies have not been conducted. However, a substantial amount of information on the geologic and hydrologic conditions are known from past studies done for the Ranch Plan and the Prima Deshecha Landfill. Therefore, the concept plan is a realistic assumption regarding the area that would be impacted from implementation of the LPPE.

As shown, Los Patrones Parkway would extend south from the terminus at Cow Camp Road. A 70-mile per hour (mph) design speeds is assumed. However, a 70-mph design speed does not mean the speed limit would be posted at 70-mph. The design speed is used to determine the roadway geometrics. Posted speeds take into account design speed but also factor in various operational considerations, such as adjacent land uses, number of intersections, and bicycle and pedestrian activity. The 70-mph design speed, which would be consistent with the design speed for the existing segment of Los Patrones Parkway, requires incorporation of larger horizontal and vertical curve radii to accommodate a higher design speed. The higher design speed is appropriate for this level of planning (i.e., General Plan and MPAH amendments and would represent a maximum environmental impact). The latest County of Orange Highway Design

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Aerial Source: ESRI, Maxar 2019

Conceptual Alignment

Los Patrones Parkway Extension



2,500 1,250 0 2,500 Feet

Exhibit 9



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Manual would be used to determine the types of improvements and appropriate safety measures. For example, advance notice to the southbound traffic that they are approaching an interchange as they approach Avenida La Pata would be provided. Possible the improvements may include advanced signing, reduction of speed signs, flashing beacons, rumble strips, and paint symbols.

Based upon the County's and City's prior experience in setting posted limits on Avenida La Pata and Avenida Vista Hermosa, it is anticipated at this stage that with the Project's similarities and proximity to Avenida La Pata, together with its connection to Avenida La Pata itself, the application of these design exceptions would lead to results similar to those reached on Avenida La Pata. In short, there is no reason to anticipate at this stage that the outcome of the evaluation of design exceptions and posted speeds would differ in any meaningful way from design exceptions and posted speeds on existing connecting arterials. The City of San Clemente has indicated that these assumptions and their incorporation into the Project description are key assumptions for the City's use of this Addendum and its conclusions in connection with approval of the Project.

Currently, at the Cow Camp Road intersection, the southbound traffic is required to turn right because both roadways (Cow Camp Road and Los Patrones Parkway) terminate at this location. Cow Camp Road extending east into Planning Area 3 is currently under construction; therefore, ultimately, traffic getting off at Cow Camp Road will have the choice to turn right or left. South of Cow Camp Road, Los Patrones would extend on a bridge structure over San Juan Creek. A second bridge structure would span Ortega Highway approximately one mile west of Gibby Road (at post mile 3.8) with no direct connection provided (i.e., no access to Ortega Highway from Los Patrones Parkway). South of Ortega Highway the roadway would enter Planning Area 5. The roadway is aligned along the western edge of the Lapeyre Industrial Sands operation and the SMWD Trampas Dam and Reservoir. The roadway would cross the ridge along a southwestern alignment and terminate at an intersection with Avenida La Pata.

The only arterial highways along this segment of the LPPE would be Cow Camp Road, Ortega Highway, and Avenida La Pata. Currently, Cristianitos Road is shown on the MPAH and Circulation Plan Map south of Ortega Highway; however, this would be deleted as part of this proposed action. Although local roads can connect to an arterial highway, both the MPAH and the Circulation Plan Map only depict arterial highways; therefore, there are no other intersections shown (or known of at this time) other than the roadways at the two termini.³⁸

Drainage

Consistent with County requirements a comprehensive surface drainage system would be developed to collect and convey runoff from the Project site into the existing and planned County storm drain system.³⁹ Storm water runoff from the proposed roadway will be collected and conveyed by swales and interceptor drains adjacent to the roadway. This runoff will be routed to storm water best management practices (BMPs) that would be designed to provide biofiltration and/or filtration to address pollutants of concern and to meet water quality treatment requirements. These facilities would also provide flow-duration-control functions, as needed, to provide hydromodification control. Flood-control requirements will also be met by providing additional peak flow detention storage in these BMPs, if needed. The proposed basins would reduce the

³⁸ As discussed in Section 4.17, Transportation, the traffic modeling assumes a connection of a local roadway with the LPPE in Planning Area 5. This roadway would be constructed in conjunction with the approved land uses in Planning Area 5.

³⁹ Standard conditions of approval pertaining to drainage have been incorporated as part of the Mitigation Program in the three FEIRs. Therefore, these measures, which also implement regulatory requirements would be required as part of roadway design.

represent a maximum environmental impact). The latest County of Orange Highway Design Manual would be used to determine the types of improvements and appropriate safety measures. For example, advance notice to the southbound traffic that they are approaching an interchange as they approach Avenida La Pata would be provided. Possible the improvements may include advanced signing, reduction of speed signs, flashing beacons, rumble strips, and paint symbols.

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flow rates to the existing condition level. Conceptual locations for these facilities are shown on Exhibit 9.

The conceptual alignment plan (Exhibit 9), identifies eight cross-culverts that would convey off-site flows across the LPPE, flowing from east to west to the Central San Juan and Trampas Canyon tributaries. The culverts will be located to preserve existing flow paths. The size of the culverts would be determined during the design process based on hydrologic analysis of the roadway and graded slopes. However, three of the culverts would be a minimum of 48 inches and may be upsized to allow for wildlife crossing. Consistent with the requirements of FEIR 589, the 100-year high confidence rational method analysis will be used for culvert sizing for adequate crossing from or to either side of the road.

Water Quality Management Plan

A Water Quality Management Plan (WQMP) for this Project would be developed to incorporate the water quality treatment and low impact development (LID) provisions of San Diego Regional Water Quality Control Board (SDRWQCB) Order No. R9-2009-0002, as described in the Model WQMP and its accompanying Technical Guidance Document (DAMP Section 7.II and 7.III, respectively, December 20, 2013).

Consistent with the *Watershed Planning Principals* developed as part of the NCCP/MSAA/HCP and SAMP processes, the concept alignment for the proposed Project identifies potential locations vegetated biofiltration BMPs, which are known as “Combination Basins”. The Combination Basins will provide water quality treatment, hydromodification control, and flood control within common basin footprints. The basins would provide multiple storm water control functions under different storm conditions. Based on the design used for the existing segment of Los Patrones Parkway, the combination basins are expected to have the following characteristics:

- **Biofiltration media bed.** The lowest elevations of the basins would include a biofiltration media bed, which would be vegetated with native plants adapted to the hydrologic conditions expected to be encountered, and media would be designed to address the pollutants of concern associated with a roadway.
- **Hydromodification control volume.** Low to middle elevations of the combination basins would provide flow duration control via a controlled release outlet structure to meet hydromodification control criteria. The volume above the biofiltration volume would be utilized infrequently during large storms. When the system is ponded higher than the biofiltration volume, the system would discharge through the media bed as well as through notch weirs and/or orifices located above the biofiltration ponding volume.
- **Flood-control volume.** Flood-control storage would be provided in addition to the hydromodification control volume, if needed, to detain peak storm events. The hydromodification and flood-control portions of the basin will be designed per the criteria of the Orange County Flood Control Manual.
- **Pre-treatment forebay.**⁴⁰ A sedimentation forebay (or equivalent approach) would be used to remove coarse sediment before water enters the main portion of the biofiltration media bed.

The storage capacity of individual combination basins will be less than 50 acre-feet and would not fall under the jurisdiction of the California Department of Water Resources, Division of Safety

⁴⁰ A sediment forebay is a small pool located near the inlet of a storm basin designed as initial storage areas to trap and settle out sediment and heavy pollutants before the water reaches the main basin. Sediment forebays act as a pretreatment feature on a storm water pond and can greatly reduce the overall pond maintenance requirement.

of Dams. The proposed storm water BMPs would discharge to receiving channels. At points of discharge, energy dissipation and outfall protection will be provided. The location of these basins is shown in Exhibit 9. Access to the basins for operations and maintenance purposes would be provided via driveways onto access paths that surround each basin.

Utilities

Although provisions for utilities do not need to be addressed as part of the Circulation Plan Map Amendment and MPAH Amendment, as an arterial highway, provisions would be made during the design phase of the Project to accommodate the extension of utilities that are planned in the area to serve the future development in the Planning Area 5. These would include in-road buried utilities. As part of the design process, utility easements may need to be granted to various utility purveyors (e.g., SDG&E, SMWD, AT&T, Cox Communications) for the crossing of the LPPE as the master planning, design and development for these utilities progresses.

Additionally, the Kinder Morgan Energy Partners (KMEP) pipeline is located along the eastern boundary of the Prima Deshecha Landfill. Within the easement there is a 10-inch and a 16-inch pipeline. The 10-inch line is inactive. The active 16-inch-diameter fuel pipeline serves the Marine Corps Air Station (MCAS) at Miramar, in San Diego County, from the refinery in Wilmington in the City of Los Angeles. The LPPE would require the relocation of a segment of the pipeline.⁴¹

Lighting

A precise street lighting plan would be developed in conjunction with the design phase of the Project. However, in those locations where the LPPE would primarily traverses open space, street lighting would be minimized as much as possible to minimize impacts on wildlife.⁴² FEIR 589 (MM 4.9-28) requires that all lighting along the perimeter of natural areas, particularly streetlights, be downcast luminaries and be shielded and oriented in a manner that will prevent spillage or glare into the remaining natural and open space areas. Street lighting at intersection is required for safety. The limits and placement of street lighting will be in accordance with the County design standards. Installation of the streetlights will be in accordance with the requirements of FEIR 589.

Wildlife Movement Crossings

The LPPE incorporates several features that would facilitate wildlife movement. The construction of a longer bridge span (approximately 1,500 feet) over San Juan Creek (Linkage J) would mostly avoid impacts to the floodplain. The concept plans evaluated in the SSHCP for Cristianitos Road assumed a 600-foot-long bridge with abutments in the creek.

The LPPE also accommodates a wildlife undercrossing within the portion of the roadway near the ridge in Planning Area 5 (see Exhibit 9 for proposed location). The crossing would support wildlife linkage K addressed in FEIR 584 and FEIR 589. Although the precise location and design would be determined as part of the final design process, it is anticipated the wildlife crossing would be

⁴¹ The relocation is a routine activity. In 2000, when a section of this pipeline needed to be relocated away from planned residential neighborhoods in Ladera Ranch, the County concurred that the relocation of the pipeline is exempt from grading permit requirements per Grading Code Section 7-1-805(d); it does not require a Site Development Permit; and CEQA does not apply because there is no discretionary action. The controlling authority over pipelines and their relocation is the Public Utilities Commission and the State Fire Marshall, although no permits are required.

⁴² The alignment would traverse open space as it crosses San Juan Creek and as it traverses adjacent to the Trampas Canyon Dam and Reservoir and extends over the ridge from the Ranch Plan into the Prima Deshecha Landfill. The conceptual alignment (Exhibit 9) also depicts a portion of the roadway in the Supplemental Open Space (SOS) on the Prima Deshecha Landfill.

a 26-foot corrugated metal pipe (CMP) with a 300-foot buffer from development. This would result in approximately 14.2 acres of additional Habitat Reserve to be dedicated north of the undercrossing, thereby expanding Linkage K in this area to maintain an approximately 1,000-foot-wide corridor along the entire boundary between RMV and Prima Deshecha, thus further improving the function of the linkage for wildlife movement. The wildlife crossing would be designed to accommodate mule deer and mountain lions. A clear line of sight through the structure would allow views of natural vegetation and/or the horizon from the entry points at either end. The bottom of the culvert will be of a natural substrate. A dry pathway at least three feet wide will be provided through the length of the structure if it is determined that significant water flows will routinely occur in the wildlife crossing. Vegetation at both ends of the crossing will be a mix of plant types in order to provide suitable cover for mountain lions and other animals as well as more open vegetation suitable for mule deer. Appropriate fencing will be installed to deter deer, mountain lion, coyote, bobcat, and other wildlife entry to the roadway in order to minimize wildlife and vehicle collisions where the road passes through Habitat Reserve lands. In addition, a continuation of the fencing installed on Los Patrones Parkway between Oso Parkway and Chiquita Canyon Drive is proposed. The fencing would be 8 feet in height with outriggers on fill slopes and on cut slopes where the fence is 2 feet or more from the toe of slope. The fencing would be 10 feet in height if it is closer than 2 feet to the toe of a cut slope. Jump-outs on the roadway side of the wildlife fencing will be provided approximately every 0.5 mile.⁴³

In addition to the 26-foot wildlife crossing, three of the culverts are shown as being a minimum of 48-inches in diameter. These culverts would be evaluated during the design phase of the process for potential use as wildlife crossings and may be upsized to better accommodate the larger animals.

Construction and Phasing

The timing and phasing of construction of the LPPE is not known at this time. There is the potential that the roadway may be constructed prior to the construction of development in Planning Area 5 of the Ranch Plan; however, this would be dependent on the availability of funding. If the roadway is constructed prior to the development of the land uses in Planning Area 5, at least a two-lane road would need to be constructed the entire length of the proposed extension to provide connectivity to other roadways. If the roadway is built in conjunction with land uses in Planning Area 5, interim segments may be constructed rather than having the entire length of the roadway built in an initial phase. The precise phasing of improvements will be determined during the design phase of the Project.

3.2.3 PRIMA DESHECHA GENERAL DEVELOPMENT PLAN AMENDMENT

The intent of the 2001 GDP was to define the phasing and boundaries of current and future landfilling activities more precisely and to identify where approved roadways could be accommodated, as well as interim and long-term use of the site for recreational purposes. As previously noted, the 2001 GDP, as amended, includes three components: a Landfill Component, Circulation Component, and Recreation Component. The conceptual design for the LPPE, depicted and described above, which has been used as the basis for the analysis in this Addendum, has the potential to affect all three components of the GDP, although to varying degrees. The following provides a description of the changes that would be required to the GDP to accommodate the LPPE.

⁴³ These design features will be reflected in the request for an amendment to the SSHCP.

Landfill Component

The LPPE would modify the southern boundary of Zone 4 of the landfill. This would reduce the area of Zone 4 by approximately 3.05 acres and the capacity for refuse disposal by approximately 300,000 to 600,000 cy. The alignment would require a reconfiguration of the planned detention/desilting system surrounding Zone 4. Based on the conceptual roadway alignment and the current concepts for basin locations, the LPPE would require the relocation of proposed Basin 4C, located along the southern edge of Zone 4 and Basin 5D near the proposed intersection of the LPPE and Avenida La Pata. Basin 4C is a 1.2-acre basin with a proposed desilting capacity of 4.1 af and a storm water storage capacity of 2 af (assumes half of the total basin would be available for soft bottom storage). Basin 5D is a 1.7-acre basin with a proposed desilting and storm water storage capacity of 14.4 af. The precise location of the relocated basins would be determined based on revisions to the landfill engineering plans that factors in the sequencing of the fill operations for Zone 4 in an effort to capture the maximum amount of drainage for the landfill area.

Circulation Component

The circulation component of the GDP would be modified to reflect the conceptual alignment for the LPPE as extending from the RMV property through the southeastern portion of Prima Deshecha Landfill and intersecting with Avenida La Pata.

Recreation Component

The recreation component of the GDP reflects a regional trail along the east of Avenida La Pata. The GDP notes the trail would be located in Zone 2; however, an alignment for the trail has not been established. Due to safety concerns, this segment of the trail network in Prima Deshecha is not expected to be implemented until after the closure of Zone 4. The trail alignment can be depicted adjacent to the roadway with the precise alignment of the trail being integrated into the ultimate recreation plan for the regional park.

3.3 INTENDED USES OF THIS ADDENDUM

The County of Orange Board of Supervisors would utilize this Addendum, together with FEIR 575, FEIR 584, and FEIR 589 for the approval of an amendment to the *County of Orange General Plan, Transportation Element* designating the LPPE (Cow Camp Road to Avenida La Pata) as a Primary Arterial Highway and the removal of Cristianitos Road south of Cow Camp Road from the *Circulation Plan Map*. Once the Board of Supervisors has taken action on the General Plan Amendment, the OCTA Board of Directors would utilize this Addendum, together with FEIR 575, FEIR 584, and FEIR 589 for the approval of an amendment to the MPAH. The City of San Clemente would also amend their *Mobility and Complete Streets Element* of the City General Plan (Figure M-1, Roadway System Map) to reflect the LPPE, which is based on the conceptual alignment that connects with Avenida La Pata just south of the City/County boundary.⁴⁴

In addition, this Addendum may be used in review of the Project for subsequent phases, if it is determined that the Addendum adequately addresses the environmental impacts. Subsequent

⁴⁴ The conceptual alignment, while not finalized, depicts the Avenida La Pata intersection as encroaching into the City of San Clemente. During final design, the County of Orange would coordinate with the City of San Clemente on the precise alignment and project design. In December 2020, the San Clemente City Council is scheduled to direct staff to advance to the County and OCTA an amendment to the City of San Clemente General Plan to reflect the addition of the LPPE to the MPAH once OCTA has approved the MPAH amendment.

approvals associated with construction of the LPPE may include the following agreements, permits and approvals:

OC Waste and Recycling

- Fee transfer of roadway right-of-way and easements for slopes and drainage for roadway improvements in the Prima Deshecha Landfill.

OC Public Works

- Approval of plans and specifications, including a connection to Avenida La Pata.

U.S. Army Corps of Engineers

- Letter of Permission, and potential amendment to the Special Area Management Plan.

U.S. Fish and Wildlife Service

- Amendment to the SSHCP prior to construction of any portion of the roadway.

California Department of Fish and Wildlife

- Subnotification and potential amendment pursuant to the Master Streambed Alteration Agreement.

San Diego Regional Water Quality Control Board

- Section 401 certification pursuant to the Clean Water Act/Waste Discharge Permit per the Porter-Cologne Water Quality Control Act

California Department of Transportation

- Encroachment permits and approval of all improvements within right-of-way under Caltrans' jurisdiction (i.e., bridge over Ortega Highway).⁴⁵

City of San Clemente and OCPW

- Encroachment permit or agreement to allow the County to construct improvements within the city limits (i.e., intersection at Avenida La Pata).

Utilities, including SMWD, SDGE, Southern California Gas Company, AT&T, and Cox Communications

- Provision for utilities in the roadway, including new power and gas lines serving development in Planning Area 5 and electrical service to traffic signals and street/safety lighting.

⁴⁵ All facilities and features constructed on Caltrans right-of-way shall conform to Caltrans' design standards, manuals, guides, policies, and procedures.

SECTION 4.0 ENVIRONMENTAL ANALYSIS

The analysis in this Addendum evaluates whether the potential impacts associated with the designation of an extension of Los Patrones Parkway on the Circulation Plan Map of the *Orange County Transportation Element* and the OCTA MPAH, and uses a conceptual design plan for assessing the eventual construction and operation of such a roadway. As outlined in Section 3.0, Project Description, the impacts associated with the construction and operation of the LPPE are substantially the same as the impacts addressed in FEIR 575, FEIR 584, and FEIR 589.

As noted in Section 1.0, Project Context, of this Addendum, the Project includes an amendment to the Circulation Plan Map component of the Transportation Element and an amendment to the Master Plan of Arterial Highways (MPAH) for the realignment of the north-south arterial highway serving the Ranch Plan. The proposal is to realign Cristianitos Road to provide a more logical roadway termini and improve connectivity with other roadways. To accomplish this, RMV is requesting to extend Los Patrones Parkway as the north-south arterial highway and have the southern terminus for Cristianitos Road be Cow Camp Road. Since the alignment would traverse a portion of the Prima Deshecha Landfill, the General Development Plan (GDP) for the landfill would need to be amended, as well.

Although the immediate request is to change the planning documents (Transportation Element, MPAH, and Prima Deshecha Landfill GDP, CEQA requires the evaluation consider the whole of a project, thus, the construction and operation of the roadway are analyzed to ensure the decisionmakers understand the full range of potential environmental impacts. The impacts are based on the evaluation of a conceptual alignment for the LPPE. This evaluation includes a determination as to whether the implementation of the LPPE would result in any new significant impacts or a substantial increase in a previously identified significant impact.

Although Section 15164 of the State CEQA Guidelines does not stipulate the format or content of an Addendum, the topical areas identified in the most recent updates to the CEQA Guidelines Environmental Checklist (Checklist) are used as guidance for this Addendum. This comparative analysis provides the County of Orange with the factual basis for determining whether any changes in the project, any changes in circumstances, or any new information since FEIR 575, FEIR 584 and FEIR 589 were certified require additional environmental review or preparation of a subsequent EIR.

Pursuant to Section 15162 of the State CEQA Guidelines, the County of Orange has determined, on the basis of substantial evidence in the light of the whole record, that (1) the designation of the LPPE on the Circulation Plan Map and the OCTA MPAH and resulting changes to the Prima Deshecha Landfill GDP, does not propose substantial changes to the previously approved projects (GDP, Ranch Plan Planned Community, and SSHP); (2) no substantial changes in circumstances have or would occur that would require major revisions to FEIR 575, FEIR 584, or FEIR 589; and (3) no new information of substantial importance has been revealed since the certification of the FEIRs. In keeping with Section 21065 of the Public Resources Code, the analysis in this Addendum addresses the reasonably foreseeable physical changes to the environment associated with the construction and operation of the LPPE as a result of amending the planning documents.

A Mitigation Program was adopted as a part of the certified Program FEIRs that minimized impacts associated with implementation of their respective projects. The Mitigation Program applicable to the LPPE is identified in each of the analysis subsections and included in Appendix A.

In certifying FEIR 575 for the Prima Deshecha Landfill GDP, the Findings of Fact for unavoidable significant impacts were made for the following topical areas:

- Topographic Changes
- Short-Term Biological Resources
- Aesthetics Impacts to the visual character especially from views in the City of San Clemente.

In certifying FEIR 589, the Findings of Fact for unavoidable significant impacts were made for the following topical areas:

- Aesthetics
- Agricultural Resources
- Air Quality
- Biological Resources
- Land Use and Relevant Planning
- Mineral Resources
- Public Services (Fire Protection Services and Facilities)
- Traffic and Circulation
- Water Resources

FEIR 584 incorporated by reference FEIR 575 and FEIR 589 and relied on the previous Findings of Fact and Statements of Overriding Considerations. However, since FEIR 584 addressed the land use development alternative (known as the B-12 Alternative) that was developed as part of the Settlement Agreement (see Section 2.1.2, The Ranch Plan and Final Program EIR 589), impacts to biological resources and public services were reduced to less than significant. Additionally, as discussed in this Addendum, not all the above listed significant and unavoidable impacts would apply to the LPPE.

Sections 4.1 through Section 4.21 address the topical areas from the CEQA Environmental Checklist. These sections have been set up as follows:

- **Summary of Findings in Previous FEIRs**—This subsection provides a brief overview of the impact conclusions from FEIR 575, FEIR 584 and FEIR 589. This summary is at a high level and addresses the whole of the Ranch Plan Planned Community and SSHCP. A comprehensive summary is not required because the record as a whole is considered in making the determination if there are new significant impacts beyond what was addressed in the previous documents.
- **Project Impact Analysis**—This section includes the questions from the current CEQA Environmental Checklist, and an analysis focused on the LPPE that provides clarifications or information to validate that the previous documents provide adequate CEQA documentation for the Project. Although the action of amending the Circulation Plan Map and MPAH to include the LPPE would not result in physical impacts, it facilitates the future implementation of the roadway. Therefore, to consider the whole of the project and to ensure there is an understanding of the general magnitude of impacts associated with the future construction and operation of the roadway, the analysis evaluates anticipated impacts of implementation of the Project, including construction and operation. It is acknowledged that this analysis is based on a conceptual alignment that will be further refined during the design phase of the Project and the impacts may differ somewhat from the analysis in this document. At the time construction is proposed, subsequent activities

would be examined in light of this Addendum, FEIR 575, FEIR 584, and FEIR 589 to determine whether additional CEQA documentation would be required pursuant to the requirements of Section 21166 of CEQA (i.e., California Public Resources Code, Section 21166) and Sections 15162 and 15168 of the State CEQA Guidelines for subsequent approvals. If during the design phase of the Project, it is determined that the potential impacts associated with the construction and operation of the LPPE are consistent with those identified in this Addendum to FEIR 575, FEIR 584, and FEIR 589, then the County may determine that in light of the record as a whole, the environmental impacts have been fully addressed and no further CEQA documentation is required. However, until such plans are completed, this determination cannot be definitively made.

- **Mitigation Program**—This section identifies which components from the FEIR 575, FEIR 584 and FEIR 589 Mitigation Programs are applicable to implementation of Project (i.e., designation of the LPPE on the Circulation Plan Map and the OCTA MPAH). As mentioned in Section 1.4, Addendum Structure, of this Addendum, the Mitigation Program provided in FEIR 589 identifies standard conditions, in addition to mitigation measures. Measures identified as standard conditions are based on local, state, or federal regulations or laws that are frequently required independently of CEQA review, which also serve to offset or prevent specific impacts. Typical standard conditions include compliance with the provisions of the Uniform Building Code, South Coast Air Quality Management District Rules, local agency fees, etc. These can include provisions in the County's Standard Conditions of Approval; however, slight modifications may have been made to the conditions in FEIR 589. Mitigation measures are project-specific measures developed to reduce impacts. As noted in Section 1.4, Addendum Structure, of this Addendum, there are some instances when minor revisions have been made to the standard conditions or mitigation measure to be appropriate for the LPPE. These changes and the rationale for the changes have been explained.

Although the current request is for a GDP Amendment, Transportation Element Amendment (Circulation Plan Map), and MPAH Amendment, many of the standard conditions and mitigation measures identified in the certified FEIRs would be applicable to the LPPE in later phases of project; therefore, these measures, have been included.

It should be noted, FEIR 584 incorporated FEIR 575 and FEIR 589 by reference. In many cases, FEIR 584 just references the measures in FEIR 575 and FEIR 589 but does not reiterate them. In these cases, only the FEIR originally listing the measure is identified.

4.1 **AESTHETICS**

Summary of Findings in Previous FEIRs

FEIR 575

FEIR 575 found the aesthetic impacts associated with the Prima Deshecha Landfill GDP as having significant, unavoidable aesthetic impacts from vantage points in the City of San Clemente. The landfill operations component of the GDP would result in significant, unavoidable impacts associated with the change in visual character, changes to topography, and the long-term nature of the landfill activities. FEIR 575 found views of the landfill from the City of San Juan Capistrano vantage point as interrupted by an east-west trending ridge line and the landfill has less than significant visual impacts. The effect on view from Forster Ranch in the City of San Clemente would be most substantial during the construction and grading phase of the landfill activities. These views will consist of exposed earth, refuse prior to daily coverage, and heavy machinery operating along the top of the fill areas. The large amount of fill area visible from some vantage points creates substantial visual impacts due to the length of time the landfill operations would be ongoing and visible. Ultimate landfill activities will substantially alter the existing topography; therefore, the visual impact will be significant. Impacts from the Talega vantage point are less significant than those of Forster Ranch because the views are from a background distance and not a major part of the overall landscape character.

The visual impacts associated with the construction of Avenida La Pata were also addressed in FEIR 575. The alignment of Avenida La Pata would be visible from the northern vantage point in Forster Ranch. The views from this vantage point will include road cuts and fill areas; light standards and traffic will be in the background views when the roadway is operational. Visual impacts from this vantage point will be less than significant with the use of revegetation on cut and fill areas. However, the visual impacts from the Talega development would be significant even with revegetation.

The recreation component also was identified as having the potential for significant visual impacts from certain vantage points due to the lack of natural topography screening the recreation sites and the nature of the recreation itself. Although aesthetic impacts were identified from vantage points in the City of San Juan Capistrano, the impacts were less than significant, in part due to an intervening ridgeline. Additionally, these could be reduced with implementation of mitigation measures.

FEIR 584 and FEIR 589

FEIR 584 and FEIR 589 addressed aesthetic impacts associated with the development of the Ranch Plan Planned Community, including impacts on scenic vistas, scenic highways, visual quality, and lighting and glare. Construction of the Ranch Plan Planned Community will result in substantial landform alterations. Mass grading would affect existing topography, vegetation cover, and visual character. Throughout much of the grading, large construction vehicles would be visible from adjacent (and some distant) vantage points. Barren slopes and new development in various stages of construction would be visible intermittently throughout the implementation of the Ranch Plan Planned Community. Although landscaping would be planted on the slopes in order to reduce the aesthetic impacts associated with grading, FEIR 584 and FEIR 589 determined that implementation of the Ranch Plan Planned Community would alter the visual characteristics of the RMV Planning Area.

The FEIRs identified a change in character from all roadways in the Ranch Plan Planned Community and roadways with views of the development area, including Thomas F. Riley

Wilderness Park and certain viewpoints in the Ralph W. Caspers Wilderness Park, and planned public open spaces uses within the Ranch Plan Planned Community.⁴⁶ In addition, the FEIR did identify the change in character would also be visible from private (e.g., residential) views and pedestrian, riding, and hiking trails that extend to higher points and have views into the Ranch Plan Planned Community site.

Development and construction of the Ranch Plan Planned Community would introduce new sources of nighttime light into the area. New light sources are anticipated to occur from the illumination of on-site structures such as commercial buildings and recreational uses (i.e., signage, interior and exterior lighting), residences (i.e., interior and exterior lighting), and street and vehicle lights. Although these light sources are not expected to extend beyond the physical limits of the RMV Planning Area, they have the potential for spillage that would create night glow in an area that has very limited lighting sources at night. This change was identified as a significant impact in FEIR 589 because the Ranch Plan Planned Community would introduce lighting into a currently undeveloped area.

While FEIR 589 focused on the impacts within the Ranch Plan boundary, FEIR 584 also addressed the potential impacts associated with the SMWD and County covered activities. FEIR 584 included a summary discussion of the impacts identified in FEIR 575 as being associated with the GDP. The discussion in FEIR 584 is consistent with the summation provided above for FEIR 575.

In conjunction with certification of FEIR 575 and FEIR 589, the Orange County Board of Supervisors adopted Findings of Fact and Statements of Overriding Considerations for aesthetic impacts.⁴⁷

Project Impact Analysis

The aesthetic impacts have been previously analyzed as part of FEIR 575, FEIR 584, and FEIR 589, which were prepared and certified pursuant to State and County CEQA Guidelines. The following provides clarifications or information to validate that the previous documents provide adequate CEQA documentation for the proposed Project and serves as an Addendum to the FEIRs.

⁴⁶ Although planned open space uses would have been private and not accessible to the public at the time FEIR 584 and FEIR 589 were prepared, the evaluation recognized that due to the size of the Ranch Plan Planned Community project, areas that were private at the time the FEIRs were prepared would become public with the phased implementation of the project.

⁴⁷ Although FEIR 584 prepared for the Southern Subregion NCCP/MSAA/HCP identifies certain significant or potentially significant environmental impacts that may occur as a result of implementation of the project (i.e., Southern Subregion NCCP/MSAA/HCP), significant unavoidable impacts associated with non-biological resource impacts associated with the RMV Covered Activities are considered "indirect" impacts. In accordance with the provisions of CEQA, since the County of Orange previously considered these impacts in adopting individual Statements of Finding as part of the Board's action to certify the Final Program EIR for the Ranch Plan Project (GPA/ZC FEIR 589) and the Prima Deshecha Landfill (FEIR 575), they were not reiterated in the Findings of Fact for and Statement of Overriding Considerations for FEIR 584. Therefore, this addendum often just cites the findings associated with FEIR 589.

Except as provided in Public Resources Code Section 21099:⁴⁸

- a) Would the project have a substantial adverse effect on a scenic vista?
- b) Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. There are no designated scenic vistas within or adjacent to the Ranch Plan Planned Community or within the Prima Deshecha Landfill. Ortega Highway (SR-74), the only state highway in proximity to the LPPE, is eligible for designation on the California Scenic Highway Program but has not been officially designated as a scenic highway (Caltrans 2011).

There are no scenic highways designated in the vicinity of the Prima Deshecha Landfill. FEIR 575 identified there would not be direct views of the landfill operations from Ortega Highway and Antonio Parkway due to intervening ridgelines.⁴⁹ These ridgelines would also screen views of the portion of the LPPE that traverses the Prima Deshecha Landfill from roadways designated on the County's Scenic Highway Plan.

FEIR 584 and FEIR 589 did address the potential impacts associated with views from scenic highways with implementation of the Ranch Plan. The Scenic Highways Plan identifies two types of scenic highways: Viewscape Corridors and Landscape Corridors. According to the Scenic Highways Plan, a Viewscape Corridor is a "route which traverses a corridor within which unique or unusual scenic resources and aesthetic values are found." The General Plan encourages development of roadside rests and vista points, when feasible and appropriate. A Landscape Corridor "traverses developed or developing areas and has been designated for special treatment to provide a pleasant driving environment as well as community enhancement" (Orange County 2005b). As noted, as Landscape Corridors, the focus is on appropriate landscaping adjacent to the roadway, rather than scenic vistas seen from the roadway. The typical landscape cross-section provided in Scenic Highway Plan identifies a 25-foot parkway strip along the edge of the roadway for enhanced landscaping.

Ortega Highway, Antonio Parkway, and Cow Camp Road are designated Landscape Corridors in the Scenic Highways Plan of the Transportation Element. Although Ortega Highway is designated on the County Scenic Highway Plan, the roadway is within Caltrans jurisdiction and is not shown on the State Scenic Highway map. The areas adjacent to Ortega Highway have natural landscaping, which would be minimally impacted because the LPPE would bridge over Ortega Highway; thereby minimizing the need for grading. Antonio Parkway is approximately a mile west of the LPPE and would not have views of LPPE because of intervening development. The LPPE would initiate at the current Los Patrones Parkway intersection with Cow Camp Road. Therefore, when implemented the LPPE would be visible from locations on Cow Camp Road surrounding the intersection with LPPE, the Project would not conflict with the County Scenic Highways Plan or *Scenic Highway Implementation Planning Guidelines*, contained in the County's Transportation Element because it would not impact the landscaping along the roadway or substantially change the visual character of Cow Camp Road, thereby deteriorating the driving experience on the roadway. Therefore, there would be no impacts to visual resources on State scenic highways or designated scenic vistas as a result of the Project.

⁴⁸ California Public Resources Code Section 21099 provides clarification on certain definitions. For the evaluation of aesthetic resources, an important consideration is if a residential, mixed-use residential, or employment center project is considered an infill project and is within a transit priority area. This would not be applicable to the LPPE.

⁴⁹ FEIR 584 and FEIR 589 identified Cow Camp Road as New Ortega Highway. After certification of the documents, the roadway was renamed. Cow Camp Road would not have been on the Scenic Highway Plan at the time FEIR 575 was prepared.

- c) **Would the project 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?**

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. The roadway would be visible from public vantage points, most notably at the current roadway terminus, where the roadway would cross over the ridge from Planning Area 5 and traverse along a ridgeline in Zone 2 of the landfill, and at the proposed connection with Avenida La Pata. Although there may be locations from private property with views of the LPPE, CEQA focuses the evaluation on public vantage points. It should also be noted, many of the views from private property would be mid-range views or views that are partially obscured by ridgelines.

From the current roadway terminus, the roadway would span San Juan Creek and Ortega Highway. These structures would be visible from public roadways in the vicinity, especially Cow Camp Road and Ortega Highway, the Sunrise Park located in Planning Area 2, and local trails with vantage points at higher elevations (such as the Community Trail in Ladera Open Space, the West Ridge Trail in Caspers Wilderness Park, and the planned San Juan Creek Regional Riding and Hiking Trail). Most of these views would be mid-range to long-range views and would be viewed in the suburban context with the rest of the Ranch Plan development. This type of change in the visual character was evaluated in FEIR 589 as being associated with the circulation network serving the Ranch Plan. The Ranch Plan circulation network both with and without the SR-241 extension assumed an arterial highway crossing San Juan Creek and Ortega Highway on bridge structures and entering into Planning Area 5 (these are reflected in FEIR 589 on Exhibits 3-22 [with SR-241] and 3-24 [without SR-241]). This assumption is reflected by the designation of Cristianitos Road on the current MPAH and Circulation Plan Map. The location for the LPPE is not more visually sensitive than the approved Cristianitos Road crossing. Therefore, the visual impacts associated with LPPE on sensitive viewsheds would not result in a new or more severe impact than what was evaluated in FEIR 584 and FEIR 589.

Once the roadway enters Planning Area 5, there are limited public views from surrounding areas due to intervening ridgelines. As noted in FEIR 584 and FEIR 589, the foreground hills would provide a partial visual barrier of the interior portions of Planning Area 5; however, there would be views of the northern portion of Planning Area 5 from vantage points in Caspers Regional Parkway and some higher vantage points along San Juan Creek. The LPPE would be part of these more distant views. Although much of Planning Area 5 is heavily disturbed from the quarry operations and the reconstruction of the Trampas Canyon Dam and Reservoir, FEIR 589 identified the aesthetic impacts of Planning Area 5 as significant due to extensive modifications to the existing topography.⁵⁰ The LPPE would contribute to the extensive modifications but would not substantially increase the amount of disturbance. Additionally, FEIR 589 identified that a portion of the background zone ridge along the western edge of Planning Area 5 would be impacted by Ranch Plan grading and would be visible from multiple evaluated vantage points.⁵¹ In the context of the future Planning Area 5 development, the visual impacts of constructing the LPPE through Planning Area 5 would not result in new or more significant impacts than those evaluated in FEIR

⁵⁰ FEIR 589 identified that Planning Area 5 would have approximately 60,200,000 cubic yards (cy) of cut and fill grading (25,200,000 cy of mass grading, and 35,000,000 cy of remedial grading).

⁵¹ FEIR 589 identified ridgelines that were 1,000 feet or greater in elevation as a background zone ridge. Exhibit 4.10-1 in FEIR 589 graphically depicts the locations of foreground zone (under 600 feet in elevation), middle-ground zone (600 feet to 1,000 feet in elevation) and background zone ridges.

584 and FEIR 589. The LPPE would be part of the developed view-scape in Planning Area 5 and would be consistent with the suburban context.

As the roadway exits Planning Area 5 it would cross the ridge that separates the RMV property (i.e., Ranch Plan) from the Prima Deshecha Landfill. FEIR 575 identified a significant unavoidable aesthetic impact associated with landfill activities to locations in San Clemente due to the length of time for the construction, grading phases of the landfill activities, and the changes to natural grade and topography.

The alignment traverses a portion of the landfill identified for open space and trail use, before entering the portion of the site designated for landfill activity. Based on the conceptual plan, a substantial cut (approximately 125- to 150-foot cut) in the ridge separating the RMV and Prima Deshecha Landfill properties would be required. The cut location would be north of the ridge that separates the landfill from the City of San Clemente. This ridge would help to shield the roadway cut from some locations in the Talega development. Within the Prima Deshecha Landfill, a segment of the roadway would extend along a ridgeline that separates unincorporated Orange County from the City of San Clemente. The alignment as it traverses near the ridgeline would be visible from locations in San Clemente, predominately the Talega Valley and Forester Ranch developments. Along this southern ridgeline, the conceptual alignment would result in cuts of approximately 0 to 40 feet; however, the need for and the extent of remedial grading is not known. This cut would likely be visible from several public vantage points on public roads (e.g., Calle Saluda, Avenida Talega, and Camino Viento Fuerte). Although CEQA does not require the evaluation of changes to private views, the closest residential uses with direct views of the alignment along the ridgeline would be located over 3,000 feet south of the alignment and are separated from the roadway by a steep canyon. In addition to the distance, there would be an approximately 300-foot elevation difference between the roadway and the residences. This segment of roadway would also result in the removal of habitat restoration installed by the County as part of the Prima Deshecha Landfill mitigation, including oak trees that were planted for visual screening. The impacts to the Supplemental Open Space, including the habitat restoration area would include both temporary (i.e., it would be restored after construction) and permanent habitat removal (see Section 4.4, Biological Resources, for more detailed discussion of the habitat impacts). Given the distance of the roadway from the residences and the County of Orange obligations under Section 7.4.2 (2) of the SSHCP Implementation Agreement concerning restoration of impacted restored habitats in the Supplement Open Space, impacts would be less than significant.

The connection of the LPPE to Avenida La Pata would be located within the portion of the Prima Deshecha Landfill previously disturbed by the construction of the La Pata Avenue Gap Closure and Camino Del Rio Extension Project. This location would be the closest to residential uses, with the roadway located approximately 900 feet north of the closest residence. However, in this location, the roadway would be located behind a ridge, which would limit direct views of the roadway.

FEIR 575 and FEIR 584 identified that the impacts associated with the landfill operation would be significant at northern vantage points in Forester Ranch due to landform alteration and changes to the landscape character. The Project would not change the height of future landfill activities; therefore, the visual impacts associated with the landfill activities would not change.⁵² These same

⁵² The County of Orange entered into Memoranda of Understanding (MOU) with the City of San Juan Capistrano and City of San Clemente in 1995 and 1997, respectively. As part of the MOU with the City of San Juan Capistrano, the final landfill grades cannot silhouette above and along the General Plan-designated "major ridgeline". The MOU with the City of San Clemente stipulates final landfill grading elevations. For Zone 4, the final finish grade is 1,010 feet. In addition, the MOU identifies a landscape plan.

locations were also identified as having views changed from the construction of Avenida La Pata (i.e., roadway cut and fill and introduction of light standards and traffic); however, this change was not determined to be a significant impact. Based on the preliminary alignment, the introduction of the connection of the LPPE would not substantially change the visual impacts identified in FEIR 575 and FEIR 584. The LPPE would be an element of the landform alteration consistent with the nature of the impacts identified for the Prima Deshecha Landfill and Avenida La Pata. The LPPE would also add an additional circulation component to the local viewshed; however, given the landform alteration elements associated with landfill activities and Avenida La Pata existing in this location, no new or substantially more severe impacts would occur.

As discussed in FEIR 575, the cities of San Juan Capistrano and San Clemente have adopted ridgeline protection policies. The provisions for the City of San Juan Capistrano are in the General Plan Conservation and Open Space Element (Figure COS-2). The LPPE would not extend into the City of San Juan Capistrano and would not impact the ridgelines identified for protection in the General Plan (SJC 1999). The City of San Clemente has a policy statement in the Natural Resources Element and the Hillside Development Ordinance for the protection of ridgelines.⁵³ The Natural Resources Element identifies the ridge along the southern edge of Zone 2 of the Prima Deshecha Landfill as a significant ridge. The portion of the ridge in the City of San Clemente would not be impacted by the LPPE. As noted above, the LPPE would traverse a portion of a ridgeline identified in the San Clemente Natural Resources Element as a significant ridge; however, this portion is in unincorporated Orange County. The City of San Clemente's Natural Resources Element and the Hillside Development Ordinance do not apply to unincorporated areas of Orange County. The San Clemente Hillside Development Ordinance (Section 15.40 of the City Municipal Code) addresses development projects, but is inapplicable to unincorporated Orange County; however, it also has a section addressing roadways. The ordinance acknowledges the value of panoramic views from hillside roads and encourages circulation to conform to natural grades as much as possible.

The impacts associated with the roadway are consistent with the impacts identified in FEIR 575, FEIR 584, and FEIR 589. The visual change may appear more evident if the roadway is constructed prior to the grading for the Ranch Plan and the landfill activities because they would be viewed in an open space context rather than in the suburban context that will be constructed with surrounding development and landfill operations. The timing for construction of the roadway is not currently known. Additionally, both FEIR 584 and FEIR 589 identified the landform alteration and the changes in visual character as significant, unavoidable impacts and the LPPE would be encompassed within these impacts. However, there would be no new or substantially more severe impacts than were identified in the FEIRs. The Project would not require major alteration to the FEIRs.

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

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. As addressed in FEIR 589, the development and construction of the Ranch Plan would introduce new sources of nighttime lighting into the area. Street and vehicle lights were identified

⁵³ The City's Hillside Development Ordinance is contained in Section 15.4 of the City's Municipal Code. It should be noted, the cities' ordinances would not be applicable to unincorporated areas. Additionally, according to Sections 53090–53091 of the California Government Code, counties and cities are exempt from zoning regulations when one entity owns territory within the jurisdiction of another entity. Additionally, according to Section 7-9-20(h) of the Orange County Zoning Code (Orange County Municipal Code, Title 7, Land Use and Building Regulations; Division 9, Planning; Article 2, The Comprehensive Zoning Code), land owned in fee by the County or land leased to the County shall not be subject to the land use regulations of the County, including but not limited to the Zoning Code, specific plans, and planned communities.

as part of the sources of light and glare. Increased lighting and illumination from the Ranch Plan was identified as a significant unavoidable impact and included in the Statement of Overriding Considerations. Within open space areas, lighting would be limited to those areas required for safety. Specifically, by incorporating MM 4.9-28, street lighting would be downcast luminaries and be shielded and oriented in a manner that will prevent spillage or glare into the remaining natural and open space areas. The precise locations and extent of the lighting would be determined during the design phase and must be consistent with County design standards. Although this would reduce the light and glare impacts to the maximum extent feasible and the lighting levels would be consistent with the lighting associated with suburban uses, the construction of the LPPE would be considered with the impacts already considered by FEIR 589 as significant unavoidable impacts associated with sources of light and glare applicable to the Project, and the finding in the Statement of Overriding Considerations adopted by the Board of Supervisors would be applicable to this Project.

Mitigation Program

Based on the information provided above, neither the proposed amendments to the GDP, the County of Orange Circulation Plan Map, the San Clemente *Mobility and Complete Streets Element*, and MPAH; nor the anticipated future impacts associated with construction and operation of the LPPE, would result in any new significant or substantially more severe aesthetic impacts requiring major revisions to FEIR 575, FEIR 584, or FEIR 589. No new mitigation measures are required.

FEIR 575 identified three mitigation measures to address the aesthetic impacts of the circulation component of the GDP. FEIR 589 identified two standard conditions; however, only one measure would be applicable.⁵⁴ FEIR 584 referenced the measures in FEIR 575 and FEIR 589 but did not list the measures or suggest any changes to the measures. These measures are discussed below.

As noted, FEIR 575 identified three mitigation measures to address the aesthetic impacts of the circulation component of the GDP, all of which are applicable to the LPPE. One measure (MM 4.11-7) relates to the development of landscape standards for plantings. This measure was also identified as applicable to the landfill and recreation components. This measure will need to be coordinated with the County of Orange obligations under Section 7.4.2 (2) of the Implementation Agreement of the SSHCP concerning restoration of restored habitats in the Supplement Open Space.

The following revisions have been made to MM 4.11-7, MM 4.11-8, and MM 4.11-9 for the LPPE:

- The approving entity has been updated from “Director PF&RD” to “Deputy Director, Infrastructure Programs” to reflect the agency’s current organizational structure.

For aesthetics, FEIR 589 identified two standard conditions. SC 4.10-1 requires development of a landscape plan and installation of an irrigation system. This standard condition would not be applicable to the LPPE because right-of-way and cut slopes would be restored pursuant to the SSHCP Habitat Reserve standards, which requires irrigation to be withdrawn once plants are established (see Section 4.4, Biological Resources). The second standard condition pertains to private open space. Since the LPPE would be a public roadway, it would not be applicable.

⁵⁴ FEIR 589 originally included a mitigation measure (MM 4.10-1), which pertained to street lighting. This measure was eliminated due to the overlap with MM 4.9-28, provided in the discussion of biological resources. This change was made because lighting is being shielded for habitat protection, not aesthetic reasons.

The above change to MM 4.11-7, MM 4.11-8, and MM 4.11-9 do not change the intent or effectiveness associated with the adopted standard condition and mitigation measures.

- MM 4.11-7
(FEIR 575) During final design, the Deputy Director, Infrastructure Programs shall establish landscape standards for plantings in areas to be revegetated or screened from view. These guidelines shall illustrate all plant materials, sizes, species and quantities plus irrigation and preservation techniques. There shall be a variety of landscape types addressed, including revegetating graded slopes and earthen berms, and screening of landfill-operations structures and permanent recreation buildings. Roads and trail cuts shall be revegetated with natural grasses, shrubs and trees to blend with the landscape character of adjacent areas. Trees selected for planting shall comply with the appropriate state and local regulatory requirements for the protection of groundwater.
- MM 4.11-8
(FEIR 575) During final design and construction, the Deputy Director, Infrastructure Programs shall ensure that plantings will be integrated with earthen berms and cut slopes to screen undesirable views. For these situations, the landscape design guidelines shall include grading guidelines which will address issues such as the areas where berms are recommended, the sizes of such berms, and recommended slope gradients to minimize soil erosion.
- MM 4.11-9
(FEIR 575) During final design, the Deputy Director, Infrastructure Programs shall ensure that the siting of permanent circulation and roadway structures does not place any structures along ridgelines so as not to interrupt the natural horizon line in the existing landscape.

4.2 AGRICULTURE AND FORESTRY RESOURCES

Summary of Findings in Previous FEIRs

FEIR 575

The NOP for FEIR 575 identified that the Prima Deshecha Landfill site did not have any soils identified by the Soil Conservation Service as prime farmland. Further, the site does not possess any locally or regionally significant soils. No part of the Prima Deshecha Landfill was included in a Williamson Act contract. This topic was focused out of FEIR 575.

FEIR 584 and FEIR 589

The FEIR 584 and FEIR 589 identified that the implementation of the Ranch Plan Planned Community would result in a significant impact due to the conversion of farmland listed as “Prime”, “Unique”, or “Statewide Importance”, as shown on the State Farmland Mapping and Monitoring Program (FMMP). These farmlands are collectively known as “Important Farmland”. As set forth in the FEIRs, the specific agricultural uses that will be affected by the Ranch Plan Planned Community include citrus and avocado orchards, limited row crops, and commercial nursery operations. At the time the FEIRs were prepared, the Ranch Plan Planned Community area was zoned for agriculture and portions of the area were within Williamson Act contracts. In conjunction with FEIR 589, the site was rezoned. The Williamson Act contracts were allowed to expire. The Orange County Board of Supervisors adopted a Findings of Fact and a Statement of Overriding Considerations for unavoidable significant impacts to Important Farmland.

Project Impact Analysis

The agricultural resource impacts have been previously analyzed as part of the FEIR 584 and FEIR 589, which were prepared and certified pursuant to State and County CEQA Guidelines. The following provides clarifications or information to validate that the previous documents provide adequate CEQA documentation for the proposed Project and serves as an Addendum to FEIR 584 and FEIR 589.

- a) **Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?**

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. For CEQA purposes, Prime Farmland, Farmland of Statewide Importance, and Unique Farmland are collectively defined as “Important Farmland”. Grazing Land is also considered farmland, although it is not included as Important Farmland. FEIR 584 and FEIR 589 did not identify any Important Farmland along the LPPE conceptual alignment, which is consistent with the 2016 State Farmland Mapping and Monitoring Program (FMMP) for Orange County (FMMP 2016). Due to the absence of Important Farmland on the Project site, the LPPE would not convert Important Farmland to a non-agricultural use. Therefore, the Project would not contribute to the significant impact identified in FEIR 584 and FEIR 589. It would not create a new significant impact or a substantial increase in the severity of previously identified effects in FEIR 584 and FEIR 589.

b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. No part of the LPPE site is under a Williamson Act contract. The Ranch Plan site is zoned PC, Planned Community and the Prima Deshecha Landfill site is designated as a landfill site. Therefore, the LPPE would not conflict with existing zoning for agricultural use, or a Williamson Act contract. Therefore, the proposed Project would not create a new significant impact or a substantial increase in the severity of previously identified effects in FEIR 575, FEIR 584, and FEIR 589.

c) Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220[g]), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104[g])?

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. Forestry and timberland resources were not a topic that required evaluation at the time FEIR 575, FEIR 584, and FEIR 589 were prepared. There are no forestry resources within the Ranch Plan or the Prima Deshecha Landfill site. The LPPE would not conflict with existing zoning for, or cause rezoning of, forest land. Therefore, the Project would not create a new significant impact.

d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. As previously noted, forestry resources were not a topic that required evaluation at the time FEIRs were prepared. There are no forestry resources within the Ranch Plan or Prima Deshecha Landfill site. The LPPE would not result in the loss of forest land or conversion of forest land to non-forest use; therefore, the Project would not create a new significant impact.

e) Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. As noted previously, no Important Farmland or forestry resources were identified in the LPPE site; therefore, implementation of the proposed Project would not result in the conversion of farmland to non-agricultural use or conversion of forest land to non-forest use. Furthermore, the LPPE would not result in indirect impacts that could result in a conversion of Important Farmland or forestry resources because there are no such resources adjacent to the proposed Project. The long-range land use plan evaluated as part of FEIR 584 and FEIR 589 fully addressed both direct and indirect impacts on agricultural resources and FEIR 575 identified there were no resources on the Prima Deshecha site. Therefore, the LPPE would not create a new significant impact or a substantial increase in the severity of previously identified effects in the FEIRs.

Mitigation Program

Based on the information provided above, **neither the proposed amendments to the GDP**, the County of Orange Circulation Plan Map, the San Clemente *Mobility and Complete Streets Element*, and MPAH; nor the anticipated future impacts associated with construction and

operation of the LPPE would result in any new significant or substantially more severe impacts to agricultural and forestry resources requiring major revisions to FEIR 575, FEIR 584, or FEIR 589. No new mitigation measures are required. Furthermore, due to the lack of impacts to these resources in the LPPE study area, the Mitigation Program adopted to minimize impacts associated with implementation of the Ranch Plan would not be applicable and no mitigation measures are required.

4.3 AIR QUALITY

Summary of Findings in Previous FEIRs

FEIR 575

FEIR 575 evaluated the air quality impacts that would result due to changes as a result of the 2001 GDP. The impacts associated with a 4,000 tons per day disposal rate had been previously evaluated in the 1995 GDP.

FEIR 575 identified mobile source emissions from automobiles and construction equipment as a source of emissions that would be associated with all components of the GDP. Dust (Particulate Matter) was identified as an impact associated with the landfill operations and construction of all improvements. Impacts associated with onsite equipment usage and odor were identified as landfill related impacts. With incorporation of mitigation measures, air quality impacts associated with the 2001 GDP were identified as less than significant.

FEIR 584 and FEIR 589

FEIR 584 and FEIR 589 addressed the construction and operational impacts associated with the Covered Activities, including the Ranch Plan Planned Community. The FEIRs identified construction-related emissions of carbon monoxide (CO), volatile organic compounds (VOC), oxides of nitrogen (NOx), and particulate matter (PM10) in excess of the South Coast Air Quality Management District's (SCAQMD's) daily significance thresholds and quarterly significance thresholds.⁵⁵ Construction activities would result in a significant direct air quality impact for CO, NOx, VOC, and PM10 (NOx and VOC are ozone precursors). Heavy-duty equipment emissions were calculated using the then-current (2004) emissions assumptions for construction equipment. However, the mitigation measure in FEIR 589 committed to having off-road diesel equipment comply with emission control regulations in force at the time of construction.

In addition to construction emissions, FEIR 584 and FEIR 589 found that the Ranch Plan Planned Community operational emissions of CO, VOC, NOx, and PM10 on a regional scale would result in significant direct and cumulative impacts based on SCAQMD thresholds of significance.

In addition, the FEIR 584 and FEIR 589 found the following:

- Based on "hot spot analysis", local operational impacts associated with the Ranch Plan Planned Community would be less than significant.
- The operations of the Ranch Plan Planned Community are not expected to expose a substantial number of people to objectionable odors.
- The Ranch Plan Planned Community would not conflict with or obstruct implementation of the Air Quality Management Plan because implementation of the proposed Ranch Plan Planned Community would not exceed growth projections for the subarea.

In conjunction with certification of FEIR 589, the Orange County Board of Supervisors adopted a Finding of Fact and a Statement of Overriding Considerations for air quality impacts.

⁵⁵ Standards for fine particulate matter, PM2.5, were not implemented until 2007.

Project Impact Analysis

The air quality impacts have been previously analyzed as part of FEIR 575, FEIR 584, and FEIR 589, which were prepared and certified pursuant to State and County CEQA Guidelines. The following provides clarifications or information to validate that the previous documents provide adequate CEQA documentation for the proposed Project and serves as an Addendum to the FEIRs.

- a) Would the project conflict with or obstruct implementation of the applicable air quality plan?**
- b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?**

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. Since the certification of the FEIRs, State and regional air quality plans have been updated. This Addendum documents the consistency of the previous analysis with the updated documents. Additionally, since the 2004 certification of FEIR 589 and the approval of the Ranch Plan, the growth assumptions have been integrated into the long-range regional planning documents, including the *Air Quality Management Plan (AQMP)*.

The Federal Clean Air Act (FCAA) requires the preparation of plans to demonstrate attainment of the National Ambient Air Quality Standards (NAAQS) for an area that is designated as being in nonattainment of the federal standards. The California Clean Air Act (CCAA) requires the revision of these plans every three years to address reducing pollutant concentrations that exceed the established California Ambient Air Quality Standards (CAAQS), established by the California Air Resources Board (CARB). The South Coast Air Quality Management District (SCAQMD) and the Southern California Association of Governments (SCAG), in coordination with local governments and the private sector, develop the AQMP for the South Coast Air Basin (SoCAB) to satisfy these requirements. The AQMP is the most important air quality management document for the SoCAB because it provides the blueprint for meeting State and federal ambient air quality standards. In keeping with these requirements, the SCAQMD has adopted updated versions of the AQMP since the certification of FEIR 575, FEIR 584, and FEIR 589.

The current AQMP (2016 AQMP) was adopted on March 3, 2017 by the SCAQMD Governing Board, which was further approved by the U.S. Environmental Protection Agency (USEPA) as the State Implementation Plan (SIP) for the air quality basin in October 2017. SCAQMD's 2016 AQMP relies on the latest scientific and technological information and planning assumptions relevant to air quality, including information regarding regional growth forecasts and transportation control measures from SCAG's *2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS)*. The 2016 AQMP is also built on extensive consultation between CARB and SCAQMD regarding the reduction of emissions from mobile sources. Importantly, the 2016 AQMP incorporated the projected growth for the Ranch Plan which, in turn, has been included in the SIP.⁵⁶ Therefore, the Ranch Plan, which includes provisions for the infrastructure to support it, is consistent with regional and State air quality planning programs.

⁵⁶ As noted, the SCAQMD's 2016 AQMP relies on regional growth forecasts from the SCAG 2016-2040 RTP/SCS. The projected population, housing, and employment data associated with the Ranch Plan Planned Community approvals have been incorporated in to the Orange County Projections (OCP), which is the database used for local and regional planning programs. The OCP process is also discussed in Section 4.14, Population and Housing. It should be noted, the SCAQMD is currently preparing the 2022 AQMP.

The Project would modify the infrastructure assumptions associated with the Ranch Plan; however, the modification would be associated with the location of the arterial highway that provides a north-south connection, not provision for expanded infrastructure. The proposed LPPE, rather than Cristianitos Road, would not serve a different or expanded circulation demand. The overall vehicle use would be comparable. The modification of the alignment relative to the alignment evaluated in FEIR 589 would not substantially change the construction effort and related emissions.⁵⁷ Overall, the air quality impacts associated with the Ranch Plan, including the proposed modification to the circulation plan and the construction and operation of the LPPE, are not expected to be substantially different from what was addressed in FEIR 589, although as discussed under Environmental Checklist Question 4.3(b), cumulative impacts may have been overstated in FEIR 589.

Although the LPPE would provide less overall miles of roadway compared to the planned Cristianitos Road and an extension of SR-241, it would not result in increased congestion compared to the analysis in FEIR 584 and FEIR 589 because the roadway network would operate at a comparable level of service (see Section 4.17, Transportation). Lower travel speeds associated with congestion results in increased emissions. Further, the LPPE would not change the landfill operations or the ability of the landfill to comply with the various regulations in the AQMP associated with landfill operations. The landfill operations are heavily regulated by the SCAQMD. As noted in FEIR 575, Prima Deshecha is in compliance with applicable landfill-specific air quality standards and regulations. As discussed in the following sections, the Project would not result in any new impacts, nor would they increase the severity of a previously identified significant impact as analyzed in FEIR 575, FEIR 584, and FEIR 589.

c) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR.

Construction Emissions

As noted above, the FEIR 584 and FEIR 589 identified that construction-related emissions associated with the Ranch Plan would result in a significant direct air quality impact for CO, NO_x, VOC, and PM₁₀. The grading assumptions in the FEIRs assumed Ranch Plan implementation would require approximately 288,461,000 cy of cut and fill grading, inclusive of remedial grading. Operational emissions were calculated based on full build-out of the land use entitlements, which assumes mobile emissions (Ranch-wide, 183,338 average daily vehicle trips).

The total earthwork and mobile emissions associated with the construction of the LPPE combined with the implementation of the Ranch Plan development would not exceed the construction assumptions in the FEIRs. The grading quantities for Cristianitos Road were not separately quantified as the volume was incorporated into the grading quantities for the development areas. As previously noted, the ROSA reduced the number of acres that will be developed as part of the Ranch Plan. Using the updated grading estimates provided in the Master Area Plans for Planning Areas 1 through 4 and the grading estimates from FEIR 589 for Planning Areas 5 and 8, it is

⁵⁷ As previously discussed in Section 2.1.2, The Ranch Plan and Final Program EIR 589, FEIR 589 evaluated a circulation network without the extension of SR-241. This network assumed Cristianitos would extend south into Planning Area 8, connecting with Avenida Pico (Exhibit 3-24 provided in FEIR 589). Additionally, FEIR 589 evaluated the construction impacts of full build-out of the Ranch Plan. The amount of grading would be less because of the ROSA the number of acres that will be developed as part of the Ranch Plan Planned Community have been reduced.

estimated that FEIR 589 overestimated the amount of grading by approximately 70 million cubic yards. This is due primarily to the elimination of development from Planning Areas 6 and 9 and substantial reduction in area to be developed in Planning Areas 2, 7 and 8.

The mitigation measure in the FEIRs committed to having off-road diesel equipment comply with emission control regulations in force at the time of construction.⁵⁸ Therefore, with the overall reduction in the amount of earthwork for the Ranch Plan and improved technology (such as Tier 3 and Tier 4 equipment), the air quality impacts associated with the LPPE would not cause the an exceedance of the emissions addressed in FEIR 584 and FEIR 589. However, even with the Mitigation Program adopted as part of FEIR 584 and FEIR 589, construction emissions would not be reduced to a level of less than significant. Although the LPPE would serve regional circulation demand beyond the Ranch Plan, when considered as a component of the larger Ranch Plan, the Project-related construction emissions would contribute to the significant direct and cumulative air quality impacts previously identified in the FEIRs due to increased CO, NOx, VOC, and PM₁₀ emissions.

Operational Emissions

The Orange County portion of the SoCAB is a nonattainment area for O₃, PM₁₀, and PM_{2.5}. FEIR 584 and FEIR 589 found that the Ranch Plan operational emissions of O₃ precursors VOC and NOx, and PM₁₀ on a regional scale would result in significant cumulative impacts based on SCAQMD thresholds of significance. From an operational perspective, the LPPE would not change the overall trip generation associated with the Ranch Plan and would not create a new or substantially more severe impact.

Although the air emissions are assumed to be cumulatively significant, as discussed below, air quality has improved within the SoCAB since certification of FEIR 584 and FEIR 589. The analysis in FEIR 584 and FEIR 589 incorporated the air quality benefits of known regulations at the time. However, due to new regulations that have resulted in substantial improvements in emission rates for construction equipment (as discussed above), roadway vehicles, and building energy efficiency standards, the Ranch Plan and the projected cumulative growth would result in less air pollutants than was previously disclosed in the FEIR 584 and FEIR 589. Regarding roadway vehicle emission-rate improvements, CARB has introduced programs that have aimed to reduce mobile emissions for light and medium duty vehicles through vehicle emissions controls and cleaner fuel.

In 2012, CARB approved the Advanced Clean Cars Program, a new emissions-control program for model year 2017 through 2025. The program combines the control of smog (i.e., criteria pollutants), soot and GHGs with requirements for greater numbers of zero-emission vehicles. By 2025, when the rules will be fully implemented, the new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions. This program has reduced smog-forming pollution by 75 percent (as compared to 2014). As stated by CARB, the State's vehicle rules have directly resulted in the development of major technological advances to clean vehicle emissions. These regulations have led to substantial regional air quality improvements throughout the SoCAB.

⁵⁸ In 2007, CARB developed in-use fleet regulations for compression-ignited engines powering on-road and off-road vehicles and portable and mobile equipment that reduce diesel particulate matter (DPM) and NOx emissions. These off-road, in-use fleet regulations require existing fleets to reduce their emissions by retiring, replacing, or repowering older engines. This included off-road construction vehicles. In addition to the off-road fleet regulations, regulations targeting off-road vehicle idling were also adopted. These have all led to improvements in the off-road equipment fleet over time. Current construction would use cleaner and newer off-road equipment than what was commercially available during preparation of the FEIR 584 and FEIR 589.

Improvements in building energy efficiency standards are primarily due to increasingly stringent air pollutant controls for new buildings. An example of this is California's 2019 Title 24 Energy Efficiency Standards, which requires single-family homes built with the 2019 standards to incorporate rooftop solar electricity generation and highly efficient air filters to trap hazardous particulates from both indoor and outdoor air (CEC 2018).

Even with the increases in regional gross domestic product, total employment, and population, the region has experienced overall air quality improvements in the South Coast Air Basin due to technological advances in pollution controls, pollution prevention, clean fuels, alternative energy, and combustion processes implemented in recent years (SCAQMD 2017). Annual PM_{2.5}, 8-hour ozone, and 1-hour ozone have decreased significantly since 1990.

Although air quality in the SoCAB has improved as a result of local, State, and federal regulations, and cleaner on-road and off-road vehicles are commercially available in the present day, especially when compared to what was available at the time FEIR 575, FEIR 584, and FEIR 589 were prepared, the LPPE, as an element of the Ranch Plan, would be part of project-specific and cumulative emissions that exceed the established significance thresholds. As noted above, when certifying FEIR 589, the Board of Supervisors adopted a Finding of Fact and a Statement of Overriding Considerations for direct and cumulative significant, unavoidable air quality impacts for both construction and operational emissions.

d) Would the project expose sensitive receptors to substantial pollutant concentrations?

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. An evaluation of the localized effects of air quality and the exposure of sensitive persons to criteria pollutants is addressed by evaluating if a proposed project could cause or contribute to carbon monoxide (CO) hot spots (defined as locations where the CO concentrations exceed a state or federal CO standard). CO controls have been implemented and the number of potential CO hotspots has been greatly reduced throughout the SoCAB. As noted in FEIR 584 and FEIR 589, the entire SoCAB was considered an attainment area for all 1-hour CO standards; subsequently, in 2007 the SoCAB was designated an attainment area for all State and federal CO standards. As part of the air quality analysis conducted for FEIR 584 and FEIR 589, the intersections projected to experience the heaviest traffic volumes from both the Ranch Plan and other sources were modeled to determine the potential for a CO hotspot. The modeling showed that no intersections would exceed the strictest CO standard (i.e., the state 8-hour standard of 9.0 ppm) even after adding background concentrations.

Currently, for purposes of providing a conservative worst-case impact analysis, CO concentrations are analyzed at congested intersection locations. If impacts are less than significant close to congested intersections, impacts also would be less than significant at more distant sensitive receptors and at other less congested intersection locations. An initial screening procedure is provided in the *Transportation Project-Level Carbon Monoxide Protocol* (CO Protocol) to determine whether a project poses the potential to generate a CO hotspot (UCD ITS 1997). The key criterion is whether the Project would worsen traffic congestion at signalized intersections operating at level of service (LOS) E or F. If a project poses a potential for a CO hotspot, a quantitative screening is required. The Traffic Impact Analysis prepared for the Project indicates that signalized intersections near the site would not operate at LOS E or worse with the proposed LPPE improvement (Iteris, 2020, Appendix E). Therefore, the Project would not result in a potential CO hotspot. The majority of the intersections in the study area would operate at the same or better LOS with the LPPE than under the No Project scenario.

In addition to CO concerns, an evaluation of toxic air contaminants (TAC) is frequently completed. The most common source of TAC is diesel particulate emissions, which CARB has identified as

a carcinogenic air toxics. However, the SCAQMD does not consider diesel-related cancer risks from construction equipment to be a significant issue due to the short-term nature of construction activities relative to the exposure periods used in a health risk analysis.⁵⁹ The most diesel emissions during project construction would occur during grading.

Based on guidance developed by Caltrans, the LPPE would not generate sufficiently high traffic volumes or result in the number of diesel trucks to require a detailed diesel particulate matter (DPM) analysis. Caltrans guidance for identifying projects that require a detailed DPM analysis, identifies a “highway or expressway that serves a significant volume of diesel truck traffic, such as facilities with greater than 125,000 annual average daily traffic (AADT) and 8 percent or more of such AADT is diesel truck traffic.”⁶⁰ None of the arterial highways in the Project study area would approach this threshold of trips or percentage of trucks (see Section 4.17, Transportation, for more detailed discussion of the traffic volumes). Additionally, the Project would not alter the access route for the landfill operations, thereby resulting in substantially greater number of miles being traveled by the trucks and equipment used at the landfill (i.e., no change in refuse drop off or equipment used for burying the material).

As discussed in Section 4.17, Transportation, the LPPE would result in additional trips on the existing portion of Los Patrones Parkway, which is located in close proximity to the eastern boundary of Esencia School and Tesoro High School (i.e., trips that use the LPPE and continue on the existing portion of Los Patrones Parkway). Each of these schools were evaluated to determine the potential for an air quality impact. Although the Esencia School is over a third of a mile from the northern terminus of the proposed extension, the existing Los Patrones Parkway roadway is approximately 250 feet from the Esencia School property line. Therefore, even though the LPPE is not in close proximity, the potential impact to the school from the increased traffic on the existing segment of Los Patrones Parkway was considered.

According to the Mitigated Negative Declaration (MND) prepared by the Capistrano Unified School District for Esencia School (CUSD 2016), Section 21151.8(a)(1)(D) of the Public Resources Code requires the evaluation of potential air quality health risk associated with placement of a school within 500 feet of the edge of a freeway or other busy traffic corridors. Section 17213 of the Education Code references the Health and Safety Code for defining “freeway or other busy traffic corridors.” The Health and Safety Code defines roadways that, on an average day, have traffic in excess of 100,000 vehicles in an urban area as a “freeway or other busy traffic corridors”.⁶¹ The MND for Esencia School identified Los Patrones Parkway as the most heavily traveled roadway within 500 feet of the school site. The analysis in the MND projected future traffic volumes on Los Patrones Parkway as 43,000 average daily trips (ADT); therefore, it

⁵⁹ The assessment of cancer risk is typically based on a 30 or 70-year exposure period to the closest residential receptors and a 30-year exposure to off-site workers.

⁶⁰ Based on the Iteris analysis, none of the roadway segments are projected to approach 125,000 ADT in Horizon Year 2045. The highest volume is approximately 45,000 ADT on a segment of Antonio Parkway. Based on typical traffic distribution on arterial highways in Southern California, medium and heavy trucks are estimated to account for approximately 2.57 percent of vehicle trips (L&B 2016).

⁶¹ The California Health & Safety Code distinguishes between rural and urban areas. Section 50101 of the Health and Safety code defines “rural area” as “any open country or any place, town, village, or city which by itself and taken together with any other places, towns, villages, or cities that it is part of or associated with: (a) has a population not exceeding 10,000; or (b) has a population not exceeding 20,000 and is contained within a nonmetropolitan area. “Rural area” additionally includes any open country, place, town, village, or city located within a Standard Metropolitan Statistical Area if the population thereof does not exceed 20,000 and the area is not part of, or associated with, an urban area and is rural in character. “Urban area” means any portion of a county or the state which is not a rural area.

determined Los Patrones Parkway does not qualify as a busy traffic corridor and air quality health risk impacts would be less than significant.

The traffic impact study done by Iteris for the LPPE identifies the 2045 traffic volumes on Los Patrones Parkway adjacent to Esencia School as approximately 17,200 ADT with the LPPE (the combined volumes identified in the traffic assessment for the northbound and southbound segment of Los Patrones between Cow Camp Road and Chiquita Canyon Road). This traffic volume is less than what CUSD evaluated when it determined that there would be no air quality impact on Esencia Elementary School.⁶² Therefore, consistent with the CUSD's finding in the MND, the LPPE would not result in an air quality health risk associated with the traffic volumes on Los Patrones Parkway.

Tesoro High School is approximately 3.75 miles north of the LPPE. At the closest point, the edge of the tennis courts and track are within 500 feet from Los Patrones Parkway. Based on the traffic assessment (see Section 4.17, Transportation), the 2045 traffic projections with the LPPE is approximately 37,900 ADT on the segment of Los Patrones Parkway adjacent to the high school. This does not meet the threshold for an evaluation of health risk based on the Health and Safety Code definition of a freeway or other busy traffic corridors. Additionally, it should be noted, the majority of the school is beyond the 500-feet used for air quality screening and there is an elevation difference because the roadway is depressed at this location.

Two other schools are in the broader LPPE study area (San Juan Hills High School and Vista Del Mar Elementary School). Both schools are over a mile from the LPPE alignment. San Juan Hills High School takes access from Avenida La Pata; however, with the LPPE, this segment of Avenida La Pata is projected as having a substantial reduction in trips. Vista Del Mar Elementary School is located on Avenida Talega, approximately 2,200 feet east of Avenida La Pata. Although this segment of Avenida La Pata would have higher traffic volumes with the LPPE, the total number of trips would be less than the 50,000 ADT identified in the Health and Safety Code. In addition, the distance to Avenida La Pata is substantially greater than the 500 feet identified in the Public Resources Code.

Both SCAQMD and CARB documents also note that distance and wind direction are also factors to be considered for DPM impact. The SCAQMD document notes "Estimated cancer risk from diesel particulate matter along rural and urban roadways is decreased approximately 68 percent at a distance 150 m (492 ft) from the edge of the roadway." When applying this SCAQMD information to the proposed Project, the potential for a substantial TAC risk to the surrounding sensitive uses is substantially reduced. Additionally, the prevailing wind direction in coastal Orange County is from west to east, which is away from existing sensitive receptors. Based on the above data, it is concluded that there would be negligible TAC impact from the proposed Project to sensitive receptors.

e) Would the project result in other emissions (such as those leading to odors adversely affecting a substantial number of people?)

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. Construction of the LPPE would have the potential to generate objectionable odors during construction and long-term operations. Potential construction odor would result from paving operations and diesel exhaust fumes generated by equipment. While construction equipment onsite would generate some objectionable odors (mainly from diesel exhaust), these emissions would generally be limited to the project site and would be temporary. Most potential sensitive receptors are far enough from the project site so that odors from construction would not affect a

⁶² The CUSD MND as a worse-case analysis assumed the extension of SR-241 connecting to I-5.

substantial number of people. The nature of these impacts are consistent with the construction impacts identified in FEIR 584 and FEIR 589. There would be nothing about the LPPE that would result in greater odors than other routine construction projects. A regulatory requirement to comply with SCAQMD Rule 402, which pertains to nuisance odors, would apply during construction to ensure that nuisance odors do not extend to adjacent property. This requirement is also included in FEIR 584 and FEIR 589 as standard condition SC 4.7-1. Therefore, the future construction of the LPPE would not result in any new significant or substantially more severe impacts associated with odor that would require major revisions to FEIR 584 or FEIR 589.

Mitigation Program

Based on the information provided above, neither the proposed amendments to the GDP, the County of Orange Circulation Plan Map, the San Clemente *Mobility and Complete Streets Element*, and MPAH; nor the anticipated future impacts associated with construction and operation of the LPPE would result in any new significant or substantially more severe air quality impacts requiring major revisions to FEIR 575, FEIR 584, or FEIR 589. No new mitigation measures are required.

FEIR 589 included two standard conditions and four mitigation measures pertaining to air quality.⁶³ FEIR 575 had one air quality mitigation measure (MM 4.9-11) that was applicable to the circulation component of the GDP. This measure requires compliance with SCAQMD Rule 403 during construction. This measure is duplicative of SC 4.7-1 from FEIR 589. The measure from FEIR 589 is included in the Mitigation Program for the LPPE because it is more comprehensive. FEIR 584 referenced the measures in FEIR 575 and FEIR 589 but did not list the measure or suggest any changes to the measures. These measures are discussed below.

The two standard conditions included in FEIR 589 focus on the reduction of construction emissions and are listed below. Of the four mitigation measures adopted as part of FEIR 589, only one measure would be applicable to the LPPE. MM 4.7-4 pertains to the proximity of construction staging areas to residential areas and is included below.

MM 4.7-1 requires the preparation of a Diesel Fuel Reduction Plan. The Plan, which focuses on reduction of emissions during construction, was approved by the County in 2007; therefore, this measure is complete and not included as a measure required for the LPPE. Many of the provisions of the Plan have subsequently been incorporated into regulations or the benefits would be exceeded by the use of Tier 3 and Tier 4 equipment. As previously noted, RMV has committed to having off-road diesel equipment comply with emission control regulations in force at the time of construction. MM 4.7-2 pertains to locations for alternative fueling facilities and MM 4.7-3 pertains to parking lot design. Neither of these issues would be applicable to the LPPE.

⁶³ MM 4.7-2 through MM 4.7-4 were developed as part of the responses to comments.

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- SC 4.7-1
(FEIR 589) All construction contractors shall comply with South Coast Air Quality Management District (SCAQMD) regulations, including Rule 403, Fugitive Dust, and Rule 402, Nuisance. All grading (regardless of acreage) shall apply best available control measures for fugitive dust in accordance with Rule 403. To ensure that the project is in full compliance with applicable SCAQMD dust regulations and that there is no nuisance impact off the site, the contractor would implement each of the following:
- a. Moisten soil not more than 15 minutes prior to moving soil or conduct whatever watering is necessary to prevent visible dust emissions from traveling more than 100 feet in any direction.
 - b. Apply chemical stabilizers to disturbed surface areas (i.e., completed grading areas) within five days of completing grading or apply dust suppressants or vegetation sufficient to maintain a stabilized surface.
 - c. Water excavated soil piles hourly or cover with temporary coverings.
 - d. Water exposed surfaces at least twice a day under calm conditions. Water as often as needed on windy days when winds are less than 25 miles per day or during very dry weather in order to maintain a surface crust and prevent the release of visible emissions from the construction site.
 - e. Wash mud-covered tires and under-carriages of trucks leaving construction sites.
 - f. Provide for street sweeping, as needed, on adjacent roadways to remove dirt dropped by construction vehicles or mud, which would otherwise be carried off by trucks departing from project sites.
- SC 4.7-2
(FEIR 589) The contractor shall comply with the following measures, as feasible, to reduce NO_x and ROC from heavy equipment.
- a. Turn equipment off when not in use for more than five minutes.
 - b. Maintain equipment engines in good condition and in proper tune as per manufacturers' specifications.
 - c. Lengthen the construction period during smog season (May through October) to minimize the number of vehicles and equipment operating at the same time.
- MM 4.7-4
(FEIR 589) All construction staging areas and stockpile sites will be located as far as feasible from residential areas. This provision will apply to currently existing residential areas and to future residential developments that are completed prior to later development stages.
- A vegetation buffer zone, including trees and shrubs, will be placed between grading sites and residential areas or other locations where sensitive receptors can be reasonably expected.

4.4 **BIOLOGICAL RESOURCES**

Summary of Findings in Previous FEIRs

FEIR 575

FEIR 575 identified the loss of native habitat and associated displacement and/or loss of wildlife species resulting from the landfilling activities and the extension of Avenida La Pata through the landfill site. The vegetation types on the landfill site, except for those that are highly disturbed, function as part of an ecosystem in the region. Impacts associated with landfilling and circulation roadway improvements on the project site would result in habitat fragmentation, displacement of wildlife, and interruption of wildlife movement. The landfilling and circulation roadway improvements were assessed together because they have established grading limits under the 2001 GDP. The recreation plans are less well defined and, due to their nature, will create more indirect impacts on biological resources. FEIR 575 identified continuation of landfilling activities, associated facilities, and the extension of Avenida La Pata would result in the removal of 139.45 acres or 49 percent of the native vegetation types on the landfill site. This was subsequently increased upward as part of FEIR 597, when additional grading was determined to be required to stabilize some landslides.

With implementation of the mitigation measures included in FEIR 575, the biological impacts associated with the 2001 GDP on biological resources can be mitigated to a level of less than significant. However, if the mitigation measures pertaining to revegetation with native vegetation types are not implemented prior to impacts in Zone 4, there will be significant, unavoidable short-term adverse impacts on native vegetation types and wildlife habitat until the plantings in the revegetation areas have matured. Therefore, FEIR 575 found the short-term loss of native plant communities, including coastal sage scrub (habitat for the gnatcatcher) and riparian (habitat for the least Bell's vireo) habitats between the time when the plant materials are removed during construction and when the revegetation plantings are mature as a significant, unavoidable adverse impact.

FEIR 584 and FEIR 589

FEIR 589 identified significant impacts, prior to mitigation, on a number of sensitive species and vegetation communities. Impacts to Corps and CDFW jurisdictional areas were also identified. Implementation of the Ranch Plan Planned Community would have short-term construction-related impacts and long-term indirect impacts. Short-term effects are related to noise impacts on nesting raptors and other sensitive bird species and grading activities that would disturb soils and result in the accumulation of dust on the surface of the leaves of trees, shrubs, and herbaceous plants. Grading activities would also result in an accumulation of trash and debris. These short-term impacts were identified in FEIR 589 as significant.

Long-term indirect effects would include the introduction of landscape materials that have the potential to include planting ornamental species that can be invasive; changes in water quality that can impact biological resources; the addition of lighting in development areas that could result in an indirect effect on the behavioral patterns of nocturnal and crepuscular (i.e., active at dawn and dusk) wildlife adjacent to these areas; and increases in human activity that would increase the disturbance of natural open space adjacent to development. These long-term indirect impacts were identified in FEIR 589 as significant.

Implementation of the Mitigation Program, which includes the preservation of 16,915 acres of open space (almost all to be included in the Habitat Reserve), would reduce biological impacts to less than significant levels except for those impacts associated with two slope wetlands in the

Chiquita sub-basin; wildlife linkages K and G; and fecal coliform pathogen impacts. These impacts remained significant and unavoidable and a Findings of Fact and a Statement of Overriding Considerations were adopted for impacts to Biological Resources. However, as a result of the ROSA, the impacts to wildlife linkage K and the slope wetlands have been avoided. This is reflected in FEIR 584.

Given the timing of the public release of Draft EIR 584, the document addressed a Ranch Plan Planned Community development scenario (identified as the B-12 Alternative, see Section 2.1.2, The Ranch Plan and Final Program EIR 589) that was agreed to as part of the Settlement Agreements. Therefore, the impacts associated with the Ranch Plan Planned Community identified in FEIR 584, though similar in nature, are reduced from what was identified in FEIR 589. The Mitigation Program included the protection of habitat as part of the Habitat Reserve and the Habitat Reserve Management Program. These provisions have been incorporated into the ITP issued to RMV. Additional project-specific mitigation is also provided through a Biological Resources Construction Plan (BRCP) designed to avoid and minimize impacts during construction. No significant unavoidable biological impacts were identified in FEIR 584.

Among those SSHCP Covered Activities evaluated in FEIR 584 were the construction of certain infrastructure projects in the Habitat Reserve, including a north-south arterial described as “Cristianitos Road”. Similarly, the north-south roadway was assumed as part of the SAMP and the MSAA. The following description of the roadway is provided in SSHCP Appendix S and the SAMP and MSAA:⁶⁴

Cristianitos Road. The existing Cristianitos Road between Avenida Pico and the development area in Trampas Canyon would remain a private ranch road. From the proposed PA 5 Trampas Canyon development area to the proposed development area in the Gobernadora sub-basin, a new north-south primary arterial highway would cross San Juan Creek and Cow Camp Road, and connect to the proposed SR-241, in a “with SOCTIIP” and Oso Parkway in a “without SOCTIIP” scenario.

The SAMP approved by the Corps and MSAA for the Ranch Plan approved by CDFW also provide for the construction of infrastructure projects in the Habitat Reserve/Aquatic Resource Conservation Areas, including the described “Cristianitos Road”.

Project Impact Analysis

The impacts to biological resources have been previously analyzed as part of FEIR 575, FEIR 584, and FEIR 589, which were prepared and certified pursuant to State and County CEQA Guidelines. The following provides clarifications or information to validate that the previous documents provide adequate CEQA documentation for the proposed Project and serves as an Addendum to the FEIRs.

Generally, impacts to biological resources resulting from development in RMV planning areas and associated infrastructure and implementation of the Prima Deshecha GDP were analyzed in the previous environmental documentation and were considered mitigated by the SSHCP Habitat Reserve and mitigation in the Prima Deshecha SOS. The following provides clarifications or information to validate that the previous documents provide adequate CEQA documentation for the LPPE and serves as an Addendum to FEIR 584, FEIR 589, and FEIR 575.

⁶⁴ PA 5 is the acronym for Planning Area 5. SOCTIIP is the South Orange County Transportation Infrastructure Improvement Project, which was being prepared by the TCA and Federal Highway Administration (FHWA) to evaluate various alternatives for the SR-241 extension.

Data regarding biological resources documented to be present or potentially present within the Project Area were prepared by Dudek, the firm that prepared FEIR 584 and the SSHCP. Information was primarily obtained from the SSHCP and FEIR 575, FEIR 584, and FEIR 589, as well as a jurisdictional delineation and impact analysis conducted for the LPPE in 2020 (GLA 2020) and recent avian survey data for Prima Deshecha in SOS (ECORP 2019). Compilation of the biological resources database is described in detail in Chapter 3, Section 3.1 of the SSHCP. The database consists of vegetation mapping, special-status species occurrence information, and “project-level” jurisdictional wetland delineation for the SSHCP study area. The vegetation mapping used the Orange County Land Cover/Habitat Classification System (Gray and Bramlet 1992), which is a hierarchical system that identifies separate vegetation associations and subassociations. The database for special-status wildlife and plant species for the SSHCP study area, including the Project Area analyzed herein, is compiled from the cumulative results of more than 25 general and focused biological surveys. Project Area biological reconnaissance was conducted in 2020 to verify existing conditions are consistent with those described in the SSHCP and FIER 575, FEIR 584, and FEIR 589.

Since the SSHCP and circulation of FIER 575, FEIR 584, and FEIR 589, the special-status species database (the California Natural Diversity Database (CNDDDB) maintained by CDFW has been periodically updated. Additionally, special-status plant designations have been updated by the California Native Plant Society (CNPS) and CDFW, and the Special Animals List was last updated by CDFW in August 2019. Therefore, the lists of special-status plant and wildlife species analyzed for the LPPE, as described in the Special-Status Species section below, are the most current available.

a) Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Services?

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. Impacts to biological resources, including special-status plant and wildlife species and vegetation communities of concern, associated with roadway infrastructure on RMV, including a north-south arterial referred to as “Cristianitos Road”, and construction and operation of the Prima Deshecha Landfill site were analyzed in the SSHCP and previous environmental documents, including FEIR 574, FEIR 584, and FEIR 589. As discussed in Section 2.1.3, Southern Subregion NCCP/MSAA/HCP and Final Program EIR 584, the effects were also analyzed by the USFWS in Biological Opinion/Conference Opinion 1-6-07-F-812.8. The USFWS issued a FESA Section 10(a)(1)(B) ITP for federally-listed species in January 2007. Mitigation for impacts associated with the Ranch Plan, including the roadway infrastructure, is primarily preservation, monitoring, and management of an approximately 32,000-acre Habitat Reserve. The Biological Opinion issued for the SSHCP identifies that the Habitat Reserve will include 20,868 acres owned by RMV. This consists of 4,282 acres of land that RMV had in existing conservation easements prior to the adoption of the SSHCP, 48 acres of RMV land located within the Arroyo Trabuco, and 16,536 acres that will be part of a phased dedication program linked to the completion of construction of the Ranch Plan. Additionally, the *Habitat Reserve Management Program* (HRMP) has been developed, which includes an *Adaptive Management Program* (AMP) on the RMV portion of the Habitat Reserve and on selected portions of the County parklands within the Habitat Reserve.⁶⁵

⁶⁵ The AMP includes components such as the *Plant Species Translocation, Propagation and Management Plan, Habitat Restoration Plan, Invasive Species Control Plan, Wildland Fire Management Plan, Grazing Management Plan, and a Management Action Plans* (MAP) that describe the specific “on-the-ground” management and monitoring actions planned for the upcoming 5 years. In addition to the AMP for the RMV portion of the Habitat Reserve, the HRMP includes Ongoing Management Program on County parklands within the Habitat Reserve.

The HRMP is designed to provide for permanent management and monitoring of biological resources and hydrogeomorphic processes that provide habitat for the 32 Covered Species in the SSHCP and to maintain net habitat value over the long term within the subregion. Other Ranch Plan specific mitigation requirements adopted in conjunction with FEIR 575, FEIR 584, and FEIR 589 are provided below under Mitigation Program.

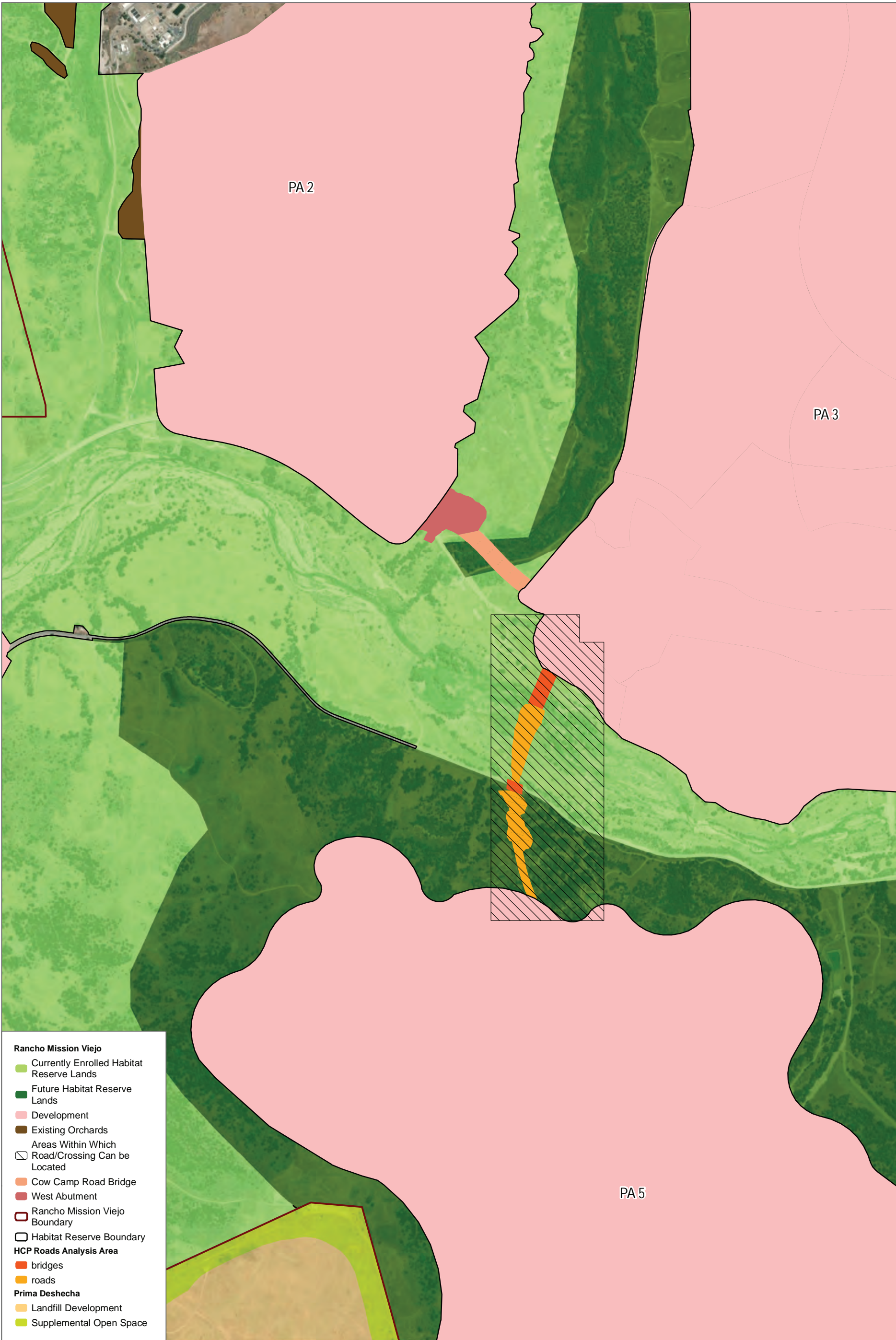
In previous environmental analyses, the impacts of the north-south primary arterial referred to as "Cristianitos Road" were evaluated for a conceptual alignment connecting the Ranch Plan Planning Area 3 in the north to Planning Area 5 in the south with a partial-span bridge of San Juan Creek. The alignment shown in Exhibit 10 is depicted in SSHCP Figure 166-M and SSHCP Appendix S. The LPPE would shift the roadway alignment west and cross San Juan Creek with a full span bridge connecting Planning Area 2 with Planning Area 5 (see Exhibit 11). The impact analysis below compares the impacts of the proposed western LPPE crossing to the eastern Cristianitos Road crossing assumed in the FEIR 584. Because FEIR 584 did not specifically evaluate a roadway connection from Planning Area 5 to Avenida La Pata through Prima Deshecha, no comparison is provided below for LPPE impacts in this portion, but impacts are analyzed. The biological impact analysis below focuses on impacts within open space (i.e., Habitat Reserve lands on RMV and SOS in Prima Deshecha) because the SSHCP and FEIR 584 and FEIR 589 assumed 100 percent development impacts in the Planning Areas of the Ranch Plan and the landfill development area in Prima Deshecha.

Vegetation Communities

RMV

This section compares the proposed LPPE impacts in the Habitat Reserve on RMV to the Cristianitos Road impacts analyzed in the SSHCP. It is important to note that the impact analysis for SSHCP Cristianitos Road included only the Habitat Reserve impacts associated with the roadway and bridges between Planning Area 3 and Planning Area 5, whereas the impact analysis for the LPPE includes all Habitat Reserve impacts, including the roadway and bridges between Planning Area 2 and Planning Area 5 and the roadway between Planning Area 5 and the boundary with the Prima Deshecha Landfill.

The proposed LPPE would result in a total of approximately 48.7 acres of impacts within RMV Habitat Reserve lands, including 10.3 acres of permanent roadway impacts and 38.4 acres of restorable impacts (e.g. cut and fill slopes adjacent to the roadway and temporary bridge impacts) (Exhibit 12). Table 2 provides a comparison of the impacts to the Habitat Reserve for the conceptual SSHCP Cristianitos Road alignment and the proposed LPPE by vegetation community. The SSHCP Cristianitos Road estimated 13.0 acres of permanent roadway impact to the Habitat Reserve; no estimates for restorable impacts were analyzed due to the conceptual nature of the engineering design at that time. It should be noted that the SSHCP Cristianitos Road impacts, evaluated here by vegetation community type, is considered conceptual because the SSHCP and FEIR 584 allowed for siting flexibility for the San Juan Creek roadway crossing (Exhibit 10 and SSHCP Figure 166-M).



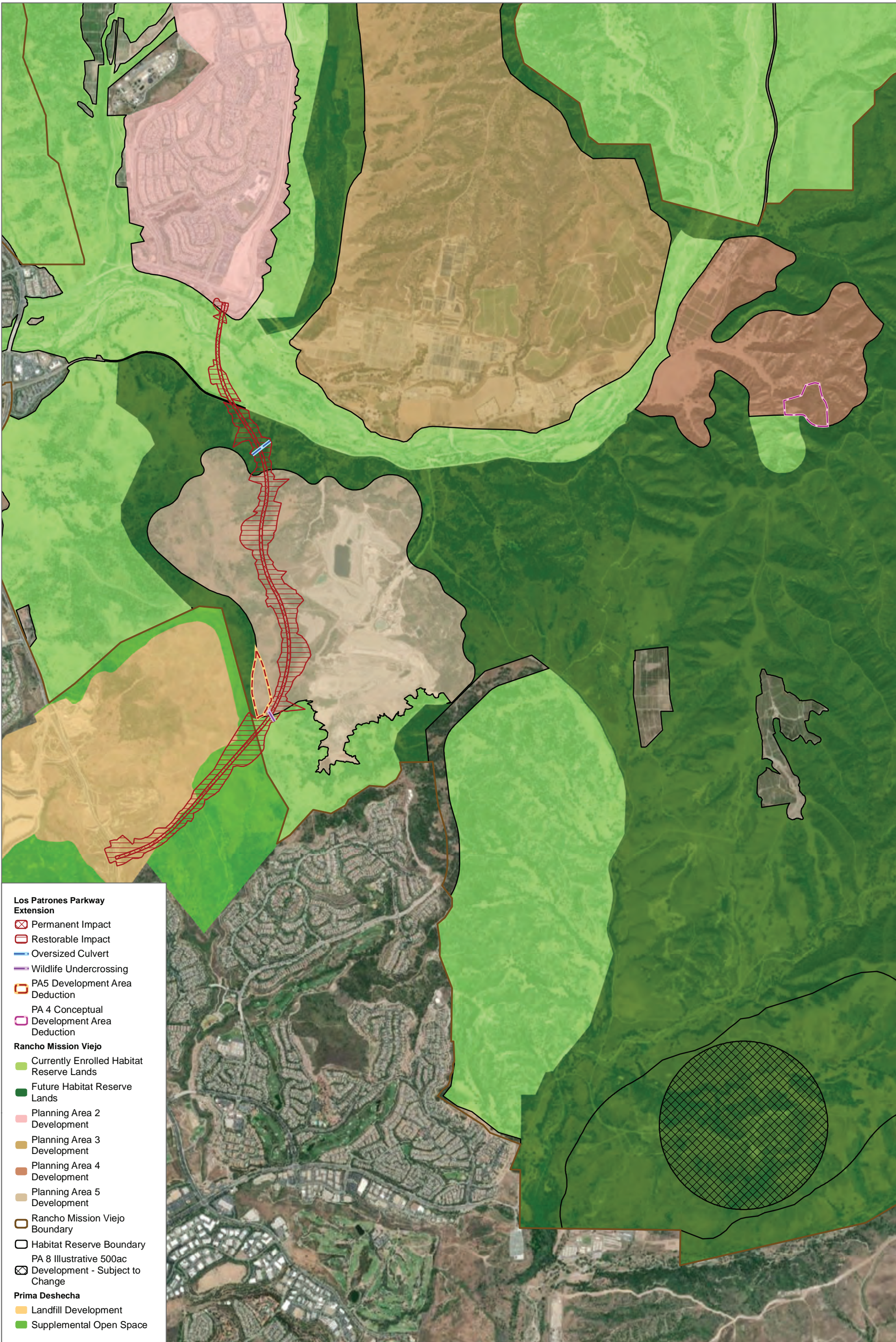
Source: Dudek 2020

SSHCP Conceptual Roadway Infrastructure

Exhibit 10

Los Patrones Parkway Extension





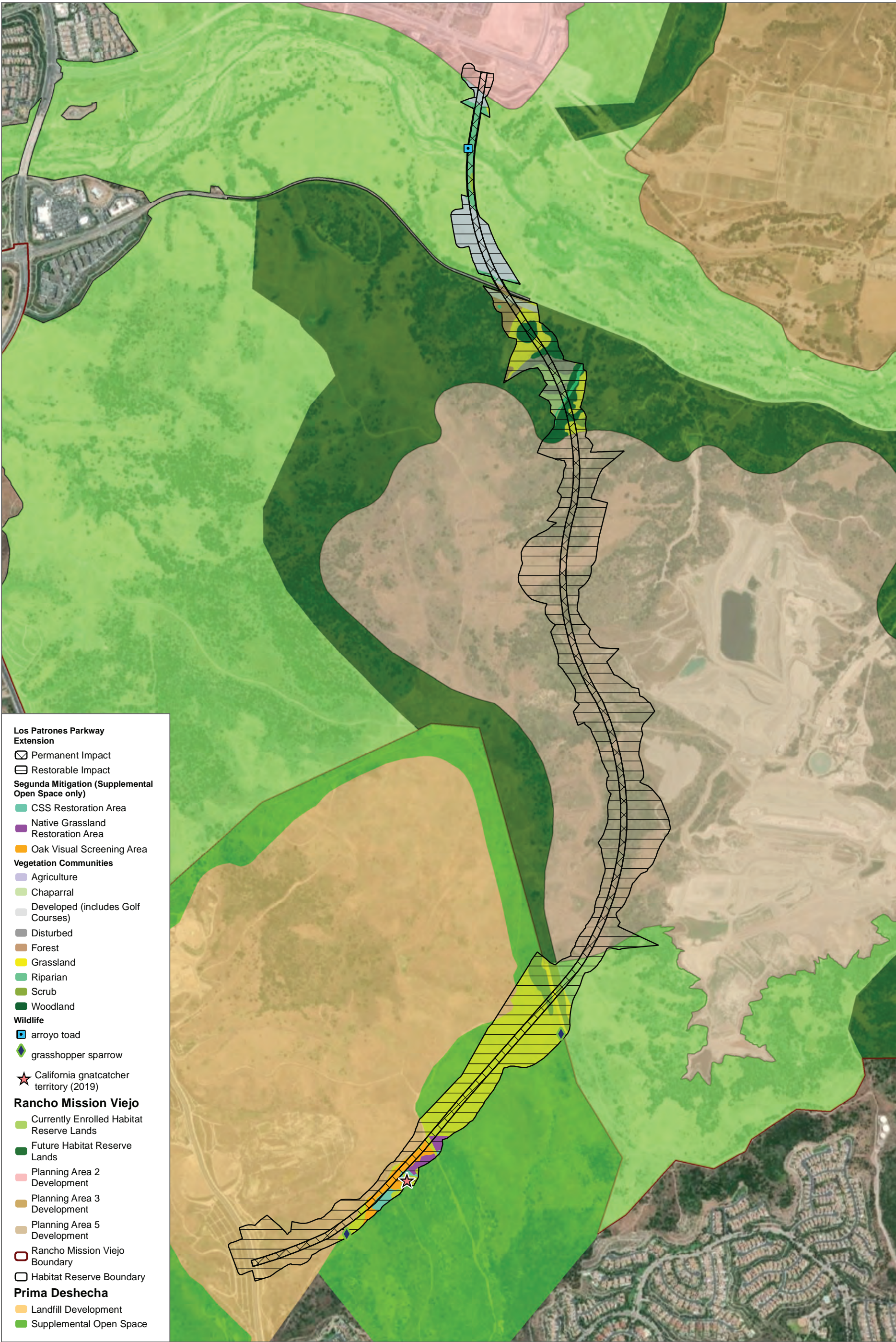
Source: Dudek 2020

Conceptual LPPE Alignment and SSHCP Habitat Reserve Land

Exhibit 11

Los Patrones Parkway Extension





Source: Dudek 2020

LPPE Biological Resource Impacts

Exhibit 12

Los Patrones Parkway Extension



TABLE 2
OPEN SPACE IMPACT COMPARISON BY
VEGETATION COMMUNITY

Vegetation Community	SSHCP Cristianitos Road Habitat Reserve Impacts (acres)	LPPE Impacts		Total (acres)
		Permanent Roadway (acres)	Restorable Impact (acres)	
RMV Habitat Reserve Lands				
Conserved Vegetation	12.5	7.1	26.4	33.5
Coastal Sage Scrub	4.9	0.5	2.1	2.6
Chaparral	1.5	0.6	2.4	3.0
Oak Woodland and Forest	1.7	1.6	8.8	10.5
Riparian and Open Water	3.0	2.5	2.2	4.7
Grassland	1.4	1.9	10.8	12.8
Non-conserved Vegetation	0.4	3.1	12.1	15.2
Agriculture	--	2.3	8.3	10.6
Developed	0.4	0.3	1.1	1.3
Disturbed	--	0.6	2.7	3.3
RMV Habitat Reserve Total	13.0	10.3	38.4	48.7
Prima Deshecha Supplemental Open Space				
CSS Restoration Areas	--	0.2	1.2	1.3*
Native Grassland Restoration Areas	--	0.1	1.4	1.5
Oak Visual Screening Areas	--	1.9	1.6	3.5
Other SOS	--	5.1	32.8	37.9
Coastal Sage Scrub	--	0.2	2.5	2.7
Grassland	--	4.9	30.3	35.1
Supplemental OS Total	--	7.2*	36.9	44.2
Notes: All roadway infrastructure impacts in the SSHCP were considered permanent; SSHCP impact acreages are conceptual because the SSHCP allowed the actual alignment to be flexible. SSHCP impacts were in Planning Area 3 and Planning Area 5 Habitat Reserve areas (future and currently dedicated); LPPE impacts in Open Space would occur in Planning Area 2 and Planning Area 5 Habitat Reserve areas (future and currently dedicated). Total LPPE bridge area is considered permanent impact; however only the bridge piers (estimated at a total of 0.06 to 0.08 acres of permanent impact) would be permanent and remainder would be restored. "Restorable Impacts" are areas of roadway cut and fill slopes that would be restored to Conserved Vegetation Communities following Project construction. Oak visual screening areas in Prima Deshecha are not considered a natural vegetation community and are not habitat mitigation for a previous project; this is an area of the SOS that abuts the landfill development area on Prima Deshecha where approximately 240 oak trees (currently approximately 9-12 feet in height) have been planted (and are irrigated to maintain viability) within existing grassland and scrub vegetation to provide visual screening.				
* Numbers may not add due to rounding.				
Source: Dudek 2020.				

Permanent Impacts

Compared to the Habitat Reserve impacts analyzed in FEIR 584 for SSHCP Cristianitos Road, the LPPE would result in a net decrease of 2.7 acres of total permanent impacts (10.3 acres of LPPE compared to 13.0 acres for Cristianitos Road). Permanent impacts to Conserved Vegetation Communities in the Habitat Reserve would be reduced by 5.4 acres under the LPPE, including a 4.4-acre decrease in impacts to coastal sage scrub, a 0.9-acre decrease in impacts to chaparral, a 0.1-acre decrease in impacts to oak woodland and forest, and a 0.5-acre decrease in impacts to riparian and open water. The LPPE would result in a 0.5-acre increase in impacts to grassland. Permanent impacts to Non-Conserved Vegetation in the Habitat Reserve would be increased by 2.7 acres under the LPPE, including a 2.3-acre increase in impacts to agriculture and a 0.4-acre increase in impacts to developed and disturbed areas.

Permanent roadway impacts to riparian vegetation is overstated for LPPE as the entire bridge span over San Juan Creek has been classified as a permanent impact in the summary above and in Table 2; however, the riparian vegetation under the bridge will be restored except for the permanent footprint of the bridge piers. No locations for the bridge piers are available at the current stage of engineering design for the roadway, therefore for purposes of this analysis the LPPE/San Juan Creek bridge impacts are assumed as permanent to represent a worst-case impact. Following more detailed engineering design, the location of the bridge piers will be determined. At this time, the best estimate is that the spans between each pier location would be approximately 190 feet. Based on a 1,500 foot long bridge, 8 to 10 locations for paired piers are estimated, but actual locations will depend on site-specific geotechnical investigations. CIDH piles of approximately 14 feet in diameter are the likely method of construction for the piers, resulting in estimated permanent impacts of 0.06 to 0.08 acres for the assumed 8 to 10 paired pier locations. These will be the only permanent impacts and any remaining area temporarily impacted by construction would be restored to original conditions or better. Further, the proposed LPPE Bridge would span approximately 1,500 feet over San Juan Creek from the edge of the Planning Area 2 development area to an agricultural field north of Ortega Highway with abutments that are setback from San Juan Creek sited largely in uplands and avoiding riparian vegetation in the San Juan Creek floodplain. In comparison, the SSHCP infrastructure design included a Cristianitos Road with a an approximately 600-foot, partial-span bridge over San Juan Creek and permanent roadway impacts within riparian and open water areas of San Juan Creek.

Restorable Impacts

Of the 38.4 acres of restorable impacts that would result from LPPE, 26.4 acres are to Conserved Vegetation Communities, including 10.8 acres of grassland, 8.8 acres of oak woodland and forest, 2.4 acres of chaparral, 2.2 acres of riparian and open water, and 2.1 acres of coastal sage scrub. Additionally, the LPPE would result in 12.1 acres of temporary impacts to Non-Conserved Vegetation (i.e., agriculture, developed, and disturbed). All restorable impacts have the potential to be restored to Conserved Vegetation Communities.

Compared to the SSHCP Cristianitos Road impacts, the LPPE would result in a net increase of 21.0 acres of total impacts to Conserved Vegetation Communities (33.5 acres compared to 12.5 acres); total impacts to coastal sage scrub would decrease by 2.3 acres and total impacts would increase by 1.5 acres of chaparral, 8.8 acres of oak woodland and forest, 1.7 of riparian, and 11.4 acres of grassland. Compared to the SSHCP Cristianitos Road impacts, the total impacts of the LPPE would result in a net increase of 14.8 acres of impacts to Non-Conserved Vegetation (12.1 acres compared to 0.4 acres), including 10.6 acres additional impacts in agriculture, 0.9 acres in developed areas, and 3.3 acres in disturbed lands. As noted above, however, due to the very preliminary design of Cristianitos Road in the SSHCP, all impacts were assumed to be permanent, and siting of the roadway was flexible; therefore restorable impacts were not estimated.

Summary

Previous environmental analysis determined that impacts to Conserved Vegetation Communities from roadway infrastructure in the Habitat Reserve were considered potentially significant, and that the impacts would be reduced below a level of significant through implementation of the SSHCP conservation and associated measures.

The LPPE would result in a net reduction of 5.4 acres of permanent impacts to Conserved Vegetation Communities than was assumed in the SSHCP and FEIR 584, including fewer impacts to all Conserved Vegetation Community types except grasslands, which would increase by 0.5 acres.

Although permanent roadway impacts in the Habitat Reserve would decrease under the LPPE from what was assumed in the SSHCP and FEIR 584, the LPPE would result in an increase of 21.0 acres of total impacts to Conserved Vegetation Communities and 14.8 acres of total impacts to Non-Conserved Vegetation in the Habitat Reserve, as compared to the SSHCP, due to impacts associated with roadway cut and fill slopes and other areas of restorable impacts. The LPPE would result in 38.4 acres of restorable impacts in the Habitat Reserve, including 26.4 acres of Conserved Vegetation Communities and 12.1 acres of Non-Conserved Vegetation. It is assumed that all 38.4 acres of restorable impacts would be restored to Conserved Vegetation Communities.

Similar to the operational segment of LPP, restoration of the roadway slopes with Conserved Vegetation Communities would be conducted for the LPPE on RMV lands. Consistent with the requirements of the SSHCP, RMV would be required to prepare a detailed Restoration Plan for USFWS review and approval, in accordance with the SSHCP Appendix H (Habitat Restoration Plan). The restoration plan will specify the amount and location of all vegetation communities that will be planted, along with the site preparation and planting methods, maintenance and monitoring methods, and performance standards that will be achieved for all restoration and revegetation areas.

Consistent with the previous environmental analyses, roadway impacts from the LPPE on Conserved Vegetation Communities in the Habitat Reserve would be considered a significant impact absent consistency with and implementation of the SSHCP conservation strategy and associated measures. The LPPE has submitted an SSHCP amendment request including measures that would be implemented consistent with the SSHCP conservation strategy and associated measures, specifically the BRCP Measures, Measures to Avoid and Minimize Indirect Effects, and Measures to Maintain Habitat Reserve Acres and Habitat Value, which will mitigate the restorable impacts on vegetation communities on RMV lands below a level of significance. The LPPE would not result in any new or substantially more severe significant impacts necessitating major revisions to the FEIRs.

Prima Deshecha

The proposed LPPE would result in permanent and restorable impacts in Prima Deshecha SOS. Generally, while SOS is not part of the Habitat Reserve, it contributes to the SSHCP Conservation Strategy by providing additional open space supporting habitat for Covered Species and contributing to wildlife connectivity and refugia which supplement the overall function of the Habitat Reserve. However, as stated in the SSHCP, "The long-term function of the proposed Habitat does not depend on the SOS..." (p. 10-46 of the SSHCP).

Impacts to Prima Deshecha SOS were contemplated in the SSHCP as it provides that any future additional impacts to SOS would be restored in the SOS. Through implementation of the requirements of the SSHCP regarding disturbance of SOS, impacts to grassland habitat will be mitigated to less than significant through restoration of impacted slopes with at least 30 acres of grassland. Restoration of slope impacts will also help maintain the function of Linkage K, especially where these restored areas would support wildlife using the large undercrossing. Restoration would include a mix of coastal sage scrub, mixed coastal sage/grassland, and grasslands depending on the vegetation communities impacted, soil conditions, and adjacent vegetation.

The LPPE would result in a total of approximately 44.2 acres of impact within Prima Deshecha SOS lands, including 7.2 acres of permanent roadway impacts and 36.9 acres of restorable impacts (Exhibit 12). Permanent impacts in Prima Deshecha SOS includes 4.9 acres of grassland and 0.2 acres of coastal sage scrub as well as 0.2 acres of coastal sage scrub restoration area, 0.1 acres of native grassland restoration area, and 1.9 acres of oak visual screening area.

Restorable impacts in Prima Deshecha SOS includes 30.3 acres of grassland and 2.5 acres of coastal sage scrub as well as 1.2 acres of coastal sage scrub restoration area, 1.4 acres of native grassland restoration area, and 1.6 acres of oak visual screening area.⁶⁶

Previous environmental analyses for activities associated with implementation of the Prima Deshecha GDP found that permanent and temporary impacts to coastal sage scrub and grassland would be mitigated below a level of significance through implementation of habitat preservation, replacement, or enhancement at a 1:1 ratio. Further, any temporary impacts to restored coastal sage scrub or native grassland in SOS would be mitigated below a level of significance through restoration of the disturbed areas on a 1:1 basis the next growing season following completion of the impacts. Consistent with previous environmental analyses, the LPPE would result in impacts to existing coastal sage scrub and grassland vegetation communities and restored coastal sage scrub and grassland, which would be considered significant if determined to conflict with the SSHCP conservation strategy and absent necessary mitigation measures. Implementation the BRCP Measures, Measures to Avoid and Minimize Indirect Effects, and Measures to Maintain SOS Habitat Value would reduce this impact to less than significant and would not result in a new or substantially more severe impact requiring modification to the FEIR 584.

In compliance with the SSHCP, restoration of all impacts to SOS mitigation areas would be conducted. All installed SOS mitigation areas would be recreated in either non-impacted SOS lands or within the Habitat Reserve. Restoration of the Prima SOS roadway slopes with Conserved Vegetation Communities would be conducted for the LPPE on Prima Deshecha lands. Priority would be given to SOS lands. As required by Appendix U of the SSHCP, a detailed Restoration Plan would be prepared for USFWS review and approval. The restoration plan would specify the amount and location of all vegetation communities that would be planted, along with the site preparation and planting methods, maintenance and monitoring methods, and performance standards that would be achieved for all restoration and revegetation areas. Implementation of the Mitigation Program, including the provisions outline in Appendix U of the SSCHP will mitigate the impacts on vegetation communities on County lands below a level of significance. The LPPE would not result in any new or substantially more severe significant impacts necessitating major revisions to the FEIRs.

Special-Status Species

The special-status wildlife and plant species analyzed for the LPPE are listed in Tables C-1 and C-2, respectively (see Appendix C). Species included in this analysis include SSHCP Covered Species and the extensive “sensitive” species addressed in FEIR 575, FEIR 584, and FEIR 589, which included special-status species typically evaluated under CEQA as well as numerous other species incorporated into the analyses based on input from the science advisors associated with the SSHCP. In order to evaluate and confirm that the LPPE would not result in any new impacts to special-status species not previously analyzed, Tables C-1 and C-2 also include any other species not addressed in previous environmental analyses that would currently be considered special-status for the purposes of CEQA. Sources used for determination of special-status biological resources included State and federally listed plant species (CDFW 2020), California Native Plant Society California Rare Plant Rank (CRPR) 1A, 1B, 2A, and 2B species (CNPS 2020), Special Vascular Plants, Bryophytes, and Lichens List (CDFW 2020), Special Animals List (CDFW 2019), and the California Natural Diversity Database (CNDDB) (CDFW 2020). Both tables

⁶⁶ Oak visual screening areas in Prima Deshecha are not considered a naturally-occurring vegetation community and are not mitigation for a previous project; this is an area of the SOS that abuts the landfill development area on Prima Deshecha where approximately 240 oak trees (currently approximately 9-12 feet in height) were planted (and are irrigated to maintain viability) within existing grassland and scrub vegetation to provide visual screening.

include the species' primary habitat associations and their known occurrence or potential to occur in the broader SSHCP study area and within the LPPE Project Area (roadway and restorable impact areas).

Special-Status Wildlife

The LPPE would result in impacts to one special-status wildlife species (and SSHCP Covered Species) in the Habitat Reserve on RMV lands, an arroyo toad location in San Juan Creek associated with the bridge overpass (Exhibit 12). This reach of San Juan Creek is known to consistently support arroyo toad and was identified as a *major population* in the SSHCP (SSHCP Figure 173-M). The majority of the impact will be temporary construction impacts and would be restored. The only potential permanent impacts would result from the bridge piers. Based on a 1,500 foot long bridge, 8 to 10 locations for paired piers are estimated. CIDH piles of approximately 14 feet in diameter are the likely method of construction for the piers, resulting in estimated permanent impacts of 0.06 to 0.08 acres for 8 to 10 paired pier locations.

No other special-status wildlife locations within the Habitat Reserve on RMV lands would be directly impacted by the LPPE.

The LPPE would result in impact to two special-status wildlife species (and SSHCP Covered Species) in SOS in Prima Deshecha, one coastal California gnatcatcher territory and two occurrence locations of grasshopper sparrow (Exhibit 12).

- A coastal California gnatcatcher territory, recorded in 2019 in SOS adjacent to the Landfill development area in the CSS restoration area and native grassland restoration area (ECORP 2019), would be impacted by the Project. Impacts to coastal California gnatcatchers on Prima Deshecha were previously analyzed in FEIR 575 and were considered mitigated below a level of significance through implementation of habitat preservation, replacement, or enhancement at a 1:1 ratio. Further, any temporary impacts to restored coastal sage scrub or native grassland in SOS would be mitigated below a level of significance through restoration of the disturbed areas on a 1:1 basis the next growing season following completion of the project impacts.
- Two grasshopper sparrow occurrences would be impacted in grassland habitat in SOS: one in the northern portion of Prima Deshecha SOS adjacent to RMV and one in the southernmost portion of the Project Area near Avenida La Pata. The LPPE would result in 12.8 acres of impact to grassland in the Habitat Reserve on RMV lands and 35.1 acres of grassland and 1.5 acres of native grassland restoration areas on Prima Deshecha, which may be suitable for grasshopper sparrow. A majority of these impacts, as reported in Table 2, are restorable impacts and would be restored to Conserved Vegetation Communities (including grasslands as appropriate) following LPPE construction. Impacts to grassland and the species this habitat supports were analyzed previously in FEIR 575 and were determined to be significant but would be mitigated below a level of significance through the implementation of habitat preservation, replacement, or enhancement at a 1:1 ratio. Further, any temporary impacts to native grassland in SOS would be mitigated below a level of significance through restoration of the disturbed areas on a 1:1 basis the next growing season following completion of the project impacts.

No other special-status wildlife locations within SOS in Prima Deshecha would be impacted by the LPPE.

Table C-1 provides a list of the other special-status wildlife species evaluated for their status in the LPPE Project Area, including documented occurrences addressed in previous environmental

analyses or their potential to occur if not previously documented. When assessing the potential for species to occur in the LPPE Project Area several factors are evaluated, including the presence of suitable habitat, geographic range, records in the Project vicinity, and published information. Based on a review of the proposed LPPE relative to the previous environmental analyses for RMV and Prima Deshecha lands, the LPPE would result in impacts to the same suite of habitat types in the Habitat Reserve for special-status wildlife species as was assumed in FEIR 584 for the SSHCP Cristianitos Road, including coastal sage scrub habitat, chaparral habitat, oak woodland and forest habitat, riparian and open water habitat, and grassland habitat.

Since the previous environmental analyses, the listing status for several special-status wildlife species has changed and is reflected in Table C-1. Western spadefoot is currently a candidate for federal listing and tricolored blackbird was recently listed as threatened in California. Both species are SSHCP Covered Species. Mountain lion, which is currently a candidate species being reviewed for state listing, is a SSHCP Planning Species. Because these species were addressed in the previous environmental analyses, the change in status for these species does not result in new significant or substantially greater impacts not previously analyzed.

Several wildlife species in Table C-1 were not previously analyzed in the SSHCP and FEIR 584 and FEIR 589 (denoted by “*”) but have since become special-status species and have a moderate or high potential to occur in the Project Area within the Habitat Reserve on RMV lands. Several wildlife species in Table C-1 were not previously analyzed in FEIR 575 (denoted by “^”) but have since become special-status species and have a moderate or high potential to occur in the Project Area within SOS on Prima Deshecha. These wildlife species generally occur in the same habitats as the species that were previously analyzed. Special-status wildlife species not previously analyzed that have moderate or high potential to occur in the Project Area and could be impacted by the Project include:

- Crotch bumble bee (*Bombus crotchii*) is known from the vicinity of the LPPE and if present would use food plants from a variety of commonly occurring plant species in grassland and scrub habitats. The LPPE would result in 2.6 acres of impact to coastal sage scrub and 12.8 acres of grassland in the Habitat Reserve on RMV lands and 2.7 acres of coastal sage scrub and 35.1 acres of grassland in SOS on Prima Deshecha. A majority of these impacts, as shown in Table 2, are restorable impacts and would be restored to Conserved Vegetation Communities following LPPE construction. Additionally, LPPE would impact Prima SOS coastal sage scrub and native grassland restoration areas. Previous environmental analyses determined that impacts to grassland and scrub habitats and the species they support would be significant but would be mitigated below a level of significance through the implementation of the SSHCP conservation strategy and the measures associated with previous environmental analyses, including the SSHCP Habitat Reserve and SOS. Therefore, implementation of the LPPE consistent with the SSHCP and implementation of the BRCP Measures, Habitat Restoration of Restorable Impacts, Measures to Avoid and Minimize Indirect Effects, and Measures to Maintain Habitat Reserve Acres and Habitat Value, and Measures to Maintain SOS Habitat Value (see Mitigation Program below) will address the habitat impacts for Crotch bumble bee and reduce potential impacts to less than significant.
- Oak titmouse (*Baeolophus inornatus*) is relatively common in oak woodland and/or forest and riparian. The LPPE would result in 10.5 acres of impact to oak woodland and forest and 4.7 acres of riparian in the Habitat Reserve on RMV lands and no naturally occurring suitable habitat on Prima Deshecha (although the species may utilize oaks planted in the oak visual screening areas, of which the Project would impact 3.5 acres). A majority of these impacts, as shown in Table 2, are restorable impacts and would be restored to Conserved Vegetation Communities following LPPE construction. Previous environmental

analyses determined that impacts to oak woodland and forest and riparian habitats and the species they support would be significant but would be mitigated below a level of significance through the implementation of the SSHCP conservation strategy and the measures associated with previous environmental analyses, including the SSHCP Habitat Reserve. Therefore, implementation of the LPPE consistent with the SSHCP and implementation of BRCP Measures, Habitat Restoration of Restorable Impacts, Measures to Avoid and Minimize Indirect Effects, and Measures to Maintain Habitat Reserve Acres and Habitat Value (see Mitigation Program below) will address the habitat impacts for oak titmouse and reduce potential impacts to less than significant.

- Golden eagle (*Aquila chrysaetos*), short-eared owl (*Asio flammeus*), long-eared owl (*Asio otus*), merlin (*Falco columbarius*), American peregrine falcon (*Falco peregrinus anatum*), Mountain plover (*Charadrius montanus*), Lark sparrow (*Chondestes grammacus*), Oregon vesper sparrow (*Pooecetes gramineus affinis*), and Lawrence's goldfinch (*Spinus lawrencei*) may forage in the grassland and agriculture in the Project Area. The LPPE would result in 12.8 acres of impact to grassland and 10.6 acres of agriculture in the Habitat Reserve on RMV lands and 35.1 acres of grassland and 1.5 acres of native grassland restoration areas on Prima Deshecha. A majority of these impacts, as shown in Table 2, are restorable impacts and would be restored to Conserved Vegetation Communities following LPPE construction. Previous environmental analyses determined that impacts to grassland and the species they support would be significant but would be mitigated below a level of significance through the implementation of the SSHCP conservation strategy and the measures associated with previous environmental analyses, including the SSHCP Habitat Reserve. Therefore, implementation of the LPPE consistent with the SSHCP and implementation of BRCP Measures, Habitat Restoration of Restorable Impacts, Measures to Avoid and Minimize Indirect Effects, and Measures to Maintain Habitat Reserve Acres and Habitat Value, and Measures to Maintain SOS Habitat Value (see Mitigation Program below) will address the habitat impacts for Oregon vesper sparrow and reduce potential impacts to less than significant.
- Special-status bats, including pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), spotted bat (*Euderma maculatum*), western mastiff bat (*Eumops perotis californicus*), silver-haired bat (*Lasionycteris noctivagans*), western red bat (*Lasiurus blossevillei*), hoary bat (*Lasiurus cinereus*), California leaf-nosed bat (*Macrotus californicus*), western small-footed bat (*Myotis ciliolabrum*), fringed myotis (*Myotis thysanodes*), long-legged myotis (*Myotis volans*), and Yuma myotis (*Myotis yumanensis*), may forage in most natural vegetation communities and agricultural areas when and where insect prey are available, although different species may have different preferred foraging habitats (see Primary Habitat Associations in Table C-1). These bat species have a low potential to roost in the Project Area. The LPPE would result in 48.7 acres of impact in the Habitat Reserve on RMV lands and 44.2 acres in SOS on Prima Deshecha. A majority of these impacts (38.4 acres on RMV and 37.0 acres on Prima Deshecha) are restorable impacts and would be restored to Conserved Vegetation Communities following LPPE construction. Previous environmental analyses determined that impacts to vegetation communities and the species they support would be significant but would be mitigated below a level of significance through the implementation of the SSHCP conservation strategy and the measures associated with previous environmental analyses, including the SSHCP Habitat Reserve. Therefore, implementation of the LPPE consistent with the SSHCP and implementation of BRCP Measures, Habitat Restoration of Restorable Impacts, Measures to Avoid and Minimize Indirect Effects, and Measures to Maintain Habitat Reserve Acres and Habitat Value, and Measures to Maintain SOS Habitat Value (see Mitigation Program below) will address the foraging habitat impacts for these special-status bat species and reduce potential impacts to less than significant.

- Dulzura pocket mouse (*Chaetodipus californicus femoralis*), mountain lion (*Puma concolor*), and American badger (*Taxidea taxus*) have a potential to occur throughout the Project Area. The LPPE would result in 48.7 acres in the Habitat Reserve on RMV lands and 44.2 acres in SOS on Prima Deshecha. A majority of these impacts (38.4 acres on RMV and 37.0 acres on Prima Deshecha) are restorable impacts and would be restored to Conserved Vegetation Communities following LPPE construction. Previous environmental analyses determined that impacts to vegetation communities and the species they support would be significant but would be mitigated below a level of significance through the implementation of the SSHCP conservation strategy and the measures associated with previous environmental analyses, including the SSHCP Habitat Reserve. Therefore, implementation of the LPPE consistent with the SSHCP and implementation of BRCP Measures, Habitat Restoration of Restorable Impacts, Measures to Avoid and Minimize Indirect Effects, and Measures to Maintain Habitat Reserve Acres and Habitat Value, and Measures to Maintain SOS Habitat Value (see Mitigation Program below) will address the foraging habitat impacts for these special-status species and reduce potential impacts to less than significant.

Special-status wildlife species may be impacted by indirect effects from short-term construction activities and long-term operation of the LPPE, including construction noise, operational noise, and introduction of invasive exotic species in adjacent Habitat Reserve and SOS areas, water quality effects, lighting effects, and increase human activity effects. These potential indirect effects would be mitigated below a level of significance through the implementation of the SSHCP conservation strategy and the measures associated with previous environmental analyses, including BRCP Measures and Measures to Avoid and Minimize Indirect Effects (see Mitigation Program below).

Linear projects have the potential to fragment special-status wildlife species habitat and constrain wildlife movement across the landscape. See analysis of wildlife movement under Environmental Checklist question 4.4(d) below.

In conclusion, the SSHCP and previous environmental analyses for RMV and Prima Deshecha found that infrastructure impacts would result in potentially significant impacts to suitable habitat for special-status wildlife species and that those potentially significant impacts would be avoided, minimized and mitigated through implementation of the SSHCP conservation strategy and associated mitigation program.

Consistent with previous environmental analyses, the LPPE would result in potentially significant impacts to suitable habitat for special-status wildlife species in the Habitat Reserve on RMV and in SOS on Prima Deshecha, and those impacts would be considered a significant impact absent consistency with and implementation of the SSHCP and associated measures. An SSHCP amendment request has been submitted including mitigation that would be implemented consistent with the SSHCP conservation strategy and associated measures, including specifically the BRCP Measures, Habitat Restoration of Restorable Impacts, Measures to Avoid and Minimize Indirect Effects, Measures to Maintain Habitat Reserve Acres and Habitat Value, and Measures to Maintain SOS Habitat Value (see Mitigation Program below), which will mitigate the direct and indirect roadway impacts on special-status wildlife species on RMV lands and Prima Deshecha below a level of significance. The LPPE would not result in any new or substantially more severe significant impacts necessitating major revisions to the FEIRs.

Special-Status Plants

No federal or state listed plant species, state rare, or SSHCP plant Covered Species are known from the LPPE Project Area on RMV lands or on Prima Deshecha.

Three special-status plant species have been recorded in the LPPE Project Area, white rabbit-tobacco (CRPR 2B.2), vernal barley (CRPR 3.2) and paniculate tarplant (CRPR 4.1).

- White rabbit-tobacco (*Pseudognaphalium leucocephalum*) was recently observed in the LPPE Project Area in the floodplain scrub vegetation on both sides of San Juan Creek, just north of Ortega Highway. In this area, the LPPE would result in impacts to 0.3 acres of coastal sage scrub and 3.8 acres of riparian in the Habitat Reserve on RMV lands and no suitable habitat on Prima Deshecha. A majority of these impacts (with the exception of permanent bridge pier impacts of 0.06 to 0.08 acres), are temporary impacts associated with bridge construction that would be restored to native floodplain scrub vegetation with the white rabbit-tobacco as a component following LPPE construction. Previous environmental analyses determined that impacts to floodplain scrub habitats and the species they support would be significant but would be mitigated below a level of significance through the implementation of the SSHCP conservation strategy and the measures associated with previous environmental analyses, including the SSHCP Habitat Reserve. Therefore, implementation of the LPPE consistent with the SSHCP and implementation of BRCP Measures, Habitat Restoration of Restorable Impacts, Measure for Impacts to Special-Status Plants, Measures to Avoid and Minimize Indirect Effects, and Measures to Maintain Habitat Reserve Acres and Habitat Value will address the habitat impacts to white rabbit-tobacco and reduce potential impacts to less than significant.
- Vernal barley (*Hordeum intercedens*) is a CRPR 3 species, which are plants about which more information is needed, and paniculate tarplant (*Deinandra paniculata*) is a CRPR 4 species, which are plants with limited distribution. These plants are not typically considered special-status species for the purposes of CEQA and impacts to these species would be considered adverse but less than significant. Regardless, these species are known from the SSHCP Habitat Reserve and Prima Deshecha SOS and will continue to benefit from the SSHCP conservation strategy.

Table C-2 provides a list of the other special-status plant species evaluated for their status in the LPPE Project Area, including documented occurrences addressed in previous environmental analyses or their potential to occur if not previously documented. When assessing the potential for species to occur in the LPPE Project Area several factors are evaluated, including the presence of suitable habitat, geographic range, soils, elevation, records in the Project vicinity, and published information. Several special-status plant species in Table C-2 were not previously analyzed in the SSHCP and FEIR 584 and 589 (denoted by “*”) or were not previously analyzed in FEIR 575 (denoted by “^”). Table C-2 identifies which species are not expected to occur or have a low potential to occur in the Project Area. Therefore, the LPPE would not have significant impacts these special-status plant species that were not previously analyzed in the SSHCP and previous environmental documents.

Although the following special-status plant species have not been detected within the LPPE Project Area, they have a moderate to high potential to occur:

- San Diego sagewort, thread-leaved brodiaea, Catalina mariposa lily, intermediate mariposa lily, western dicandra, many-stemmed dudleya, Palmer’s grapplinghook, and small-flowered microseris. Potential impacts to these special-status plant species were analyzed in FEIRs 584 and 589. Potential impacts to these special-status plant species were also analyzed in FEIR 575, except for San Diego sagewort (*Artemisia palmeri*) and Catalina mariposa lily (*Calochortus catalinae*), which are reviewed below.

San Diego sagewort is known from sandy soils often associated with riparian, coastal sage scrub, and chaparral and has with a moderate potential to occur in the LPPE Project Area. This is a CRPR 4.2 species not typically considered special-status species for the purposes of CEQA, and impacts to this species would be considered adverse but less than significant. Regardless, this species will continue to benefit from the SSHCP conservation strategy and Prima Deshecha SOS.

- Catalina mariposa lily is known from heavy clay soils in coastal sage scrub, chaparral, and grassland and has with a high potential to occur in the LPPE Project Area. This is a CRPR 4.2 species not typically considered special-status species for the purposes of CEQA, and impacts to this species would be considered adverse but less than significant. Regardless, this species will continue to benefit from the SSHCP conservation strategy and Prima Deshecha SOS.

Based on a review of the proposed LPPE relative to the previous environmental analyses, the LPPE would result in impacts to the same suite of habitat types for special-status plant species as was assumed in FEIR 574, FEIR 584, and FEIR 589, including coastal sage scrub habitat, chaparral habitat, oak woodland and forest habitat, riparian and open water habitat, and grassland habitat.

Special-status plant species may be impacted by indirect effects from short-term construction activities and long-term operation of the LPPE, including introduction of invasive exotic species in adjacent Habitat Reserve and SOS areas, water quality effects, and increase human activity effects. These potential indirect effects would be mitigated below a level of significance through the implementation of the SSHCP conservation strategy and the measures associated with previous environmental analyses, including BRCP Measures, Habitat Restoration of Restorable Impacts, Measure for Impacts to Special-Status Plants, Measures to Avoid and Minimize Indirect Effects, and Measures to Maintain Habitat Reserve Acres and Habitat Value (see Mitigation Program below).

Consistent with previous environmental analyses, the LPPE would result in potentially significant impacts to suitable habitat for special-status plant species in the Habitat Reserve on RMV and in Prima Deshecha SOS, and those impacts would be considered a significant impact absent consistency with and implementation of the SSHCP and associated measures. The LPPE has submitted an SSHCP amendment request including mitigation that would be implemented consistent with the SSHCP conservation strategy and associated measures, including specifically the BRCP Measures, Habitat Restoration of Restorable Impacts, Measure for Impacts to Special-Status Plants, Measures to Avoid and Minimize Indirect Effects, Measures to Maintain Habitat Reserve Acres and Habitat Value, and Measures to Maintain SOS Habitat Value (see Mitigation Program below), which will mitigate the roadway impacts on special-status plant species on RMV lands and Prima Deshecha below a level of significance. With implementation of these measures, the LPPE would not result in any new or substantially more severe impacts necessitating major revisions to the FEIRs.

- b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Services?**

c) Would the project 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?

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. A jurisdictional delineation of the LPPE Project Area was conducted in order to determine whether the site includes areas such as streams or wetlands that would be subject the jurisdiction of the Corps pursuant to Section 404 of the federal Clean Water Act and the CDFW pursuant to Section 1602 of the California Fish and Game Code (GLA 2020). The jurisdictional delineation is provided in Appendix D of this Addendum.

The LPPE Project Area includes several features that would be considered Corps, CDFW and/or San Diego Regional Water Quality Control Board (SDRWQCB) jurisdictional. As previously noted, the SAMP approved by the Corps and MSAA for the Ranch Plan approved by CDFW provides for the construction of Cristianitos Road in the Habitat Reserve/Aquatic Resource Conservation Areas (see SAMP Figure 8-1 and MSAA Exhibit D).⁶⁷

The LPPE bridge structure that would cross San Juan Creek is 100 feet wide and there would be one pair of bridge piers within the areas of Corps, CDFW and SDRWQCB jurisdiction resulting in 0.007 acres of permanent impact; however, the final location has not been determined. Construction of the bridge would require temporary impacts extending 100 feet on either side of the bridge, which would be restored in place and in-kind following completion of construction. Additionally, four ephemeral drainage features occur in the LPPE Project Area in the Habitat Reserve on RMV lands and one ephemeral drainage feature occurs in the Landfill development area on Prima Deshecha.

- **Corps Jurisdictional Resources:** Permanent impacts to Corps jurisdiction include (1) impacts to ephemeral drainages totaling 0.07 acre; and (2) impacts to wetlands associated with a single pair of San Juan Creek Bridge piers totaling up to 0.007 acres. Impacts to ephemeral drainages would be mitigated through removal of giant reed within San Juan Creek in accordance with the SAMP. Permanent loss of 0.007 acres of wetland habitat would be mitigated through credits within the Gobernadora Ecological Restoration Area (GERA), in accordance with the SAMP. Temporary impacts of 3.34 acres within San Juan Creek would be mitigated in place and in-kind following construction of the LPPE Bridge. RMV will prepare a Habitat Mitigation and Monitoring Plan (HMMP) in accordance with the requirements of the SAMP that addresses restoration of the areas subject to temporary impacts.
- **CDFW Jurisdictional Resources:** Permanent impacts to CDFW jurisdiction include (1) impacts to coast live oak riparian forest totaling 0.78 acres; (2) impacts to wetlands associated with a single pair of San Juan Creek Bridge piers totaling 0.007 acres; and (3) impacts to ephemeral drainages totaling 0.10 acres. Impacts to ephemeral drainages would be mitigated through removal of giant reed within San Juan Creek in accordance with the MSAA. Permanent loss of 0.007 acres of wetland habitat would be mitigated through credits within GERA, in accordance with the MSAA. Impacts to coast live oak riparian forest would be mitigated through preservation within the Habitat Reserve as required by the MSAA. Temporary impacts of 3.34 acres within San Juan Creek would be mitigated in place and in-kind following construction of the LPPE Bridge. RMV will prepare a HMMP in accordance with the requirements of the SAMP that addresses restoration of the areas subject to temporary impacts.

⁶⁷ Exhibit D in the MSAA is SSHCP Figure 187-R.

- **SDRWQCB Jurisdictional Resources:** Permanent impacts to SDRWQCB jurisdiction include (1) impacts to ephemeral drainages totaling 0.13 acres; and (2) impacts to wetlands associated with a single pair of San Juan Creek Bridge piers totaling up to 0.007 acres. Impacts to ephemeral drainages would be mitigated through removal of giant reed within San Juan Creek. Permanent loss of 0.007 acres of wetland habitat would be mitigated through credits within GERA. Temporary impacts of 3.34 acres within San Juan Creek would be mitigated in place and in-kind following construction of the LPPE Bridge. RMV will prepare a HMMP that addresses restoration of the areas subject to temporary impacts.

Previous environmental analyses for RMV and Prima Deshecha found that infrastructure impacts would result in potentially significant impacts to riparian habitat and jurisdictional resources and that those potentially significant impacts would be avoided, minimized and mitigated through implementation of the SSHCP conservation strategy and associated mitigation program.

Consistent with previous environmental analyses, the LPPE would result in potentially significant impacts to riparian habitat and jurisdictional resources, and those impacts would be considered a significant impact absent consistency with and implementation of the SSHCP and associated measures. The LPPE would be implemented consistent with the SSHCP conservation strategy and associated measures, including specifically the BRCP Measures, Measures to Avoid and Minimize Indirect Effects, and Measures for Impacts to Riparian Habitat and Jurisdictional Resources (see Mitigation Program below), which will mitigate the roadway impacts on riparian habitat and jurisdictional resources on RMV lands and Prima Deshecha below a level of significance. With implementation of these measures, the LPPE would not result in any new or substantially more severe significant impacts necessitating major revisions to the FEIRs.

- d) **Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?**
- e) **Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?**
- f) **Would the project conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?**

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. A key component of the SSHCP Conservation Strategy is the design of the Habitat Reserve, which has been designed to provide for long-term protection of the habitats of the listed Covered Species, as well as the habitats of other non-listed and non-covered species. The Habitat Reserve also has been designed to be capable of protecting and maintaining populations of SSHCP Planning Species over the long term, including land areas necessary for the dispersal of Planning Species and the ability to maintain genetic flow within and between areas. The subregional Habitat Reserve is designed to relate functionally to adjacent Federal lands such as the Cleveland National Forest San Mateo Wilderness, and Camp Pendleton Marine Corps Base, as well as other regionally significant open space in the Coastal and Central Subregion NCCP/HCP. Therefore, evaluation of potential impacts on wildlife movement corridors was an important consideration as part of the land use entitlement process.

SSHCP habitat linkages and wildlife corridors were depicted in SSCHP Figure 159-M. The proposed LPPE would occur in the vicinity of SSHCP Linkage J and Linkage K.

- Linkage J was described in the SSHCP (Table 7-16) as a “habitat linkage along San Juan Creek that is central nexus for connecting to Bell, Verdugo, Gobernadora, Chiquita and Trampas canyons in the central portion of the planning area”. Key species for this linkage identified in the SSHCP include: “large mammals such as mountain lion, mule deer, coyote and bobcat. Mobile avian species such as California gnatcatcher.”
- Linkage K analyzed in the SSHCP was considered to be constrained due to its narrow configuration (600 to 700 feet wide at its narrowest) between the Planning Area 5 development area and the Prima Deshecha Landfill. SSHCP Table 8-1 (Southern Planning Guidelines Consistency Findings) found that the design would not be consistent with Planning Guideline 68 to maintain an upland, east-west habitat linkage through this area. Through the SSHCP minor amendment approved in May 2017 associated with the Trampas Canyon Dam and Reservoir, the Habitat Reserve was expanded in the constrained Linkage K, increasing the linkage width along the southern boundary of Planning Area 5 to at least 1,200 feet wide, which was determined to increase its functionality for wildlife movement.

Regarding habitat connectivity and wildlife movement associated with SSHCP Linkage J, the proposed LPPE would include:

- A longer bridge span (approximately 1,500 feet) over San Juan Creek (Linkage J) which mostly avoids impacts to the floodplain, compared to the SSHCP that assumed a 600-foot-long bridge with abutments in the creek.
- An oversized culvert (48-inch minimum) under the proposed LPPE in the main drainage in the Habitat Reserve just south of Linkage J and Ortega Highway, compared to no oversized culvert assumed in the SSHCP. This culvert would provide an east-west movement area for small- and mid-sized wildlife (e.g., coyote and bobcat).
- Wildlife exclusion fencing along the roadway in the Habitat Reserve consistent with the fencing installed on the operating segment of LPP.

Regarding habitat connectivity and wildlife movement associated with SSHCP Linkage K, the proposed LPPE would include:

- A 26-foot diameter CMP wildlife undercrossing of the LPPE roadway connecting Habitat Reserve associated with the Trampas Reservoir in the southern end of Planning Area 5 to the Habitat Reserve on the west side of LPPE adjacent to the Prima Deshecha Landfill. This undercrossing would be large enough to accommodate both mountain lion and mule deer, as well as small- and mid-sized wildlife.
- Approximately 14.2 acres of additional Habitat Reserve would be dedicated north of the undercrossing as part of the mitigation included in the amendment request in order to provide at least a 300-foot buffer from the nearest Planning Area 5 development, and thus improve the functionality of the wildlife undercrossing, shown as "Development Deduction Area" in Exhibit 11. Adding the 14.2-acre Development Deduction Area to the Habitat Reserve would also expand Linkage K in this area to maintain an approximately 1,000-foot-wide corridor along the entire boundary between RMV and Prima Deshecha, thus further improving the function of the linkage for wildlife movement. It should also be noted that fuel management zones within the western edge of the Planning Area 5 development footprint would also provide additional buffering between development and the linkage.

- Wildlife exclusion fencing along the roadway in the Habitat Reserve consistent with the fencing installed on the operating segment of the LPP. This fencing will serve to prevent wildlife from accessing the roadway and to direct animals to the wildlife undercrossing.

With the proposed design elements incorporated into the LPPE, including the 1,500-foot bridge span over San Juan Creek, the oversized culvert south of the creek and Ortega Highway, the wildlife exclusion fencing, and the large CMP wildlife undercrossing the proposed LPPE would result in a net improvement to habitat connectivity and wildlife movement via Linkages J and K, as compared to the SSHCP analysis and FEIR 584 and FEIR 589.

Taking into consideration the proposed LPPE features, including the longer bridge over San Juan Creek, the oversized culvert south of Ortega Highway, the 14.2 acre Development Deduction Area added to the Habitat Reserve, the wildlife undercrossing south of Planning Area 5, and restoration of all non-permanent impacts, the Proposed Project would not reduce the overall integrity and function of the Habitat Reserve.

Foremost, the bridge crossing of San Juan Creek would be improved by increasing the length of the bridge to fully span the San Juan Creek floodplain (approximately 1,500 feet compared to 600 feet for the Cristianitos Road crossing analyzed in the SSHCP) and placing the abutments out of the floodplain. The only permanent impacts in the creek would be the bridge piers, estimated to be 0.06 to 0.08 acres. This full span of the floodplain will maintain wildlife movement and fish passage in San Juan Creek.

Shifting the bridge crossing to the west, as compared to the location assumed in the SSHCP, is expected to have a biologically minor effect on overall Habitat Reserve integrity and ecosystem function as measured by habitat blocks sizes, contiguity, and connectivity. While there would be increased impacts to oak woodland and forest compared to the alignment analyzed in the SSHCP, these impacts are proposed to be offset by a deduction in development acres in Planning Area 4 that includes woodland and forest. A conceptual deduction area in Planning Area 4 totaling 21.5 acres consists of the following Conserved Vegetation Communities: 14.2 acres of chaparral, 4.9 acres of oak forest, 2.2 acres of coastal sage scrub, and 0.2 acres of grassland. In addition, under current projections (not including the Planning Area 4 deduction) based on both currently enrolled Habitat Reserve lands and planned future Habitat Reserve lands, the dedication of oak woodland and forest in the Habitat Reserve would be approximately 200 acres greater than assumed in the SSHCP conservation analysis (an estimated 1,620 acres vs. 1,417 acres in the SSHCP). Therefore, upon full enrollment of the Habitat Reserve there would be no net loss of habitat value provided by oak woodland and forest in the Habitat Reserve as a result of the LPPE.

The proposed Project would result in impacts to Habitat Reserve south of Planning Area 5 where the roadway would cross between Planning Area 5 development and Prima Deshecha that were not anticipated in the SSHCP. However, most of these impacts (5.5 acres) are due to the expansion of the Habitat Reserve in the original Planning Area 5 development boundary. Nonetheless, the roadway across the Habitat Reserve in this area would introduce a potential new fragmenting impact. The main value of the Habitat Reserve in this area, as analyzed in the SSHCP, is to maintain habitat connectivity for species such as California gnatcatcher via Linkage K in the SSHCP. Linkage K was considered a "constrained" corridor in the SSHCP because it had minimum widths of 600-700 feet.⁶⁸ With the expanded Habitat Reserve in Planning Area 5, including the proposed 14.2-acre Development Deduction Area, the minimum linkage width through the area would be approximately 1,000 feet along the entire boundary between RMV and

⁶⁸ Constrained corridors by definition have potential indirect impacts from land uses on both sides of the corridor, so conceptually the actual "undisturbed" part of the corridor (i.e., area least susceptible to edge effects) is a strip through the middle of the corridor, not accounting for the mitigating effect of cover habitat within the corridor.

Prima Deshecha, taking into consideration the Habitat Reserve and Prima Deshecha SOS. To reduce potential fragmentation effects, the roadway crossing through the Habitat Reserve includes a proposed 26-foot wide CMP wildlife undercrossing, which is more than large enough to accommodate movement by mid- and large-sized wildlife, including mule deer, mountain lion, and bobcat, and also suitable for smaller wildlife. The undercrossing will provide a minimum 300-foot protective buffer from the nearest development in Planning Area 5. While this part of the Habitat Reserve is not considered essential for mountain lion, the design of the undercrossing should not preclude lions from moving through the area.⁶⁹

The extension of LPP from the Planning Area 5 development area across the Habitat Reserve to Prima Deshecha could also introduce lighting effects in the Habitat Reserve that were not anticipated in the SSHCP. This could affect both nocturnal movement by wildlife through Linkage K and activities of both nocturnal and diurnal species adjacent to the roadway, including nesting birds such as grasshopper sparrow. While a detailed street lighting plan has not yet been developed for the roadway, lighting adjacent to the Habitat Reserve will follow the guidelines in Appendix U (Avoidance and Minimization Measures), such as directing lighting away from the Habitat Reserve and/or implementing other shielding methods (see Measures to Avoid and Minimize Indirect Effects in the Mitigation Program below). Further, implementation of Measures to Facilitate Wildlife Movement and Measures to Maintain Habitat Reserve Acres and Habitat Value (see Mitigation Program below) will maintain habitat integrity of the Habitat Reserve consistent with the SSHCP. The LPPE will not conflict with any local policies protecting biological resources or with the provisions of any adopted habitat conservation plan.

As previously noted, an amendment to the SSHCP would be required prior to the initiation of construction. As discussed above, the LPPE is conceptually designed consistent with the SSHCP conservation strategy. As part of that process, measures have been proposed that would ensure there is no net loss of Habitat Reserve acreage or net habitat value. The measures are consistent with the framework for mitigating impacts to habitat developed as part of the SSHCP and the associated environmental analyses. The measures include a relocation of the acres in the Habitat Reserve that would ensure there is no "loss of habitat reserve acres" and no "loss of habitat value". Specific measures to maintain habitat reserve acres and habitat value include:

- Dedication of a development deduction area of 21.5 acres of Planning Area 4, which is shown conceptually in Exhibit 11. This deduction area is subject to change and subject to approval by USFWS, but shall at a minimum include oak woodland and/or forest. Conserved Vegetation Communities that would not be developed but instead added to the Habitat Reserve conceptually include: 14.2 acres of chaparral, 4.9 acres of oak forest, 2.2 acres of coastal sage scrub, and 0.2 acres of grassland.
- Dedication of 14.2 acres of Planning Area 5 development acres to support the functionality of Linkage K. Conserved Vegetation Communities and Covered Species within this proposed addition to the Habitat Reserve include 13.1 acres of grassland, 1.1 acres of coastal sage scrub, and less than 0.1 acres of riparian (Exhibit 11).

The proposed deduction of development acres from Planning Area 5 and Planning Area 4 ensures that there will be no net loss of Habitat Reserve acreage, when considering both the permanent impacts of 13.0 acres assumed for the Cristianitos Road Bridge analyzed in the SSHCP and restorable impacts associated with the proposed LPPE. Specifically, the deduction of 35.7 acres of development acres would offset the impact to the Habitat Reserve (i.e., 48.7 acres of total

⁶⁹ A study by Ogden (1992) of wildlife movement in an urban setting in San Diego found that mountain lion, as well as mule deer and bobcat used the "Carmel Mountain to Peñasquitos Lagoon corridor", which had a "most constrained section" of 500 feet in length by 300 feet in width.

impact to the Habitat Reserve – 13.0 acres of impact to the Habitat Reserve assumed in the SSHCP = 35.7 acres). The 14.2-acre Planning Area 5 development area deduction will contribute and maintain habitat value by supporting and adding to an improved Linkage K, including 13.1 acres of grassland, 1.1 acres of coastal sage scrub, and just less than 0.1 acres of riparian. The 21.5-acre Planning Area 4 deduction would contribute and maintain habitat value by adding 14.2 acres of chaparral, 4.9 acres of oak forest, 2.2 acres of coastal sage scrub, and 0.2 acres of grassland to the Southeastern habitat block (see Figure 193-M from the SSHCP).

Based on a review of the LPPE as described above, the LPPE would not result in any new impacts or substantial increase the severity of impacts to wildlife movement or fish passage as previously analyzed in FEIRs 584, 589, and 575. The proposed LPPE is consistent with the intent of and will be implemented consistent with the SSHCP; therefore, the proposed project would not conflict with the approved SSHCP and no major revisions to the FEIRs are necessary.

Mitigation Program

Based on the information provided above, neither the proposed amendments to the GDP, the County of Orange Circulation Plan Map, the San Clemente *Mobility and Complete Streets Element*, and MPAH; nor the anticipated future impacts associated with construction and operation of the LPPE would result in any new significant or substantially more severe impacts on biological resources requiring major revisions to FEIR 575, FEIR 584, or FEIR 589. No new mitigation measures are required.

FEIR 575 had five biological mitigation measures that were applicable to the circulation component of the GDP; however, several of the measures have multiple parts, which are denoted with sub-numbering. FEIR 589 identified 27 mitigation measures pertaining to biological resources.⁷⁰ FEIR 584 referenced the measures in FEIR 575 and FEIR 589. However, the primary element of the mitigation program for biological resources, which is the core assumption of FEIR 584 and incorporated into the Ranch Plan and FEIR 589, is the preservation, monitoring, and management for the approximate 32,000-acre SSHCP Habitat Reserve, as described in detail in Chapter 7 of the SSHCP. Additionally, Appendix U of the SSHCP identifies Avoidance and Minimization Measures to SSHCP Covered Activities. For projects located outside the RMV development areas (such as the portion of LPPE within the Habitat Reserve), there is a requirement to prepare a BRCP, which is designed to avoid and minimize impacts during construction. Appendix U specifies the minimum requirements of the BRCP. Appendix U of the SSHCP also requires restoration of all temporary impact areas to equivalent or better conditions compared to the time of the impact. These provisions of the SSHCP would address several of the measures outlined in FEIR 575, which was certified before the adoption of the SSHCP and the issuance of the County ITP.

The following provides an overview of the measures adopted in conjunction with FEIR 575 and FEIR 589 and how those measures are integrated into the regional SSHCP program and FEIR 584.

MM 4.5-7(a) through MM 4.5-7(c) in FEIR 575 address measures for compliance with the FESA Section 4(d) requirements, which were in place prior to the approval of the SSHCP. Paragraphs (a) and (c) pertain to continued commitment to the NCCP/HCP process and potential amending

⁷⁰ Although Draft EIR 589 identified 43 mitigation measures for biological resources, based on the alternative selected by the Board of Supervisors (Alternative B-10 Modified) 16 of the mitigation measures were deemed not to be necessary because the impact to the resource was avoided. The MMRP adopted at the time FEIR 589 was certified identifies the following measures as not applicable to the Ranch Plan, as adopted: MM 4.9-4 through MM 4.9-6; MM4.9-8 through 4.9-15; MM 4.9-17; MM 4.9-18; MM 4.9-20; MM 4.9-21; and MM 4.9-34.

the GDP once the SSHCP is adopted. These provisions are no longer necessary because the SSHCP has been adopted. The requirement for the coastal sage scrub mitigation plan would be based on the programmatic restoration plan in the SSHCP. Therefore, MM 4.5-7(a) through MM 4.5-7(c) in FEIR 575 are not included as applicable mitigation measures because the SSHCP provides a comprehensive program for protection of these resources.

MM 4.5-8(a) through 8(e) adopted in conjunction with FEIR 575 pertains to mitigation for jurisdictional lands. These measures would not be applicable to the LPPE because there are no impacts to jurisdictional land with the portion of the LPPE in the Prima Deshecha Landfill.

Although adopted when FEIR 589 was certified, the following 14 mitigation measures would not be applicable to LPPE:

- MM 4.9-1 through MM 4.9-3 pertain to resources identified in Planning Area 2 that are not anticipated to be impacted by the LPPE (i.e., the two protected locations of small thread-leaved brodiaea, a key location of a major population of southern tarplant, and a major population of Coulter's saltbush, respectively).
- MM 4.9-7 and MM 4.9-16, which apply to Planning Area 7.
- MM 4.9-19, which applies to Planning Area 8.
- MM 4.9-24 and MM 4.9-25, which apply to construction of SMWD to reservoir tanks.
- MM 4.9-29, which pertains to an Open Space Agreement between the County of Orange and RMV regarding management of access to RMV Open Space.
- MM 4.9-31, which applies to Planning Area 4.
- MM 4.9-32, which applies to construction of a golf-course in the Cristianitos sub-basin.
- MM 4.9-33, which applies to construction of a golf-course in the Blind sub-unit.
- MM 4.9-41, which pertains to Planning Area 6.
- MM 4.9-43, which pertains to the "ox-bow" area of the Gobernadora sub-basin.

The following change has been made to MM 4.5-9(b) through MM 4.5-9(e), MM 4.5-10(a), MM 4.5-10(b), and MM 4.5-11 in FEIR 575:

- The approving entity has been updated from "the Director Public Facilities and Resources Department (PF&RD)" to the "Director OCPW or designee". This revision reflects the agency's current organizational structure and has been made in all locations referencing PF&RD.

MM 4.5-9(a) lists species where focused surveys are recommended prior to construction. This list, which was developed to address the Prima Deshecha Landfill, includes species that do not have the potential to occur within the LPPE study area. Additionally, MM 4.5-9(c) calls for "focused surveys are conducted by a qualified biologists for those species that potentially occur onsite, but which were not identified during the 1998 surveys" conducted for FEIR 575. This Addendum identified the species with potential to occur within the LPPE area or whose status have changed since the preparation of the FEIRs. The BRCP, which would be reviewed by USFWS, would identify the species requiring pre-construction surveys and account for species that may not have been included in the 1998 surveys. Therefore, the following revision to the text of MM 4.5-9(c) has been made:

- The reference to conducting focused surveys "for those species that potentially occur onsite, but which were not identified during the 1998 surveys, as described earlier in this

EIR” has been changed to “for those species that potentially occur onsite, as identified in the BRCP.”

With this change to MM 4.5-9(c), MM 4-9(a) is not required because the list of species requiring focused surveys will be determined in conjunction with USFWS as part of their review of the BRCP.

The following changes have been made to MM 4.9-22 and MM 4.9-23 in FEIR 589, which have been incorporated into SSHCP Appendix U:

- The reference to “County’s Director of Planning Services Department” has been updated to “Director of OCPW”. This revision reflects the agency’s current organizational structure.
- The reference to “Cristianitos Road” has been changed to “the LPPE”, to reflect the change of the north-south arterial highway.⁷¹
- In addition to referencing the timing of the measure as being prior to issuance of a grading permit, the following timing has been include “or authorization to proceed to a contractor”. This reflects the appropriate timing should the County construct the roadway.

The following change has been made to MM 4.9-26 in FEIR 589:

- The approving entity has been updated from “the Manager, Subdivision and Grading” to be the “Manager, Building and Safety”.

The following change has been made to MM 4.9-27 in FEIR 589:

- The third paragraph of the mitigation measure has been deleted (shown in strike-out) because it pertains to recordation of a tract map adjacent to the RMV Open Space.

The following changes have been made to MM 4.9-28 in FEIR 589:

- The second paragraph of the mitigation measure has been deleted (shown in strike-out) because it pertains to issuance of a building permit for a tract map adjacent to the RMV Open Space.
- The following text has been added to the first paragraph to indicate the method of verification for the mitigation measure: “In conjunction with final design, the Director of OCPW or designee, shall verify. . .”

Although the conceptual alignment does not traverse close to the vernal pools in Planning Area 5, MM 4.9-35 is included to ensure that during final design modifications are not made to the alignment that would result in an impact to this resource. The following changes have been made to MM 4.9-35 in FEIR 589:

- The reference to “County’s Director of Planning Services Department” has been updated to “Director of OCPW”.

MM 4.9-36 through MM 4.9-40 in FEIR 589 requires the development of a salvage and relocation program for specific special-status plant species. These measures identify the implementation details of the salvage and relocation program shall be consistent with the requirements in the Final Plant Species Translocation, Propagation and Management Plan, outlined in Appendix J-1,

⁷¹ MM 4.9-22 originally stated the provisions in the mitigation measure as applicable to New Ortega Highway. Prior to implementation, the roadway was named Cow Camp Road and is so referenced in the measure.

which is the same as Appendix I of the SSHCP and FEIR 584. Appendix I includes a broader list of plant species than those identified in the cited mitigation measures. Compliance with Final Plant Species Translocation, Propagation and Management Plan, which is a component of the Adaptive Management Plan, was adopted as part FEIR 584 and FEIR 589, and is included as part of the avoidance and minimization measures contained in Appendix U of FEIR 584. Therefore, for the LPPE, rather than separately listing MM 4.9-36 through MM 4.9-40, implementation of the Final Plant Species Translocation, Propagation and Management Plan is included as a measure from Appendix U of FEIR 584.

- MM 4.5-9(b)
(FEIR 575) The Director OCPW or designee shall ensure that, for the periods covering all site preparation, disturbance, or grading of native areas, a Resource Management Coordinator shall monitor wildlife habitat preservation. The purpose of this monitoring is to ensure that the Environmentally Sensitive Areas and Environmentally Restrictive Areas (i.e., area outside the grading limits) will not be adversely impacted during site preparation, grading, and construction of the circulation and roadway improvements.

For the circulation improvements, the OCPW Project Manager will shall schedule regular progress and status meetings with the Resource Management Coordinator. These meetings shall commence at the beginning of grading for each roadway improvement, when native ground is scheduled for disturbance (e.g., grading and/or stockpiling activities, etc.) The OCPW Project Manager will attend these meetings and provide a status and progress report to the Director OCPW or designee. These meetings will be held throughout the site preparation, grading and construction periods for all the circulation and roadway improvements. The monitoring reports shall continue to be prepared and submitted by the Director OCPW or designee until the disturbance is completed.

The monitor shall be onsite before, during, and after the completion of site preparation, grading and construction for all of the circulation improvements.

- MM 4.5-9(c)
(FEIR 575) Prior to any site preparation, grading, or construction activities in native areas, the Director OCPW or designee will ensure that focused surveys are conducted by a qualified biologists for those species that potentially occur onsite, as identified in the BRCP.

- MM 4.5-9(d)
(FEIR 575) In conjunction with final design and prior to any site preparation or grading in native areas, the Director OCPW or designee will ensure that all special status species and special habitats within 300 feet of the grading limits shall be mapped on the grading plans by a qualified biologist.

- MM 4.5-9(e)
(FEIR 575) Prior to any site preparation, grading, and construction activities, the Director OCPW or designee shall implement procedures for protecting special status and candidate species and special habitats identified and mapped on grading plans during site preparation, grading, construction, and maintenance activities for all of the circulation and roadway improvements affecting native areas.

- MM 4.5-10(a)
(FEIR 575) During site preparation and grading for the circulation uses, the Director OCPW or designee shall phase these operations outside significant habitat areas during the nesting and breeding season for the Coastal California gnatcatcher. This measure will be overseen and conducted by a qualified biologist.

During site preparation and grading for the circulation uses, the Director OCPW or designee shall phase these operations outside significant habitat areas during the nesting and breeding season for the least Bell's vireo. This measure will be overseen and conducted by a qualified biologist. Prior to activities that may impact potential vireo habitat, updated vireo surveys will be conducted by a qualified biologist.

MM 4.5-10(b)
(FEIR 575) The Director OCPW or designee shall ensure that grading and construction operations for the circulation uses are redirected temporarily around nesting sites for a distance of 500 feet for candidate and listed species of birds and a distance of 1,000 feet for raptors during nesting and breeding seasons between February 15 and July 15, or a distance and time period agreed upon by the USFWS. In the event that a coyote, bobcat, -or mountain lion den is located, then grading and construction operations shall be redirected temporarily around the den for a distance of 1,000 feet. The nesting sites and dens should be resurveyed toward the end of the breeding seasons of these species to verify completion of the breeding cycle. Nests and dens that will be removed due the grading and/or construction operations shall be removed only during the non-breeding season.

MM 4.5-11
(FEIR 575) The Director OCPW or designee shall ensure that during final design, the circulation component improvements continue to incorporate regulatory agency guidelines to reduce indirect impacts associated with noise, dust, night lighting, and blowing debris. Noise shall be controlled through the proper maintenance of the construction equipment, including trucks, bulldozers, and other mobile and fixed construction equipment. Dust shall be controlled at its source with standard wetting techniques consistent with applicable SCAQMD requirements. Low lighting alternatives and shielded lighting shall be employed to reduce indirect impacts on surrounding habitats.

MM 4.9-22
(FEIR 589) Prior to issuance of a grading permit or authorization to proceed to a contractor, for construction of the LPPE from Cow Camp Road to PA 5, the applicant shall demonstrate to the satisfaction of the County's Director of OCPW or his/her designee that the design of the LPPE includes the following features to facilitate wildlife movement:

- The bridge shall have minimum height dimensions of 20 feet.
- Chain link fencing of 10 feet in height shall be installed on the north and south approaches to the culvert for a distance of 100 feet to deter wildlife from accessing the roadway.
- All lighting on the bridge, if required for public health and safety, shall be shielded to prevent spill-over effects.

MM 4.9-23
(FEIR 589) Prior to issuance of a grading permit or authorization to proceed to a contractor, for construction of the LPPE, the applicant shall demonstrate to the satisfaction of the County's Director of OCPW or his/her designee that the design for LPPE includes the following features to facilitate wildlife movement:

- The culvert that will be used as a wildlife crossing shall have minimum dimensions of 15 x 15 feet.
- The bottom of the culvert shall be natural substrate.

- Light shall be visible from one end of the culvert to the other.
- Vegetation installed at either end of the culvert shall be native-low growing species to prevent predator-prey stalking.
- Chain link fencing of 10 feet in height shall be installed on the north and south approaches to the bridge for a distance of 100 feet to deter wildlife from accessing the roadway.
- If required for public health and safety, all lighting on the road above the culvert shall be shielded to prevent spill-over effects.

MM 4.9-26
(FEIR 589)

During construction, a construction monitoring program shall be implemented to mitigate for short-term noise impacts to nesting raptors, to the satisfaction of the County of Orange, Manager, Building and Safety. Indirect impacts shall be mitigated by limiting heavy construction (i.e., mass grading) within 300 feet of occupied raptor nests. Occupied raptor nests shall be marked as “Environmentally Sensitive Areas” on grading/construction plans and shall be protected with fencing consisting of T-bar posts and yellow rope. Signs noting the area as an “Environmentally Sensitive Area” will be attached to the rope at regular intervals.

MM 4.9-27
(FEIR 589)

All plants identified by the California Exotic Pest Plant Council as an invasive risk in southern California shall be prohibited from development and fuel management zones adjacent to the RMV Open Space. The plant palette for fuel management zones adjacent to the RMV Open Space shall be limited to those species listed on the Orange County Fire Authority Fuel Modification Plant List. Plants native to Rancho Mission Viejo shall be given preference in the plant palette.

Prior to issuance of fuel modification plan approvals, the County of Orange shall verify that: 1) plants identified by the California Exotic Pest Plant Council as an invasive risk in Southern California are not included in plans for fuel management zones adjacent to the RMV Open Space and, 2) the plant palette for fuel management zones adjacent to RMV Open Space is limited to those species listed on the Orange County Fire Authority Fuel Modification Plant List.

~~Prior to the recordation of a map for a tract adjacent to the RMV Open Space, the County of Orange shall verify that the CC&Rs contain language prohibiting the planting of plants identified by the California Exotic Pest Plant Council as an invasive risk in Southern California in private landscaped areas.~~

MM 4.9-28
(FEIR 589)

In conjunction with final design, the Director of OCPW or designee, shall verify that lighting is shielded or directed away from RMV Open Space habitat areas through the use of low-sodium or similar intensity lights, light shields, native shrubs, berms or other shielding methods.

~~Prior to the issuance of building permits for a tract with public street lighting adjacent to RMV Open Space habitat areas, the County of Orange shall verify that measures to shield such lighting have been incorporated in the building plans.~~

MM 4.9-30 (FEIR 589)	<p>Biological resources outside of the Proposed Project impact area shall be protected during construction. To ensure this protection, the Project Applicant shall prepare and implement a Biological Resources Construction Plan (BRCP) that provides for the protection of the resource and established the monitoring requirements. The BRCP shall contain at a minimum the following:</p> <ul style="list-style-type: none"> • Specific measures for the protection of sensitive amphibian, mammal, bird, and plant species during construction. • Identification and qualification of habitats to be removed. • Design of protective fencing around conserved habitat areas and the construction staging areas. • Specific construction monitoring programs for sensitive species required by Wildlife Agencies including, but not limited to, programs for the arroyo southwestern toad, western spadefoot toad, southwestern pond turtle, cactus wren, and coastal California gnatcatcher. Such measures shall be consistent with prior Section 7 consultations and 1600 agreements e.g., Arroyo Trabuco Golf Course. • Specific measures required by Wildlife Agencies (e.g., Arroyo Trabuco Golf Course) for the protection of sensitive habitats including, but are not limited to, erosion and siltation control measures, protective fencing guidelines, dust control measures, grading techniques, construction area limits, and biological monitoring requirements. <p>Provisions for biological monitoring during construction activities to ensure compliance and success of each protective measure. The monitoring procedures will (1) identify specific locations of wildlife habitat and sensitive species to be monitored; (2) identify the frequency of monitoring, monitoring methodology (for each habitat and sensitive species to be monitored); (3) list required qualifications of biological monitor(s); and (4) identify reporting requirements.</p>
MM 4.9-35 (FEIR 589)	<p>Prior to issuance of a grading permit for Planning Area 5, the Project Applicant shall demonstrate to the satisfaction of the OCPW Director or designee that all vernal pools in the Trampas Sub-basin have been avoided.</p>
MM 4.9-42 (FEIR 589)	<p>The project applicant shall obtain Section 404, 1600, and federal and state Endangered Species Act permits, as applicable.</p>
Minimization Measure Appendix U (FEIR 584)	<p>Any populations or individuals special-status plants not avoided through final design will be addressed through implementation of SSHCP Appendix I, Translocation, Propagation and Management Plan for Special Status Plants. Implementation of Appendix I will address the following elements:</p> <ul style="list-style-type: none"> • Seed collection • Selection of receptor sites • Greenhouse propagation • Site preparation • Translocation of natural populations • Introduction of cultivated plants

- Direct seeding at translocation site
- Maintenance and Monitoring

The Translocation, Propagation and Management Plan for Special Status Plants will be developed for all special-status plant species known to occur in the Project Area (i.e., vernal barley, paniculate tarplant, and white rabbit-tobacco) and any other special-status plant species detected during pre-construction surveys.

The Translocation, Propagation and Management Plan for Special Status Plants will be developed consistent with the provisions in Appendix I, which generally require seed shall be collected prior to project impacts to special-status species for use in the seed mix for restoration areas. Receiver sites will support suitable soils and other conditions suitable for the impacted species. In addition, where feasible, soils will be salvaged from development areas and appropriately transported to restoration areas to provide a seed bank. Implementation details of the salvage and relocation program shall be identified in the Final Plant Species Translocation, Propagation and Management Plan.

Minimization
Measure
Appendix U
(FEIR 584)

Consistent with the requirements of Appendix U of the SSCHP, all temporary (restorable) impact areas to equivalent or better conditions compared to the time of the impact. A detailed Restoration Plan will be prepared for USFWS review and approval. The restoration plan will specify the amount and location of all vegetation communities that will be planted, along with the site preparation and planting methods, maintenance and monitoring methods, and performance standards that will be achieved for all restoration and revegetation areas. Restoration of RMV land shall be implemented, in accordance with the SSHCP Appendix H (Habitat Restoration Plan).

4.5 CULTURAL RESOURCES

Summary of Findings in Previous FEIRs

FEIR 575

The cultural resource studies⁷² conducted for FEIR 575 included records checks and field surveys. In addition to the two field surveys conducted for the GDP, six prior investigations had been conducted that involved both a complete and partial site walkover surveys. No historic archaeological sites or historic remains were identified on site. The records check and literature reviews identified three recorded archaeological sites; however, during the surveys for the GDP only one site (CA-ORA-701) was located. The 1992 survey identified nine archaeological activity areas on the Prima Deshecha site (two new sites and seven isolates). In 1993, three isolates were identified; however, the isolates found in 1992 were not relocated. FEIR 575 identified that the evidence suggest evidence of prehistoric habitation and the Prima Deshecha Landfill site was determined to have a moderate to high archaeological sensitivity. Earthmoving activities would potentially impact archaeological resources. With incorporation of mitigation (a testing, monitoring, and salvage program for archaeological resources), impacts would be reduced to less than significant.

FEIR 584 and FEIR 589

FEIR 584 and FEIR 589 provide details on the recorded prehistoric and historic sites of the RMV Planning Area portion of the San Juan Creek Watershed and San Mateo Creek Watershed (i.e., the Ranch Plan Planned Community). The cultural resources evaluation prepared for FEIR 584 and FEIR 589 were prepared consistent with the standards for CEQA, NEPA, and the requirements of Section 106 of the National Historic Preservation Act (NHPA) because they were associated with federal approvals (i.e., the SSHCP and SAMP programs).

The analysis addressed the maximum environmental impact by assuming any archaeological resources located within the development areas of the Ranch Plan Planned Community would be eliminated through grading and construction activities. Records and literature searches were conducted at the South Central Coastal Information Center (SCCIC) and a field walkover survey and field checking of all recorded sites on or immediately adjacent to the project boundaries were completed. Phase II testing was conducted at 24 sites. These sites were determined to have a high likelihood of being impacted by the Ranch Plan development.

Consistent with the requirements of the NHPA, the State Historic Preservation Officer (SHPO) concurred with the findings of eligibility for listing in the National Register of Historic Places (NRHP) and/or the California Register of Historic Resources (CRHR) was obtained on January 27, 2004. Direct impacts on archaeological sites that are either eligible or potentially eligible for the NRHP and/or CRHR were identified as significant impacts. However, through implementation of various project design features, standard conditions, and mitigation measures, impacts were reduced to less than significant levels.

As part of the cultural resources evaluation process, there was consultation with the Native American Heritage Commission and the Juaneño Band of Mission Indians, Acjachemen Nation. Native American consultation was also conducted as a part of the Section 106 process to

⁷² Paleontological resources were evaluated under Cultural/Scientific Resources when FEIR 575, FEIR 584, and FEIR 589 were prepared. Subsequent changes to the CEQA Environmental Checklist include paleontological resources as part of the Geology and Soils analysis, provided in Section 4.7, Geology and Soils, of this Addendum.

determine the significance of resources. Maps and letters regarding the project were sent to three representatives of the Juaneño Band in February and March 2000.

Project Impact Analysis

The cultural resources have been previously analyzed as part of FEIR 575, FEIR 584, and FEIR 589, which were prepared and certified pursuant to State and County CEQA Guidelines. The following provides clarifications or information to validate that the previous documents provide adequate CEQA documentation for the proposed Project and serves as an Addendum to the FEIRs.

a) Would the project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. FEIR 575 did not identify any historic resources on the Prima Deshecha Landfill site. Therefore, the portion of the LPPE within the Prima Deshecha Landfill would not impact any historical resources and there would be no new significant or substantially more severe impacts than what was evaluated in FEIR 575.

As part of the comprehensive survey conducted for historic resources on the Ranch Plan site, five historic sites were identified. There are no structures or remnants of past facilities on site that would be directly impacted by construction. The closest historic site to the LPPE (CA-ORA-29) was identified north of San Juan Creek, east of the conceptual alignment. Phase II testing of the site in September 2001 consisted of 20 trenches and 11 hand excavated units. Through consultation with SHPO, this site was identified by SHPO as eligible for the NRHP and CRHR. The limits of the site are sufficiently east of the alignment that no direct or indirect impacts are anticipated. Therefore, no significant historic resources impacts would occur with implementation of the LPPE and no mitigation measures would be applicable. This is consistent with the findings of FEIR 584 and FEIR 589.

b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. As noted above, FEIR 575 identified the Prima Deshecha Landfill site has having moderate to high sensitivity for archaeological resources. FEIR 575 found grading activities may result in impacts to sensitive archaeological resources. As mitigation for the potential impact, FEIR 575 identified a requirement for a testing, monitoring, and salvage program for archaeological resources. The LPPE would result in the same type of impact. With implementation of the prescribed Mitigation Program impacts would be reduced to less than significant, consistent with the findings of FEIR 575.

As part of the comprehensive archaeological resource surveys conducted for the FEIR 584 and FEIR 589, five archaeological sites were identified in Planning Area 5; however, no prehistoric or historic archeological sites were identified within or adjacent to the LPPE alignment.⁷³ The archaeological sites in Planning Area 5 were located on the eastern side of the planning area and would not be impacted by the LPPE. Additionally, none of these sites were found by SHPO to be eligible for the NRHP or the CRHR.

⁷³ The full cultural resource studies are contained in Appendix H of FEIR 589.

Although there is the potential for discovery of buried resources with grading activities, the Mitigation Program adopted in conjunction with the FEIR 584 and FEIR 589 includes the County's standard conditions of approval, which require monitoring of grading activities to minimize potential impacts to unknown buried resources. These conditions would be applicable to any grading in native (undisturbed) soil. As with the development of the Ranch Plan, implementation of this measure would reduce impacts to unknown resources to less than significant. The LPPE would not create a new significant impact or substantial increase in the severity of previously identified effects in FEIR 584 and FEIR 589.

c) Would the project disturb any human remains, including those interred outside of formal cemeteries?

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. FEIR 575 did not identify an impact associated with disturbance of human remains. FEIR 584 and FEIR 589 identified that during grading activities there is the potential for discovery of archaeological resources, including human remains interred outside of formal cemeteries. However, in the event a burial is discovered during construction, Section 7050.5 of the State Health and Safety Code requires that no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains occur until the County Coroner has determined the appropriate treatment and disposition of the human remains. If the County Coroner determines that the remains are or believe to be Native American, the County Coroner shall notify the Native American Heritage Commission (NAHC). Section 5097.98 of the California Public Resources Code requires the coroner to notify the NAHC. The NAHC will then notify the Most Likely Descendent. This regulatory requirement would apply to the LPPE. Therefore, no new significant impact or substantially more severe impact would occur with the LPPE than what was identified in the FEIRs.

Mitigation Program

Based on the information provided above, neither the proposed amendments to the GDP, the County of Orange Circulation Plan Map, the San Clemente *Mobility and Complete Streets Element*, and MPAH; nor the future construction of the LPPE would result in any new significant or substantially more severe impacts on cultural resources requiring major revisions to FEIR 575, FEIR 584, or FEIR 589. No new mitigation measures are required.

FEIR 575 had two cultural resources mitigation measures that were applicable to the circulation component of the GDP. FEIR 589 identified two standard conditions and three mitigation measures pertaining to cultural resources. FEIR 584 referenced the measures in FEIR 575 and FEIR 589 but did not list the measures or suggest any changes to the measures. These measures are discussed below.

The first cultural resources mitigation measure contained in FEIR 575 (MM 4.6-1) identifies the need to develop a Testing, Monitoring and Salvage Program. This measure is comparable to SC 4.11-1 in FEIR 589. The standard condition provided in FEIR 589 is more comprehensive and reflects the County's Standard Condition of Approval. Therefore, to prevent duplication SC 4.11-1 has been identified as applicable to the LPPE and is listed below. The second mitigation measure is related to paleontological resources, which is discussed in Section 4.7, Geology and Soils, consistent with the updated CEQA Environmental Checklist.

Of the two standard conditions and three mitigation measures pertaining to cultural resources in FEIR 589, the first standard condition would be applicable to the LPPE and is listed below. The second standard conditions is related to paleontological resources and is presented in Section 4.7, Geology and Soils, consistent with the updated CEQA Environmental Checklist. The

first mitigation measure, which requires the preparation of a Cultural Resources Management Plan, would also be applicable to the LPPE. Since MM 4.11-2 pertains to development in Planning Areas 7 and 9, this measure would not be applicable to LPPE because it would not enter these planning areas.⁷⁴ MM 4.11-3 is specific to a listing of archaeological and historic sites, none of which are located in proximity to the LPPE alignment; therefore, it would not apply.

The following revisions have been made to SC 4.11-1 for the LPPE:

- The approving entity in the first paragraph has been updated from “the Manager, Subdivision and Grading” to be the “Manager, Building and Safety”. In the second paragraph, the approving entity has been revised from “Manager, Harbors, Beaches & Parks HBP/Coastal and Historical Facilities” to “Manager, Building and Safety”. In the second paragraph the change has been made in three places. This revision reflects the agency’s current organizational structure and the updated County Standard Conditions of Approval.

These changes, listed above, to SC 4-11-1 do not change the intent or effectiveness associated with the adopted standard condition in FEIR 589 or the mitigation measure included in FEIR 575.

Since the LPPE would extend beyond the Ranch Plan Planning Areas, MM 4-11.1 has been modified to have it address the full limits of the LPPE alignment. The following revisions have been made to MM 4.11-1:

- The timing of verification of the measure has been changed from “Prior to approval of each Master Area Plan” to “Prior to approval of final plans and specifications for the LPPE roadway design”.

SC 4.11-1
(FEIR 589) Prior to the issuance of any grading permit, the applicant shall provide written evidence to the County of Orange Manager, Building and Safety, that applicant has retained a County-certified archaeologist to observe grading activities and salvage and catalogue archaeological resources as necessary. The archaeologist shall be present at the pre-grade conference; shall establish procedures for archaeological resource surveillance; and shall establish, in cooperation with the applicant, procedures for temporarily halting or redirecting work to permit the sampling, identification, and evaluation of the artifacts as appropriate. If the archaeological resources are found to be significant, the archaeological observer shall determine appropriate actions, in cooperation with the project applicant, for exploration and/or salvage.

Prior to the release of the grading bond, the applicant shall obtain approval of the archaeologist’s follow-up report from the Manager, Building and Safety. The report shall include the period of inspection, an analysis of any artifacts found and the present repository of the artifacts. Applicant shall prepare excavated material to the point of identification. Applicant shall offer excavated finds for curatorial purposes to the County of Orange, or its designee, on a first refusal basis. These actions, as well as final mitigation and disposition of the resources shall be subject to the approval of the Manager, Building and Safety. Applicant shall pay curatorial fees if an applicable fee program has been adopted by the Board of Supervisor, and such fee program is in effect at the

⁷⁴ See Section 2.1.2, The Ranch Plan and Final Program EIR 589, for a discussion on the restriction for development in these planning areas as a result of the ROSA.

time of presentation of the materials to the County of Orange or its designee, all in a manner meeting the approval of the Manager, Building and Safety.

- MM 4.11-1 Prior to the approval of final plans and specifications for the LPPE roadway design, the project applicant shall prepare a Cultural Resources Management (CRM) Plan to address the presence of cultural resources, evaluate the significance of any resource finds, provide final mitigation and monitoring program recommendations, and determine proper retention or disposal of resources. The CRM Plan shall be reviewed and approved by the County Director of Planning.

4.6 ENERGY

Summary of Findings in Previous FEIRs

FEIR 575 included a discussion on the energy recovery opportunities associated with the Prima Deshecha Landfill. The energy recovery facility at the Prima Deshecha Landfill was approved in 1997 and is designed to generate 6.0 megawatts daily. The power is distributed by SDG&E.

Although energy resources were not included in the CEQA checklist at the time FEIR 575, FEIR 584, and FEIR 589 were prepared, the impacts to energy resources were evaluated in FEIR 589 due to the size of the Ranch Plan Planned Community. An Energy Resources evaluation was conducted in conjunction with the analysis of Public Services and Facilities (Section 4.15.3 of FEIR 589). As part of this analysis, the FEIR not only looked at the physical impacts associated with the construction of electrical and natural gas facilities, the analysis also looked at the long-term demand and ability to supply the required energy resources. Annual demand for energy resources were developed using the SCAQMD usage rates developed by land use type. FEIR 589 identified that the annual electrical demand at buildout of the Ranch Plan would be 156,050 million kilowatt hours and the annual natural gas demand at buildout was estimated at 1,267,480 million cubic feet. This demand estimate was based on average usage and would not have been wasteful, inefficient, or unnecessary consumption of energy resources.

Project Impact Analysis

The following provides clarifications or information to validate that the previous documents provide adequate CEQA documentation for the proposed Project and serves as an Addendum to FEIR 575, FEIR 584, and FEIR 589.

- a) **Would the project, result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?**
- b) **Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?**

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. The landfill gas-to-energy plant located on the Prima Deshecha Landfill site, which is managed by the Foristar Methane Group, powers the equivalent of 7,500 homes. This facility captures the methane created at the landfill and using combustion engines generates electricity. The LPPE would not impact any of the methane recovery efforts or energy production facilities. Therefore, it would not have any impact on energy associated with the landfill.

The comprehensive energy usage of the Ranch Plan was evaluated in FEIR 589. The overall development assumptions have been incorporated into long-term planning programs for the utility providers. However, since the approval of the Ranch Plan Planned Community energy standards have become more stringent and energy associated with the land development component of the Ranch Plan is less than what was identified in FEIR 584 and FEIR 589.

The construction of the LPPE would not be wasteful, inefficient, or unnecessary consumption of energy resources because it would be sized appropriately to the projected volume of traffic. Furthermore, the requested Circulation Plan Map Amendment and MPAH Amendment and the construction and operation of LPPE would have the energy offset associated with the planned construction of the SR-241 and Cristianitos Road, which were assumed infrastructure improvements in the area.

Energy consumption associated with roadways is almost entirely confined to the consumption of fossil fuel (gasoline and diesel) associated with vehicle movement. The trips that would utilize the LPPE would be a reassignment of trips assumed in FEIR 584 and FEIR 589 to have utilized SR-241, Cristianitos Road and other local roadways. As previously noted, the TCA is no longer pursuing the extension of the SR-241 and in conjunction with the amendment to reflect the LPPE on the Circulation Plan Map and the MPAH, the southern extension of Cristianitos Road (south of Cow Camp Road) would be deleted as a planned arterial highway.

The Project does not propose or provide required infrastructure for other uses that would generate a substantial number of vehicle trips. When compared to a No Project Alternative, some fuel use reduction may be realized as motorists shift routes to a higher-speed route with less congestion and the benefit of increased network capacity. Fuel consumption decreases as a result of vehicles traveling at higher speeds. This is borne out by the analysis in the TCA's *Scoping Summary and Alternatives Screening Report* (March 2020) that identifies Alternative 22 (the non-tolled extension of Los Patrones Parkway) would result in a reduction of 3,270 vehicle hours of delay (VHD) on I-5 for the average weekday and a reduction of 4,520 VHD on all roadways on the average weekday. The energy savings from the operation of the LPPE will offset the potential indirect energy requirements generated from the maintenance of the improved facility.

Based on this information, a factual finding can be made by the County that such energy usage associated with the proposed Project does not constitute new information and would not create a new significant impact or a substantial increase in the severity of previously identified effects in FEIR 584 and FEIR 589. Therefore, no major revisions to the FEIRs are required.

Mitigation Program

Based on the information provided above, neither the proposed amendments to the GDP, the County of Orange Circulation Plan Map, the San Clemente *Mobility and Complete Streets Element*, and MPAH; nor the anticipated future impacts associated with construction and operation of the LPPE, would result in any new significant or substantially more severe energy impacts requiring major revisions to FEIR 584 or FEIR 589. No new mitigation measures are required.

FEIR 589 identified three standard conditions related to Energy Resources (evaluated under Public Services and Facilities). However, these measures pertained to the design or relocation of energy facilities (electrical lines and natural gas lines). These measures would not be applicable to the LPPE.

4.7 GEOLOGY AND SOILS

Summary of Findings in Previous FEIRs

FEIR 575

FEIR 575 identified that the Prima Deshecha Landfill site was not in an Alquist-Priolo Earthquake Fault Zone. No known active or potentially active faults are known to cross the project site; however, any activity along the regional faults could result in damage to facilities at the Prima Deshecha Landfill site.

FEIR 575 identifies the changes to topography associated with the landfill activities as an unavoidable significant impact. These changes would change drainage patterns. However, the impacts associated with changes to drainage patterns are reduced to less than significant with implementation of mitigation measures. Portions of the site are underlain with unstable soils and landslide materials. FEIR 575 provided information on the regulatory requirements associated with the design of the landfill operations (i.e., types of cut slopes, size of benches used to stabilize landfill slopes, grades of decks for insuring positive drainage). The FEIR identified the construction of embankment fills, especially for the construction of Avenida La Pata, could promote reactivation of landslide masses due to the compressible nature of the landslide debris. Mitigation measures were identified, which included more detailed geotechnical investigations as part of the design phase and compliance with current County of Orange seismic design practices.

FEIR 584 and FEIR 589

FEIR 584 and FEIR 589 addressed the constraints associated with geology and soils on the Ranch Plan Planned Community site. FEIR 584 and FEIR 589 identified that:

- The Ranch Plan site is not in a designated Alquist-Priolo Earthquake Fault Zone. No known active or potentially active faults are known to cross the project site. Two inactive faults, the Cristianitos and Mission Viejo Faults, cross the Ranch Plan Planned Community.
- Because no active or potentially active faults have been mapped on or adjacent to the any of the Ranch Plan Planned Community development planning areas, the potential for surface displacement is considered to be less than significant.
- Seismic Hazard Zone Maps prepared by the California Geological Survey for the Ranch Plan Planned Community site indicate that portions of the site are within a zone that requires investigation for liquefaction and therefore are susceptible to liquefaction. Measures to reduce the potential for liquefaction can be achieved using conventional grading techniques. These methods may include but are not limited to removal and recompaction of soils; deep dynamic compaction; and dewatering.
- Within the development areas there are surficial units that are highly susceptible to erosion. Erodibility can be mitigated during grading using conventional grading techniques (e.g., slope stabilization, construction of drainage devices).
- Collapsible and/or compressible soils are located throughout the planning areas. Removal and compaction of all collapsible or compressible soils would be required in areas to be developed.
- Expansive soils are present in most of the planning areas. Significant impacts associated with the presence of expansive soils in areas to be developed can be remediated with proper foundation design.

FEIR 584 and FEIR 589 determined that implementation of various project design features, standard conditions, and mitigation measures will reduce the geology and soils impacts to less than significant levels.

Project Impact Analysis

The impacts associated with geology and soils have been previously analyzed as part of FEIR 575, FEIR 584, and FEIR 589, which were prepared and certified pursuant to State and County CEQA Guidelines. The following provides clarifications or information to validate that the previous documents provide adequate CEQA documentation for the proposed Project and serves as an Addendum to the FEIRs.

a) Would the project 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?**

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. The following provides an overview of the conditions specific to the proposed LPPE area and the consistency with the analysis in the FEIRs.

Seismic Hazards

Fault Zones and Ground Shaking

As noted above, neither the Prima Deshecha Landfill site nor the Ranch Plan site are in a designated Alquist-Priolo Earthquake Fault Zone. This would be inclusive of the LPPE area. No active or potentially active faults are known to cross the site. The FEIRs identified the Newport-Inglewood fault and the San Joaquin Hills Blind Thrust fault, located approximately nine miles west of the site, as the nearest active faults.

The FEIRs identified the Cristianitos fault zone as the nearest fault zone to the Project area. The main branch of the Cristianitos fault zone, which is approximately the eastern limit of the fault zone, lies in the western portion of Planning Area 5, west of the area for the conceptual alignment for the LPPE. This fault runs predominately in a north-south direction. As the alignment veers to the west and enters the Prima Deshecha Landfill, the alignment would cross the fault zone. FEIR 575 identifies that the Forester fault is a branch of the inactive Cristianitos fault which crosses through the center of Zone 4 of the landfill. Additionally, an unnamed fault is mapped south of Ortega Highway in Planning Area 5, in proximity of the conceptual LPPE alignment. (For fault locations see Exhibit 4.4-8, Local Faults in FEIR 589 and Figure 4.2.2, Active Faults in FEIR 575). Other active seismic sources are also present within a 50-mile radius of the site; therefore, as with all of Southern California, the alignment area is located in a seismically active region and would be subject to earthquake induced ground shaking. Since the site is located in a seismically active region of Southern California, future roadway design would use a site-specific probabilistic

seismic hazard analysis to evaluate the likelihood of various ground motion levels at the site as reflected in peak horizontal ground acceleration.

The mitigation programs developed for the FEIRs require compliance with applicable codes and the *County of Orange Grading Code and Manual*. In compliance with SC 4.4-1, a geotechnical report, meeting the requirements of the *County of Orange Grading Code and Manual* would be required during the design phase of the Project. Implementation of these requirements in the Mitigation Program would reduce potential impacts to less than significant. All construction would also comply with the California Building Code, which has incorporated requirements to address seismic safety. Therefore, the LPPE would not result in new significant or substantially more severe impacts than those identified in FEIR 575, FEIR 584, and FEIR 589.

Liquefaction

Soil liquefaction results from loss of strength during cyclic loading, such as imposed by earthquakes. Liquefaction is induced when, during seismic ground shaking, the soil is subjected to cyclic shear stresses that can cause increased pore-water pressure. Liquefaction causes softening and deformation, resulting in settlement or other liquefaction-induced ground failures such as lateral spreading. Although FEIR 589 did identify locations within the Ranch Plan Planned Community as being susceptible to liquefaction, the only portion of the conceptual alignment that would traverse an area identified as being susceptible to liquefaction is the portion of the alignment between the southern boundary of Planning Area 2 and north of Ortega Highway. This is the portion of the roadway that crosses San Juan Creek (see Exhibit 4.4-9 in FEIR 589, which also depicts the Prima Deshecha site). This same condition would apply to the Cristianitos Road improvements; however, the Cristianitos Road improvements would also have been exposed to more extensive liquefaction hazards as the alignment extended into Planning Area 5.⁷⁵

The PHGA and California Building Code (CBC) site-specific seismic coefficients would also apply in the analysis of liquefaction hazards and the future design of structures (i.e., culverts and walls). Final design of remedial grading would need to mitigate excessive liquefaction-induced settlement and slope deformation. Based on the preliminary analysis conducted in conjunction with FEIR 589, mitigation would be feasible through conventional remedial grading (i.e., localized removal and re-compaction of liquefiable materials). This is reflected in MM 4.4-1 in FEIR 589, which requires where grading activities may encounter unconsolidated soils susceptible to soil creep, liquefaction, landslides, or settlement that the geotechnical study identify the specific measures to be taken when such soils are encountered during grading. This measure would be applicable during the design phase of the Project. With implementation of this measure and standard engineering practices, the liquefaction hazard would be less than significant. Therefore, the implementation of the LPPE would not result in any new or substantially more severe impacts associated with liquefaction than those assumed in FEIR 589. FEIR 575 did not identify an impact associated with liquefaction within the Prima Deshecha Landfill site because all soft saturated soils would be removed from beneath the landfill.

Landslides

A review of the Seismic Hazards Maps (source: California Geological Survey) for the Prima Deshecha Landfill site and the Ranch Plan Planned Community site were conducted during the preparation of FEIR 575 and FEIR 589, respectively. FEIR 575 and the GDP acknowledged

⁷⁵ FEIR 589 did identify that the majority of the main stem and associated tributaries of Trampas Canyon in Planning Area 5 is susceptible to liquefaction. However, groundwater monitoring of water levels in Trampas Canyon indicates that water in the alluvium is approximately 40 feet below the existing ground surface. Therefore, the potential for liquefaction is considered low.

potential impacts from landslides and included landslide remediation programs as part of the landfill design.⁷⁶ FEIR 589 identified that portions of the Planned Community are within a zone that requires investigation for earthquake-induced landslides. Four landslide areas were identified in the Planning Area 5 development area. Areas within a zone that require investigation do not conclude that a landslide is present but includes “areas where previous occurrence of landslide movement or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacement...” Exhibit 4.4-9 in FEIR 589 depicts a substantial amount of the western portion of Planning Area 5, including portions of the LPPE alignment, as being susceptible to earthquake-induced landslides. In an abundance of caution, FEIR 589 considered this a potentially significant impact prior to the implementation of remediation, which would be addressed as part of the more site-specific planning efforts that are undertaken. The need to incorporate such measures was incorporated into the analysis in FEIR 589. As previously noted, earthwork quantities for Planning Area 5 included a substantial amount of remedial grading (35,000,000 cy of remedial grading).

As part of the roadway design, additional geotechnical investigation and analysis would be conducted to assess the stability of slopes and the potential for adverse geologic structure to be exposed as a result of planned cut slopes. Slope stabilization can be accomplished through conventional grading techniques, such as keyways and buttressing. Retaining walls can also be incorporated into design to ensure slope stability is achieved. The specific measures to stabilize the site would be evaluated during the grading design.

Consistent with the requirements of MM 4.4-1, a geotechnical report meeting the requirements outlined in the *County of Orange Grading Code and Manual* would be required. The specific recommendations for site grading, slope design, and retaining wall design, if deemed necessary, would be determined based on more detailed project-level field investigation, geotechnical analyses, and review of engineered grading plans conducted as part of the design review process. Impacts would be less than significant with implementation of the Mitigation Program and consistent with the findings of the FEIRs. Therefore, the LPPE would not result in new significant or substantially more severe impacts than those identified in FEIR 575, FEIR 584, and FEIR 589.

b) Would the project result in substantial soil erosion or the loss of topsoil?

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. FEIR 575, FEIR 584, and FEIR 589 identified that most of the surficial units within the Prima Deshecha site and the Ranch Plan site are highly susceptible to erosion. The potential for erosion is greatest during and shortly following construction before landscape material is well established. As noted in FEIR 589, erodibility can be mitigated using conventional grading and design techniques (e.g., erosion and sediment control BMPs, slope stabilization, construction of drainage devices, etc.).

The State Water Resources Control Board's (SWRCB's) National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction

⁷⁶ As noted in Section 2.1.1, Prima Deshecha Landfill and Final Program EIR 575, SEIR 597 was prepared to address the potential increased impacts associated with landslide remediation. The boundaries for Zones 1 and 4, as presented within EIR 575, represent the refuse footprint of each zone, with the incorporation of some additional area of cut slopes. The limits of potential disturbance evaluated in SEIR 597 extend the Zones 1 and 4 landfill boundaries in order to remediate unstable geologic conditions on the property (i.e., locations with Capistrano and Monterey formation soils). This resulted in an increase of 278 acres in the area to be disturbed for refuse activities. Of these 278 acres, approximately 110 acres are located around the perimeter of Zone 1 and 168 acres are located around the perimeter of Zone 4. This increase in acreage is associated with the need to allow for landslide remediation and other landfill-support features. This change does not result in an increase in the landfill prism or trash capacity of the landfill.

Activity is referred to as the “Construction General Permit”. Compliance with the Construction General Permit would require the development of a Storm Water Pollution Prevention Plan (SWPPP) and an Erosion and Sediment Control Plan (ESCP) to prevent potential short-term impacts of construction on water quality. Temporary construction erosion and sediment-control BMPs would be used to minimize erosion, as well as keep sediment and other pollutants from affecting downstream water bodies.⁷⁷ The FEIRs found the regulatory requirements and Mitigation Program adopted in conjunction with certification of the FEIRs would reduce geotechnical impacts (including erosion) to less than significant. The impacts associated with LPPE would be consistent with the findings of the FEIRs. Therefore, the LPPE would not result in new significant or substantially more severe impacts than those identified in FEIR 575, FEIR 584, and FEIR 589.

c) Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. The presences of areas prone to liquefaction and landslides are discussed above. FEIR 575 identified areas of instability within the Prima Deshecha Landfill site; however, the document notes that the Landfill Master Plan analyzed slopes to ensure the design achieves acceptable factors of safety under static and earthquake-loading conditions. For slopes that were initially deemed unstable, slope remediation techniques including sheer keys, buttresses, and/or slope reconfiguration were incorporated into the design to ensure slopes would be stable under anticipated grading, operating and ultimate fill conditions. FEIR 584 and FEIR 589 also identified potential areas of soil instability, landslides, and liquefaction potential within the Ranch Plan site. The LPPE would traverse the soil types identified in the FEIRs as being potentially unstable. However, during roadway design, detailed geotechnical investigations would be required, and recommendations made on the appropriate methods for achieving stability. All three FEIRs identified the same general engineering solutions (remedial grading, use of sheer keys and buttresses). Additional stabilization could be achieved using structural retaining walls, if deemed necessary; however, further Project design would be required to establish the appropriate measures. With implementation of the measures identified in the FEIRs, any impacts would be less than significant with implementation of the Mitigation Program and are consistent with the findings of FEIRs. Therefore, the LPPE would not result in new significant or substantially more severe impacts than those identified in FEIR 575, FEIR 584, and FEIR 589.

d) Would the project be located on expansive soils, as defined in Table 18-1-B of the California Building Code (1994), creating substantial direct or indirect risks to life or property?

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. Expansive soil swells and shrinks in their volume based on moisture. This can result in cracking of foundations, retaining walls, and pavements. FEIR 575 states the U.S. Soil Conservation Service classifies a number of the soil types on site as being highly expansive and easily erodible. The removal of compressible materials during excavation of temporary and permanent GDP roadways and proper preparation of the subgrade for permanent (i.e., paved) roadways would mitigate potential adverse impacts due to expansive native bedrock and soil materials.

FEIR 584 and FEIR 589 identified that expansive soils are present in most of the planning areas for the Ranch Plan Planned Community. Although FEIR 584 and FEIR 589 identified there would

⁷⁷ Erosion control measures were included in the FEIR 589 Mitigation Program as part of the evaluation of Water Resources. This Addendum includes these measures under Hydrology and Water Quality.

be potential significant impacts associated with the presence of expansive soils in areas proposed for development, proper grading and foundation design was identified as a method for remediating the impact. MM 4.4-1 requires a geotechnical study be done, which maps areas susceptible to expansive soils and define specific measures to be taken during grading and construction. This requirement would be applicable during the design and construction phase of the LPPE and impacts would be consistent with the findings of FEIR 584 and FEIR 589. Therefore, the LPPE would not result in new significant or substantially more severe impacts than those identified in FEIR 575, FEIR 584, and FEIR 589.

- e) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal system where sewers are not available for the disposal of wastewater?**

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. As a roadway, the Project would not generate any wastewater; therefore, there would be no use of septic tanks or alternative wastewater disposal systems. Therefore, this threshold is not be applicable to the Project.

- f) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?**

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. The Prima Deshecha site and surrounding area is underlain by San Onofre Breccia, Monterey Formation, Capistrano Formation, and Quaternary stream deposits. The Monterey and Capistrano Formations are known to have a high sensitivity for paleontological resources. FEIR 575 did not map the formations to protect the resources from possible vandalism and collection. However, the FEIR does identify that the landfill activities would have the potential to have a significant impact on paleontological resources. However, a mitigation measure requiring a paleontological monitoring program during grading and site preparations would reduce the impacts to less than significant.

Based on information provided by the Natural History Museum of Los Angeles County for FEIR 584 and FEIR 589, the Project site is expected to have low to high paleontological sensitivity (Exhibit 4.11-2 in FEIR 589).⁷⁸ This is consistent with the *Orange County General Plan* Resources Element (Figure VI-9), which identifies broad areas of general areas of paleontological sensitivity. The LPPE site is located within the San Juan Capistrano-San Clemente District, an area of general sensitivity. In areas that are already disturbed or where the soil type is identified as undocumented fill or landslide debris, the potential for discovery of fossils is low. However, portions of the alignment would traverse the Santiago or Topanga formations, and in these portions the sensitivity is rated as high. Discovery of fossils when grading occurs in native (undisturbed) soils remains possible in these formations. Because of the high sensitivity of the Santiago and Topanga Formation, impacts associated with ground-disturbing activities—including brush clearance and grading—are considered significant. However, with implementation of SC 4.11-2 from the Mitigation Program adopted as part of the FEIR 589, these impacts would be mitigated to less than significant levels. The implementation of the LPPE would not result in any new or more severe impacts than those assumed in FEIR 589. (Exhibit 4.4-2 in FEIR 589 depicts the soil types in Planning Area 5 of the Ranch Plan. Table 4.11-2 in FEIR 589 identifies the paleontological sensitivity of the soil types.

⁷⁸ Not all paleontologists agree with ranking all formations as high in sensitivity because differences exist among the underlying geologic formations.

The FEIRs' identified impact on paleontological resources would be reduced to less than significant with implementation of a paleontological monitoring program during construction (a County standard condition in both Mitigation Programs). This requirement would be applicable during all grading activities in native soil. Therefore, implementation of the Project would not result in any new significant or substantially more severe impacts than those assumed in the FEIRs.

Mitigation Program

Based on the information provided above, neither the proposed amendments to the GDP, the County of Orange Circulation Plan Map, the San Clemente *Mobility and Complete Streets Element*, and MPAH; nor the anticipated future impacts associated with construction and operation of the LPPE, would result in any new significant or substantially more severe geotechnical impacts requiring major revisions to FEIR 575, FEIR 584, or FEIR 589. No new mitigation measures are required.

FEIR 575 had two geology and soils mitigation measures that were applicable to the circulation component of the GDP. FEIR 589 identified five standard conditions and two mitigation measures pertaining to geology and soils. FEIR 584 referenced the measures in FEIR 575 and FEIR 589 but did not list the measures or suggest any changes to the measures. These measures are discussed below.

FEIR 575 has two mitigation measures pertaining to the circulation component of the GDP; however, MM 4.2-6 is provided in three parts, which are denoted with sub-numbering. The following changes have been made to MM 4.2-6(a), MM 4.2-6(b), MM 4.2-6(c), and MM 4.2-7:

- The approving entity for all four mitigation measures has been updated from "Director, PF&RD" to the "Deputy Director, Infrastructure Programs". This revision reflects the agency's current organizational structure.

Additionally, MM 4.2-6(b), MM 4.2-6(c), and MM 4.2-7 specifically identify the Avenida La Pata extension in the measure. The following changes have been made to these measures:

- The references to "La Pata Avenue extension" have been changed to "LPPE". To avoid any confusion with the change in reference from the La Pata Avenue extension to LPPE, an "R" has been added to the end of the mitigation measure to denote the revision. However, it should be noted that these measures would have already been implemented for the La Pata improvements because the Avenida La Pata improvements have been constructed.

For geology and soils, FEIR 589 included five standard conditions and two mitigation measures. SC 4.4-1, SC 4.4-4, and SC 4.4-5 would be applicable to the LPPE and are listed below. SC 4.4-2 and SC 4.4-3 pertain to tract maps and would not be applicable to the Project. MM 4.4-1 is also associated with approval of a tentative tract map. However, it is similar to SC 4.4-1, which is applicable to the LPPE. Both measures require a geotechnical report consistent with the requirements outlined in the Grading Code and Manual. MM 4.4-2 is specific to development in Planning Area 9, which is not applicable to the LPPE. In addition, SC 4.11-4, which pertains to paleontological resources has been included in this section to reflect the changes to the placement of this issue on the CEQA Environmental Checklist.

The following revisions have been made to SC 4.4-1 and SC 4.4-4 for the LPPE:

- The approving entity for both standard conditions has been updated from “the Manager, Subdivision and Grading” to the “Manager, Building and Safety”. This revision reflects the agency's current organizational structure.

These changes, listed above, to SC 4.4-1 and SC 4.4-4 and MM 4.2-6(a), MM 4.2-6(b), MM 4.2-6(c), and MM 4.2-7, do not change the intent or effectiveness associated with the adopted standard conditions and mitigation measures.

- | | |
|----------------------------|---|
| MM 4.2-6(a)
(FEIR 575) | Prior to the final design of any circulation uses on the site, the Deputy Director Infrastructure Programs shall conduct a comprehensive geotechnical study. The study should include detailed geologic mapping, exploratory drilling, logging and sampling, laboratory testing of soil and rock samples, engineering and slope stability analyses, and cut slope and landslide removal recommendations. The final recommendations of the geotechnical study shall be incorporated in the final design of the GDP circulation elements as appropriate. |
| MM 4.2-6(b)R
(FEIR 575) | Where embankment fills associated with the extension of Los Patrones Parkway overlie landslide deposits, the Deputy Director Infrastructure Programs will ensure that the final design incorporates removal of all highly disturbed landslide debris prior to placement of fill. The final design of the LPPE regarding the removal of landslide debris will be consistent with the findings of the geotechnical study, described in MM 4.2-6a, above, to reduce adverse settlement and/or potential instability of the roadfill. |
| MM 4.2-6(c)R
(FEIR 575) | Where unstable cut slopes are found along the LPPE, they will require some form of stabilization. Typical measures for stabilizing permanent unstable cut slopes in the various bedrock units and landslide debris include construction of low-angle (3:1 horizontal to vertical or less) cut slopes, buttress and/or stabilization fills, and structurally reinforced fills. Stabilization measures for temporary cut slopes associated with ingress and egress from the landfill may only require constructing the cut slopes at low angles. The Deputy Director Infrastructure Programs will ensure that the appropriate measure for stabilizing the permanent cut slopes along the LPPE will be determined during final design of the extension, based on the findings of the geotechnical study described in MM 4.2-6a, above. |
| MM 4.2-7R
(FEIR 575) | The Deputy Director Infrastructure Programs shall incorporate the appropriate seismic design features in the final design of the LPPE, consistent with the geotechnical study described in MM 4.2-6a and with the current County of Orange seismic design practices and standard design practices for arterial roads. |
| SC 4.4-1
(FEIR 589) | Prior to the issuance of a grading permit, the applicant shall submit a geotechnical report to the Manager, Building and Safety for approval. The report shall meet the requirements outlined in the County of Orange Grading Code and Manual. |

SC 4.4-4
(FEIR 589) Prior to issuance of grading permits, the Manager, Building and Safety shall determine that the proposed grading is consistent with the grading depicted within the approved planning application.

SC 4.4-5
(FEIR 589) The proposed development shall be designed in compliance with the Uniform Building Code (UBC), accepted industry standards, and the County's earthquake safety Municipal Code requirements.

SC 4.11-2
(FEIR 589) Prior to the issuance of any grading permit, the project contractor shall provide written evidence to the Manager, Building and Safety, that the contractor has retained a County certified paleontologist to observe grading activities and salvage and catalogue fossils as necessary. The paleontologist shall be present at the pre-grade conference, shall establish procedures for paleontological resources surveillance, and shall establish, in cooperation with the contractor, procedures for temporarily halting or redirecting work to permit sampling, identification, and evaluation of the fossils. If the paleontological resources are found to be significant, the paleontologist shall determine appropriate actions, in cooperation with the contractor, which ensure proper exploration and/or salvage.

Prior to the release of any grading bond, the contractor shall submit the paleontologist's follow up report for approval by the County Manager, Building and Safety. The report shall include the period of inspection, a catalogue and analysis of the fossils found, and the present repository of the fossils. The contractor shall prepare excavated material to the point of identification. The contractor shall offer excavated finds for curatorial purposes to the County of Orange, or its designee, on a first-refusal basis. These actions, as well as final mitigation and disposition of the resources, shall be subject to approval by the Manager of Building and Safety. The contractor shall pay curatorial fees if an applicable fee program has been adopted by the Board of Supervisors, and such fee program is in effect at the time of presentation of the materials to the County of Orange or its designee, all in a manner meeting the approval of the County Manager, Building and Safety.

4.8 **GREENHOUSE GAS EMISSIONS**

At the time of certification of FEIR 575, FEIR 584, and FEIR 589 for the Prima Deshecha Landfill GDP, the Southern Subregion NCCP/MSAA/HCP, and the Ranch Plan Planned Community, respectively, a Greenhouse Gas (GHG) Emissions analysis was not part of the required CEQA Checklist.

Project Impact Analysis

- a) **Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?**
- b) **Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?**

No New or More Severe Impacts/ No Changes or New Information Requiring Preparation of an EIR. Effective March 18, 2010, the State of California adopted amendments to the State CEQA Guidelines requiring the analysis and mitigation of the effects of GHG emissions in CEQA documents. The State CEQA Guidelines regarding GHG emissions do not themselves specifically address situations involving subsequent implementing actions for a project with a previously certified FEIR. Applicable case law provides, however, that an SEIR is not required on the issue of GHG emissions and climate change where an earlier certified FEIR did not address climate change.

All three FEIRs are “program EIRs” as defined in CEQA and the State CEQA Guidelines (see State CEQA Guidelines, Section 15168) in that each covers one large project with several phases or components that require a series of implementing actions. Pursuant to CEQA and the State CEQA Guidelines, subsequent activities in implementing the approved Ranch Plan Planned Community and the SSHCP that are subject to further discretionary approvals by the County are to be examined by the County pursuant to the three-part test set forth in Section 21166 of the Public Resources Code, which is also reflected in Section 15162(a) of the State CEQA Guidelines (see discussion in Section 1.3, Use of an Addendum, regarding how to determine if the changes warrant the preparation of an SEIR).

As discussed throughout this Addendum, the proposed Project would modify a component of the circulation network approved to support the Ranch Plan. The original roadway network is part of the approved infrastructure supporting the Ranch Plan approvals and implement a component of the RMV Covered Activities identified in the SSHCP. Although the designation of Los Patrones Parkway as the major north-south arterial highway is a modification to the Project, in the overall context of the Ranch Plan and the SSCHP, it is not a substantial modification and it does not result in new significant impacts, as documented in this Addendum. Additionally, as discussed in Section 2.1.2, The Ranch Plan and Final Program EIR 589, FEIR 589 did evaluate a scenario utilizing an aerial highway to provide the north-south circulation movement if construction of SR-241 was substantially delayed. No other changes to the development entitlements are proposed.

Furthermore, GHG emissions do not constitute new information. As the courts have upheld, GHG emissions and global climate change are not “new information” since these effects have been generally known for quite some time. For example, in a 2011 case, *Citizens for Responsible Equitable Environmental Development v. City of San Diego*,⁷⁹ the Fourth District Court of Appeal affirmed the trial court’s denial of a petition for writ of mandate challenging the City of San Diego’s

⁷⁹ *Citizens for Responsible Equitable Environmental Development v. City of San Diego* (2011) 196 Cal. App.4th 515.

adoption of an addendum to a previously certified EIR rather than the preparation of an SEIR for a development project. In one of many issues, the court found that “information on the effect of greenhouse gas emissions on climate was known long before the City approved the 1994 FEIR”. The court discussed several federal court decisions that demonstrated information about the nexus between GHG emissions and climate change was known well before the 1994 FEIR was certified. As such, the effect of GHG emissions on climate change could have been raised in 1994 when the City certified the FEIR. Because the plaintiff in this case provided no competent evidence of new information of a significant impact, it did not meet its burden under Section 21166 of CEQA to demonstrate that an SEIR was required. Therefore, this case demonstrates that an SEIR is not required based on the general issue of GHG emissions and climate change, where an earlier certified FEIR for the project did not address climate change.

A 2014 decision by the Sixth District Court of Appeals in *Citizens Against Airport Pollution v. City of San Jose*⁸⁰ reaches a similar result. The decision states that, “information about the potential environmental impact of greenhouse gas emissions was known or could have been known at the time the 1997 EIR and the 2003 SEIR for the Airport Master Plan were certified. We reiterate, . . . an agency may not require an SEIR unless “[n]ew information, which was not known and could not have been known at the time the [EIR] was certified as complete, becomes available.” Since the potential environmental impact of GHG emissions does not constitute new information as defined in the CEQA statutes, Section 21166, subdivision (c), the City did not violate Section 15064.4 of the State CEQA Guidelines by failing to analyze greenhouse gas emissions in the eighth addendum.

In addition to case law clarification that GHG emissions do not constitute “new information” under Section 15162(a) of the State CEQA Guidelines, this approach has been used by the Orange County Planning Commission for the approval of the previous Addenda for the Ranch Plan Planned Community and other developments with an FEIR that was certified prior to the requirement of the GHG analysis.

Mitigation Program

Based on the information provided above, neither the proposed amendments to the GDP, the County of Orange Circulation Plan Map, the San Clemente *Mobility and Complete Streets Element*, and MPAH; nor the anticipated future impacts associated with construction and operation of the LPPE would result in generation of substantially greater greenhouse gas impacts than would be associated with the Ranch Plan Planned Community or the other Covered Activities evaluated as part of the SSHCP.

Although specific measures for greenhouse gas emissions were not identified in the FEIRs, SC 4.7-2 adopted to reduce air quality impacts would also lessen the impacts associated with greenhouse gas emissions.

⁸⁰ *Citizens Against Airport Pollution v. City of San Jose* (2014) 227 Cal. App.6th 788.

4.9 HAZARDS AND HAZARDOUS MATERIALS

Summary of Findings in Previous FEIRs

FEIR 575

Hazardous materials are evaluated in Section 4.13, Public Safety and Risk of Upset in FEIR 575. FEIR 575 evaluated several issues under this topic, although not all of them would be pertinent to the LPPE. The landfill is also subject to regular inspections by CalRecycle's local enforcement agency and is also regulated by the California Regional Water Quality Control Board and the South Coast Air Quality Management District to ensure compliance with all applicable regulations. The following is a brief summary of the subtopics evaluated in FEIR 575 under this topic, which are most applicable to the landfill activities:

- **Vehicle Traffic:** Traffic issues relevant to public safety pertain to the separation of landfill equipment, commercial and public traffic on-site, and on-site traffic controls. The separation of the landfill and recreational trips and public and commercial landfill users minimizes potential conflict and accidents. Circulation improvements, such as the Avenida La Pata extension would enhance ability to separate recreation and landfill users. Mitigation measures associated with onsite traffic controls were adopted and impacts were found to be less than significant.
- **Disposal of Hazardous Materials:** Prima Deshecha Landfill is a Class III landfill that does not accept hazardous, explosive, or radioactive wastes. Consistent with the permit from CalRecycle, the landfill has procedures for the inspection of loads and the rejection of loads containing hazardous material. In addition to procedures pertaining to the handling of materials such as biosolids, automobile shredder waste, and the household hazardous waste collection center, FEIR 575 discussed vehicle maintenance and fueling activities. Additionally, short-term use of materials classified as hazardous during construction was evaluated. Mitigation measures were adopted that pertain to the landfill operations and measures to separate landfill and recreational visitors were adopted. Impacts were identified as less than significant.
- **Landfill Gas Generation:** FEIR 575 evaluated issues such as the creation and migration of landfill gas, which is a byproduct of the natural anaerobic decomposition of organic material contained in solid waste. The FEIR includes a discussion of the regulatory framework, the constituents in landfill gas, and measures in place to address this issue. Measures include an energy recovery facility, a flare station, and a landfill gas control system. Landfill gas generation is only applicable to the landfill component of the GDP; however, mitigation measures were also adopted for the recreation component to ensure safety of users in the buildings associated with the recreation component. With mitigation, impacts would be less than significant.
- **Fire Safety and Control:** FEIR 575 included a discussion on the risks associated with surface fires, wildland fires, refuse fires, and subsurface fires. The latter is a risk associated landfill operations. Impacts were found to be less than significant, although mitigation measures were adopted to further minimize potential impacts. Based on the reorganization of the CEQA Checklist, wildland fires is discussed in Section 4.20, Wildfire, of this Addendum.

FEIR 584 and FEIR 589

As part of FEIR 589, nine Phase I Environmental Site Assessments (ESAs) were prepared to assess the possible presence of recognized environmental conditions within each of the Ranch

Plan Planned Community's development areas. The ESAs were prepared in conformance with the American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments. The federal, state, and regional databases, and other relevant sources were searched for each of the development planning areas and a half-mile buffer area surrounding the planning areas.⁸¹ The ESAs were contained in Appendix I to FEIR 589.

A range of issues were identified, including risks associated with residual pesticides; potential demolition of buildings containing asbestos-containing materials and lead-based paint; potential of contamination in the vicinity of aboveground tanks (AGT) and underground storage tanks (UST); minor surface soil staining; contamination associated with past lease and agricultural operations; and potential damage or disturbance to abandoned oil wells.

FEIR 584 and FEIR 589 also evaluated wildland fire hazards. An Adaptive Management Program, which includes a *Wildland Fire Management Plan* (WFMP), was developed in conjunction with the Ranch Plan. This plan outlines management requirements for the extensive open space provided as part of the Ranch Plan and provide protection of both the approved development and the sensitive habitat within the Southern Subregion HCP. Additionally, a *Ranch Plan Planned Community-Wide Fire Protection Plan* has been developed in conjunction with the Orange County Fire Authority (OCFA) and approved by the Orange County Board of Supervisors, thus providing a comprehensive approach to the processing of all emergency access and fire safety issues associated with proposed development within the Ranch Plan Planned Community.

With implementation of the project design feature, standard condition of approval, and the mitigation measures, impacts due to hazardous materials and wildland fires would be reduced to a level considered less than significant. As noted above, the topic of wildland fires is also discussed in Section 4.20, Wildfire, of this Addendum.

Project Impact Analysis

The impacts associated with hazards and hazardous materials have been previously analyzed as part of FEIR 575, FEIR 584, and FEIR 589, which were prepared and certified pursuant to State and County CEQA Guidelines. The following provides clarifications or information to validate that the previous documents provide adequate CEQA documentation for the proposed Project and serves as an Addendum to the FEIRs.

a) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

No New or More Severe Impacts/ No Changes or New Information Requiring Preparation of an EIR. The construction of the LPPE would involve the use, storage, and handling of hazardous and non-hazardous materials as well as the generation of hazardous waste. Although these would be materials routinely used for construction, many construction and household items are identified as hazardous based on the requirements of Proposition 65.⁸² Once constructed, vehicles carrying materials classified as hazardous would be allowed to use the roadway.

⁸¹ The comprehensive list of the databases searched is provided in Section 4.14 of FEIR 589 and the reports are included in Technical Appendix I to FEIR 589.

⁸² Proposition 65 was passed by California voters in 1986. Proposition 65 requires businesses to provide warnings to Californians about significant exposures to chemicals that cause cancer, birth defects or other reproductive harm. These chemicals can be in the products that Californians purchase, in their homes or workplaces, or that are released into the environment. As of January 2020 the Proposition 65 List, which is maintained by the Office of Environmental Health Hazard Assessment ("OEHHA"), includes approximately 1,000 naturally occurring and synthetic chemicals that include additives or ingredients in pesticides, common household products, food, drugs, dyes, or solvents (<https://oehha.ca.gov/proposition-65/proposition-65-list>).

However, there would not be any characteristics of the LPPE that would result in a more substantial amount of hazardous materials being transported than any other public roadway.

California Code of Regulations Title 22 establishes requirements pertaining to the storage, transportation, and disposal of hazardous materials. Any transport of hazardous materials is also regulated at the Federal (Title 49 of the Code of Federal Regulations) and State (Title 13 of the California Code of Regulations) level. Through mandated compliance with all applicable federal, State, and local regulations pertaining to hazardous materials, the risk associated with the use and transport of the materials, is minimal.

The LPPE would bypass the entrance to the landfill, allowing vehicles transporting material destined for Prima Deshecha to remain on Avenida La Pata. This supports the design features and operational protocols identified in FEIR 575 that aim to promote public safety by separating landfill equipment, commercial and public traffic on-site, and use of on-site traffic controls. FEIR 575 identified these measures to minimize potential conflict and accidents.

The LPPE would not result in any new significant or substantially more severe impact associated with the routine transport, use, or disposal of hazardous materials. The potential for impacts is consistent with the findings of FEIR 575, FEIR 584, and FEIR 589.

b) Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

The conceptual alignment for the LPPE traverses predominately undeveloped land within the Ranch Plan and the Prima Deshecha Landfill. A review of a historic aerial photograph dating back to 1938 shows the area surrounding the LPPE conceptual alignment as undeveloped. In 1976, the Prima Deshecha Landfill was established and between 1970 and 1980, the quarry operations were initiated. FEIR 575 did not identify any pre-existing conditions within the Prima Deshecha Landfill site that would result in a potential constraint associated with the conceptual alignment identified for the LPPE.

As noted in Section 3.2.2, Conceptual Design Assumptions, of this Addendum, the LPPE would require the relocation of the KMEP pipeline. The need for relocating the pipeline was discussed in FEIR 575 and FEIR 589. FEIR 589 identified that during the relocation process there is an increased potential for leaks and/or spills that would result in soil contamination. However, standard construction practices would minimize the potential for releases during the relocation process. The impact was identified as less than significant.

As part of the Planning Area 5 ESA, prepared for FEIR 589, databases were reviewed to determine if the Planning Area, or any adjacent properties, were listed as hazardous waste generators, underground storage tank releases (UST), or as having other environmental concerns (i.e., spill, leak, or aboveground tank). Additionally, a field survey and interviews were conducted. The record searches identified some historic environmental concerns in Planning Area 5, including three instances of a leaking underground fuel tank between 1960 and 1997. A 10,000-gallon underground diesel storage tank was removed from the site in October 1990. No groundwater or visible signs of contamination were noted by the inspector. However, samples collected during removal operations indicated contamination to the east and west of the tank excavation. All these cases were closed by the regulating agency; however, FEIR 589 identified in each case, contamination was reported and only partially removed. In one case, the contamination was relocated to the overburden storage area of the property with permission from the OC Health Care Agency (OC HCA). The rationale used at the time was there would be no impact associated with the current land use, due to low level nature of the contamination, the rural

setting, lack of impact to groundwater, and lack of human/environmental receptors. FEIR 589 does not depict the precise location of the previous instances; however, FEIR 589 does have a mitigation measure that requires an updated ESA (MM 4.14-13) in conjunction with issuance of a grading permit. Although the LPPE would not be categorized as a sensitive use, the updated ESA would allow identification of any environmental concerns and remedial measures if deemed necessary. With implementation of the standard conditions and the mitigation measures, impacts would be less than significant

Based on file data, FEIR 589 identified one petroleum exploration well (Exxon, "O'Neill Estate" C-2) was installed near the Planning Area 5 boundary with the Prima Deshecha Landfill in 1959. The well was drilled to a total depth of approximately 4,100 feet; however, the well was appropriately closed and marked as "Plugged and Abandoned – Dry Hole." Although, this well presents no environmental risk, FEIR 589 identified where wells would be disturbed there would be a need to re-abandon the wells in compliance with applicable State standards.⁸³ This was formalized in MM 4.14-14, which would apply to the LPPE should, during final design, should it be determined that the abandoned well would be disturbed.

Multiple studies associated with the quarry operation have been conducted over the years. Even though the conceptual alignment is not shown as traversing areas of activity resource extraction, the past studies are identified to support the lack of potential risks associated with proximity to the mining operation. The Planning Area 5 ESA prepared for FEIR 589 summarized the 1999 *Draft Report: Phase II, Assessment of Conditions, Trampas Canyon Dam, Orange County California*, prepared by URS Greiner Woodward Clyde. Analytical results of samples collected from soil and groundwater indicated no detectable concentrations of VOC's (volatile organic compounds) or SVOC's (semi-volatile organic compounds). Based on the results of their investigation, URS stated that there appeared to be "no significant environmental limitations to the re-use of tailings materials." This study was updated in 2014 and no constraints were identified. Although the potential risk during construction is unlikely, the contractor would be required to comply with the mitigation measure that requires the development of a Health and Safety Contingency Plan (HSCP) in the event that unanticipated/ unknown environmental contaminants are encountered during construction (MM 4.14-1). In the event that contaminated soils are identified during construction, compliance with SCAQMD Rule 1166 (MM 4-14-2) would apply.

FEIR 575 and FEIR 589 provided a comprehensive evaluation of potential impacts associated with risks of upset. The ultimate construction of the LPPE would not 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; therefore, the Project would not create a new significant impact or substantially more severe impact than what was previously evaluated in FEIR 575 and FEIR 589.

⁸³ The California Geologic Energy Management Division (CalGEM) (formerly known as the State Division of Oil, Gas, and Geothermal Resources or DOGGR) has oversight responsibility for the well abandonment process (Cal. Pub. Res. Code §3200 et seq.).

c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No New or More Severe Impacts/ No Changes or New Information Requiring Preparation of an EIR. There are no schools within one-quarter mile of the LPPE alignment. The schools in closest proximity to the proposed LPPE are:

- Esencia School (preschool through eighth grade), located at 5 Aprender Street in Rancho Mission Viejo, is slightly more than a third of a mile from the northern terminus of the proposed extension.
- San Juan Hills High School, located at Avenida La Pata and Stallion Way in San Juan Capistrano, is over a mile north and west of the proposed alignment.
- Vista Del Mar (kindergarten through fifth grade) is located slightly more than a mile to the south on Avenida Talega in San Clemente.

Since no schools are within the one-quarter mile limit of the Project, the risk associated with the handling or emission of hazardous materials is low (see checklist question 4.9(b), above). Therefore, no new significant hazard would occur with implementation of the Project and no mitigation measures would be applicable. This is consistent with the findings of FEIR 575, FEIR 584, and FEIR 589.

d) Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No New or More Severe Impacts/ No Changes or New Information Requiring Preparation of an EIR. The proposed conceptual alignment for the LPPE is not identified on the list of hazardous materials sites compiled pursuant to *California Government Code* §65962.5 (i.e., Cortese List). Nor is there a listing of any site in close proximity to the Project site. Therefore, the LPPE would not result in a hazard to the public or the environment due to known hazardous materials and no mitigation measures would be applicable. This is consistent with the findings of FEIR 575, FEIR 584, and FEIR 589.

e) Would the project be located within an airport land use plan or, where such 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?

No New or More Severe Impacts/ No Changes or New Information Requiring Preparation of an EIR. No land use compatibility issues were identified related to airports. John Wayne Airport is the closest commercial airport, which is located more than 18 miles northwest of the northern terminus of the LPPE. Consistent with the FEIRs, no impacts would occur, and no mitigation is necessary.

f) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No New or More Severe Impacts/ No Changes or New Information Requiring Preparation of an EIR. FEIR 575 identified that the County of Orange and cities of San Juan Capistrano and San Clemente have established procedures related to onsite safety, which are being implemented at the Prima Deshecha Landfill. The GDP provides for the continuation of these procedures.

Emergency access or evacuation plans were evaluated as part of the Public Services and Facilities evaluation in FEIR 589. There are no designated evacuation routes within the Ranch Plan Planned Community. Therefore, the LPPE would not interfere with any emergency response or evacuation plans. The purpose of the roadway is to provide another north-south circulation route, which would be a benefit to south Orange County residents should there be an emergency or need to evacuate. Additionally, it would provide an alternative route should there be a closure of a portion of I-5 due to an accident or fire. This route would also provide fire fighters improved access. The LPPE would be designed to County arterial standards; therefore, it would not introduce an obstacle for access by fire fighters and firefighting equipment. It would also provide additional routes for emergency access and evacuation in the region. Consistent with the findings in the FEIRs, no impacts would occur, and no mitigation is necessary.

g) Would the project expose people or structures either directly or indirectly to a significant risk or loss, injury or death involving wildland fires?

No New or More Severe Impacts/ No Changes or New Information Requiring Preparation of an EIR. FEIR 575 identified the area has been subject to wildland fires in the past. However, the exposure to wildland fires is not a result of the GDP activities. The landfill activities would reduce the potential of wildland fire onsite because the fuel (vegetation) would be removed as part of the grubbing, grading, and operations in the area.

FEIR 589 identified the Ranch Plan would introduce more people and urban activities into an area that currently has limited accessibility. This can have a positive influence by improving accessibility, reducing fuel loading in the area, and providing improved water availability to the area. Although, ultimately, the Ranch Plan would also introduce an increased number of structures to the area. The LPPE would not result in an increase in the number of structures that could be affected by a wildland fire. The road, in addition to providing improved access, would also serve as a fire break in the area.

As noted above, a WFMP was developed in conjunction with OCFA to support FEIR 584 and FEIR 589. The WFMP includes a *Short-Term Fire Management Plan* and a *Long-Term Strategic Fire Protection Plan*. Implementation of the Plan would provide measures intended to reduce the incidence and severity of wildfires (e.g., the use of prescribed burns to reduce fuel loads) and includes a “Strategic Fire Suppression Plan” intended to guide fire suppression actions that protect sensitive habitat areas from repeated wildfires (e.g., by identifying high priority “aggressive” fire suppression areas) and that minimize physical impacts from fire protection activities (e.g., the use of heavy fire suppression equipment). This issue is discussed in greater detail in Section 4.20, Wildfire.

Based on this evaluation no new significant or substantially greater impacts than what was addressed in the FEIRs regarding hazards and hazardous materials would result due to the LPPE.

Mitigation Program

Based on the information provided above, neither the proposed amendments to the GDP, the County of Orange Circulation Plan Map, the San Clemente *Mobility and Complete Streets Element*, and MPAH; nor the anticipated future impacts associated with construction and operation of the LPPE would result in any new significant or substantially more severe impacts associated with hazards and hazardous materials that would require major revisions to FEIR 575, FEIR 584, or FEIR 589. FEIR 575 included No new mitigation measures are required.

FEIR 575 had four public safety and risk of upset mitigation measures that were applicable to the circulation component of the GDP. One of the measures in FEIR 575 is broken into two parts and

denoted with sub-numbering. MM 4.13.3-3b pertains to roadways serving landfill activities. The LPPE would not have any direct interface with the landfill activities; therefore, it would not be applicable. FEIR 589 identified 2 standard conditions and 15 mitigation measures for hazards and hazardous materials. FEIR 584 incorporated FEIR 575 and FEIR 589 by reference but did not have a discussion of this issue. The adopted measures are discussed below.

The following changes have been made to MM 4.13.1-4, MM 4.13.1-5, and MM 4.13.3-3(a):

- The reference to “PF&RD/Road Programs” has been updated to OCPW/Infrastructure Programs”. This revision reflects the agency’s current organizational structure.

Additionally, MM 4.13.1-4 specifically identify the La Pata Avenue extension in the measure. The following changes have been made to these measures:

- The references to “La Pata Avenue extension” have been changed to “LPPE”. To avoid any confusion with the change in reference from the La Pata Avenue extension to the LPPE, an “R” has been added to the end of the mitigation measure to denote the revision. However, it should be noted that this measure would have already been implemented for the La Pata improvements because the Avenida La Pata improvements have been constructed.

The following change has been made to MM 4.13.3-4:

- The approving entity has been updated from “Director, PF&RD” to the “Deputy Director, Infrastructure Programs”. This revision reflects the agency’s current organizational structure.

As noted above, not all elements of the mitigation program from FEIR 589 would apply to the LPPE. Based on a review of the Mitigation Program in FEIR 589, SC 4.14-1 is associated with a subdivision map and would not be applicable to the LPPE. MM 4.14-3 would not apply because it is specific to planning areas that had previous agricultural activities (Planning Areas 1, 2, 3, 4, and 7) and would not involve the LPPE alignment area. MM 4.14-4 and MM 4.14-5 would not apply because they are addressing components of the Ranch Plan that involve demolition of older buildings. The LPPE alignment would not require the removal of any structures. MM 4.14-6 applies to Planning Area 5 but would not be required for the LPPE because it would not impact the area currently being mined by Lapeyre Industrial Sands and would not require the closure of the quarry. MM 4.14-8 applies to Planning Area 3; therefore, it does not apply to the LPPE. MM 4.14-10 pertains to testing of the tailings in the Trampas Canyon Reservoir. This measure was completed by SMWD as part of the reconstruction of the dam and reservoir. MM 4.14-11 and MM 4.14-12 pertain to Planning Area 8 and would not be applicable to the LPPE. MM 4.14-15 pertains to tentative tract maps and development projects; therefore, these measures are not applicable to the LPPE.

SC 4.14-2 is identified as being applicable for the LPPE. MM 4.14-1, MM 4.14-2, MM 4.14-7, MM 4.14-9, MM 4.14-13, and MM 4.14-14 also would apply or potentially apply to the LPPE.

The following revisions have been made to MM 4.14-1 for the LPPE:

- The approving entity for the required Health and Safety Contingency Plan has been updated from “Manager of Subdivision and Grading Services (PDS) in consultation with the Manager of Environmental Resources (PFRD)” to the “Manager, Building and Safety”. This revision reflects the agency’s current organizational structure.

The following revisions have been made to MM 4.14-7 for the LPPE:

- The timing of the verification is modified should the LPPE be constructed prior to the development in Planning Area 5. As adopted, the timing of the measure is “Prior to approval of Area Plan for areas within Planning Areas 1, 3, and 5 . . .” Since an Area Plan is not required for infrastructure improvements, the timing is expanded to include a grading permit. The revised wording is “Prior to issuance of a grading permit or approval of Area Plan, whichever comes first, for areas within Planning Areas 1, 3, and 5 . . .”

The following revisions have been made to MM 4.14-9 for the LPPE:

- The timing of the verification is modified should the LPPE be constructed prior to the development in Planning Area 5. As noted above, an Area Plan is not required for infrastructure. Currently, the timing for the measure is “Prior to approval of an Area Plan, for those locations within Planning Area 5 . . .” This is changed to read: “Prior to issuance of a grading permit or approval of an Area Plan, whichever comes first, for those locations within Planning Area 5 . . .”

The following revisions have been made to MM 4.14-14 for the LPPE:

- The timing of the verification is modified should the LPPE be constructed prior to the development in Planning Area 5. Currently, the measure reads, “The Master Area Plan prepared for those Planning Areas containing oil wells (Planning Areas 3 and 9) shall graphically depict the location of all oil wells. Prior to issuance of building permits for those locations with oil wells, . . .”

The text is revised to read, “If as part of final roadway design, it is determined that the oil well located in Planning Area 5 would be disturbed by the roadway grading, then prior to issuance of a grading permit or authorization for the contractor to proceed, the applicant or County shall coordinate with the Department of Conservation, Division of Oil, Gas, and Geothermal Resources and remedial action in compliance with well abandonment procedures will be developed and completed as part of roadway construction.”

MM 4.13.1-4R The County's OCPW/Infrastructure Programs shall develop and implement on-site traffic operations procedures regarding on-site posted traffic speed limits and traffic controls for the LPPE extension.
(FEIR 575)

MM 4.13.1-5 As part of the construction documents and operating procedures, OCPW/Infrastructure Programs shall ensure that construction activities for the circulation uses, which may temporarily bring construction equipment and ordinary vehicular traffic into closer contact, will be mitigated by traffic control consisting of limiting access of vehicular traffic to construction areas. The traffic control plans for the 2001 GDP construction areas shall be consistent with existing County of Orange traffic control policies and procedures.
(FEIR 575)

MM 4.13.3-3(a) Prior to the opening of public access roads on-site, the OCPW/Infrastructure Programs shall coordinate with the Orange County Fire Authority on the placement of fire warning signs along public roadways through the site, warning motorists of potential fire hazards, fire conditions and other relevant information.
(FEIR 575)

MM 4.13.3-4
(FEIR 575) As part of the construction documents, the Deputy Director, Infrastructure Programs shall ensure that all construction contractors and employees engaged in construction for the circulation uses implement safe working practices regarding the potential for surface fires associated with construction equipment and personal vehicles. These practices, subject to the approval of the Orange County Fire Authority, shall include at a minimum, the installation of spark arresters on equipment which has the potential to emit sparks or glowing embers, avoiding parking vehicles in areas with high or very dry vegetation, restrictions on employee smoking and the use of open flames or fire in high hazard areas and other similar safe working practices.

SC 4.14-2
(FEIR 589) Prior to the issuance of a grading permit, the contractor shall submit to the Fire Chief a list of all hazardous, flammable and combustible liquids, solids or gases to be stored, used or handled on site. These materials shall be classified according to the Uniform Fire Code and a document submitted to the Fire Chief with a summary sheet listing the totals for storage and use for each hazard class.

MM 4.14-1
(FEIR 589) Prior to the issuance of a grading permit, the contractor shall develop an approved Health and Safety Contingency Plan (HSCP) in the event that unanticipated/ unknown environmental contaminants are encountered during construction. The plan shall be developed to protect workers, safeguard the environment, and meet the requirements of the California Code of Regulations (CCR), Title 8, General Industry Safety Orders–Control of Hazardous Substances.

The HSCP should be prepared as a supplement to the Contractor's Site-Specific Health and Safety Plan, which should be prepared to meet the requirements of CCR Title 8, Construction Safety Orders.

Specifically, the HSCP must:

1. Describe the methods, procedures, and processes necessary to identify, evaluate, control, or mitigate all safety and health hazards associated with any soil, groundwater and/or air contamination that may be encountered during field construction activities.
2. Apply to all site construction workers, on-site subcontractors, site visitors, and other authorized personnel who are involved in construction operations.
3. Be approved by the Manager, Building and Safety and/or their appointed consultant team.

The HSCP will take effect only if materials affected by environmental contaminants are exposed during construction. This includes undocumented waste materials, contaminated soils, affected groundwater, and related substances that may be classified as hazardous or regulated materials, and/or materials that could endanger worker or public health. If affected materials are encountered, the HSCP will be implemented to reduce the potential exposure to the environment and workers at the site. All site workers will be required to perform work in a prescribed manner to reduce the potential that they will endanger themselves, others, or the general public.

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| MM 4.14-2
(FEIR 589) | During construction, if environmentally affected soil, groundwater, or other materials are encountered on-site, the project engineer shall be quickly mobilized to evaluate, assess the extent of, and mitigate the affected materials. The contractor or owner's consultant shall be responsible for implementing all applicable sampling and monitoring of the project. At present, applicable sampling and monitoring activities are expected to include air monitoring (both for personal protection and SCAQMD Rule 1166 compliance), collecting soil and groundwater samples for analysis, and documenting mitigation activities. Specific applicable sampling and monitoring requirements will vary, depending upon the nature, concentration, and extent of affected materials encountered. |
| MM 4.14-7
(FEIR 589) | Prior to issuance of a grading permit or approval of Area Plan for areas within Planning Areas 1, 3, and 5, whichever comes first, where soil staining has been identified, the applicant or leaseholder shall test the test the contaminated soils to assess their level of impact and a remediation plan shall be developed, if required pursuant to applicable laws and regulations. If significant contamination is encountered, the results of the testing/investigation shall be provided to OCHCA, or other appropriate agency, for direction and oversight of the remediation |
| MM 4.14-9
(FEIR 589) | Prior to issuance of a grading permit or approval of an Area Plan, whichever comes first, for those locations within Planning Area 5 where the UST's were removed, and the overburden storage area where previously contaminated soil was relocated, the applicant or leaseholder shall conduct further investigation regarding the level of contamination. If contamination exists at a level that requires action pursuant to applicable laws and regulations, a remediation plan shall be prepared. If significant contamination is encountered, the results of the testing/investigation shall be provided to OCHCA, or other appropriate agency, for direction and oversight of the remediation. |
| MM 4.14-13
(FEIR 589) | Prior to issuance of grading permits within each Planning Area, the Environmental Site Assessments (ESAs) will be updated for that grading permit area. If the Phase I Update identifies new actual or potential impacts, a Phase II ESA will be completed as necessary for the grading area by the landowner or subsequent project applicant. During the Phase II ESA, samples from potential areas of concern will be collected and submitted for laboratory analysis to confirm the nature and extent of potential impacts. If hazardous materials are identified during the site assessments, the appropriate response/remedial measures will be implemented including directives of the OCHCA and/or Regional Water Quality Control Board (RWQCB), as appropriate. If soil is encountered during site development that is suspected of being impacted by hazardous materials, work will be halted and site conditions will be evaluated by a qualified environmental professional. If requested by the qualified environmental professional, the results of the evaluation will be submitted to OCHCA and/or RWQCB, and the appropriate remedial measures will be implemented, as directed by OCHCA, RWQCB, or other applicable oversight agency, until all specified requirements of the oversight agencies are satisfied and a no-further-action status is attained. |
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MM 4.14-14
(FEIR 589)

If as part of final roadway design, it is determined that the oil well located in Planning Area 5 would be disturbed by the roadway grading, then prior to issuance of a grading permit or authorization for the contractor to proceed, the applicant or County shall coordinate with the Department of Conservation, Division of Oil, Gas, and Geothermal Resources and remedial action in compliance with well abandonment procedures will be developed and completed as part of roadway construction.

4.10 HYDROLOGY AND WATER QUALITY

Summary of Findings in Previous FEIRs

FEIR 575

FEIR 575 identified that the Prima Deshecha Landfill site is predominately located in two major watersheds: the Prima Deshecha Cañada and the Segunda Deshecha Cañada watersheds. The Prima Deshecha Cañada drainage course is the major hydrologic feature within the landfill site, covering approximately 84 percent of the site. Several small tributary streams drain the canyon and flow into the main southwesterly trending channel. The flows exit the site and enter the M01 reinforced concrete box storm drain, which was designed in 1983 to accommodate a 25-year storm. The Segunda Deshecha Cañada watershed covers approximately 15 percent of the site, located in the southeast corner of the site. A small portion, less than 1 percent of the landfill site, drains toward San Juan Creek. The focus of the analysis was on the Prima Deshecha Cañada watershed because no landfill activities are proposed in the Segunda Deshecha Cañada watershed.

FEIR 575 identified that implementation of the GDP would result in increased runoff in the Prima Deshecha Cañada watershed due to a decrease in the infiltration rate and increase in the velocity of surface water on the site. Additionally, changes in the drainage patterns will occur in Zones 1 and 4 and could occur in areas where ancillary facilities (such as the landfill gas flare facility, scales, storage, and trial staging area) are proposed. However, desilting/detention basins proposed as part of the landfill design will accommodate the increase. For the circulation component of the GDP, the need for culverts under the road were identified to allow the flows to pass. With implementation of mitigation measures, potential short- and long-term hydrological impacts would be less than significant.

FEIR 575 evaluated the potential water quality impacts associated with the components of the GDP. One potential water quality concern with landfill operations is leachate. Landfill leachate is created when water, regardless of its source, moves through refuse fill and dissolves soluble substances contained in the fill. If free leachate exists in a landfill, it is possible that it could escape from the waste fill, migrate to ground or surface water bodies, and degrade water quality. The design measures, including, but not limited to, the composite liner system, vertical distance of refuse to groundwater, and groundwater flow barriers, are used to mitigate the potential for leachate migration. These measures also serve to mitigate the potential for migration of landfill gases into groundwater. No significant impacts to water quality were identified in FEIR 575 due to the circulation component of the GDP.

FEIR 584 and FEIR 589

The Ranch Plan is located in the San Juan Creek and the Western San Mateo Creek watersheds. Based on the watershed management measures (project design features, standard conditions, and mitigation measures) adopted in conjunction with FEIR 589, the Ranch Plan Planned Community would maintain the flow regime and prevent significant impacts during a full range of flow events (2-year, 10-year and 100-year). Proposed detention facilities, in conjunction with the infiltration approach, will reduce post-project flow peaks to the pre-Ranch Plan Planned Community project level. The size of the detention facilities will comply with County criteria and reduce on- and off-site flood hazards to less than significant. The existing flow regime, especially for the more frequent and channel forming events (approximately 2-year events) will be maintained. For larger events, flow peaks will not increase.

The *Conceptual Water Quality Management Plan* (WQMP) prepared for the Ranch Plan Planned Community outlines the site design, source control and treatment systems and would provide an effective treatment for most pollutants associated with urbanization. In addition, the proposed features address both dry-weather and wet-weather water quality concerns. With the exception of certain pathogen indicators, potential runoff water quality impacts are considered less than significant with the proposed mitigation features outlined in the WQMP. More detailed WQMPs are developed for each Planning Area. A project specific WQMP is prepared for major infrastructure projects as part of the design process.

In conjunction with certification of FEIR 589, the Orange County Board of Supervisors adopted a Finding of Fact and a Statement of Overriding Considerations for water quality impacts (pathogens).⁸⁴

Project Impact Analysis

The hydrology and water quality impacts have been previously analyzed as part of FEIR 575, FEIR 584, and FEIR 589, which were prepared and certified pursuant to State and County CEQA Guidelines. The following provides clarifications or information to validate that the previous documents provide adequate CEQA documentation for the proposed Project and serves as an Addendum to the FEIRs.

- a) **Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?**
- b) **Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?**
- e) **Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?**

No New or More Severe Impacts/ No Changes or New Information Requiring Preparation of an EIR. As discussed in the FEIR 589, the Clean Water Act (CWA) requires that the discharge of pollutants to waters of the United States from any point source be effectively prohibited, unless the discharge is in compliance with a National Pollutant Discharge Elimination System ("NPDES") permit. In 1987, this was expanded to establish regulations for permitting of stormwater discharges (as a point source) by municipal and industrial facilities and construction activities under the NPDES permit program. The regulations require that municipal separate storm sewer system (MS4) discharges to surface waters be regulated by a NPDES permit.

The CWA requires states to adopt water quality standards for water bodies and have those standards approved by the EPA. Water quality standards consist of designated beneficial uses for a particular water body (e.g., wildlife habitat, agricultural supply, commercial fishing etc.), along with water quality criteria necessary to support those uses. Water quality criteria are set

⁸⁴ FEIR 589 found, based on available information, the stormwater detention basins and infiltration basins should provide moderate to good levels of treatment for pathogen indicators. However, the Ranch Plan Planned Community may result in increases in pathogen levels (i.e., bacteria counts) above target limits even though all regulatory requirements will be met. This finding was based on the fact that bacteria indicators in San Juan Creek exceeded acceptable standards downstream in the vicinity of the Pacific Ocean and neither existing nor post-development levels are likely to meet REC-1 standards for fecal coliform on a consistent basis, other than those flows that are infiltrated. Given the infeasibility of infiltrating all flows, a finding of a significant impact was made. However, it should be noted, USEPA, in an evaluation of Recreational Water Quality Criteria, is now recognizing that non-human sources of indicator bacteria represent a lower risk of human health impacts (USEPA 2017).

concentrations or levels of constituents – such as lead, suspended sediment, and fecal coliform bacteria – or narrative statements which represent the quality of water that support a particular use. In 2000, the EPA established numeric water quality criteria for toxic constituents found in those waters which have human health or aquatic life designated uses.

When designated beneficial uses of a particular water body are being compromised due to changes in water quality, Section 303(d) of the CWA requires identifying and listing that water body as “impaired.” Since the certification of the applicable FEIRs, the listing of impaired water bodies pursuant to Section 303(d) of the Clean Water Act has been updated. The *2014 and 2016 Integrated Report (Clean Water Section 303(d) List/305(b) Report)*, approved by US EPA on April 6, 2018, identifies segments of both Prima Deshecha Creek and San Juan Creek as being impaired south of the Project site. The segment of Prima Deshecha Creek is from north of I-5 in the Shorecliff Golf Club to the Pacific Ocean, approximately 1.8 miles from the edge of Zone 1 of the landfill. For San Juan Creek, the 303(d) list includes the same two locations for San Juan Creek (Pacific Coast Shoreline and Lower San Juan Creek—the mouth and one-mile up creek) as were listed on the 2002 list included in the FEIR 584 and FEIR 589. These locations are over five miles from where the LPPE would cross San Juan Creek.

The Project site is within the jurisdiction of the SDRWQCB. The San Diego Basin Plan (Basin Plan) would be the key water quality control plan for the Project study area. The Basin Plan is developed pursuant to the Porter-Cologne Water Quality Control Act of 1970 (Porter-Cologne Act), which is California’s primary statute governing water quality and water pollution issues. The Basin Plan must conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB in its State Water Policy. The primary mechanism for attainment of water quality standards in urban areas is through the MS4 NPDES Permits.

As discussed in Section 3.2.2, Conceptual Design Assumptions, of this Addendum, during the design phase, a WQMP for this Project would be developed to incorporate the water quality treatment and low impact development (LID) provisions of SDRWQCB Order No. R9-2009-0002, as described in the Model WQMP and its accompanying Technical Guidance Document (DAMP Section 7.II and 7.III, respectively, December 20, 2013).

Construction Impacts

FEIR 575 identified the landfill operations would result in the modification of the surface hydrology of the site. The landfill operations and construction period for the roadways have the potential for erosion, which could result in the degrading of surface water due to increased silt loads. FEIR 584 and FEIR 589 also identified similar potential for impacts to hydrology and water quality, prior to mitigation.

As discussed in the FEIRs, construction impacts would be minimized through compliance with the Construction General Permit, which requires completing a construction site risk assessment to determine appropriate coverage level and by preparing a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must include erosion- and sediment-control BMPs that would meet or exceed measures required by the determined risk level of the Construction General Permit, in addition to BMPs that control the other potential construction-related pollutants. A Construction Site Monitoring Program that identifies monitoring and sampling requirements during construction is also a required component of the SWPPP. These provisions would apply to the LPPE.

Erosion-control BMPs are designed to prevent erosion, whereas sediment controls are designed to trap or filter sediment once it has been mobilized. In addition to erosion- and sediment-control BMPs, the following types of BMPs would be implemented, as needed, during construction: waste and materials management; non-storm water management; training and education; and

inspections, maintenance, monitoring, and sampling. The BMPs would be implemented in compliance with the Construction General Permit.

Compliance with the Construction General Permit, including preparation of an SWPPP and General Water Discharge Requirements would ensure impacts to receiving waters from non-storm water flows during construction are less than significant. For the portion of the Project within Caltrans' right-of-way (the bridge crossing over Ortega Highway), the Project would comply with the requirements of the Caltrans Statewide Construction NPDES Permit (Caltrans Statewide General Permit for Storm Water Discharge Associated with Construction and Land Disturbance Activities Order No. 2009-0009-DWQ as amended to Order No. 2010-0014-DWQ, and Order No. 2012-0006-DWQ).

Operational (Long-Term) Water Quality

FEIR 575 did not identify any significant impacts to water quality associated with the circulation component of the GDP. Increased traffic was identified as possibly resulting in relatively minor impacts from automotive fluids dripping from vehicles onto the road. Minor impacts to surface water could result from litter generated by passing motorists. Covering of portions of the site may result in small reductions in groundwater recharge. Although impacts were identified as less than significant, mitigation measures were adopted.

In conjunction with the preparation of FEIR 584 and FEIR 589, a Conceptual WQMP was prepared for the Ranch Plan Planned Community. The Conceptual WQMP identifies the BMPs to address potential pollutants of concern; the Conceptual WQMP also identifies other measures that would control post-development peak storm water runoff discharge rates and velocities to maintain or reduce pre-development downstream erosion rates and to protect stream habitat. The source-control BMPs include routine non-structural BMPs, routine structural BMPs, and BMPs for individual categories/project features. Site-design BMPs that help reduce the predicted increase in runoff volume include the clustering of development into Planning Areas and leaving large amounts of undeveloped open space within the Ranch Plan Planned Community. These measures would be constructed as a component of the larger Ranch Plan development. This provides the framework and a more detailed Preliminary WQMP is prepared as specific projects are implemented.

As previously noted, during the design phase of the Project, specific water quality measures will be identified in the Preliminary WQMP, which would be required to be consistent with the County's DAMP. For a roadway project, pollutants of concern would be associated with metals, oil and grease, trash and debris, oxygen-demanding substances, and nutrients and pesticides (associated with landscaping particularly for the portion of the Project adjacent to development). Potential long-term treatment control BMPs identified as effective in FEIR 589, which may be used for the LPPE, include landscape management, catch basin inspection, and employee training. Structural source control BMPs include storm drain system stenciling and signage; use of efficient irrigation systems and landscape design, water conservation, smart controllers, and source control; and hillside landscaping. Site design practices also help source control treatment; they include maximizing opportunities for BMPs preserving existing drainage patterns and time of concentration and maximizing natural infiltration capacity and preserving vegetation. Project-based treatment-control BMPs are required to reduce pollutants of concern in stormwater discharges to the maximum extent practicable. As noted in Section 3.2.2, Conceptual Design Assumptions, the concept plan incorporates combination basins which provide multiple stormwater control functions including water quality treatment, hydromodification control and flood control.

The Project would not draw from groundwater or substantially interfere with groundwater recharge. FEIR 589 identified the incorporation of basins that would provide flow management in an effort to maintain the existing flow regime. As shown, the conceptual alignment has provided for water quality and hydromodification basins to maintain similar hydrologic balance and volumes within the project area. The proposed flow duration control basins will reproduce or otherwise preserve recharge and infiltration runoff volumes for groundwater. Based on this, the Project would not result in a decrease in groundwater supply and the impact on groundwater is considered to be less than significant.

With the implementation of the FEIR 575 and FEIR 589 mitigation program, water quality impacts of the LPPE would be mitigated to a less than significant level and the Project would not conflict with the Basin Plan. However, when the LPPE is considered as a component of the Ranch Plan (as a replacement of Cristianitos Road as the north-south arterial highway), the significant unavoidable impact associated with pathogen indicators would be applicable. FEIR 589 found that although the proposed BMPs such as biofiltration and source control measures would serve to reduce pathogens in San Juan Creek, infiltration of all runoff during storm events was not feasible. Therefore, FEIR 589 identified that the Ranch Plan could not with certainty state that development would not contribute to the pollutants that resulted in the segments of San Juan Creek at the coast and one-mile inland as being listed as an impaired water bodies. However, as a roadway project, the characteristics of the LPPE would not directly contribute to pathogen indicators within stormwater runoff.

c) Would the project substantially alter the existing drainage pattern of the site or area including the alteration of the course of a stream or river, or through the addition of impervious surfaces, in manner which would:

- i) result in substantial erosion or siltation on or off-site;
- 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 additional sources of polluted runoff; or
- iv) impede or redirect flood flows?

No New or More Severe Impacts/ No Changes or New Information Requiring Preparation of an EIR. The Project site would increase the impervious area due to roadway construction. The increased imperviousness of the site would result in a greater amount of runoff; however, the Project would provide hydromodification basins to ensure the natural flow regime. This approach is consistent with the *Watershed Planning Principles* that were developed as part of the NCCP/MSAA/HCP and SAMP processes to minimize hydrologic impacts and to preserve the natural water resources. The basins would provide sufficient storage for runoff volumes to avoid increases in peak discharges. The *Watershed Planning Principles*, which are incorporated into the Ranch Plan, would require the Project to mimic existing runoff and infiltration patterns within the project area and not exacerbate peak flow rates or water volumes within or downstream of the project area.⁸⁵

⁸⁵ The *Watershed Planning Principles* are incorporated as part of the Ranch Plan through Project Design Feature (PDF) PDF 4.5-1

In April 2013, the County of Orange approved the Runoff Management Plan (ROMP) for the portion of the Ranch Plan Planned Community within the San Juan Creek watershed. The preliminary storm drainage system was evaluated in the ROMP, which provides the comprehensive watershed planning guidance. This document combines the Runoff Management Plan and the Master Plan of Drainage.

The ROMP defines a plan with various strategies to provide an appropriate level of mitigation in the areas of (1) hydrology, (2) hydraulics, (3) water quality, and (4) stream stability. This planning effort evaluates the stormwater management and flood control mitigation requirements to support and provide guidance for the proposed development. Future refined watershed planning and/or design level engineering will require additional detailed analyses following the County criteria and procedures.

Due to the magnitude of the Ranch Plan area, phasing of development and drainage facilities for development are identified after approval of the Master Area Plan with the submittal of more detailed plans. Similar to the development areas, the refinement of the drainage plans that would serve the LPPE would be developed as part of final design. All County standards would be complied with.

On March 13, 2014, the SDRWQCB deemed the mitigative water quality and hydromodification management scheme detailed in FEIR 589, the Ranch Plan ROMP, and the San Juan Creek Watershed Study, acceptable. Section F.1.d(11) of Board Order R9-2009-0002 allows the use of master planned regional LID BMPs where a specific set of criteria are met. F.1.d(11) states:

Where a development project, greater than 100 acres in total project size or smaller than 100 acres in size yet part of a larger common plan of development that is over 100 acres, has been prepared using watershed and/or sub-watershed based water quality, hydrologic, and fluvial geomorphologic planning principles that implement regional LID BMPs in accordance with the sizing and location criteria of this Order and acceptable to the Regional Board, such standards shall govern review of projects with respect to Section F.1 of this Order and shall be deemed to satisfy this Order's requirements for LID site design, buffer zone, infiltration and groundwater protection standards, source control, treatment control, and hydromodification control standards.

The conceptual drainage facilities proposed for the LPPE (i.e., the hydromodification basins and water quality basins) are consistent with FEIR 589 and ROMP, in that they meet the general watershed planning objective on the macro level is to maintain the natural integrity/stability of the regional San Juan Creek system and downstream levels of flood protection through hydrologic mitigation measures, and include water quality mitigation features. Therefore, implementation of the LPPE would not result in flooding or exceeding the capacity of storm drains and would be consistent with the findings of FEIR 584 and FEIR 589.

FEIR 575 identified that the Prima Deshecha Cañada watercourse would receive increased runoff as a result of the GDP due to a combination of a decrease in the infiltration rate and an increase in the velocity of surface waters on the site. These impacts were predominately associated with landfilling and excavation activities in Zones 1 and 4. The GDP also incorporated a design of detention basins and water quality basins to address the increased runoff. The LPPE would impact the concept plans for the desilting and detention basins on the southeastern side of Zone 4. Based on the conceptual roadway alignment and the current concepts for basin locations, the LPPE would require the relocation of proposed Basin 4C, located along the southern edge of Zone 4 and Basin 5D near the proposed intersection of the LPPE and Avenida La Pata. The relocation of the planned future basins would be determined based on revisions to the landfill

engineering plans that factors in the sequencing of the fill operations for Zone 4 in an effort to capture the maximum amount of drainage for the landfill area.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

No New or More Severe Impacts/ No Changes or New Information Requiring Preparation of an EIR. The crossing of San Juan Creek is the only location where the LPPE crosses an area designated as being in the 100-year floodplain. The crossing would be built on a bridge structure meeting the County design requirements, which would also ensure flows would not be constricted resulting in greater flooding. No habitable structures are proposed. The Project site is not located in an area that would be subject to tsunami or seiche zone because other than where the roadway would cross San Juan Creek, it is not in proximity to any body of water; therefore, there would not be an increased risk of a release of pollutants due to inundation.

Mitigation Program

Based on the information provided above, neither the proposed amendments to the GDP, the County of Orange Circulation Plan Map, the San Clemente *Mobility and Complete Streets Element*, and MPAH; nor the anticipated future impacts associated with construction and operation of the LPPE would result in any new significant or substantially more severe hydrology and water quality impacts requiring major revisions to FEIR 575, FEIR 584, or FEIR 589. No new mitigation measures are required.

FEIR 575 had one hydrology and two water quality mitigation measures that were applicable to the circulation component of the GDP. FEIR 589 identified 12 standard conditions and 9 mitigation measures pertaining to hydrology and water quality. FEIR 584 summarized or referenced the measures in FEIR 575 and FEIR 589 but did not develop additional measures or suggest any changes to the measures. These measures are discussed below.

FEIR 575 has three hydrology and water quality mitigation measures pertaining to the circulation component of the GDP; however, two of the measures (MM 4.4-3 and MM 4.4-4) have two parts, which are denoted with sub-numbering. All these measures are applicable.

The following changes has been made to MM 4.3-2:

- The reference to “Orange County PF&RD” has been updated to “OCPW/Infrastructure Programs”. This revision reflects the agency’s current organizational structure.
- The references to “La Pata Avenue extension” have been changed to “LPPE”. To avoid any confusion with the change in reference from the La Pata Avenue extension to the LPPE, an “R” has been added to the end of the mitigation measure to denote the revision. However, it should be noted that this measure would have already been implemented for the La Pata improvements because the Avenida La Pata improvements have been constructed.

The following change has been made to MM 4.4-3(a), MM 4.4-3(b), and MM 4.4-4(a):

- The approving entity for all three mitigation measures has been updated from “Director, PF&RD” to the “Deputy Director, Infrastructure Programs”. This revision reflects the agency’s current organizational structure.

The following changes has been made to MM 4.3-2:

- The reference to “PF&RD/Road Programs” has been updated to “OCPW/Infrastructure Programs”. This revision reflects the agency’s current organizational structure.
- The references to “La Pata Avenue extension” have been changed to “LPPE”. To avoid any confusion with the change in reference from the La Pata Avenue extension to the LPPE, an “R” has been added to the end of the mitigation measure to denote the revision. However, it should be noted, that this measure would have already been implemented for the La Pata improvements because the Avenida La Pata improvements have been constructed.

Of the 12 standard conditions and 9 mitigation measures identified in FEIR 589 that pertain to hydrology and water quality, 6 standard conditions and 1 mitigation measures would be applicable to the LPPE.

SC 4.5-1, SC 4.5-2, SC 4.5-4, SC 4.5-5, SC 4.5-12, and MM 4.5-7 pertain to tract maps and would not be applicable to the Project. SC 4.5-6 and MM 4.5-5 pertain to improvement to or construction of flood control facilities. These measures would not be applicable because there are no such facilities. SC 4.5-7 and MM 4.5-1 both pertain to the preparation of a ROMP. As noted above, the ROMP for the San Juan Creek watershed has been prepared and approved by the County; therefore, these measures have been completed. The Project does not extend into the San Mateo watershed. SC 4.5-9 pertains to compliance with the WQMP. MM 4.5-2 requires that the Master Plan of Drainage be completed prior to the approval of the first Master Area Plan. This measure has been completed. MM 4.5-3 and MM 4.5-4 require preparation of a WQMP at the Master Area Plan and Subarea Plan levels, respectively. As an infrastructure project, a Master Area Plan and Subarea Plan is not required (SC 4.5-8 requires a project-level WQMP). MM 4.5-8 requires a stream monitoring program prior to construction within the watershed. This measure is complete for the San Juan Creek watershed. MM 4.5-9 applied to residential development in Planning Area 9 and would not be applicable to the LPPE.

The following revision has been made to SC 4.5-3 for the LPPE:

- The approving entity has been updated from “Manager of Subdivision and Grading Services” to the “Manager, Building and Safety”. This revision reflects the agency’s current organizational structure.
- The timing identified in Paragraph B of SC 4.5-3 has been revised from “Prior to the issuance of certificates of use and occupancy” to ““If constructed by RMV, prior to the offer of roadway dedication”. Additionally, the approving entity for Paragraph B is modified from “Manager, Construction” to “Manager, Inspection”, to reflect the agency’s current organizational structure.

The following revision has been made to the approving entity in SC 4.5-8 for the LPPE:

- The approving entity has been updated from “Manager, Inspection Services Division” to the “Manager, Building and Safety”. This revision reflects the agency’s current organizational structure.

SC 4.5-9 has been modified to apply if RMV is constructing the roadway and to reflect that the LPPE is an infrastructure project, which would not have use and occupancy permits or residents. The following revisions have been made:

- The timing of the measure has been revised from “Prior to the issuance of certificates of use and occupancy” to “If constructed by RMV, prior to the offer of roadway dedication”.

- Since the LPPE would not have residents, the last three bullet items have been stricken from the text of the standard condition, as applicable to the LPPE (shown in strike-out text).

The following revision has been made to the approving entity in SC 4.5-10 and SC 4.5-11 for the LPPE:

- The approving entity has been updated from “Manager, Building Permit Services” to the “Manager, Permit Intake”. This revision reflects the agency’s current organizational structure.

In MM 4.5-6, the reference to the use of biofiltration swales has been deleted (shown in strike-through text) because subsequent to the certification of FEIR 589 biofiltration swales were found not to be an effective measure for filtration of pollutants from runoff.

MM 4.3-2R (FEIR 575)	The OCPW/Infrastructure Programs shall ensure that the temporary and permanent grading associated with the LPPE comply with street drainage design criteria in the County's Local Drainage Manual.
MM 4.4-3(a) (FEIR 575)	The Deputy Director, Infrastructure Programs shall ensure that the final design of the GDP circulation and roadway improvements include features such as installation of grates in open drains and culverts to catch litter and elimination of bridge drains which drain directly into stream courses to minimize the potential water quality impacts of runoff from on-site roadways.
MM 4.4-3(b) (FEIR 575)	Prior to the initiation of construction activities, the Deputy Director, Infrastructure Programs shall apply for updated NPDES permit conditions for each phase of circulation use construction.
MM 4.4-4(a) (FEIR 575)	The Deputy Director, Infrastructure Programs shall ensure, as part of the construction documents for circulation and roadway improvements under the GDP, that the construction contractors implement erosion control measures conforming to County standards for all graded or cleared areas on the site.
MM 4.4-4(b)R (FEIR 575)	OCPW/Infrastructure Programs shall ensure as part of the construction documents for the circulation uses (i.e., LPPE) and normal facility operating practices, that silt loading to surface waters from the construction activities will be periodically tested and controlled, where necessary, by appropriate erosion control measures, siltation basins or other settling structures.

SC 4.5-3
(FEIR 589)

Drainage Improvements

- A. Prior to the issuance of any grading permits, the applicant shall in a manner meeting the approval of the Manager, Building and Safety:
 - 1) Design provisions for surface drainage; and
 - 2) Design all necessary storm drain facilities extending to a satisfactory point of disposal for the proper control and disposal of storm runoff; and
 - 3) Dedicate the associated easements to the County of Orange, if determined necessary.
- B. If constructed by RMV, prior to the offer of roadway dedication, said improvements shall be constructed in a manner meeting the approval of the Manager, Inspection.

SC 4.5-8
(FEIR 589)

Water Quality Management Plan. Prior to the recordation of any final subdivision map (except those maps for financing or conveyance purposes only) or the issuance of any grading or building permit (whichever comes first), the applicant shall submit for review and approval by the Manager, Building and Safety, a Water Quality Management Plan (WQMP) specifically identifying Best Management Practices (BMPs) that will be used onsite to control predictable pollutant runoff. This WQMP shall identify, at a minimum, the routine structural and non-structural measures specified in the current Drainage Area Management Plan (DAMP). The WQMP may include one or more of the following:

- Discuss regional water quality and/or watershed programs (if available for the project);
- Address Site Design BMPs (as applicable) such as minimizing impervious areas, maximizing permeability, minimizing directly connected impervious areas, creating reduced or “zero discharge” areas, and conserving natural areas;
- Include the applicable Routine Source Control BMPs as defined in the DAMP;
- Demonstrate how surface runoff and subsurface drainage shall be managed and directed to the nearest acceptable drainage facility (as applicable), via sump pumps if necessary.

SC 4.5-9
(FEIR 589)

Compliance with the WQMP. If constructed by RMV, prior to the offer of roadway dedication, the applicant shall demonstrate compliance with the WQMP in a manner meeting the satisfaction of the Manager, Inspection Services Division, including:

- Demonstrate that all structural Best Management Practices (BMPs) described in the project's WQMP have been implemented, constructed and installed in conformance with approved plans and specifications;
- Demonstrate that the applicant has complied with all non-structural BMPs described in the project's WQMP;
- Submit for review and approval an Operations and Maintenance (O&M) Plan for all structural BMPs for attachment to the WQMP;
- ~~• Demonstrate that copies of the project's approved WQMP (with attached O&M Plan) are available for each of the incoming occupants;~~
- ~~• Agree to pay for a Special Investigation from the County of Orange for a date (12) twelve months after the issuance of a Certificate of Use and Occupancy for the project to verify compliance with the approved WQMP and O&M Plan; and~~
- Demonstrate that the applicant has agreed to and recorded one of the following: 1) the CC&R's (that must include the approved WQMP and O&M Plan) for the project Home Owner's Association; 2) a water quality implementation agreement that has the approved WQMP and O&M Plan attached; or 3) the final approved Water Quality Management Plan (WQMP) and Operations and Maintenance (O&M) Plan.

SC 4.5-10
(FEIR 589)

Stormwater Pollution Prevention Plan. Prior to the issuance of any grading or building permits, the applicant shall demonstrate compliance under California's General Permit for Stormwater Discharges Associated with Construction Activity by providing a copy of the Notice of Intent (NOI) submitted to the State Water Resources Control Board and a copy of the subsequent notification of the issuance of a Waste Discharge Identification (WDID) Number or other proof of filing in a manner meeting the satisfaction of the Manager, Permit Intake. Projects subject to this requirement shall prepare and implement a Stormwater Pollution Prevention Plan (SWPPP). A copy of the current SWPPP shall be kept at the project site and be available for County review on request.

SC 4.5-11
(FEIR 589)

Erosion and Sediment Control Plan. Prior to the issuance of any grading or building permit, the applicant shall submit a Erosion and Sediment Control Plan (ESCP) in a manner meeting approval of the Manager, Permit Intake, to demonstrate compliance with local and state water quality regulations for grading and construction activities. The ESCP shall identify how all construction materials, wastes, grading or demolition debris, and stockpiles of soil, aggregates, soil amendments, etc. shall be properly covered, stored, and secured to prevent transport into local drainages or coastal waters by wind, rain, tracking, tidal erosion or dispersion. The ESCP shall also describe how the applicant will ensure that all BMPs will be maintained during construction of any future public rights-of-way. A copy of the current ESCP shall be kept at the project site and be available for County review on request.

MM 4.5-6
(FEIR 589)

Combined Flow and Water Quality Control System. All developments will be designed in order to achieve flow duration matching, address the water balance, and provide for water quality treatment through a combined flow and water quality control system (termed combined control system).

Combined Control System Components

The proposed combined control system will include one or more of the following components (see Exhibits 4.5-14, 15 and 16), each of which provides an important function to the system:

- Flow Duration Control and Water Quality Treatment (FD/WQ) Basin
- Infiltration Basin
- ~~Bioinfiltration Swale~~
- Storage Facility for Recycling Water for Non-Domestic Supply
- Diversion Conduit to Export Excess Flows out of the Sub-basin.

The flow duration control and water quality treatment basin provides the initial flow and water quality treatment control functions to the system. The remaining components address the excess flows, alone or in combination with each other, generated during wet weather. Additional water quality treatment control is also provided in the infiltration basin and ~~bioinfiltration swale~~. The following sub-sections describe each combined control system component in more detail.

1. Flow Duration Control and Water Quality Treatment (FD/WQ) Basin

The flow duration control and water quality treatment (FD/WQ) basin will provide both flow control and water quality treatment in the same basin. Detention basins are the most common means of meeting flow control requirements. The concept of detention is to collect runoff from a developed area and release it at a slower rate than it enters the collection system. The reduced release rate requires temporary storage of the excess amounts in a basin with release occurring over a few hours or days. The volume of storage needed is dependent on (1) the size of the drainage area; (2) the extent of disturbance of the natural vegetation, topography and soils, and creation of impervious surfaces that drain to the stormwater collection system; (3) the desired detention capacity/time for water quality treatment purposes; and

(4) how rapidly the water is allowed to leave the FD/WQ basin, i.e., the target release rates.

The FD/WQ basin shall incorporate extended detention to provide water quality treatment for storm flows. The FD/WQ basin shall also incorporate wetland vegetation in a low flow channel along the bottom of the basin for the treatment of dry weather flows and small storm events.

To the extent feasible depending on the topography and grade, the FD/WQ basin will be located in areas where there is a larger depth to groundwater and more infiltrative soils. The FD/WQ basin shall be designed to have two active volumes, a low flow volume and a high flow volume. The low flow volume is designed to capture small to moderate size storms, the initial portions of larger storms, and dry weather flows. The high flow volume is designed to store and release higher flows to maintain, to the extent possible, the pre-development runoff conditions.

2. Infiltration Basin

The second element in the combined control system shall consist of a separate downstream, shallow basin designed to infiltrate stormwater where soils have a high infiltration capacity. The infiltration basin is sized to infiltrate all the flows released from the lower volume in the FD/WQ basin; ~~nonetheless, an overflow system would convey excess flows that may occur during very wet years to the bioinfiltration swale discussed below.~~ Features of the proposed combined control system that shall guard against groundwater contamination include: (1) pretreatment of all runoff in a FD/WQ basin before it enters the infiltration basin, and (2) locating infiltration basins where there is at least 10 feet of separation to the groundwater.

3. ~~Bio-infiltration Swale~~

~~The third element of the combined control system shall be a bio-infiltration swale that leads from the FD/WQ basin to the stream channel. A bio-infiltration swale is a relatively flat, shallow vegetated conveyance channel that removes pollutants through infiltration, soil adsorption, and uptake by the vegetation. In areas characterized by terrains with good infiltration capabilities, flows released from the FD/WQ basin and carried in the bio-infiltration swale will mimic pre-development conditions, in which low flows infiltrate in the soils and only high flows reach the main stem of the stream channel. In catchments where development is located on less pervious soils and therefore pre-development runoff is higher, the swale may be lined to better mimic pre-development hydrology or flows may be piped to the stream.~~

3. Storage Facility for Recycling Water for Non-Domestic Supply

The fourth possible element of the combined control system shall be storage of surface water flows for recycling where there is opportunity

for reuse of water for irrigation, such as a golf course, residential common area, or local park. Diversion of outflows from the FD/WQ basin to non-domestic water supply reservoirs will be conducted if feasible and cost effective.

4. Diversion Conduit to Export Flows out of the Sub-basin

The fifth possible element of the combined control system shall be the provision to export flows out of the sub-basin. This element provides an additional option that may be employed to better preserve the pre-development water balance within the sub-basin. Such diversions may be desirable where excess runoff could result in increased stormwater flows or increased base flows in sensitive streams. However, all diversions of drainage area are subject to approval by the County of Orange. The diversions would be for excess runoff only and would only be feasible for development bubbles that adjoin other sub-basins having less sensitive stream channels, or are close to San Juan Creek or Lower Cristianitos Creek, which have characteristics that allow them to handle additional flows without causing damage to the stream channel. In some locations, such as Cañada Chiquita, it may also be feasible to divert flows to the wastewater treatment plant for reclamation.

4.11 LAND USE AND PLANNING

Summary of Findings in Previous FEIRs

FEIR 575

The land use and planning section of FEIR 575 addressed a number of issues beyond the current CEQA land use questions, including utility easements, trails, agricultural preserves and general plan arterial alignments. This information has been included in the sections of this Addendum identified by the CEQA Environmental Checklist. As previously noted, portions of the Prima Deshecha Landfill are within the cities of San Clemente and San Juan Capistrano. Additionally, the landfill is adjacent to the Ranch Plan Planned Community. However, the landfill would not have any direct impact on existing or planned land uses on adjacent properties. Indirect impacts, such as aesthetic impacts, agricultural impacts, utilities, and recreation, have been identified in other sections of this Addendum.

FEIR 584 and FEIR 589

The Ranch Plan Planned Community is generally at the edge of urban development. At the time FEIR 584 and FEIR 589 were prepared, the existing uses within the Ranch Plan Planned Community included various agricultural uses, industrial leases, and rural residential uses. The Ranch Plan Planned Community allows the continuation of these uses until they are replaced with urban uses. As set forth in the FEIRs, the Ranch Plan Planned Community would not disrupt or divide the physical arrangement of an established community. The closest established communities are Ladera Ranch to the north, Wagon Wheel and Coto de Caza to the east, and the cities of San Juan Capistrano and San Clemente to the west. The Ranch Plan Planned Community would not have any physical impact on these communities.

At the time FEIR 584 and FEIR 589 was prepared, the Ranch Plan Planned Community was found to be inconsistent with the regional planning programs, which identified a greater level of development on the site. This was identified as a significant unavoidable impact. (This is also discussed in Section 4.14, Population and Housing.)

Project Impact Analysis

The land use and planning impacts have been previously analyzed as part of FEIR 575, FEIR 584, and FEIR 589, which were prepared and certified pursuant to State and County CEQA Guidelines. The following provides clarifications or information to validate that the previous documents provide adequate CEQA documentation for the proposed Project and serves as an Addendum to the FEIRs.

a) Would the project physically divide an established community?

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. The LPPE alignment would not physically divide an established community. The alignment is proposed in an area that has not been developed with the approved Ranch Plan suburban uses. The LPPE would be incorporated into the internal circulation network for Planning Area 5 as part of the Master Area Plan and Subarea Plan processes. The LPPE would provide an efficient circulation network by replacing the Cristianitos Road and SR-241 extensions, which were planned when the Ranch Plan was approved. Therefore, the Project would not create a new significant impact, or a substantial increase in the severity of an effect previously identified in FEIR 584 and FEIR 589.

b) Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. The plans applicable to the LPPE that have been adopted for the avoiding or mitigating an environmental impact would be the SSHCP, the Ranch Plan Planned Community, the SAMP, the Prima Deshecha Landfill GDP and the City of San Clemente General Plan. Additionally, regional planning documents are developed to recognize the importance of a comprehensive evaluation of regional issues, which affect the environment. The *Air Quality Management Plan* is one such document and is discussed in Section 4.3, Air Quality. This section also addresses the Southern California Association of Governments' (SCAG) *2016-2040 Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS) and the 2020 RTP/SCS, which are updates of the 2004 RTP that was in place at the time FEIR 584 and FEIR 589 was prepared. The following provides a discussion of the adjacent land uses and the adopted plans and regulations.

The Southern Subregion Habitat Conservation Plan

As discussed in Section 2.1.3, Southern Subregion NCCP/MSAA/HCP and Final Program EIR 584, the SSHCP was adopted to provide long-term, large-scale protection of natural vegetation communities and wildlife diversity while allowing compatible land uses and appropriate development and growth. One component of the SSHCP program is the Habitat Reserve. Recognizing the long implementation period, the SSHCP includes an amendment process to accommodate changes and unforeseen circumstances. The roadway alignment would traverse an area originally identified to be part of the Habitat Reserve, including a portion associated with the construction of the Trampas Dam and Reservoir where a conservation easement has been dedicated. In processing an SSHCP amendment, the USFWS will evaluate the LPPE and proposed mitigation strategy in light of the both the Ranch Plan and the SSHCP, as a whole.

The conceptual design of the LPPE has incorporated design features, such as the 26-foot diameter wildlife crossing with a 300-foot buffer area surrounding the crossing, as well as oversized (48-inch) culverts to accommodate movement of mid-sized to large wildlife, which was an important consideration in the development of the SSHCP and the Habitat Reserve. Other features include wildlife exclusionary fencing and long-span bridges over San Juan Creek and Ortega Highway. Shifting the bridge crossing to the west, as compared the location assumed in the SSHCP (at Cristianitos Road), is expected to have a biologically minor effect on overall Habitat Reserve integrity and ecosystem function as measured by habitat blocks sizes, contiguity, and connectivity.

It is considered in the larger context, not as a separate standalone project. Through the SSHCP amendment process, the LPPE must demonstrate there is not a net loss of Habitat Reserve acres or a net loss of "Habitat Value" and the Project is consistent with SSHCP Habitat Reserve framework. The USFWS approval of the SSHCP amendment would confirm that the Project would not cause a significant environmental impact due to a conflict with the SSCHP, which was adopted for the purpose of avoiding or mitigating an effect on biological resources. Amending the SSHCP to incorporate the LPPE is a regulatory requirement, which would need to occur prior to construction of the roadway. Consistency with the SSHCP is a requirement of the RMV and County ITPs. The consistency of the LPPE with the SSHCP is fully discussed in Section 4.4, Biological Resources (see Environmental Checklist question 4.4(f)).

The Ranch Plan Planned Community

The Ranch Plan, which implements the *Orange County General Plan*, was developed in conjunction with the SSHCP and the SAMP to ensure consistency with the planning guidelines and principles formulated to address biological and water resources in the larger subregion. The Ranch Plan identifies the type of land uses and supporting infrastructure needed for development of each of the Planning Areas. However, prior to construction, Area Plans are required for each planning area to provide more specific detail on the neighborhood layouts, location of supporting services, collector street locations and preliminary grading concepts. Cristianitos Road, not the LPPE, was identified as the arterial highway that would provide access to Planning Area 5 and to the future extension of SR-241.⁸⁶ However, this westward shift of the north-south roadway would not result in a land use conflict. Planning Area 5 is designated as 1B, Suburban Residential (0.5 to 18.0 dwelling units per acre) on the *County of Orange General Plan, Land Use Element* (Land Use Element). Land uses approved for Planning Area 5 as part of the 2004 General Plan Amendment include residential, neighborhood center, and golf resort. The specific placement of these approved land uses is not known because a Master Area Plan has not been processed for Planning Area 5. If the LPPE is added to the Circulation Plan Map and MPAH, the Master Plan for Planning Area 5 would need to make provisions for the roadway and, through the land use planning process, demonstrate that there would not be land use conflicts associated with the implementation of the roadway (e.g., noise impacts). The General Plan provides for a transportation system to support all land uses and is not seen as a conflicting use. As noted in the Land Use Element, "The broad residential categories include allowances for local and community open space, local schools, childcare facilities, neighborhood commercial centers, and other facilities needed for neighborhood services, as well as for trails and complete streets to improve neighborhood access and connectivity to other land uses." Additionally, based on the planning process outlined in the *Ranch Plan Planned Community Program Text*, as an arterial highway, connections to the LPPE can be integrated into the Master Area Plan for Planning Area 5 to provide appropriate access and connectivity. No significant impacts with planned land uses with Planning Area 5 are anticipated.

FEIR 589 identified there were more than 23 different entities operating within the Ranch Plan site. The *Ranch Plan Planned Community Program Text*, which provides the regulations and procedures that apply to each of the land use categories approved as a part of the Ranch Plan, allows these uses to continue unless they are replaced with urban uses adopted as part of the project or the use is terminated pursuant to the applicable lease agreement. As the alignment enters Planning Area 5 the proposed alignment would be located on the western edge of the Lapeyre Industrial Sands operation. The alignment would impact approximately western edge of the leased lands but would not impact the area currently being excavated for resources. The timing on the construction of the roadway would be a factor on the extent of the impact. As discussed in Section 4.12, Mineral Resources, FEIR 584 and FEIR 589 identified that the quarry operations would cease when Planning Area 5 is developed. Should the LPPE not be constructed until Planning Area 5 is constructed, the quarry may no longer be operational, and the roadway would not impact this existing use. Should it occur prior to the development of Planning Area 5, minor modifications to the facilities may be required; however, construction of the roadway would not require the quarry operations to cease. It should be noted that FEIR 584 and FEIR 589 did identify that the Ranch Plan would result in the displacement of a number of uses, including the

⁸⁶ FEIR 589 reflected the locally preferred alignment for the southern extension of SR-241. FEIR 589 identified that at the time the EIR was being prepared, the TCA and Federal Highway Administration (FHWA) were conducting the South Orange County Transportation Infrastructure Improvement Project (SOCTIIP), which included a number of different alternatives for SR-241. Further, it stated that should the TCA and FHWA select a SOCTIIP alternative that includes an alignment for the SR 241 extension that is different from what is depicted in the local General Plans, regional planning documents, and the FEIR, the Ranch Plan project would be modified, as needed, to reflect the adopted alignment.

quarry operations. This was not identified as a significant land use impact because there is no commitment to continue these uses beyond the termination dates of the leases. Further, lease agreements have provisions for modifications. Therefore, from a land use perspective, this would not be a change in conditions and there would be no new significant impact.

Further south within the Ranch Plan site, the LPPE alignment would traverse a portion of land acquired by SMWD for the Trampas Canyon Dam and Reservoir. As noted in the Project Description (see Section 3.2, Project Description), based on the conceptual roadway alignment, there would be a need to obtain a temporary construction easement and permanent slope easements from SMWD. However, these easements would not impact the dam or reservoir, nor would there be a need to reconstruct or modify any of the elements associated with the dam or reservoir. Therefore, the land use impacts on the Trampas Canyon Dam and Reservoir would be less than significant. As discussed above and in Section 4.4, Biological Resources, a portion of the SMWD land has a conservation easement and this portion is enrolled in the Habitat Reserve. Replacement habitat has been identified (see Exhibit 11) to avoid impacts to the Habitat Reserve. Although the SSHCP amendment process may not be completed until the design phase, through this process the USFWS would evaluate the replacement habitat to ensure the Project would not result in a net loss of Habitat Reserve acres or a net loss of "Habitat Value". Therefore, through its compliance with this regulatory requirement, the Project would not cause a significant environmental impact due to a conflict with the SSHCP.

Special Area Management Plan

As discussed in Section 2.1.4, Special Area Management Plan, of this Addendum, in 2007 the Corps approved the SAMP for the San Juan Creek and Western San Mateo Creek Watersheds. This program provides watershed-level planning and permitting process framework under Section 404 of the Federal Clean Water Act for identified projects to provide for reasonable economic development and the protection and long-term management of sensitive aquatic resources (biological and hydrological). The SAMP was developed as part of a coordinated land use and natural resources conservation planning process in conjunction with the Ranch Plan and the NCCP/MSAA/HCP. The SAMP includes the following four primary elements, with the last three elements forming the Aquatic Resources Conservation Program:

- Proposed Permitting Procedures
- Aquatic Resources Preservation
- Aquatic Resources Restoration
- Aquatic Resources Management

Through the SAMP process, RMV and SMWD underwent extensive pre-project review with the Corps to avoid and minimize impacts to the aquatic ecosystem to the maximum extent practicable. This process included coordination with the resource agencies and implementation of project modifications to ensure compliance with the Section 404 (b)(1) Guidelines through avoidance, initial minimization measures and a comprehensive aquatic resource compensatory mitigation program. With the approval of the SAMP, RMV was issued an Individual Permit (SPL-1999-16236) that covers Dredge and Fill Activities within the Ranch Plan Planned Community. The long-term Individual Permit requires additional review and analysis as individual projects are proposed within the Ranch Plan to ensure consistency with allowable impacts and the terms and conditions of this long-term Individual Permit.

The LPPE was not identified as a component of the Ranch Plan when the Corps issued RMV the Individual Permit; therefore, prior to construction an evaluation of the Project by the Corps would

be required. As part of this process, utilizing the final design plans for the LPPE, it would need to be demonstrated that there would be no net loss of wetlands and the consistency of the LPPE design with the Aquatic Resources Conservation Plan, the SAMP Tenets, and *Watershed Planning Principals* at both a watershed and sub-basin scale. As part of this process, an amendment to the SAMP may be required. This would be determined in consultation with the Corps prior to construction.

The Prima Deshecha Landfill is not within the SAMP study area; however, there are no jurisdictional impacts on the Prima Deshecha Landfill site.

Prima Deshecha Landfill

As noted in Section 2.1.1, Prima Deshecha Landfill and Final Program EIR 575, the 1,530-acre Prima Deshecha Landfill site is a Class III municipal solid waste landfill, with 697 acres for waste disposal. The site is proposed on the Master Plan of Regional Recreational Facilities to become a future regional park upon completion of the landfill operations. The 2001 GDP, as amended, is the planning document for coordinated long-term implementation of both interim and ultimate site development uses. Landfill operations are designed in Zones 1 and 4 of the landfill (see Exhibit 2 previously presented in Section 2.1.1, Prima Deshecha Landfill and Final Program EIR 575). In addition to landfill activities, there is a renewable energy plant that utilizes landfill gas to produce electricity, which is sold to SDG&E (OCWR 2018). The facilities for converting the methane to energy are located in the northeast quadrant of the Avenida La Pata/Prima Deshecha interchange. Riding and hiking trails are proposed in Zone 2; however, no trails have been constructed east of Avenida La Pata.⁸⁷ Due to safety concerns, trail development east of Avenida La Pata will not occur until the landfill activities are complete. In addition to providing for a future trail, Zones 2 and 3 are designated as Supplemental Open Space (SOS) pursuant to the SSHCP. These zones also serve as buffer areas between the landfill activities and the residential development. The potential land use impacts on the Prima Deshecha Landfill are related to both the landfill operations and the function of the SOS.

The conceptual alignment would remove approximately 3.05 acres of area from Zone 4, which is designated to receive future refuse. This acreage equates to approximately 300,000 to 600,000 cy of capacity (accounting for air space of the area to be filled). FEIR 575 identified Zone 4 as having a remaining refuse capacity of 89,000,000 cy. Using the higher number, the loss of landfill capacity would be equivalent to approximately 0.67 percent of the Zone 4 capacity.⁸⁸ The reduction of area in Zone 4 would also result in the loss of future soil used for the daily cover of refuse. It is estimated that the loss of future soil would be approximately 400,000 cy (OCWR 2020). This loss of area in Zone 4 would require a reconfiguration of the future detention/desilting system for Zone 4. Based on the conceptual roadway alignment and the current concepts for basin locations, the LPPE would require the relocation of proposed Basin 4C, located along the southern edge of Zone 4 and Basin 5D near the proposed intersection of the LPPE and Avenida La Pata. The relocation of the planned future basins would be determined based on revisions to the landfill engineering plans that factors in the sequencing of the fill operations for Zone 4 in an effort to capture the maximum amount of drainage for the landfill area. Although a reduction in

⁸⁷ As shown on Exhibit 2, Zone 2 is depicted as surrounding each of the zones. Segments of a trail has been constructed in the western portion of Zone 2 in the vicinity of Zone 1. This trail is not on the County's Master Plan of Riding and Hiking Trails. However, it serves to connect trails in the cities of San Juan Capistrano and San Clemente.

⁸⁸ This calculation may overstate the impact because OCWR has developed more efficient disposal techniques since FEIR 575 was prepared.

landfill capacity, this would not be a significant impact because it represents less than one percent of the overall capacity of Zone 4. There would be no land use impacts to Zone 1 from the LPPE.

As noted, the LPPE would impact a portion of Zone 2, which is identified for trail use and as part of the SOS. Given that there is no established alignment for the trail in this portion of Zone 2, and that implementation of the trail will not occur until the closure of Zone 4, which is anticipated in 2102, there would be opportunities to accommodate the trail as part of the ultimate recreational plans for the Prima Deshecha Regional Park (see Section 4.16, Recreation). The SOS was identified pursuant to the SSHCP for the purpose of avoiding or mitigating an environmental effect associated with the landfill operations. The SOS complements the Habitat Reserve but is not part of it. Although not a part of the Habitat Reserve, the impacts to the SOS would be evaluated as part of the SSHCP amendment process to ensure the LPPE, after consideration of the proposed mitigation strategy, would not impact the SSHCP Reserve design framework.

As previously noted, the SSHCP amendment, which is a regulatory requirement because consistency with the SSHCP is a provision of the RMV and County ITP, may not be completed until the roadway design process, through this process the USFWS would evaluate the replacement habitat to ensure the Project; however, would not result in a net loss of Habitat Reserve acres or a net loss of "Habitat Value". Based on this approach, the impacts would be less than significant.

City of San Clemente General Plan

As shown on Exhibit 5 of this Addendum, the intersection of the LPPE and Avenida La Pata is located within the City of San Clemente based on the conceptual alignment. Although the City General Plan does not specifically address this roadway, the City of San Clemente adopted the *Centennial General Plan* in February 2014 to help guide important community decisions. As noted in Section 3.3, Intended Uses of this Addendum, with the designation of the LPPE on the MPAH, an amendment to the roadway systems map (Figure M-1 of the Centennial General Plan) would be required to comply with the OCTA requirement for General Plan consistency with the MPAH. In December 2020, the City Council is scheduled to direct staff to process such an amendment returning to the City Council following final approval of the MPAH Amendment by OCTA.

The Project would traverse areas designated in the San Clemente General Plan as OS1 (Open Space Public) and OS2 (Open Space Private) which fall under the protection of Measure V, a 2008 open space protection voter initiative. By itself, Measure V does not allow or prohibit any use. Rather, it refers to the open-space land-use designations in place at the time it was adopted (November 2008), as incorporated into the Centennial General Plan, and freezes them unless the voters approve a change. Specifically, Measure V locks in:

1. the designation of Open Space Areas (defined as any property that is designated for open space by the then-current General Plan, specific plans, or zoning code), so that they cannot be reclassified without prior voter approval, and
2. Permitted Open Space Uses (i.e., whatever the then-current specific plans and zoning code allowed in the Open Space Areas), so that all other uses (referred to as Non-Open Space Uses) are prohibited without prior voter approval.

In short, the Measure manifests the voters' intention to prevent any expansion of uses on land designated as open-space without first getting city-wide voter approval. Measure V contains an exception for "public roadways," which at the time contemplated local service roadways like Avenida La Pata. Like Avenida La Pata, the Project is consistent with the scope and scale of the public roadways exception contemplated in Measure V.

The Roadway Systems Section of the *Mobility and Complete Streets Element* does contain a goal and supporting policies pertaining to creating a balanced transportation network. The LPPE would serve this demand by enhancing north-south travel to and from the City. A policy also encourages participation in regional coordination on transportation improvements. The policy specifically mentions the need to coordinate on the extension of SR-241. The MPAH Guidelines supports this policy through the cooperative study process and sharing of technical analyses. The City recently initiated a General Plan Amendment to delete all references to SR-241 in the City's General Plan and zoning documents. Consistent with that action, this roadway would serve the demand that would have been served by the SR-241 extension and would delete reference on the County's Circulation Plan Map of the study of future extension/transportation options currently under evaluation by TCA. The Project would be consistent with the policies of the Roadway System Section of the *Mobility and Complete Streets Element*.

The Project is consistent with the following Policies of the *Urban Design Element* of the City's General Plan:

- UD-1.05, which requires that streets should strengthen connectivity and beautify and enhance community character with sidewalks, bicycle paths, street trees, parkways, etc.;
- UD -1.06, which requires that sidewalks, street trees, and other amenities be provided with City streets's Urban Development Element;
- UD-2.04, which encourages roadways in gateway areas to enhance motor vehicle, bicycle, pedestrian and transit circulation;
- UD-2.05, which requires the preservation of public view corridors; and
- UD-2.12, which requires inter-agency cooperation on the design, implementation, and maintenance of highway facilities and rights-of-way.

Elements such as landscaping, pedestrian paths, and bicycle lanes would be determined during the design phase. As described above, the San Clemente segment of the Project would be subject to the same collaborative County-City design process and criteria employed with their jointly development San Clemente segment of Avenida La Pata. The Avenida La Pata San Clemente entry pedestrian bridge will stil serve as the primary City gateway, but the Project's San Clemente segment would be consistent with and complement that entry. The Project is consistent with the following Policies of the City's General Plan *Mobility and Complete Streets Element*:

- M-1.18, which promotes scenic corridors to improve the City's visual quality and character and integraton of roadways with surrounding districts; and
- M-1.26, which designates Avenida La Pata, Avenida Vista Hermosa, and Camino Del Rio (streets in the immediate vicinity of the San Clemente segment) as scenic corridors and the immediately adjacent Avenida La Pata segment a key entry point to the City.

As indicated above, the Project's San Clemente terminus would be in close proximity to the existing Gateway design, roadway design, and entry monument jointly developed for Avenida La Pata. The same collaborative County-City design process and criteria employed with that project will apply to this Project, with the Avenida La Pata gateway retaining primary status as a City entry point from the unincorporated County area.

As discussed in Section 4.1, Aesthetics, the City of San Clemente does identify hillsides and ridgelines as an aesthetic resource in the City, which are depicted in Figure NR-1 in the Natural Resources Element. One such ridge is located along the southern edge of Zone 2 of the Prima Deshecha Landfill. The portion of the ridge in the City of San Clemente would not be impacted by

the LPPE; however, a portion of the ridgeline in unincorporated Orange County would be modified. The City of San Clemente's Natural Resources Element does not apply to unincorporated areas of Orange County.

Regional Transportation Plan/Sustainable Communities Strategy

SCAG is the Metropolitan Planning Organization (MPO) for six counties: Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial. As the designated MPO, the SCAG is mandated by the federal government to research and draw up plans for transportation, growth management, and air quality. As discussed in the Summary of Findings in Previous FEIRs, at the time FEIR 589 was prepared, the Ranch Plan Planned Community was found to be inconsistent with the regional planning programs, which identified a greater level of development on the site. This was identified as a significant unavoidable impact. Subsequent to the approval of the Ranch Plan Planned Community and certification of FEIR 589, the Orange County Projections (OCP) socioeconomic projections were modified and the regional planning documents were updated to reflect the 2004 approvals.⁸⁹ As such, this is no longer an impact.

The 2020-2045 RTP/SCS (known as "Connect SoCal") was adopted by the SCAG's Regional Council on May 7, 2020 for federal transportation conformity purposes.⁹⁰ The Regional Council approved Connect SoCal in its entirety and for all other purposes on September 3, 2020. The plan includes the most current regional growth forecasts that were developed in coordination with local jurisdictions. The plan sets forth the long-range regional plan, policies and strategies for transportation improvements and regional growth year of 2045. The approved plan includes a financially constrained plan and a strategic plan. The constrained plan includes transportation projects that have "committed, available or reasonably available revenue sources, and thus are probable for implementation. The strategic plan is an illustrative list of additional transportation investments that the region would pursue if additional funding and regional commitment were secured". The strategic plan is provided for information purposes only and is not part of the financially constrained and conforming Final Connect SoCal. (SCAG 2020)

Each of the RTP/SCS updates builds on the goals and progress made the previous RTP/SCS. The FEIR prepared for the 2016-2040 RTP/SCS acknowledges that "due to increasing costs and environmental concerns, the expansion of highways and local arterials has not been keeping pace with the growing population. Critical gaps in the transportation network that hinder access to certain parts of the region and/or hinder efficient regional operations currently exist." The SR-241 improvements were identified as part of a locally-developed county transportation plan that had "identified projects to close these gaps and complete the system." The 2016-2040 RTP/SCS analysis of peak period congestion delay on the regional freeway system reflects scenarios both with and without the SR-241 extension. The southern extension of the SR-241 was not carried

⁸⁹ Population, housing, and employment data is developed on a County-wide basis for use in planning programs by the Center for Demographic Research based at the California State University at Fullerton. This data estimates and projections for housing, population, and employment in Orange County. These efforts support both operational and long-range planning activities of various government agencies and are used in the regional planning documents. These socioeconomic projections are called the Orange County Projections or OCP. A number follows the OCP designation to indicate the year the data set was adopted. The OCP numbers are updated approximately every four years. OCP-2016 are the current demographic projections.

⁹⁰ Due to the COVID-19 pandemic, the Regional Council initially approved the 2020-2045 RTP/SCS for consideration by FHWA and FTA for conformity with the federal Clean Air Act. The conformity determination on the 2016-2040 RTP/SCS was set to expire on June 1, 2020. A finding of conformity is required by the federal Clean Air Act to ensure that federally-supported transportation activities conform to or are consistent with the State's air quality implementation plan for meeting the federal health-based air quality standards. Specifically, the regional transportation plan, program, and project are required to not create new violation of the federal air quality standards, worsen the existing violation, or delay the timely attainment of the applicable air quality standards.

forward in Connect SoCal (the 2020-2045 RTP/SCS). This Addendum assumes, for purposes of analyzing the Project's growth inducing and cumulative impacts that SR-241 would not be carried forward.

Connect SoCal acknowledges "Southern California's highway and arterial system functions as the backbone of the larger transportation network. Most trips in our region are still made on our highways and arterials, . . . given that critical gaps and congestion choke points still exist in the system, improvements beyond those that are operational in nature still need to be considered." (SCAG 2020). The need to add capacity for closing the gaps in the system and improving access is part of the framework and guiding principles of the Highway and Arterial improvements component of in Connect SoCal.

As such, the requested Circulation Plan Map Amendment and MPAH Amendment would not conflict with any of the regional planning documents. As previously noted, the LPPE would serve as part of the infrastructure support that was intended to be accomplished with the construction of Cristianitos Road connecting with the SR-241 extension. This configuration was reflected on the MPAH prior to the 2016 abandonment of the Green Alignment for SR-241. The role of the Transportation or Circulation Element prepared for each of the six counties and 191 cities in the SCAG region provides a summary of the existing conditions in the planning area and describes the major locations and corridors for existing and future travel based on land use patterns in order to develop a comprehensive, coordinated, and continuing transportation system for the region.

The adopted 2020-2045 RTP/SCS is the planning document that addresses the goal of sustaining mobility with the goal of fostering innovative regional solutions through inclusive collaboration, visionary planning, regional advocacy, information sharing, and promoting best practices. As noted in FEIR 589, projects are reviewed by SCAG for consistency with the regional planning core and ancillary policies that apply to the specific project being reviewed. As part of the project review an assessment is made on whether the project is consistent with or supports those specific policies. As noted above, through that review process, the regional growth assumptions and land use patterns have been aligned to be consistent with the growth provided for by the Ranch Plan and reflected in the regional planning documents updates.

Based on the evaluation of the applicable local and regional planning documents, the proposed Project would not conflict with any provisions adopted for the purpose of avoiding or mitigating adverse environmental effects. Therefore, the proposed Circulation Plan Map Amendment and MPAH Amendment would not result in any new significant or substantially more severe impacts beyond those analyzed in FEIR 584 and FEIR 589.

Mitigation Program

Based on the information provided above, neither the proposed amendments to the GDP, the County of Orange Circulation Plan Map, the San Clemente *Mobility and Complete Streets Element*, and MPAH; nor the future construction of the LPPE would result in any new significant or substantially more severe land use and planning impacts requiring major revisions to FEIR 584 or FEIR 589. No new mitigation measures are required.

FEIR 575 had two mitigation measures in the Land Use/Relevant Planning section that were applicable to the circulation component of the GDP. Both of these measures pertained to at-grade trail crossings of Avenida La Pata. As identified in Section 4.16, Recreation, neither of these measures would be applicable to the LPPE because the regional trails are not depicted as crossing the proposed the LPPE alignment.

FEIR 584 and FEIR 589 included three land use mitigation measures; however, none of these would be applicable for the future construction of the LPPE. MM 4.1-1 and 4.1-8 pertained to Planning Area 8. MM 4.1-5 required disclosure to all future sales, leases or rentals in Planning Area 5 of the proximity of the Prima Deshecha Landfill. Although this measure applies to Planning Area 5, it would not be applicable to the LPPE.

4.12 MINERAL RESOURCES

Summary of Findings in Previous FEIRs

FEIR 575

The NOP for FEIR 575 identified that the Prima Deshecha Landfill site did not have any mineral resources of a quantity sufficient to mine economically. Therefore, this topic was focused out of FEIR 575.

FEIR 584 and FEIR 589

FEIR 584 and FEIR 589 identified two areas of significant mineral resources within the Ranch Plan Planned Community limits. The first is identified as the Oglebay-Norton Industrial Sands (ONIS)⁹¹ operation in Trampas Canyon, which would be displaced by development in Planning Area 5. The second are the sand and gravel resources within San Juan Creek, which were not actively being mined at the time FEIR 584 and FEIR 589 were certified, but were identified by the California Department of Conservation/Division of Mines and Geology as a significant sand and gravel resource for the Orange County region. The FEIRs assessed that the ability to extract these resources would be lost with the development of the Ranch Plan Planned Community. These impacts remained significant and unavoidable and the Findings of Fact and a Statement of Overriding Considerations were adopted for impacts to mineral resources.

Project Impact Analysis

The impacts to mineral resources have been previously analyzed as part of FEIR 584 and FEIR 589, which were prepared and certified pursuant to State and County CEQA Guidelines. The following provides clarifications or information to validate that the previous documents provide adequate CEQA documentation for the proposed Project and serves as an Addendum to FEIR 584 and FEIR 589.

- a) **Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?**
- b) **Would the project result in the loss of availability of a locally important mineral resources recovery site delineated on a local general plan, specific plan, or other land use plan.**

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. The mineral resources impacts analysis conducted as part of FEIR 584 and FEIR 589 was prepared pursuant to State and County CEQA Guidelines. As noted above, two locations were identified in FEIR 584 and FEIR 589 as having significant mineral resources—San Juan Creek and the Lapeyre Industrial Sands quarry (previously identified as the ONIS operation). Prior to the Ranch Plan approval, both locations were zoned S&G, Sand and Gravel. With the approval of the Ranch Plan, the zoning was changed to PC, Planned Community. The proposed alignment for the LPPE would traverse both locations. The Ranch Plan identified two Project Design Features (PDFs) to reduce the impact to mineral resources. This included the continuation of surface mining within Planning Area 5 as an interim use until such time as development is proposed and allowing temporary excavation/extraction of construction aggregate or construction-related materials extraction during construction grading and on-site earthmoving

⁹¹ FEIR 589 identified the site as the ONIS. The quarry is currently operated by Lapeyre Industrial Sands; however, the nature of the operations is substantially the same as the operation identified in FEIR 584 and FEIR 589.

activities to promote project construction efficiencies and limit long distance transportation of construction aggregate and construction related material. As noted above, even with these measures, the Board of Supervisors, when approving the Ranch Plan, found the inability to extract these resources would be a significant and unavoidable impact and the Findings of Fact and a Statement of Overriding Considerations were adopted for impacts to mineral resources.

The LPPE alignment would traverse each of these resources. The following provides more detailed information on these resources and the potential for impact to these resources.

The San Juan Creek mineral deposit is still reflected on the *County of Orange General Plan, Resources Element* (Resources Element) and the California Department of Conservation/Division of Mines and Geology mapping. As reported in FEIR 584 and FEIR 589, the California Geological Survey Updated Special Report 143, prepared in 1994, identified San Juan Creek contains aggregate resources equaling 120 million short tons. However, the depiction of a Mineral Resource Zone (MRZ) in the California Geological Survey report is not intended to represent a commitment to mineral extraction for those areas, but rather as a response to the Surface Mining and Reclamation Act (SMARA) mandate to recognize mineral resource areas. Resources include reserves as well as all potentially usable aggregate materials that may be extracted in the future, but for which no permits allowing extraction have been granted or for which marketability has not been established. As identified in FEIR 584 and FEIR 589, there are no aggregate extraction activities in San Juan Creek. Though the Ranch Plan would not result in the loss of the resource (they would still be located onsite), the identification of San Juan Creek for conservation use precludes the future extraction of this resource and the impact was considered a significant impact.⁹²

The LPPE would bridge San Juan Creek. As identified above, the approval of the Ranch Plan identified San Juan Creek for conservation; therefore, any future mineral resource extraction is precluded. The proposed Project would not change this finding or further contribute to the loss of the ability to extract the aggregate resources. The LPPE would not result in a new or substantially more severe impact to this resource, the loss of which has been addressed by the Board of Supervisors with the adoption of a Finding of Fact and Statement of Overriding Considerations.

Consistent with the analysis provided in FEIR 584 and FEIR 589, the Resources Element reflects the locations identified by California Department of Conservation/Division of Mines and Geology as having significant mineral resources. Therefore, the Resources Element does not identify the Lapeyre Industrial Sands quarry on the map of Mineral Resources (Figure VI-13 in the Resources Element). However, quarry operations are still ongoing at this site. FEIR 589 identified that in 2004, approximately 500,000 tons of silica sand was processed annually for building materials such as stucco, grouts, and mortars, as well as for use in golf courses, playing fields and playgrounds. Since this operation is still ongoing, a substantial loss of the ability to recover this resource would be considered a significant impact because this resource would be considered of value to the region due to the local demand for building materials. Although the LPPE alignment would traverse the western edge of the Lapeyre leasehold, the alignment would not impact the currently ongoing quarry operation, which is located to the east of the LPPE alignment. As identified above, FEIR 584 and FEIR 589 identified an impact of the Ranch Plan would be the loss of the ability to mine this resource. The impact of the LPPE on the Lapeyre Industrial Sands operation would not be a new or more significant impact than previously evaluated.

Neither the Orange County General Plan Resources Element nor the California Department of Conservation/Division of Mines and Geology mapping have identified new locations of mineral

⁹² FEIR 584 and FEIR 589 identified there would be significant biological impacts, specifically to the arroyo toad, if the sand and gravel resources in San Juan Creek were to be mined.

resources within the alignment study area as having value to the region or considered to be locally important (CGS 2015). Therefore, the LPPE would not result in a new significant or substantially more severe impacts beyond those identified in the FEIR 584 and FEIR 589.

Mitigation Program

Based on the information provided above, neither the proposed amendments to the GDP, the County of Orange Circulation Plan Map, the San Clemente *Mobility and Complete Streets Element*, and MPAH; nor the anticipated future impacts associated with construction and operation of the LPPE would result in any new significant or substantially more severe impacts to mineral resources requiring major revisions to FEIR 584 or FEIR 589. FEIR 575 focused mineral resources analysis out as part of the NOP, so no mitigation measures were identified. The Mitigation Program in the other FEIRs identified the two PDFs; however, no mitigation measures were identified as feasible. PDF 4.13-1 identified that the continued surface mining within Planning Area 5 as an interim use. PDF 4.13-2 allowed for the temporary excavation/extraction of construction aggregate or construction-related materials extraction during construction grading to limit long distance transportation of construction aggregate and construction related material. These measures would still be applicable to the Ranch Plan but would not be project design features of the LPPE.

4.13 **NOISE**

Summary of Findings in Previous FEIRs

FEIR 575

FEIR 575 identified noise impacts associated with the uses identified in the GDP would be significant if they exceeded the noise standards identified by the County of Orange, or the cities of San Juan Capistrano or San Clemente. FEIR 575 identified that noise impacts are generally separated into temporary (construction) noise impacts and long-term impacts. However, with the landfill operations, the construction impacts are long-term because the noise generated by construction would be on going for the life of the landfill operation. Only Zone 1 was identified as having noise sensitive uses that have a direct line-of-sight of the landfill operations and are located within a mile of the operations. Intervening ridges and rolling topography prevent unobstructed views of the landfill activities, with the exception of Forester Ranch in San Clemente, which has direct line-of-sight views of Zone 1 activities. GDP activities were not identified as resulting in a 3 decibel (dB) project-related increase, which was used to determine if the noise increase would result in a significant noise impacts.

FEIR 584 and FEIR 589

FEIR 584 and FEIR 589 addressed both short-term construction and long-term operational noise impacts. The FEIRs concluded that impacts would be less than significant if construction was limited to the hours prescribed in the *County of Orange Noise Ordinance* (County Noise Ordinance),⁹³ if equipment has properly operating and maintained mufflers, and if stockpiles were located away from residential areas.

Impacts from noise from the Ranch Plan project-generated traffic were estimated in FEIR 584 and FEIR 589 by comparing the “with” and “without” the Ranch Plan traffic volumes and evaluating the projected changes in noise levels along roadways in the vicinity of the RMV Planning Area. The analysis evaluated potential impacts on the adjacent arterial highways, extending west to I-5. Cumulative noise impacts were estimated by comparing the future noise levels to existing noise levels. FEIR 589 noted that, based on the thresholds of significance, the Ranch Plan would not have any significant project-specific noise impacts. Similarly, FEIR 584 addressed the potential impacts of the Covered Activities and incorporated by reference previous environmental documentation, including FEIR 589.

Aircraft noise was determined not to be a significant impact because of the distance of the site to the nearest airport. John Wayne Airport is the closest commercial airport, which is located approximately 18 miles from the Project site. There are no private airstrips in the vicinity of the Ranch Plan site. FEIR 589 also addressed potential aviation and other military noise associated with the operations at MCB Camp Pendleton. Based on historic activities at MCB Camp Pendleton and the base’s relation to the Ranch Plan site, noise levels generated by military activities are not expected to exceed the County’s Community Noise Equivalent Level (CNEL) noise criteria for the project site.⁹⁴

⁹³ The *Noise Ordinance* is part of the *County of County Municipal Code* (Division 6, Section 4.6).

⁹⁴ The airfield at MCB Camp Pendleton is approximately 15.5 miles south of the Orange/San Diego County line and over 19 miles south of the southern terminus of the LPPE. A Range Compatible Use Zone study, which assesses potential impacts, including noise, from the operations at MCB Camp Pendleton was being updated at the time FEIR 589 was certified. The study, which was completed in June 2007, does not identify any impacts on the Ranch Plan site.

Project Impact Analysis

The noise impacts have been previously analyzed as part of FEIR 575, FEIR 584, and FEIR 589, which were prepared and certified pursuant to State and County CEQA Guidelines. The following provides clarifications or information to validate that the previous documents provide adequate CEQA documentation for the proposed Project and serves as an Addendum to the FEIRs.

- a) Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies?**

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR.

Short-Term Construction Noise

Noise generated by construction equipment and construction activities can reach high levels. As discussed in the FEIRs, construction equipment noise comes under the control of the Environmental Protection Agency's Noise Control Program (Part 204 of Title 40, Code of Federal Regulations). The County's Noise Ordinance and *General Plan Noise Element* contain the County's policies on noise. The County Noise Ordinance applies to noise generated on one property impacting a neighboring property. Specifically, the County Noise Ordinance establishes maximum noise levels that may be experienced on a neighboring property as a result of noise generated on/from another property. The County Noise Ordinance is enforceable throughout all unincorporated portions of the County. However, an exemption for construction activities is provided for in the County Noise Ordinance (Section 7-6-7(e) of the Municipal Code), which reads as follows:

Noise sources associated with construction, repair, remodeling, or grading of any real property, provided said activities do not take place between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or at any time on Sunday or a Federal holiday.

This requirement is reflected in a standard condition in FEIR 589 (SC 4.8-1).⁹⁵

The major sources of noise associated with construction would include heavy grading equipment and pile driving for the bridges over San Juan Creek and Ortega Highway. Peak noise level generated by the heavy grading equipment would be 70 to 95 dBA at a distance of 50 feet.⁹⁶ Pile driving activities can generate noise levels of up to 100 dBA at 50 feet (FTA 2006). As discussed in the FEIRs, the noise level dissipates with distance from the noise source. At 150 feet, the peak construction noise levels range from 61 to 86 dBA. At 1,000 feet, the peak noise levels range from 44 to 69 dBA. It should be noted that these noise levels are based upon worst-case conditions and, typically, noise levels would be less because the analysis assumes no shielding

⁹⁵ The City of San Clemente's Municipal Code has a similar but slightly more restrictive requirement. The City's Ordinance, states that construction activity should be restricted to between the hours of 7:00 a.m. and 6:00 p.m. on Monday through Friday, between the hours of 8:00 a.m. and 6:00 p.m. on Saturday, and at no time on a Sunday or a City-recognized holiday.

⁹⁶ Because the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear. Community noise levels are measured in terms of the "A-weighted decibel," abbreviated dBA.

by topography or buildings. Additionally, construction noise is generally not at the peak level continuously.

For the LPPE, the majority of the alignment would traverse areas that are currently undeveloped. There would be no construction directly adjacent to existing residences or other noise sensitive uses. Residential uses exist in the vicinity of the northern and southern termini of the roadway. At the southern terminus the roadway would be 1,000 feet from the closest residential uses. This distance would reduce the noise levels experienced at the residential uses. Intervening topography would also provide attenuation, thereby reducing the noise levels experienced at the residential units. At the northern terminus, the closest residences would be approximately 900 feet from the closest point of the roadway. Again, the distance from the construction activities would reduce the noise from grading equipment and pile driving equipment associated with the construction of the bridges over San Juan Creek and Ortega Highway. Furthermore, in addition to limits on the hours of construction, the standard conditions applicable to the Project requires construction equipment be equipped with properly operating and maintained mufflers and stockpiling and staging be located as far from residences as practicable.

Construction activities would also result in an incremental increase of traffic on the roadways that provide access to the Project site. This would include construction crew commutes and the transport of construction equipment and materials to the Project site. As a result, noise levels would incrementally increase on roads that provide access to the site. However, the noise increase along the access roads would not be discernible because the projected construction traffic will be minimal when compared to the existing traffic volumes on the adjacent roadways.⁹⁷ It takes a doubling of traffic volume to increase the noise level by 3 dB, which is considered barely perceptible. Therefore, short-term, construction-related worker commutes and equipment transport noise impacts would not be substantial.

The LLPE would not result in a new significant or substantially more severe construction noise impact compared to the analysis in FEIR 575, FEIR 584, and FEIR 589.

Long-Term Operational Noise

Long-term operational impacts would be associated with the redistribution of traffic on the roadway network. The noise levels are presented in terms of Community Noise Equivalent Level (CNEL), which is the predominant rating scale used in California for land use compatibility assessment. The CNEL scale represents a time weighted 24-hour average noise level based on the A-weighted decibel. Time weighted refers to the fact that noise which occurs during certain sensitive time periods is penalized for occurring at these times. The evening time period (7 p.m. to 10 p.m.) penalizes noises by 5 dBA, while nighttime (10 p.m. to 7 a.m.) noises are penalized by 10 dBA.

⁹⁷ Using Caltrans 2018 traffic data (the most current year with posted volumes), Ortega Highway east of Rancho Viejo Way had an average of approximately 41,800 Annual Average Daily Trips (AADT). West of Gibby Road (identified in the Caltrans data as Conrock entrance) had approximately 31,600 AADT. SR-241 had approximately 6,900 AADT at Oso Parkway. (<https://dot.ca.gov/programs/traffic-operations/census>) According to the OCTA 2019 Traffic Flow Map, in 2017 (the most recent year with counts for these roadways) Oso Parkway at SR-241 had 24,000 ADT and Avenida La Pata south of Ortega Highway had 19,000 ADT (<https://www.octa.net/pdf/2019-ADT.pdf>).

As discussed in the FEIRs, the County's Noise Element establishes exterior and interior noise standards for noise sensitive uses (i.e., residential uses, schools, hospitals, and places of worship). For residential uses, 65 CNEL is used for "outdoor living areas". The County defines "outdoor living areas" to be spaces that are typically used for passive recreational activities or other noise sensitive uses. Such spaces include patio areas, barbecue areas, and Jacuzzi areas for residential uses. Outdoor areas that are usually not included in the definition for residential areas include front yard areas, driveways, greenbelts, maintenance areas, and storage areas. For schools, areas routinely used for educational purposes that may be adversely impacted by noise are considered "outdoor living areas," while other areas not used for education uses such as play yard areas are not considered "outdoor living areas." An interior standard of 45 CNEL is applied for residential uses. A typical residence can achieve a 12 dB noise reduction with windows open (i.e., interior noise levels will be at least 12 dB lower than the exterior noise levels with open windows) and a 20 dB reduction with windows closed. For grades K-12, the interior noise standard is 45 LEQ(h).⁹⁸ The County Noise Ordinance does prescribe exterior and interior noise standards; however, the control of the mobile noise sources on public roads is preempted by federal and state laws.⁹⁹

The County's noise standards, which were also used in FEIR 575, FEIR 584, and FEIR 589, would apply to the LPPE to determine if an impact would occur. The noise standard requires that both of the following two criteria are met:

- the project traffic results in a substantial noise level increase on a roadway segment adjacent to a noise sensitive land use (e.g., residential use) (a substantial noise increase is defined as an increase of 3 dB or more); and
- the resulting "future with project" noise level exceeds the criteria for the noise sensitive land use, as identified above, for the County of Orange. The following interior and exterior noise standards apply to the LPPE:
 - 45 CNEL residential interior noise levels
 - 65 CNEL residential exterior noise levels

As noted, in Section 2.4, Alternative Environmental Baseline, the impact analysis compares the 2045 with and without the proposed Amendment (i.e., 2045 traffic volumes with the LPPE compared to the 2045 network without having Los Patrones Parkway as a continuous route to Avenida La Pata [No LPPE]). This allows the analysis to define the changes in circulation patterns associated with the proposed Project more clearly. Use of an existing conditions baseline would be misleading if the 2045 modified circulation network was evaluated compared to existing conditions because the evaluation would reflect the changes in trips associated with full build-out of the Ranch Plan (which was already approved and evaluated in the prior EIRs) and any regional growth. These trips will occur regardless and would mask the effect of the change in the MPAH and Circulation Plan Map and the construction and operation of LPPE.

To determine if the redistribution of the trips would result in a substantial change in the noise characteristics from what was previously evaluated, the 2025 traffic volumes projections on key roadways, presented in FEIR 584 and FEIR 589 for the Ranch Plan Buildout scenario, have been compared to the 2045 traffic volumes in the traffic impact study prepared by Iteris for the LPPE

⁹⁸ For LEQ(h), the h is the time duration of usage in hours.

⁹⁹ The cities of San Clemente and San Juan Capistrano have comparable noise standards for residential uses. The City of San Clemente noise standard for exterior and interior living areas require that existing or future noise levels not exceed an exterior L_{dn} of 65 dBA and an interior L_{dn} of 45 dBA. The San Juan Capistrano General Plan is consistent with the County's with an exterior standard of 65 dBA CNEL and an interior noise level of 45 dBA CNEL.

(the traffic impact study is provided in Appendix E of this Addendum).¹⁰⁰ The comparison uses the scenario from FEIR 584 and FEIR 589, with buildout of the Ranch Plan and the long-range cumulative growth assumptions, using the committed network (i.e., existing and funding improvements) plus the construction of Avenida La Pata (depicted in Exhibit 4.6-11 in FEIR 589). In FEIR 584 and FEIR 589, this scenario does include an arterial highway extending through Planning Area 5; however, it was shown connecting to Avenida Pico, not Avenida La Pata.

Based on the 2045 traffic volumes, which are also discussed in Section 4.17, Transportation, of this Addendum, other roadways that would experience the greatest traffic increases would be Los Patrones Parkway north of Cow Camp Road, Avenida La Pata south of the LPPE connection, Cow Camp Road east of Los Patrones Parkway, and Avenida Vista Hermosa. Although there is an increase in traffic volumes on these roadways compared to the 2025 traffic volumes included in FEIR 584 and FEIR 589, there would not be a significant noise impact unless the noise increase exceeds the County noise standards (identified above) and the traffic results in a 3 dB or more increase. Both criteria must be met for the impact to be considered significant.¹⁰¹ A number of roadways would also experience a decline in traffic volumes; however, the traffic volume reductions would not be expected to substantially change the noise levels associated with the roadways.

Table 3 identifies the locations that would experience an increase in traffic volumes as a result of adding the LPPE to the circulation network (i.e., 2045 traffic volumes with LPPE are higher compared to projections without the LPPE [No Project]) and warranted an evaluation for a potential noise increase. The traffic impact study assigns each of the roadway segments a segment number. Exhibit 13 provided in Section 4.17, Transportation, identifies the locations of each of these roadway segments. The difference in traffic volumes between the 2045 with and without the LPPE represent the change associated with the Project rather than other factors such as regional growth. For the locations where the LPPE would result in higher traffic volumes, the 2025 traffic volumes identified in FEIR 584 and FEIR 589 are also provided, when available, because the 2025 traffic volumes were the basis for the noise analysis in for the SSHCP and the Ranch Plan. For those locations where the 2045 traffic volumes are projected to exceed the traffic projections evaluated in FEIR 584 and FEIR 589, a closer evaluation is included to determine if there would be potentially greater traffic noise than what was addressed in FEIRs. These locations were categorized into three different groups for consideration: (1) locations within the Ranch Plan not currently developed; (2) locations within the Ranch Plan with adjacent sensitive receptors; and (3) locations outside of the Ranch Plan limits.

¹⁰⁰ FEIR 575 was prepared before the Ranch Plan Planned Community was approved; therefore, the comparison focuses on the analysis in FEIR 584 and FEIR 589. However, the traffic volumes were not substantially different. The analysis in FEIR 575 used a 2020 horizon year. The 2020 ADT on Avenida La Pata is shown as being 24,000 ADT south of Ortega Highway and 38,000 ADT south of Avenida Vista Hermosa. Volumes are not posted for Avenida Vista Hermosa. Antonio Parkway north of Ortega Highway was shown as having 31,000 ADT in 2020. Although the SR-241 extension is depicted on the circulation maps in FEIR 575, no traffic volumes are shown. Traffic volumes were only posted for the arterial highway network (i.e., no posting of volumes for I-5 or SR-241). Los Patrones Parkway did not exist and was not identified as a future arterial highway; therefore, no trip assignments would have been made to the roadway.

¹⁰¹ The transportation implications of the increased traffic is evaluated in Section 4.17, Transportation.

TABLE 3
ROADWAYS WITH INCREASES IN
AVERAGE DAILY TRAFFIC VOLUMES WITH THE LPPE

Roadway Segment		2025 Traffic Volume from FEIR 584 and FEIR 589 ^b	2045 Traffic Volume without LPPE (2-lane Ortega)	2045 Traffic Volume without LPPE (4-lane Ortega)	2045 Traffic Volume with LPPE (2-lane Ortega)	2045 Traffic Volume with LPPE (4-lane Ortega)
6	Avenida Vista Hermosa, Calle Frontera to Camino Faro/Laurel	39,000	20,300	20,400	24,000	24,100
7	Avenida Vista Hermosa, Camino Vera Cruz to Sports Park	43,000	20,700	20,700	26,000	26,100
8	Camino Del Rio, Camino De Los Mares to Calle Sarmentoso	NA	7,600	7,600	8,500	8,300
16	Cow Camp Road, Coyotes to Bucker Way	31,000	16,700	15,200	21,100	21,400
17	Cow Camp Road, Bucker Way to Ortega Hwy	35,000	12,800	11,300	17,300	17,800
18	Coyotes, south of Bucker Way	NA	8,300	8,300	8,400	8,400
20	Esencia Drive, Chiquita Canyon Drive to Risilla Drive	NA	4,400	4,400	5,000	5,000
21	Esencia Drive, south of Fauna Drive	NA	1,100	1,100	2,000	2,000
22	Esencia Drive, south of Andaza	NA	1,100	1,100	2,100	2,100
23	Esencia Drive, north of Cow Camp Road	NA	3,900	3,900	4,900	4,900
30/31	Los Patrones Parkway, north of Chiquita Canyon Drive ^a	33,000	34,500	34,500	37,500	37,600
32/33	Los Patrones Parkway, north of Cow Camp Road ^a	18,000	12,700	12,500	15,700	15,800
35	LPPE, south of Cow Camp Road	NA ^c	N/A	N/A	22,100	22,000
36	LPPE, east of Avenida La Pata	NA ^d	N/A	N/A	21,500	21,600
43	Ranch Canyon Road (previously Cristianitos Road), north of Cow Camp Road	17,000	2,900	3,000	3,300	3,300
44	San Juan Creek Road, west of Avenida La Pata ^e	13,000	9,500	9,600	9,700	9,900
45	Avenida La Pata, LPPE to Camino Del Rio	22,000	17,000	17,000	28,300	28,200
46	Avenida La Pata, Camino Del Rio to Avenida Vista Hermosa	24,000	24,800	25,000	32,500	32,600

**TABLE 3
ROADWAYS WITH INCREASES IN
AVERAGE DAILY TRAFFIC VOLUMES WITH THE LPPE**

Roadway Segment		2025 Traffic Volume from FEIR 584 and FEIR 589 ^b	2045 Traffic Volume without LPPE (2-lane Ortega)	2045 Traffic Volume without LPPE (4-lane Ortega)	2045 Traffic Volume with LPPE (2-lane Ortega)	2045 Traffic Volume with LPPE (4-lane Ortega)
47	Avenida La Pata, Avenida Vista Hermosa to Avenida Pico	41,000	7,000	7,000	8,200	8,200
<p>NA: Not Available; N/A: Not Applicable (roadway not included in this scenario)</p> <p>^a In the 2020 Iteris Report, the traffic volumes for Los Patrones Parkway are shown for each direction of travel (i.e., north and south for Los Patrones Parkway)) because the roadway is divided. The directional volumes for each roadway have been added for easier comparison to the volumes evaluated in FEIR 589 and other environmental documents referenced in this section.</p> <p>^b The traffic volumes from FEIR 589 shown for Los Patrones Parkway are the volumes posted for an arterial highway proposed to extend from Oso Parkway south to Avenida Pico along an alignment proposed for the SR-241 extension.</p> <p>^c FEIR 584 and FEIR 589 identified Cristianitos Road as the north-south arterial highway in the scenario without the extension of SR-241. Cristianitos Road was projected to have 28,000 ADT south of Cow Camp Road.</p> <p>^d FEIR 584 and FEIR 589 identified Cristianitos Road as the north-south arterial highway in the scenario without the extension of SR-241. Cristianitos Road was projected to have 22,000 ADT as it connected to the existing segment of Avenida Pico.</p> <p>^e The circulation network in FEIR 584 and FEIR 589 did not assume the connection of San Juan Creek Road to Avenida La Pata because it was not a funded improvement. FEIR 584 and FEIR 589 identified 13,000 ADT east of La Novia with volumes up to 16,000 ADT east of I-5.</p> <p>Sources: FEIR 589 and Iteris 2020.</p>						

Locations Within The Ranch Plan Not Currently Developed

The following segments within the Ranch Plan are projected to have higher traffic volumes in 2045 with the LPPE compared to the No Project scenario:

- Cow Camp Road, Coyotes to Bucker Way (Segment 16)
- Cow Camp Road, Bucker Way to Ortega Hwy (Segment 17)
- Coyotes, south of Bucker Way (Segment 18)
- LPPE, south of Cow Camp Road (Segment 35)
- LPPE, east of Avenida La Pata (Segment 36)
- Ranch Canyon Road (previously Cristianitos Road), north of Cow Camp Road (Segment 43)

The LPPE would extend through currently undeveloped areas (predominately Planning Area 5) so there would not be a noise impact on the land uses adjacent to the LPPE. Although, residential uses are approved for Planning Area 5, it is not possible at this time to evaluate the possible noise impacts on the future noise sensitive uses because the precise locations of the uses are not known. The LPPE would result in additional traffic using roadways in Planning Area 3 (Segments 16, 17, 18, and 43). These locations are not currently developed. As noise sensitive land uses are developed in Planning Areas 3 and 5, an acoustical evaluation would be required to determine if attenuation measures are required by the residential developer. FEIR 589 identifies this as a standard condition (SC 4.8-3 through SC 4.8-5) for residential, multi-family, and non-residential uses, respectively. These studies are required to evaluate the precise location of the sensitive uses and the site conditions to determine the appropriate type of acoustical design features to achieve interior and exterior noise standards. With implementation of these standard conditions, there would not be a new or substantially more severe noise impact on sensitive uses adjacent to these roadway segments. It should also be noted, the 2025 traffic volumes identified in FEIR 589 were higher for Segments 16, 17, and 43 than the projected 2045 traffic volumes. Based on the requirements in FEIR 589, there would be no new or substantially greater impacts at the above listed locations.

Locations Within The Ranch Plan With Adjacent Sensitive Receptors

The following segments within the Ranch Plan are projected to have higher traffic volumes in 2045 with the LPPE compared to the No Project scenario:

- Esencia Drive, Chiquita Canyon Drive to Risilla Drive (Segment 20)
- Esencia Drive, south of Fauna Drive (Segment 21)
- Esencia Drive, south of Andaza (Segment 22)
- Esencia Drive, north of Cow Camp Road (Segment 23)
- Los Patrones Parkway, north of Chiquita Canyon Drive (Segments 30/31)
- Los Patrones Parkway, north of Cow Camp Road (Segments 32/33)

Noise sensitive land uses have been developed adjacent to each of these roadways. Consistent with the standard conditions, acoustical analyses were conducted in conjunction with the tentative tract maps for these developments. All of these roadways are in Planning Area 2. The acoustical analysis done for Planning Area 2 used projected 2035 traffic volumes and determined the traffic volumes were high enough on Los Patrones Parkway (known then as "F" Street), Chiquita Canyon Road (known then as "A" Street), and Cow Camp Road to warrant an evaluation and attenuation measures (L&B 2013). The projected 2035 traffic volumes on these roadways ranged

46,000 ADT on Cow Camp Road to 16,700 ADT on the segment of Chiquita Canyon Drive west of Los Patrones Parkway. Esencia Drive serves as a collector road internal to the development. The projected 2045 traffic volumes on Esencia Drive (Segments 20 through 23) with and without the LPPE are low and would not generate sufficient traffic noise to require attenuation. Without the LPPE, the traffic volumes on Esencia Drive are below 5,000 ADT and only one segment (Segment 20) increases to 5,000 ADT with the LPPE. Traffic noise varies with traffic volume and speed and distance from the road. The design speed for Esencia Drive 40 miles per hour (mph) south of Andaza Street and 35 mph north to Chiquita Canyon Drive. With these traffic volumes (5,000 ADT), the Federal Highway Administration, Highway Traffic Noise Prediction Model, estimates the 65 dBA CNEL Noise Contour would be 69 and 59 feet from the roadway centerline, respectively (Irvine 2012). The residences are set back further than 69 feet from the centerline. There is also an elevation difference for many of the residences. Therefore, there would be no new or significant impact.

Los Patrones Parkway, immediately north of Chiquita Canyon Drive is adjacent to residential and commercial uses. The roadway then traverses open space and is adjacent to Tesoro High School (located south of Oso Parkway). The residential uses and the Tesoro High School are considered noise sensitive use in proximity to this segment of the roadway. The first row of residential units are located in close proximity to the Los Patrones Parkway (the nearest exterior area is approximately 100 feet from the Los Patrones Parkway centerline). The acoustical analysis conducted for the residential development (Planning Area 2.3), which assumed 40,000 ADT on this segment of Los Patrones Parkway, identified the 65 CNEL would extend 310 feet from centerline of Los Patrones Parkway, with no consideration of the effect of intervening topography (L&B 2016). Noise attenuation (a sound wall) was constructed to protect the first row of housing. As shown in Table 3, the projected traffic volumes for all scenarios on this portion of Los Patrones Parkway (Segments 30/31) is less than the 40,000 ADT used for the acoustical analysis conducted for the attenuation of the residential development. Therefore, there would be no new or significant impact.

The distance of the school from the Los Patrones Parkway varies from approximately 450 feet (by the tennis courts) to 680 feet from classrooms at the northern edge of the school. Topography provides some shielding of the school at the southern edge. This distance (greater than 310 feet from centerline) is sufficient to ensure the 65 CNEL does not extend to instructional areas of the school. Since the 2045 traffic volumes with the LPPE identified less than the 40,000 ADT, which was the basis for the previous acoustical analysis, no new or substantially more severe impacts are anticipated on Tesoro High School.

Although Los Patrones Parkway, north of Cow Camp Road would experience an increase in traffic volumes with the LPPE compared to without the roadway extension, the volumes would be less than what evaluated in FEIR 584 and FEIR 589. Since the FEIRs were done at a programmatic level, the precise location of uses within the Ranch Plan could not be evaluated and, as noted above, standard conditions were adopted requiring additional acoustical analysis be done at the tentative tract map level to demonstrate compliance with County noise standards. Noise sensitive uses adjacent to this segment of roadway include Esencia School and residential uses. The acoustical analysis prepared for Planning Area 2, which is also cited in the MND prepared by the CUSD for Esencia School, used 43,000 ADT along this segment of Los Patrones Parkway (Segments 32/33). Noise attenuation (a sound wall) is provided for the first row of residential uses (L&B 2013). The MND for the school found:

The 65 dBA CNEL noise contour, without considering topography, was identified at 241 feet from the centerline of Los Patrones Parkway. Traffic noise from Los Patrones Parkway at the school campus would be reduced by ground topography, which includes an approximately 100-foot long steep slope between the east edge of the Aprender Street

right-of-way and the west edge of Los Patrones Parkway right-of-way. Based on distance alone, without considering topography, a small portion of the northeast corner of the school property would have the potential for noise levels at 65 dBA CNEL, the rest of the school site is farther from Los Patrones Parkway and would be exposed to noise levels below 65 dBA CNEL. The 2013 noise study did not definitively find significant noise impacts at the school site, but included an optional 6-foot high noise barrier along the school site boundary to reduce the noise levels at the exterior areas. Because the school district, County, and state do not have exterior noise standards for parks and exterior school play areas, and most of the exterior areas at the school campus would be under 65 dBA, the school would not be adversely impacted by traffic noise from Los Patrones Parkway. Traffic noise exposure at the school exterior areas would be less than significant.

Given that the projected 2045 traffic volumes with the LPPE would be less than the traffic volumes evaluated for Planning Area 2 and by CUSD, the noise impacts on this segment of Los Patrones Parkway would be less than significant.

Based on the design elements incorporated into the existing development (i.e., elevations differences, setbacks from the roadway, and attenuation measures), there would be no new or substantially greater impacts at the above listed locations.

Locations Outside The Ranch Plan

The following segments outside of the Ranch Plan limits are projected to have higher traffic volumes in 2045 with the LPPE compared to the No Project scenario:¹⁰²

- Avenida Vista Hermosa, Calle Frontera to Camino Faro/Laurel (Segment 6)
- Avenida Vista Hermosa, Camino Vera Cruz to Sports Park (Segment 7)
- Camino Del Rio, Camino De Los Mares to Calle Sarmentoso (Segment 8)
- San Juan Creek Road, west of Avenida La Pata (Segment 44)
- Avenida La Pata, LPPE to Camino Del Rio (Segment 45)
- Avenida La Pata, Camino Del Rio to Avenida Vista Hermosa (Segment 46)
- Avenida La Pata, Avenida Vista Hermosa to Avenida Pico (Segment 47)

The projected traffic volumes on Avenida Vista Hermosa (Segments 6 and 7) are substantially lower than the traffic volumes evaluated in FEIR 584 and FEIR 589 for these locations. Therefore, the traffic noise levels would be less than what was evaluated in FEIR 589 and FEIR 584. Although there are residential uses adjacent to the roadway (backyards), these units have been developed with appropriate attenuation measures. Along Segment 6, the units on the south side of the Avenida Vista Hermosa are setback and elevated above the roadway. Additionally, a sound barrier has been provided at the property line. On the north side of Segment 6, a block wall has been constructed, which provides attenuation from the roadway noise. Along Segment 7 the block wall on the north side of the road is continued and land use transitions to open space. On the south side of the roadway, there is an elevation difference of the units from the roadway. The increase in traffic along Segment 6 is approximately 3,700 ADT and 5,400 ADT along Segment 7. As noted above, a doubling of the traffic results in an increase of approximately 3 dB, which is

¹⁰² These segments were evaluated for potential circulation impacts associated with the LPPE. In addition, Section 4.17, Transportation, identifies some additional locations that are identified by the Orange County Transportation Analysis Model (OCTAM) as having minor increases in traffic volumes (see Exhibits 15 and 16). However, the increase in the 2045 traffic volumes would not be sufficient to result in a substantial increase in traffic noise levels. As identified above, a doubling of the traffic results in an increase of approximately 3 dB, which is considered barely perceptible and is the standard for defining a substantial increase.

considered barely perceptible and is the standard for defining a substantial increase. Given the design elements incorporated into the development along Vista Hermosa, the increase in traffic would not result in a substantial increase, and the traffic volumes are less than those identified in FEIR 589, the LPPE would not result in a new or substantially more severe impact on the sensitive land uses adjacent to these roadways.

The increase in 2045 traffic with the LPPE along Camino Del Rio between Camino De Los Mares to Calle Sarmentoso (Segment 8) and San Juan Creek Road (Segment 44) would be nominal compared to the No Project scenario. The increase would be dependent on the number of lanes on Ortega Highway. The Camino Del Rio segment would experience an increase of between 700 or 900 ADT with a four-lane and two-lane Ortega Highway scenario, respectively. On San Juan Creek Road, the projected increase is 200 ADT when Ortega Highway has two lanes and 300 ADT if Ortega Highway is increased to four lanes. The increases in traffic on these two roadway segment would not result in a perceptible noise increase. The projected traffic volume on San Juan Creek Road is lower than what was evaluated in FEIR 589. Additionally, the 2045 traffic modeling assumes build-out of the MPAH, which includes an extension of San Juan Creek Road to Avenida La Pata, which was not assumed as part of FEIR 584 and FEIR 589.¹⁰³

The LPPE would also result in an increase in traffic on Avenida La Pata between the intersection with the LPPE and Avenida Pico (Segments 45, 46, and 47). The greatest increase in 2045 traffic volumes (approximately 11,300 ADT), would occur between the LPPE intersection and Camino Del Rio). The majority of this segment is open space with some residential uses. The residential units closest to Avenida La Pata are those on the eastside of the roadway in the Talega Valley Development. The closest unit is approximately 350 feet from the edge of the roadway. There is an approximately 65-foot elevation difference between the roadway and residential units, with the roadway being elevated. The homes on the westside of Avenida La Pata in the Forester Ranch development are approximately 1,100 feet from the roadway and there is an intervening ridge in this location. The distance from the roadway and topography would reduce the increased traffic noise on Avenida La Pata for receptors on both sides of the roadway. Additionally, the elevation differences would further reduce the noise levels experienced at the residential units. Where the line of sight between an observer and a roadway is blocked by a substantial object (e.g., a berm, block wall, or building), the traffic noise levels are reduced by a minimum of approximately 5 dB (FEIR 589).

Avenida La Pata between Camino Del Rio and Avenida Vista Hermosa is projected to have an approximately 7,700 ADT increase with the LPPE in 2045 compared to the No Project scenario. The west side of the roadway is open space with commercial use at the northwest corner of Avenida Vista Hermosa and Avenida La Pata. These are not considered noise sensitive uses. Residential uses are located on the east side of the road. The units are setback from the roadway by approximately 730 to 1,100 feet. Additionally, there is an elevation difference between the roadway and the residential uses. As discussed above, the increase in traffic volume would not be sufficient to result in a 3 dB increase, which is identified as a perceptible noise increase.

The 2045 traffic volumes identifies an increase of 1,200 ADT with the LPPE compared to the No Project for the final segment of Avenida La Pata between Avenida Vista Hermosa and Avenida Pico. This increase in traffic would not result in a perceptible noise increase. Additionally, there are not noise sensitive uses immediately adjacent to the roadway.

¹⁰³ The extension of San Juan Creek Road to Avenida La Pata is neither proposed nor required as part of the request to add the LPPE to the MPAH.

Based on the information provided above, the LPPE would not result in new or substantially more severe impacts than what was previously evaluated in FEIR 584 and FEIR 589.

b) Would the project expose persons to or generate excessive ground borne vibration or ground borne noise levels?

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. Excessive ground borne vibration and ground borne noise was focused out of FEIR 575, FEIR 584, and FEIR 589. There are no Orange County standards for excessive groundborne vibration or groundborne noise levels. The Federal Transit Administration (FTA) *Office of Planning's Transit Noise and Vibration Impact Assessment* (FTA 2006) and Caltrans have developed protocols for assessing potential vibration impacts. Both protocols are consistent.

Ground-borne vibration is usually measured in terms of vibration velocity, either the root-mean-square (RMS) velocity or peak particle velocity (PPV). PPV is typically measured in inches per second (in/sec). Caltrans has established a level of 0.24 PPV (in/sec) as being distinctly perceptible. (Caltrans 2013).

Problems with both ground-borne vibration and noise from these sources are usually localized to areas within approximately 100 feet from the vibration source (FTA 2006). When roadways are smooth, vibration from traffic, even heavy trucks, is rarely perceptible. There is the potential for short-term vibration during construction if sensitive uses are in close proximity to the construction activities. However, the FTA guidance states that ground vibrations from construction activities very rarely reach the level that can damage structures and only achieves the audible and perceptible ranges in buildings very close to the site. Pile driving and blasting are generally the sources of the most severe vibration during construction.

Although the construction methods cannot be known with certainty until design is complete, a worst case for noise and vibration would be the use of pile driving for the bridges over San Juan Creek and Ortega Highway.¹⁰⁴ However, the pile driving activities would for a limited period of time (approximately two months). Conventional heavy construction equipment would be used for mass grading. The closest residential use to the bridge structure is located approximately 0.15 miles to the north. This distance is sufficient that vibration levels would be below the level that would cause annoyance. Additionally, the pile driving activities would be for a short-period and would only occur during the hours when construction is allowed by the Orange County Noise Ordinance; therefore, no construction vibrations impacts would occur. This is consistent with the determination made when the scope of FEIR 584 and FEIR 589 were developed and the issue of vibration was focused out of the EIRs.

c) For a project located within the vicinity of a private airstrip or an airport land use plan area, 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?

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. In conjunction with the scoping process for FEIR 575, FEIR 584, and FEIR 589, aircraft noise was determined not to be a potential significant impact because of the distance of the site from the nearest airport (i.e., John Wayne Airport is 18 miles to the north and the airfield at MCB Camp Pendleton is over 19 miles south of the southern terminus of the LPPE). The LPPE would not be adding any noise sensitive uses or changing the flight patterns or number of flights.

¹⁰⁴ Cast-In-Drilled Hole (CIDH) caissons or cast-in-situ piles are the most likely construction method options. However, pile driving is addressed here because it would be the worst case for noise and vibration.

Therefore, this threshold would not apply to the LPPE and the conditions have not changed since the approval of FEIR 575, FEIR 584, and FEIR 589. No further evaluation of these issues is required.

Mitigation Program

Based on the information provided above, neither the proposed amendments to the GDP, the County of Orange Circulation Plan Map, the San Clemente *Mobility and Complete Streets Element*, and MPAH; nor the anticipated future impacts associated with construction and operation of the LPPE would result in any new significant or substantially more severe noise impacts requiring major revisions to FEIR 575, FEIR 584, or FEIR 589. No new mitigation measures are required.

FEIR 575 had two noise mitigation measures that were applicable to the circulation component of the GDP. FEIR 589 identified seven standard conditions and one mitigation measure pertaining to noise. FEIR 584 summarized or referenced the measures in FEIR 575 and FEIR 589 but did not develop additional measures or suggest any changes to the measures. These measures are discussed below.

The first mitigation measure in FEIR 575 pertained to the incorporation of landscape buffers and setbacks from the road right-of-way into the design of Avenida La Pata. The second measure identified the limiting hours of construction adjacent to sensitive receptors. The first measure would not be applicable to the LPPE because there are no sensitive land uses adjacent to the proposed right-of-way. The second measure, pertaining to construction, is similar to two of the standard conditions adopted as part of FEIR 584 and FEIR 589. To avoid duplication, the standard conditions from FEIR 584 and FEIR 589 are used in this Addendum because they provide more detail on the measures that must be implemented.

The first two standard conditions (SC 4.8-1 and SC 4.8-2) pertain to reduction of construction noise and would be applicable to the LPPE.

The following changes has been made to SC 4.8-2:

- The reference to “Manager, Building Permits Services” has been updated to “Manager, Building and Safety”. This revision reflects the agency’s current organizational structure.

SC 4.8-3 and SC 4.8-4 would not be applicable to the LPPE because they pertain to residential development. SC 4.8-5 and SC 4.8-6 pertains to non-residential development and SC 4.8-7 pertains to a buyer notification requirement for the area surrounding the then proposed SR -241. None of these conditions would apply to the LPPE. Mitigation measure 4.8-1 was subsequently found not to be necessary.

SC 4.8-1 (FEIR 589)	During construction, the project applicant shall ensure that all noise generating activities be limited to the hours of 7 a.m. to 8 p.m. on weekdays and Saturdays. No noise generating activities shall occur on Sundays and holidays in accordance with the County of Orange Noise Ordinance.
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SC 4.8-2 (FEIR 589)	A. Prior to the issuance of any grading permits, the project proponent shall produce evidence acceptable to the Manager, Building and Safety, that:
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| (1) All construction vehicles or equipment, fixed or mobile, operated within 1,000' of a dwelling shall be equipped with properly operating and maintained mufflers. |
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- (2) All operations shall comply with Orange County Codified Ordinance Division 6 (Noise Control)
 - (3) Stockpiling and/or vehicle staging areas shall be located as far as practicable from dwellings.
- B. Notations in the above format, appropriately numbered and included with other notations on the front sheet of the project's permitted grading plans, will be considered as adequate evidence of compliance with this condition.

4.14 POPULATION AND HOUSING

Summary of Findings in Previous FEIRs

FEIR 575

The NOP for FEIR 575 identified that the Prima Deshecha Landfill operations would not affect either local or regional population projections for the area. The GDP would not create a need for substantial housing since employment was not projected to increase due to the Project. The NOP also identified that the GDP would not be growth inducing. This topic was focused out of the FEIR 575.

FEIR 584 and FEIR 589

FEIR 584 and FEIR 589 included an extensive evaluation of growth inducing impacts, including direct and indirect growth. The analysis considered the potential for the Ranch Plan to induce growth in Regional Statistical Areas (RSAs) 40 and 43 in Orange County, Subregional Areas (SRA) 42, 43, and 55 in northwest San Diego County, and the Elsinore and Southwest Planning Areas of western Riverside County. FEIR 589 determined that the Ranch Plan Planned Community would not (1) remove obstacles to growth in the surrounding counties or areas within Orange County; (2) induce unplanned growth; (3) encourage economic activities that would result in adverse impacts to the environment; or (4) require the expansion of one or more public services to areas that were not already planned to receive such services. Growth resulting from the Ranch Plan Planned Community would be limited to the growth planned as part of the Planned Community project and would not substantially influence growth outside the project limits. This is primarily due to the fact that much of the surrounding area is currently developed or in public ownership (i.e., MCB Camp Pendleton, Caspers Wilderness Park and the Cleveland National Forest).

FEIR 584 and FEIR 589 identified that the development of the Ranch Plan Planned Community would result in the displacement of employment uses (agricultural and industrial uses) and a limited amount of residences for the agricultural workers. The number of residences being displaced are not of sufficient magnitude to affect the regional population and housing projections for the area. Additionally, the Ranch Plan Planned Community provides for employment and housing opportunities.

Project Impact Analysis

The impacts associated with population and housing have been previously analyzed as part of FEIR 584 and FEIR 589, which were prepared and certified pursuant to State and County CEQA Guidelines. The following provides clarifications or information to validate that the previous documents provide adequate CEQA documentation for the proposed Project and serves as an Addendum to the FEIRs.

- a) Would the project 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)?**

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. Subsequent to the certification of FEIR 584 and FEIR 589, the OCP numbers were updated to reflect the housing and population projections associated with the Ranch Plan Planned Community, as approved. The OCP numbers are provided to SCAG and have been incorporated into the regional growth forecasts and planning documents (such as the Regional Transportation

Plan/Sustainable Communities Strategy). Therefore, the significant unavoidable impact identified in FEIR 589 associated with inconsistency with regional planning documents and not providing sufficient housing to fully meet the housing goal, is no longer applicable. The most current data set is OCP-2018, which provides projected growth through 2045.¹⁰⁵

A comparison of the data for the five Community Analysis Areas (CAA) that were identified in FEIR 589 as the study area, shows that the current 2045 projections for housing and population are less than the 2025 projections evaluated in FEIR 589.¹⁰⁶ The 2045 employment projections are only slightly greater (less than 3 percent) than the 2025 projections in FEIR 589 (OCP-2018 projects 3,915 more jobs in the study area in 2045 than OCP-2000M projected in 2025).

FEIR 589 evaluated the historic and projected growth patterns of Orange, San Diego, and Riverside counties. The analysis considered (1) existing land uses; (2) planned land uses; and (3) unplanned land uses. Based on regional planning, available infrastructure and infrastructure that would be provided by the Ranch Plan Planned Community, and landownership of surrounding lands, the Ranch Plan was found not to be growth inducing. FEIR 584 evaluated the potential for growth inducing impacts as an indirect impact associated with the adoption of the Southern Subregion HCP/MSAA/NCCP. FEIR 584 determined that the County's Covered Activities, including the Prima Deshecha Landfill, would not have growth inducing impacts because no additional development would be facilitated by the proposed activity. Rather, the landfill improvements evaluated in FEIR 575, and incorporated by reference as part of FEIR 584, would allow for more efficient use of the site.

The proposed Project would provide infrastructure to more efficiently meet the subregional transportation needs in south Orange County but would not induce growth by expanding infrastructure that would encourage growth beyond the regional projections and local approvals. As previously mentioned in Section 4.11, Land Use and Planning, consistent with Connect SoCal (the 2020-2045 RTP/SCS), the southern extension of the SR-241 has not carried forward in any of the assumptions in this Addendum; therefore, the LPPE would not be providing duplicative infrastructure that may result in growth inducing and cumulative impacts not evaluated in the FEIR 584, FEIR 589 or the regional planning programs. The conditions documented in FEIR 584 and FEIR 589 as it pertains to growth in the region have not substantially changed. Most of the surrounding areas are either already developed or are within public ownership, such as MCB Camp Pendleton, Caspers Wilderness Park and the Cleveland National Forest. The surrounding developed areas are not of the age or nature where redevelopment would be likely in response to the proposed Project. The public ownership would eliminate the potential of substantial future urban development. As a result, there is limited potential for the Project to induce housing or economic growth beyond what has already been approved by the local agencies (including the Ranch Plan). Additionally, it must be recognized that the proposed extension of the LPPE is in lieu of the extension of Cristianitos Road and would not change the land use entitlements associated with the Ranch Plan. Therefore, the determinations made in FEIR 584 and FEIR 589 are still valid and the Project does not create a new impact or increase the severity of an existing impact identified under the FEIRs.

¹⁰⁵ The OCP-2018 data set was approved on September 27, 2018. The figures cited were released by the Center for Demographic Research at California State University at Fullerton in January 2019. A 2050 data set at the jurisdiction level is included in OCP-2018 but it is noted these numbers are advisory only.

¹⁰⁶ Orange County is divided into ten RSAs, which are combinations of census tracts designated by SCAG for planning purposes. Each RSA is divided into CAAs, which are planning areas used in Orange County to approximate cities, areas within a city (e.g., Anaheim Hills), unincorporated communities, or special use areas. They provide a level of geography larger than census tracts but smaller than RSAs. For socioeconomic analysis in FEIR 589, the Ranch Plan study area consisted of CAAs 58, 59, 60, 68, 69, and 70; however, the Ranch Plan is only located within a portion of CAAs 59 and 60. This is discussed in Section 4.3 of FEIR 589.

b) Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. The proposed Project would not result in any displacement of any housing or a substantial number of people; thereby requiring construction of replacement housing elsewhere. The site is currently undeveloped or used for a quarry operation. Therefore, implementation of the Project would not result in any new population and housing impacts beyond those analyzed in FEIR 584 and FEIR 589.

Mitigation Program

Based on the information provided above, neither the proposed amendments to the GDP, the County of Orange Circulation Plan Map, the San Clemente *Mobility and Complete Streets Element*, and MPAH; nor the anticipated future impacts associated with construction and operation of the LPPE would result in any new significant or substantially more severe population and housing impacts requiring major revisions to FEIR 584 or FEIR 589. As noted, the NOP for FEIR 575 focused out the issue of population and housing; therefore, no mitigation measures were identified. As a part of FEIR 589, a Mitigation Program was adopted, which minimizes impacts associated with the residential displacement associated with implementation of the Ranch Plan Planned Community. This mitigation measure would not be applicable to the LPPE because there would be no displacement. The proposed Project would not result in any new population and housing impacts, nor would it contribute to the impact as previously analyzed in FEIR 584 and FEIR 589. No mitigation measures are required.

4.15 PUBLIC SERVICES

Summary of Findings in Previous FEIRs

FEIR 575

FEIR 575 identified Fire Station 7 at 31865 Del Obispo Street in San Juan Capistrano as the closest OCFA station.¹⁰⁷ The improved access associated with the extension of Avenida La Pata was identified as beneficial aspect of the circulation component because the improved access would also benefit responding to areas surrounding the landfill. No substantial increase in demand or significant impacts for public services were identified; therefore, no mitigation measures were recommended.

FEIR 584 and FEIR 589

FEIR 589 evaluated potential impacts associated with the provision of public services and identified potentially significant unavoidable impacts for fire protection services; however, these impacts were generally associated with development in Planning Areas 7 and 9 due to their remoteness. As part of ROSA (see Section 2.1.2, The Ranch Plan and Final Program EIR 589, for a discussion of the Settlement Agreement), development was eliminated in Planning Area 9 and only the RMV headquarters and limited orchards are allowed in Planning Area 7; therefore, these significant unavoidable impacts have been eliminated.

Project Impact Analysis

The impacts associated with public services have been previously analyzed as part of FEIR 575, FEIR 584, and FEIR 589, which were prepared and certified pursuant to State and County CEQA Guidelines. The following provides clarifications or information to validate that the previous documents provide adequate CEQA documentation for the proposed Project and serves as an Addendum to the FEIRs.

- a) **Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:**

Fire protection?

Police protection?

Schools?

Parks?

Other Public Facilities?

¹⁰⁷ At the time FEIR 575 was prepared, OCFA Station 59 was located on Calle Negocio. Although this station would be closer to the Prima Deshecha Landfill than Station 7, without the Avenida La Pata improvements no direct access was available. Subsequent to certification of FEIR 575, OCFA Station 59 has been relocated to 48 Avenida La Pata in San Clemente and the roadway improvements have been completed. In addition, subsequent to the preparation of the FEIRs, Station 56, located at 56 Sendero Way, in Rancho Mission Viejo has been constructed.

Fire Protection?

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. Fire protection services are provided by the OCFA. RMV and OCFA have entered into a *Secured Fire Protection Agreement* to ensure adequate fire protection service is available to meet the demands of the Ranch Plan Planned Community. Subsequent to the certification of FEIR 589, the *Ranch Plan Planned Community-Wide Fire Protection Program* was prepared in cooperation with OCFA and approved by the Board of Supervisors on July 31, 2007. The design of facilities (including but not limited to street access, hydrant locations, residential development and fuel modification) would be in conformance with adopted programs. Fire Station 56, located at 56 Sendero Way, (near Antonio Parkway and Cow Camp Road) is the closest existing fire station to the proposed LPPE alignment. The Master Area Plan for Planning Area 3 identifies a future fire station in Subarea 3.14 in proximity to Cow Camp Road.

The implementation of the LPPE would not adversely affect the provision of fire protection services or result in the need for new or physically altered facilities. The construction of the LPPE would facilitate access by emergency services personnel by providing a high functioning roadway that would provide improved access to Planning Area 5, as well as Planning Area 2. The construction of the LPPE may result in a re-evaluation of the location for the planned fire station in Planning Area 5. FEIR 589 and the *Secured Fire Protection Agreement* conceptually identifies a fire station in Planning Area 5 in proximity of the Cristianitos Road and the then proposed SR-241 intersection. The LPPE would not preclude this location; however, the location of public services, including fire stations, is refined during the Master Area Plan and Subarea Plan process. As previously indicated, no Master Area Plan and Subarea Plans have been processed for Planning Area 5; therefore, this location has not been finalized.

The future new fire station in Planning Area 5 is not in response to or required for the LPPE. This facility is required to serve the planned land uses in Planning Area 5. The LPPE would not change the land use entitlements for Planning Area 5 or any other part of the Ranch Plan. However, the extension of the LPPE in lieu of the Cristianitos Parkway extension, may result in locating the planned fire station in proximity to a high function roadway that would be more central to development. The location of the future fire station would be evaluated during the Planning Area 5 Master Area Plan process to ensure optimal placement to serve the future land uses.¹⁰⁸ Since the fire station would be constructed within the Planning Area 5 development area, construction of the facility would not result in any impacts beyond those addressed in FEIR 589. Additionally, to minimize potential fire risk during construction, through issuance of permits to access its property, RMV requires the implementation of construction safeguards provided in Chapter 35 of the California Fire Code to prevent accidental ignitions during hot work such as welding and brush clearing. This is also discussed in Section 4.20, Wildfire.

The extension of the LPPE would also not result in increased demand for fire protection at the Prima Deshecha Landfill site. The improved access would also allow the planned fire station in Planning Area 5 to respond to calls to portions of the cities of San Clemente and San Juan Capistrano should additional support be required. No new or physically altered fire protection facilities would be required to maintain applicable performance objectives. Therefore, the Project would not create a new significant impact or a substantial increase in the severity of previously identified effects in FEIR 589.

¹⁰⁸ FEIR 589 includes a discussion of the *County of Orange General Plan Public Services and Facilities Element*, and OCFA criteria for the location of fire stations. In general, each fire station serves a circular-shaped area with a two-mile radius from the station. However, precise locations are determined in conjunction with OCFA.

Police Protection?

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. Police protection services would be provided by the Orange County Sheriff's Department (OCSD) and the California Highway Patrol (CHP). At the time FEIR 589 was prepared, the OCSD stated that the new residents and business uses brought into the area by virtue of the development of the Ranch Plan would place additional demands on services. The OCSD identified a need for an additional substation facility within the Ranch Plan Planned Community area, which could be provided for in the community facilities area identified in the 2015 Master Area Plan for Planning Area 3. However, in April 2015 the Saddleback Station in southeast Orange County became operational. Based on communication with the OCSD in 2016, the Saddleback Station is sized to meet the long-term service demand for south Orange County, including development of the Ranch Plan.¹⁰⁹ No additional facilities are required to serve the projected demand associated with the Ranch Plan (County 2016).

Although the LPPE would open an area currently not accessible to the public, it would not result in increased demand for police services that would necessitate new facilities because it is an area that has been planned for development as part of the Ranch Plan. The roadway extension would provide improved access compared to either the current condition (i.e., no roadway) or the planned Cristianitos Road extension, which does not connect to other roadways south of Ortega Highway (SR-74). Therefore, implementation of the proposed LPPE would also not require additional police protection facilities in the project area. In 2016, the OCSD indicated that patrol units are dispersed throughout the region to facilitate timely response to emergency calls. OCSD have not identified any service response issues associated with serving south Orange County, including the projected growth associated with the Ranch Plan development area, from the Saddleback Station. No new or physically altered police protection facilities would be required to maintain applicable performance objectives. Therefore, the LPPE would not result in substantial adverse physical impacts associated with the provision of new or physically altered facilities providing police protection services. The Project would not create a new significant impact or a substantial increase in the severity of previously identified effects in FEIR 589.

Schools?**Parks?****Other Services?**

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. The LPPE would not result in any increased need for schools, parks, or other public facilities because the Project would not add to the resident population in the area. The proposed conceptual alignment would connect with Avenida La Pata south of the San Juan Hills High School; therefore, there would be no direct or indirect adverse impact on the school. As discussed in Section 4.17, Transportation, the LPPE is projected to reduce the number of trips on Avenida La Pata in the vicinity of San Juan Hills High School.

The LPPE would be a new public roadway and would require the installation of storm drain and water quality facilities to accommodate the runoff from the roadway. These facilities would be constructed in conjunction with the roadway improvements, or if the development of Planning

¹⁰⁹ The Saddleback Station (Southeast Operations Division serves over 273 square miles and over 280,750 residents. The Southeast Operations Division provides police services to unincorporated communities of Coto de Caza, Ladera Ranch, Las Flores, Wagon Wheel, Trabuco Canyon, and Rancho Mission Viejo. In conjunction with the preparation of the *Orange County Affordable Housing Implementation Program—Ranch Plan Program Environmental Impact Report* (Final EIR 623, 2016), the OCSD indicated no additional facilities are required to serve the Ranch Plan area and there are no plans for a future substation in the Ranch Plan Planned Community.

Area 5, dependent on the timing of the construction of the roadway improvements. The anticipated physical impacts associated with construction of the LPPE, which have been addressed in this Addendum, are not substantially different than the requirements associated with the infrastructure identified in FEIR 584 and FEIR 589 to support the SSHCP Covered Activities and the Ranch Plan, respectively. Therefore, the proposed Project would not create a new significant impact or a substantial increase in the severity of previously identified effects in FEIR 584 and FEIR 589. Solid Waste facilities are addressed in Section 4.11, Land Use and Planning, and Section 4.19, Utilities and Service Systems.

Mitigation Program

Based on the information provided above, neither the proposed amendments to the GDP, the County of Orange Circulation Plan Map, the San Clemente *Mobility and Complete Streets Element*, and MPAH; nor the anticipated future impacts associated with construction and operation of the LPPE would result in any new significant or substantially more severe impacts to public services thereby requiring major revisions to FEIR 575, FEIR 584, or FEIR 589. No new mitigation measures are required.

As previously noted, FEIR 575 did not identify any mitigation measures applicable to public services. FEIR 589 identified 11 standard conditions and 6 mitigation measures pertaining to public services. All of the standard conditions and all but one of the mitigation measures pertain to approvals of Area Plans or tract maps and would not be applicable to the Project.¹¹⁰ Only MM 4.15-6, which pertains to the relocation of the KMEP pipeline would be applicable to the LPPE. However, this measure is included in Section 4.19, Utilities and Service Systems. Therefore, no measures are applicable the LPPE.

¹¹⁰ SC 4.15-1 and MM 4.15-1 through MM 4.15-3 pertain to Fire Protection. MM 4.15-4 pertains to Law Enforcement Services. SC 4.15-2 through SC 4.15-3 pertained to Energy Resources (SDG&E and the Gas Company). SC 4.15-5 through SC 4.15-8 pertained to water and wastewater. SC 4.15-9 and MM 4.15-5 pertained to schools, SC 4.15-10 pertained to development of a Solid Waste Management Plan, and SC 4.15-11 pertained to libraries fees.

4.16 RECREATION

Summary of Findings in Previous FEIRs

FEIR 575

Although FEIR 575 addressed potential interim and long-term recreational use of the Prima Deshecha Landfill site for recreational purposes, the document also identified a needs assessment would be prepared prior to implementation since the recreational needs may change over time. Zones 1 and 4 would provide the opportunity for activity recreation once the landfill activities were complete; therefore, the significant unavoidable impacts associated with the GDP would not be associated with the development of the recreational facilities. No adverse impacts to parks in the vicinity were identified.

FEIR 584 and FEIR 589

The Ranch Plan Planned Community requires the construction of new parks and recreational facilities, such as trails and bikeways. The *Ranch Plan Planned Community Local Park Implementation Plan (LPIP)* has been prepared to demonstrate how the Ranch Plan Planned Community will provide a local park program in compliance with the Orange County Local Park Code and the Master Plan of Local Parks Component of the *County of Orange General Plan, Recreation Element* (Recreation Element). The parks would be constructed within the approved development areas. Therefore, FEIR 584 and FEIR 589 addressed the impacts on the environment as part of the development impacts. No significant unavoidable impacts associated with recreation were identified.

Although the Prima Deshecha Landfill GDP identified the solid waste disposal needs as the most important function of the site, the plan included a recreation component as a long-range use of the landfill site. The GDP reflects the Recreation Element, which identifies a proposed Prima Deshecha Regional Park and a proposed trail that is depicted on the Master Plan of Regional Riding and Hiking Trails. Consistent with the GDP, the landfill activities will take precedence over all other possible uses.

Project Impact Analysis

Recreation impacts have been previously analyzed as part of FEIR 575, FEIR 584, and FEIR 589, which were prepared and certified pursuant to State and County CEQA Guidelines. The following provides clarifications or information to validate that the previous documents provide adequate CEQA documentation for the proposed Project and serves as an Addendum to the FEIRs.

- a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?**

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. The extension of the LPPE would not generate any increased demand for recreational facilities because it would not increase the population in the area. As a result, it would not cause a substantial physical deterioration of existing recreational facilities associated with increased usage.

The existing segment of Los Patrones Parkway between Cow Camp Road and Chiquita Canyon Drive is located along the eastern boundary of Sunrise Park in Planning Area 2. The park offers active recreational activities. The traffic volumes along this segment of the LPPE would increase

with the roadway extension. However, no substantial indirect impacts on the park would result due to the extension of the roadway. The park was identified in the 2013 Master Area Plan and Subarea Plans for Planning Area 2. At that time, the adjacent roadway was assumed to be the SR-241 extension and higher traffic volumes were assumed in the buildout condition. The elevation difference between the park and the roadway incorporated into the design minimizes noise levels associated with the roadway and shields the viewshed for park users.¹¹¹ As a result, the park facilities would not deteriorate due to the LPPE.

As identified in Section 4.1, Aesthetics, the roadway would be visible from trails within Caspers Wilderness Park and the Ladera Community Trail; however, these views would be mid-range to long-range views and would not affect the usage of the park. As previously noted, the same type of change in the visual character was evaluated in FEIR 589 as being associated with the circulation network serving the Ranch Plan. Therefore, there would be no new or substantially more severe impacts on existing recreational facilities due to the LPPE. The Project would not contribute to a substantial physical deterioration of any recreational facilities.

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

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. At this time, as part of the Circulation Plan Map and the MPAH Amendment and GDP Amendment, and the future construction and operation of the LPPE, no recreational facilities are propose or require. Therefore, there would be no physical impacts associated with the construction or expansion of such facilities. If during the design process, a bikeway or riding and hiking trail is proposed, the impacts associated with the additional facility would be evaluated at that phase of the project.

Although not specifically required under this threshold, this Addendum has also provided an evaluation of the potential impacts that the roadway may have on planned recreational facilities to determine if the extension of the roadway may result in the greater impacts associated with the future implementation of the planned facilities. The LPPE would traverse areas that are planned to accommodate the San Juan Creek Riding and Hiking Trail and San Juan Creek Bikeway, the Prima Deshecha Trail, and the Prima Deshecha Regional Park. These are described below.

- **San Juan Creek Riding and Hiking Trail and San Juan Creek Bikeway.** The September 2011 *Master Trail and Bikeways Implementation Plan* establishes conceptual routes for trails and bikeways within the Ranch Plan to provide connectivity to community trails and bikeways in adjacent developments and with existing and proposed recreational facilities. This plan depicts a Class I bikeway along the northern side of San Juan Creek and a riding and hiking trail on the south side of San Juan Creek. FEIR 584 and FEIR 589 did assume the San Juan Creek Class I Bikeway and the San Juan Creek Regional Riding and Hiking Trail would be located along the creek and would have components outside the development area.¹¹² These impacts were incorporated into total impact areas identified for the Ranch Plan Planned Community.

The Ranch Plan identified that the Class I bikeway and the riding and hiking trail would have sections constructed under roadways because the Ranch Plan identifies several

¹¹¹ The elevation of the Sunrise Park ranges from approximately 410 feet above msl to 420 feet above msl. Los Patrones Parkway in this location is at approximately 365 feet above msl.

¹¹² These facilities are also designed on the Bikeway Plan Map (a component of the Transportation Element) and the Master Plan of Regional Riding and Hiking Trails Map (a component of the Recreation Element), respectively.

roadways crossing San Juan Creek. The Ranch Plan requires that the right-of-way for the regional riding and hike trail be reserved in conjunction with development but identifies that the trail will not be implemented until the development of Planning Area 5 to ensure there is logical trail linkage to Planning Area 4. The LPPE is proposed to be elevated as it crosses San Juan Creek. Although the best placement of the bikeway and trails would be evaluated during the design phase, these facilities can be accommodated with no greater impacts than those evaluated in FEIR 584 and FEIR 589.¹¹³ The LPPE would not preclude these facilities or result in greater impacts than previously evaluated in FEIR 584 and FEIR 589.

- **Prima Deshecha Trail.** The Prima Deshecha Trail, as depicted in the Recreation Element, extends northerly from the San Onofre State Park and terminates at San Juan Creek. A portion of the trail is in the City of San Clemente. The Recreation Element identifies a portion of the proposed trail as extending along the Edison easement and the open space to the proposed Prima Deshecha Regional Park. The trail continues through the proposed future park and along the northeastern ridgeline to the entrance. At the entrance to the landfill the trail is identified as crossing Avenida La Pata and again following along the Edison power line easement heading north to Ortega Highway. The trail terminates at the highway where it connects with the San Juan Creek Trail. A possible staging area is also identified in the proposed Prima Deshecha Regional Park. None of this six-mile-long trail is built. The Recreation Element (General Plan Appendix VII-4) placed the trail in Group C (lowest priority) for allocation of funding for trail development; therefore, there is no current schedule for the construction of the trail.

FEIR 575 identified that the regional trail would extend through the Prima Deshecha site in the area designated as Zone 2 in the GDP. Zone 2 is a narrow strip that is adjacent to Zone 4 (see Exhibit 2). FEIR 575 states final alignments for the trails have not been developed and it is not possible to predict when the trails would be completed and open for use. FEIR 575 states the trail depicted along the perimeter of the Zone 4 landfill area may be available as interim recreational uses during the filling operations of the Zone 1 landfill but would be closed to the public based on public health and safety once landfilling activities are initiated in Zone 4. However, initial phases of Zone 4 are anticipated to be developed in 2022; therefore, the trails east of Avenida La Pata (in the vicinity of Zone 4) are not expected to be implemented until post-closure of the landfill (OCWR 2020). The proposed LPPE is conceptually shown as extending through a portion of Zone 2 and adjacent to Zone 4. Once Zone 4 is complete, the trail alignment can be developed and integrated into the ultimate recreation plan for the regional park. Given the expected timing of the trail is not until post-2102 and the roadway would not preclude the future implementation of the trail, the impact would be less than significant.

- **Prima Deshecha Regional Park.** Prima Deshecha is identified as a future regional park. As such, the GDP identified possible uses, noting that the recreational use demands may change over time and the actual uses will be determined in a needs analysis prior to the time of landfill closure when the demand can be more accurately assessed. The GDP identifies a variety of possible recreational uses for the site in the future and given the size of the site, several can be accommodated. A golf course is identified as a proposed use within Zone 1, which is projected to continue to receive refuse until 2050 and is located on the west side of Avenida La Pata. The LPPE would not have any direct or indirect impacts on the Zone 1 area.

The LPPE would traverse the portion of the landfill east of Avenida La Pata. Similar to Avenida La Pata, the LPPE would traverse area identified for future park development.

¹¹³ For Antonio Parkway, the embankments under the bridge have been designed to accommodate the bikeway and trail.

Although the extension of Los Patrones Parkway would traverse the future park, the potential impact on recreational uses cannot be assessed at this time because of the lack of information on the future recreational uses. The GDP only identifies the riding and hiking trail in Zone 2 (see above). There are no specific recreational uses identified for Zone 4, which is not projected to be available for recreational uses until the closure of Zone 4, currently projected for 2102. Given the size of the future park, improved access and internal circulation would be required. The LPPE could be incorporated into the design of the recreational facilities as an additional access route to the park. The LPPE would provide a boundary for the portion of Zone 3 east of Avenida La Pata, which is identified as being retained in its natural state in concert with the SSHCP. Given that the roadway would not preclude the implementation of the future park, impacts are anticipated to be less than significant. At this point it would be speculative to identify how the recreational facilities would accommodate the roadway or the extent of impacts on recreational uses that are not slated until after 2102. Section 15145 of the CEQA Guidelines does not require a lead agency to speculate on potential impacts.

Mitigation Program

Based on the information provided above, neither the proposed amendments to the GDP, the County of Orange Circulation Plan Map, the San Clemente *Mobility and Complete Streets Element*, and MPAH; nor the anticipated future impacts associated with construction and operation of the LPPE would result in any new significant or substantially more severe impacts related to recreational facilities requiring major revisions to FEIR 575, FEIR 584, or FEIR 589. No new mitigation measures are required.

FEIR 575 has two recreation (trails) mitigation measures pertaining to the circulation component of the GDP. These mitigation measures (MM 4.7-4 and MM 4.7-5) pertain to providing signage for at-grade hiking and riding trails crossing Avenida La Pata and providing a future grade separated culvert for trails crossing Avenida La Pata. Neither of these measures would be applicable to the LPPE because the regional trails are not depicted as crossing the proposed LPPE alignment.

FEIR 589 identified four standard conditions and one mitigation measures for recreation.¹¹⁴ All the standard conditions and the mitigation measure pertain to approvals of Area Plans or tract maps and would not be applicable to the LPPE. Therefore, there are no measures applicable to the LPPE.

¹¹⁴ The Draft EIR 589 included five standard conditions; however, one condition pertained to the dedication of a regional park. The alternative selected by the Board of Supervisors did not include the regional park identified in the "Proposed Project"; therefore, this standard condition was not included in the FEIR or MMRP for FEIR 589.

4.17 TRANSPORTATION

Summary of Findings in Previous FEIRs

FEIR 575

FEIR 575 evaluated both short-range (2005) and long-range (2020) impacts on the circulation network. The buildout circulation system in FEIR 575 reflects the then current MPAH. The long-range transportation improvements include completion of the City of San Juan Capistrano and City of San Clemente Circulation Elements. Long-range buildout traffic forecasts are presented under conditions reflecting the Foothill Transportation Corridor (FTC) as a toll facility.

Planned road improvements in the area include the construction of the Foothill Transportation Corridor. The Transportation Corridor Agencies is currently evaluating two potential alignments of this arterial roadway. The "CP" alignment is proposed to the east of the site; the "BX" alignment generally extends through the central portion of the Prima Deshecha Landfill in an alignment similar to the proposed extension of La Pata Avenue (FEIR 575, page 7-3).

FEIR 575 did not identify any transportation impacts associated with any component of the GDP. The circulation improvements were identified as serving the long-range traffic needs in the region.

Final EIR 584 and FEIR 589

Final EIR 584 and FEIR 589 identified the total trip generation associated with the Ranch Plan Planned Community as 183,338 average daily trips (ADT), of which 14,289 trips are anticipated to be in the AM peak hour and 18,033 trips would occur in the PM peak hour. The traffic analysis was conducted with and without the SR-241 extension. For the scenario without the SR-241 extension, an arterial highway between Oso Parkway and Cow Camp Road is assumed (i.e., Los Patrones Parkway). Significant unavoidable project and cumulative impacts were identified on arterial highway intersections and the freeway network (both ramps and mainline facilities) with buildout of the Ranch Plan Planned Community. The number of arterial highway intersections impacted would vary based on the circulation network assumed. As part of FEIR 589, a Mitigation Program was formulated to address the significant circulation impacts associated with development of the Ranch Plan Planned Community. However, a number of the proposed improvements are located outside the County's jurisdiction. Because the County is unable to ensure that mitigation outside their jurisdictional boundaries will be implemented, the impacts to be mitigated by those improvements were identified as significant and unavoidable. It should be noted, that a number of the required roadway improvements (e.g., the widening of Antonio Parkway and Ortega Highway, the construction of the Avenida La Pata improvements (i.e., La Pata Avenue Gap Closure and Camino Del Rio Extension Project), Los Patrones Parkway (Segment 1 and Segment 2), and Cow Camp Road (Segment 1) have been constructed.

Project Impact Analysis

Transportation impacts have been previously analyzed as part of FEIR 575, FEIR 584, and FEIR 589, which were prepared and certified pursuant to State and County CEQA Guidelines. The following provides clarifications or information to validate that the previous documents provide adequate CEQA documentation for the proposed Project and serves as an Addendum to the FEIRs.

a) Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR.

Key programs and plans that have policies applicable to the LPPE would be the MPAH Guidance (also discussed in Section 2.1.5, Master Plan of Arterial Highways) and the County of Orange Transportation Element. The Prima Deshecha GDP, the SSHCP, and the Ranch Plan were all found to be consistent with the applicable local, state, and federal policies at the time FEIR 575, FEIR 584, and FEIR 589 were certified for their respective projects. The analysis in this Addendum demonstrates that the LPPE would not change these findings. The analysis of these plans is presented both as a policy analysis and a discussion of the operation of the roadway network.

Guidance for Administration of the Orange County Master Plan of Arterial Highways

The MPAH Guidance states in Section 1.0, “the Orange County MPAH map establishes a system of countywide arterial highways, and is a key factor in defining Orange County's long-range transportation planning and policy objectives.” OCTA, as the administrator of the MPAH, is responsible for coordination with cities and the County, including determination of cities and County consistency with the MPAH map. Consistency with the MPAH is essential for maintaining a functional regional highway network. It ensures that cities and the County are using similar standards and assumptions for the backbone roadway network in the County. OCTA facilitates the use of these common assumptions through administration of the Orange County Transportation Analysis Model (OCTAM).

The MPAH Guidance includes goals and policies that provide direction to local agencies for implementing the MPAH. Most of the policies outline the role of OCTA for coordinating the review and implementation of the arterial highway system with the local and regional jurisdictions for an integrated approach for implementing the arterial highway network and integration into the regional circulation system. Additionally, the MPAH Guidance provides basic cross sections for each arterial highway classification. These cross sections are based on the design standards in the County of Orange Highway Design Manual and includes special intersection approaches for Principal, Major, Primary, and Secondary arterials to help address congestion problems.

Section 3.10 of the MPAH Guidance identifies special considerations that may require MPAH Guidance. Three of these, which are listed below, are applicable to the LPPE.

3.10.1 Intersection Condition

Intersection performance is the most critical factor in determining vehicular traffic conditions along arterials. Intersection conditions should be considered in the planning process to reduce congestion via improved traffic flow conditions on the arterial highway system.

3.10.2 Arterial Continuity

Arterials should be continuous between two connecting arterials. However, the classification may vary between the connecting arterials if actual and projected traffic volumes vary significantly and support different classifications.

3.10.4 Other Facilities and Considerations

State/Interstate freeways are shown on the MPAH map for reference. Although maintained and operated by Caltrans, these facilities are an integral part of the countywide transportation system. Coordination among Caltrans, TCA, OCTA, cities and the County concerning planning and improvements to these facilities is essential to meeting regional traffic needs.

Special Consideration 3.10.1, Intersection Condition, the need to consider intersection performance, is fully discussed below as part of the evaluation of Roadway Network Operations.

Special Considerations 3.10.2, Arterial Continuity, and 3.10.4, Other Facilities and Considerations, are similar as they pertain to the LPPE. As discussed in Section 2.2.2, State Route 241, of this Addendum, as part of the TCA's settlement agreement, the 2006 approval of the "Green Alignment" was rescinded. The Green Alignment would have extended SR-241 south of SR-74 (Ortega Highway) on an alignment east of Cristianitos Road, then extending through the San Onofre State Beach and connecting with I-5. When the approval was rescinded, the southern extension of the SR-241 as a planned facility was removed from the MPAH. As a result, Cristianitos Road would no longer be continuous between two major transportation facilities and would not effectively function as a major north-south roadway due to lack of connectivity with the roadway network. The proposed MPAH Amendment would be consistent with these Special Considerations and the conceptual circulation network approved for the Ranch Plan.

The MPAH Guidance outlines the MPAH Amendment process. This has been summarized in Section 2.1.5, Master Plan of Arterial Highways, of this Addendum and has guided the process being implemented for the LPPE. In addition, there is a section of the MPAH Guidance that outlines the review process for a local agency to be eligible to for participation in funding programs, such as the Measure M2 Net Revenues.

County of Orange General Plan, Transportation Element

The purpose of the Transportation Element has not changed since FEIR 575, FEIR 584, and FEIR 589 were certified. The stated purpose is:

To develop an integrated transportation system consisting of a blend of transportation modes capable of meeting the need to move people and goods by private and public means with maximum efficiency, convenience, economy, safety, and comfort and a system that is consistent with other goals and values of the County and the region.

The Transportation Element includes three components: the Circulation Plan, Bikeways Plan, and Scenic Highways Plan. The Circulation Plan Component serves as the legally required Circulation Element for the unincorporated areas under California Government Code Section 65302(b). The LPPE proposes a modification to the Circulation Plan Map, which is Figure IV-1 of the Circulation Plan Component. Although the Circulation Plan Component establishes a system of surface roadways within the unincorporated areas of the County, the County coordinates with the cities and OCTA "to develop a consistent intra-community arterial highway system that will effectively serve existing and future land uses within its jurisdiction." No changes to the policies of the Transportation Element are proposed as part of this Transportation Element Amendment.

FEIR 589 provided an extensive evaluation of consistency with the Transportation Element.¹¹⁵ As noted in the General Plan, the goals, objectives, and policies are intended to provide direction for transportation implementation in the County's unincorporated areas. The goals are defined as “a general expression of values and is abstract in nature. Goals look to an ultimate future of approximately twenty years.” As such, none of the goals have changed since FEIR 589 was certified. The policies, and objectives have mostly remained the same with some minor updates. The analysis in FEIR 589 found the Ranch Plan consistent with the County General Plan goals, objectives, and policies.

One of the goals identified in the Transportation Element is to provide a circulation plan that supports land use policies of the County. In approving the Ranch Plan, the supporting roadway network would achieve this goal through the addition of a new north-south arterial highway (i.e., Cristianitos Road connecting to the SR-241 extension). The proposed LPPE would provide this same circulation function and meet the goals of the Transportation Element.

The Transportation Element identifies that intersection performance is the most critical factor in determining traffic conditions on arterials. Intersection condition should be considered in the planning process to improve traffic flow conditions in the arterial highway system. This is contained in Policy 3.2, which reads: “Ensure that all intersections within the unincorporated portion of Orange County maintain a peak hour level of service “D”, according to the County Growth Management Plan Transportation Implementation Manual.” Although LOS is no longer used in CEQA to assess transportation impacts (see Environmental Checklist Question 4.17(b)), an assessment of LOS on the roadway network is provided in the following discussion on Roadway Network Operation.

Roadway Network Operation

The analysis of the roadway operations is summarized from the Traffic Impact Analysis prepared by Iteris, under contract to the County of Orange, and complies with the OCTA requirements for an MPAH amendment. The full report, entitled *County of Orange MPAH Amendments in Rancho Mission Viejo Traffic Impact Study* (traffic impact study or Iteris Report), is provided in Appendix E of this Addendum.¹¹⁶ As previously discussed in Section 2.4, Alternative Environmental Baseline, the analysis has been conducted consistent with the OCTA and County of Orange traffic impact analysis protocols for evaluating an MPAH Amendment and Transportation Element Amendment.

As previously noted in Section 4.13, Noise, FEIR 575 used a 2020 horizon year and FEIR 584 and FEIR 589 used 2025 as the horizon year. The Iteris Report compares the 2045 with and without the proposed Amendment (i.e., 2045 traffic volumes with the LPPE compared to the 2045 network without having Los Patrones Parkway as a continuous route to Avenida La Pata [No LPPE]) to ensure the analysis addresses the full cumulative impacts of projected growth in the region and reflects any changes that have occurred to the circulation network since FEIR 575, FEIR 584 and FEIR 589 were certified. This allows the analysis to more clearly identify any changes in circulation patterns associated with the proposed Project. Additionally, by using the

¹¹⁵ The policy analysis can be found in Section 4.1, Land Use and Planning of FEIR 589. The only goals, policies and objectives of the General Plan not included in the policy discussion are ones that are not applicable to the project or relate to countywide programs that would be implemented by the County or other agency (such as those pertaining to pursuing funding sources, public education, and representing the County at trade shows).

¹¹⁶ As noted in Section 2.3, Project Setting, RMV requested the MPAH address four roadways. These requests were divided into two separate requests. The LPPE is being processed as a single item amendment and the other items were being processed together. To be comprehensive, the Traffic Impact Analysis evaluates all the modifications together.

OCTA OCTAM model, the analysis evaluates the potential for the redistribution of local trips but also regional trips. As discussed in Section 2.4, Alternative Environmental Baseline, comparison of the 2045 with and without projections provides a more accurate assessment of the impacts of the proposed LPPE Project. The LPPE would not generate any additional trips. Neither the No Project nor the Project (the LPPE) analysis assumes the construction of the SR-241 extension because, as previously noted, the extension of the SR-241 is no longer depicted on the regional planning documents (RTP/SCS), the MPAH, nor the local General Plans.

Consistent with OCTA protocols, the 2045 analysis is conducted assuming full build-out of the MPAH.¹¹⁷ This allows an evaluation of function of the full planned roadway network with and without the proposed amendment (the addition of the LPPE and deletion of the Cristianitos Road extension). It should be noted, the OCTAM network also includes the following four improvements in the vicinity of the study area, for which there is no current implementation timeframe:

- San Juan Creek Road 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 Drive
- Extension of Camino Las Rambles to Avenida La Pata

The County requested Ortega Highway east of Antonio Parkway also be evaluated as a two-lane roadway because Ortega Highway is a State Route and is only reflected on the MPAH for informational purposes. Any improvements to Ortega Highway would be done by Caltrans. The roadways being evaluated are shown in Exhibit 13 and their MPAH classification is shown in Table 4. The 18 study area intersections being evaluated are shown in Exhibit 14 and are discussed later in this section.

¹¹⁷ The traffic impact study was conducted using the OCTA traffic model OCTAM Version 5. The analysis is FEIR 584 and FEIR 589 used using the South (Orange) County Sub-Area Model, which was based on OCTAM Version 3.1.

TABLE 4
STUDY AREA ARTERIAL HIGHWAYS

#	Arterial	Limits	Facility Type	
			Without LPPE	With LPPE
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	Build - Los Patrones to Camino Del Rio	Primary	Primary
46	Avenida La Pata	Build - Camino Del Rio to Ave Vista Hermosa	Primary	Primary
47	Avenida La Pata	Build 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 De 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	Removed
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	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	Los Patrones Parkway SB and NB On-Ramps	Secondary	Secondary
27	Bucker Way	Los Patrones Parkway NB On-Ramp to Ranch Canyon Road	Secondary	Secondary
28	Bucker Way	Coyotes to Cow Camp Road	Secondary	Secondary
29	Legado Road	North of Cow Camp Road	Secondary	Secondary
30	Los Patrones Parkway northbound ^a	North of Chiquita Canyon Drive Ramps	Secondary	Secondary
31	Los Patrones Parkway southbound ^a	North of Chiquita Canyon Drive Ramps	Secondary	Secondary
32	Los Patrones Parkway northbound ^a	South of Chiquita Canyon Drive Ramps	Secondary	Secondary
33	Los Patrones Parkway southbound ^a	South of Chiquita Canyon Drive Ramps	Secondary	Secondary

TABLE 4
STUDY AREA ARTERIAL HIGHWAYS

#	Arterial	Limits	Facility Type	
			Without LPPE	With LPPE
34	Ortega Highway	West of Cow Camp Road	Primary	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 ^b	Cristianitos to Gibby Road	Primary	Primary
40	Ortega Highway ^b	West of Caspers Park Road	Primary	Primary
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 Road	North of Cow Camp Road	Primary	Primary
44	San Juan Creek Road	West of Avenida La Pata	Secondary	Secondary
48	Camino las Rables	West of Avenida La Pata	Secondary	Secondary
^a Although the existing portion of Los Patrones Parkway is designated on the MPAH as a Rural Secondary and the LPPE would be a Primary arterial highway, the roadway would function as an expressway because there would be 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.				
^b 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.				
Source: Iteris 2020				

OCTAM is a socioeconomic-based model, which uses population and employment data to generate trips. The traffic model assumes full build-out of the County's and cities' general plans, including the Ranch Plan. The employment data has been developed using the Orange County Subarea Modeling Guidelines Manual.

A level of service was calculated for roadway segments (i.e., mid-block) and for intersections. OCTA applies the segment analysis for a General Plan level of analysis. However, as noted in the MPAH Guidance:

Intersection capacities usually control overall roadway capacities; therefore, the MPAH Guidance uses LOS 'C' for General Plan analysis purposes. Although LOS 'D' is more consistent with urban land uses, it has been found that using it uniformly tends to overload intersections (usually resulting in LOS 'E' or LOS 'F' at the intersections themselves). Therefore, the practice when planning the arterial system is to use LOS 'C' for link capacities, with the intent of maintaining LOS 'D' through intersections.

The County's Growth Management Plan (GMP) Transportation Implementation Manual references the use of segment analysis for General Plans, but also states the County of Orange requires that the Intersection Capacity Utilization (ICU) methodology be used. Table 5 shows the roadway capacity volumes for each type of arterial highway used by both OCTA and the County of Orange.

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Source: Iteris 2020

Study Area Arterial Highway Segments

Exhibit 13

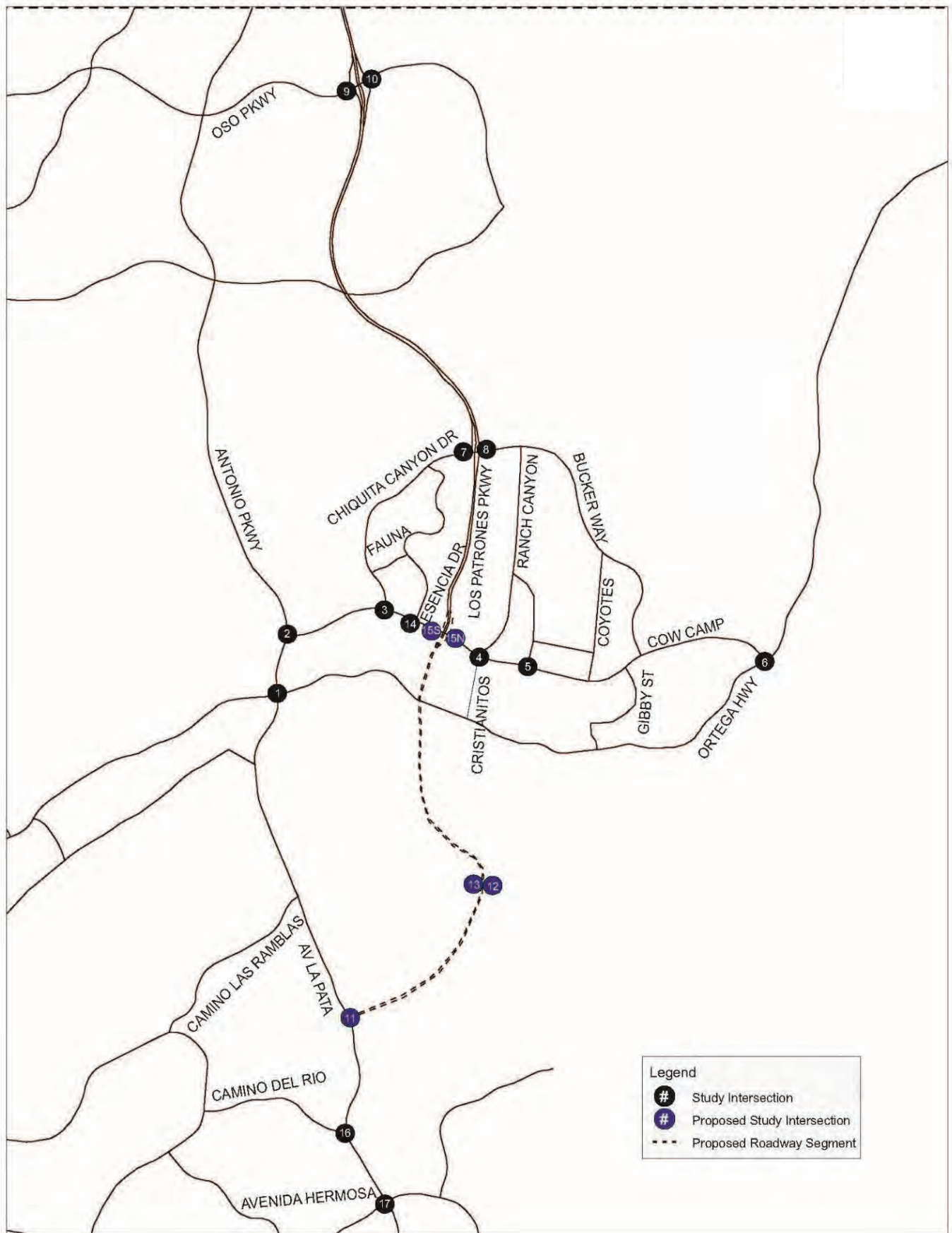
Los Patrones Parkway Extension



Map not to scale

PSOMAS

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Source: Iteris 2020

Study Area Intersections

Exhibit 14

Los Patrones Parkway Extension



Map not to scale



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TABLE 5
ARTERIAL HIGHWAYS 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: Iteris 2020						

Both the OCTA MPAH Guidance and the County's GMP Transportation Implementation Manual acknowledge:

These roadway capacities are approximate figures only, and are used at the General Plan level. They are affected by such factors as intersections (numbers & configuration), degree of access control, roadway grades, design geometrics (horizontal & vertical alignment standards), sight distance, level of truck and bus traffic, and level of pedestrian and bicycle traffic. Average daily traffic (ADT) is used by the County as a long range planning tool to assist in determining arterial highway classification (number of through lanes) needed to meet traffic demand.

Based on the above stated requirements and the acknowledgement that the roadway capacity figures are estimates, the impact analysis utilizes the ICU analysis conducted for signalized intersections. An ICU for an intersection is the ratio between the volume and the capacity gives a volume/capacity (V/C) ratio. The peak hour (AM and PM) is the time period used for impact evaluation because it represents the worst case. Based on the V/C ratio, a corresponding "level of service" (LOS) is defined. Level of Service is a qualitative measure of a facility's operating performance and is described with a letter designation from A to F, with LOS A representing the best operating conditions and LOS F the worst. The V/C ranges for arterial roads are designated in the OCTA Congestion Management Program Preparation Manual and are used by the County of Orange and by the local jurisdictions in the study area. The County uses LOS D (ICU not to exceed 0.90) as the accepted standard. For locations under Caltrans jurisdiction, the *Highway Capacity Manual* (HCM) methodology was also used, consistent with Caltrans' protocols.¹¹⁸ The HCM methodology defines the LOS by the average vehicle delay experienced by all vehicles traveling through the intersection. Caltrans targets an LOS at the transition between LOS C and LOS D. 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.

The intersection of Cow Camp Road and Ortega Highway is within Caltrans jurisdiction. Based on the *Intersection Control Evaluation* conducted in conjunction with the Caltrans' design process, this intersection will be developed as a roundabout. While the roundabout design is still being finalized the assumptions made are that the 2045 configuration would be a two-lane roundabout

¹¹⁸ Locations under Caltrans jurisdiction in the LPPE study area include Ortega Highway and the intersections on Oso Parkway with the SR-241, immediately north of the LPPE study area. Therefore, the following intersections were evaluated using the HCM methodology: (1) Ortega Highway and Antonio Parkway; (2) Ortega Highway and Cow Camp Road; (3) Oso Parkway and SR-241/Los Patrones Parkway southbound ramps; and (4) Oso Parkway and SR-241/Los Patrones Parkway northbound ramps.

in both the two-lane Ortega Highway and four-lane Ortega Highway scenarios since the analysis assumed full buildout of land uses and even in the two-lane Ortega Highway the roadway would presumably need to be widened at the approaches and departures to accommodate the future volumes and roundabout design.

Table 6 identifies the level of service ranges and their corresponding V/C ranges used for ICU calculations and the delay times for signalized intersections when using the HCM methodology.

**TABLE 6
LEVEL OF SERVICE RANGES**

Level of Service (LOS)	Volume/Capacity (V/C) Ratio Range (ICU)	Signalized Intersection Delay (seconds) (HCM)
A	0.00 – 0.60	≤ 10.0
B	0.61 – 0.70	> 10.0 to 20.0
C	0.71 – 0.80	> 20.0 to 35.0
D	0.81 – 0.90	> 35.0 to 55.0
E	0.91 – 1.00	> 55.0 to 80.0
F	Above 1.00	> 80.0
ICU=Intersection Capacity Utilization; HCM=Highway Capacity Manual Sources: V/C ranges: 2019 Orange County Congestion Management Program, OCTA Intersection Delay: Highway Capacity Manual 6 th Edition (HCM 2010), Transportation Research Board, National Research Council		

Segment Analysis

The 2045 operational analysis segment analysis evaluated with and without the LPPE under two scenarios: (1) MPAH build-out but with only two lanes on Ortega Highway and (2) full MPAH build-out (four lanes on Ortega Highway).

Segment Analysis with two-lane Ortega Highway

Exhibits 15a and 15b provides a visual representation of the changes in 2045 weekday daily traffic volumes on the roadway network that would occur with the LPPE compared to the No Project scenario when using the two-lane Ortega Highway assumption. Exhibit 15a identifies those roadways in red that would have an increase in traffic volumes with the LPPE when compared to the No Project scenario. Exhibit 15b shows those roadways in green that would have decreased traffic as a result of the reassignment of traffic associated with the construction of the LPPE. Based on OCTAM, the LPPE would result in higher traffic volumes on the following roadways:

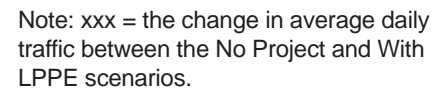
- Los Patrones Parkway north of Cow Camp Road
- Cow Camp Road, from Los Patrones Parkway to Ortega Highway
- Ranch Canyon Road, from Buckner Way to Cow Camp Road
- Coyotes, from Buckner Way to Cow Camp Road
- Esencia, from Cow Camp Road to Chiquita Canyon Road
- Rancho Viejo Road, from Ortega Highway to Junipero Serra Road
- Camino Capistrano Road, from Ortega Highway to Junipero Serra Road
- Avenida La Pata, from LPPE to south of Avenida Pico



Increases in Daily Traffic Volumes on the Roadway Network between the Project and the No Project (two-lane Ortega Highway) Exhibit

Exhibit 15a





Decreases in Daily Traffic Volumes on the Roadway Network between the Project and the No Project (two-lane Ortega Highway) Exhibit

Exhibit 15b



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- Camino Del Rio, from Avenida La Pata to Camino De Los Mares
- Avenida Vista Hermosa, from I-5 to Avenida Pico
- Camino Vera Cruz, from Calle Sarmentoso to Avenida Vista Hermosa

Traffic volumes would be reduced on the following roadways:

- I-5, from north of Crown Valley Parkway to Avenida Pico
- Crown Valley Parkway, from I-5 to Antonio Parkway
- Antonio Parkway/Avenida La Pata, from north of Crown Valley Parkway to LPPE
- Cow Camp Road, from Antonio Parkway to Los Patrones Parkway
- Ortega Highway, from I-5 to Cow Camp Road
- Camino Las Rambles, from I-5 to a future connection with Avenida La Pata¹¹⁹
- Camino De Los Mares, from Calle Naranja to Camino Del Rio

Table 7 provides the V/C ratios and LOS comparing the 2045 ADT No Project and the 2045 With LPPE scenario using the two-lane Ortega Highway assumption. As shown, the following three segments would operate at LOS D in the No Project scenario:

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

The diversion of traffic onto the LPPE and Cow Camp Road in the With LPPE scenario eliminates these three deficiencies. Among the 48 tested segments (excluding the one to be deleted), only one segment (Avenida La Pata from Camino Del Rio to Avenida Vista Hermosa) would experience a deterioration of LOS to LOS D with the LPPE when using the average daily traffic volumes. A peak hour segment analysis is provided below in this section to provide a closer evaluation of the function of this segment.

TABLE 7
FUTURE 2045 ARTERIAL ROADWAY SEGMENT ANALYSIS
DAILY VOLUME TO CAPACITY RATIO AND LEVEL OF SERVICE SUMMARY
(two-lane Ortega Highway)


#	Arterial	Limits	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

¹¹⁹ As noted, OCTA requires MPAH amendment analysis to evaluate full build-out of the MPAH network, which includes an extension of Camino Las Rambles to Avenida La Pata. The LPPE does not propose or require the extension of Camino Las Rambles.

TABLE 7
FUTURE 2045 ARTERIAL ROADWAY SEGMENT ANALYSIS
DAILY VOLUME TO CAPACITY RATIO AND LEVEL OF SERVICE SUMMARY
(two-lane Ortega Highway)

#	Arterial	Limits	No Project		With Project		Δ In V/C
			V/C	LOS	V/C	LOS	
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 De 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	0.14
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	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

TABLE 7
FUTURE 2045 ARTERIAL ROADWAY SEGMENT ANALYSIS
DAILY VOLUME TO CAPACITY RATIO AND LEVEL OF SERVICE SUMMARY
(two-lane Ortega Highway)

#	Arterial	Limits	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 ^a	West of Cow Camp Road	0.42	A	0.26	A	(0.16)
35	Los Patrones Parkway	South of Cow Camp Road	-	-	0.59	B	0.59
36	Los Patrones Parkway	East of Avenida La Pata	-	-	0.57	B	0.57
37	Ortega Highway	Shadetree Lane/Avenida Siega to Reata Road	0.84	D	0.77	C	(0.07)
38	Ortega Highway ^a	Antonio Parkway/La Pata Ave to Gateway Place	0.57	A	0.41	A	(0.16)
39	Ortega Highway ^a	Cristianitos to Gibby Road	0.42	A	0.26	A	(0.16)
40	Ortega Highway ^a	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)
#=segment number; Δ= change; V/C=volume to capacity ratio; LOS=Level of Service; NB=northbound; SB=southbound; (0.XX)=reduction in V/C ratio (i.e., improvement compared to the No Project)							
 =segment operating at less than LOS C							
^a Segment is a collector but considered a rural highway rather than a collector. Assumed capacity of 12,500 vehicles per day may in reality be an underestimate.							
Source: Iteris 2020							

Segment Analysis with four-lane Ortega Highway

Exhibits 16a and 16b provides a visual representation of the changes in 2045 weekday daily traffic volumes on the roadway network that would occur with the LPPE compared to the No Project scenario when using the four-lane Ortega Highway assumption. As noted above, the LPPE would result in redistribution of trips on the roadway network when compared to the No Project scenario. Exhibit 16a identifies those roadways in red that would have an increase in traffic volumes with the LPPE when compared to the No Project scenario. Exhibit 16b shows those roadways in green that would have decreased traffic as a result of the reassignment of traffic associated with the construction of the LPPE. The same roadways would be effected with the four-lane Ortega Highway scenario as were listed above for the two-lane Ortega Highway scenario.

Table 8 provides the V/C ratios and LOS comparing the 2045 ADT No Project and the 2045 With LPPE scenario using the four-lane Ortega Highway assumption. As shown, there are three segment locations that would operate at LOS D in the No Project scenario with Ortega Highway as a four-lane roadway. These segments, listed below, are the same roadway segments that would operate at LOS D in the No Project scenario when Ortega Highway was assumed to be two lanes:

- Antonio Parkway from Avendale Boulevard to O'Neill Drive

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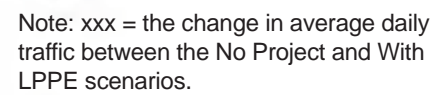
Source: Iteris 2020

Increases in Daily Traffic Volumes on the Roadway Network between the Project and the No Project (four-lane Ortega Highway)

Exhibit 16a

Los Patrones Parkway Extension





Source: Iteris 2020

Exhibit 16b

Los Patrones Parkway Extension



- Bucker Way between Los Patrones Parkway northbound on-ramp and Ranch Canyon Road
- Ortega Highway between Shadetree Lane/Avenida Siega to Reata Road

Similarly, the diversion of traffic onto the LPPE and Cow Camp Road in the With LPPE scenario eliminates these three deficiencies. Among the 48 tested segments (excluding the one to be deleted), only one segment (Avenida La Pata from Camino Del Rio to Avenida Vista Hermosa) would experience a deterioration of LOS to LOS D with the LPPE when using the average daily traffic volumes. A peak hour segment analysis is provided below in this section to provide a closer evaluation of the function of this segment.

TABLE 8
FUTURE 2045 ARTERIAL ROADWAY SEGMENT ANALYSIS
DAILY VOLUME TO CAPACITY RATIO AND LEVEL OF SERVICE SUMMARY
(four-lane Ortega Highway)

#	Arterial	Limits	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 De 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	0.04	A	0.08	A	0.04
23	Esencia Drive	North of Cow Camp Road	0.16	A	0.20	A	0.04

TABLE 8
FUTURE 2045 ARTERIAL ROADWAY SEGMENT ANALYSIS
DAILY VOLUME TO CAPACITY RATIO AND LEVEL OF SERVICE SUMMARY
(four-lane Ortega Highway)

#	Arterial	Limits	No Project		With Project		Δ In V/C
			V/C	LOS	V/C	LOS	
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
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)
#=segment number; Δ= change; V/C=volume to capacity ratio; LOS=Level of Service; NB=northbound; SB=southbound; (0.XX)= reduction in V/C ratio (i.e., improvement compared to the No Project)							
 =segment operating at less than LOS C							
Source: Iteris 2020							

Peak-hour Segment Analysis

As noted above, OCTA's primary screening criteria for identifying deficiencies for the MPAH is based on LOS C for roadway segments. The analysis presented above uses a daily capacity V/C ratio. While daily capacity provides a good overall sense of "how busy" a segment is, it does not necessarily represent the maximum daily throughput of traffic on the segment nor does it represent how the segment will perform during peak hours. A peak hour function analysis was conducted for the segment (Avenida La Pata between Camino Del Rio and Avenida Vista Hermosa) where the Project (with LPPE scenario) is forecast to operate below LOS C based on daily traffic volumes. These values are compared to the No Project scenario.

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. An assumed capacity of 1,700 vehicles per hour per lane for Avenida La Pata, since this segment has no driveways or public access points. This assumption is consistent with the saturation flow rate in the OCTA's 2019 Congestion Management Program. As shown in Table 9, for the With LPPE scenarios, Avenida La Pata between Camino Del Rio and Avenida Vista Hermosa would operate at LOS A under both the two-lane and four-lane Ortega Highway scenarios based on the maximum peak hour traffic. Therefore, the Project is able to achieve the OCTA practice of using LOS C for segment capacities, with the intent of maintaining LOS D through intersections. The intersection analysis, which demonstrates that the intersections adjacent to this segments are forecast to operate at LOS D or better, is provided below. Based on this analysis, it can be concluded that all of the study segments would function satisfactorily in peak hour conditions and there would be no new impact or substantially more severe impact that would require modifications to FEIR 575, FEIR 584, and FEIR 589.

TABLE 9
PEAK HOUR ARTERIAL ROADWAY SEGMENT ANALYSIS

#	Arterial	Limits	Ortega	Scenario	Daily				AM Peak Hour		PM Peak Hour		Max Peak Hour		
					Volume	Capacity	V/C	LOS	NB/EB	WB/SB	NB/EB	WB/SB	Capacity	Max V/C	LOS
46	Avenida La Pata	Camino Del Rio and Avenida Vista Hermosa	2-lanes	No Build	25,300	37,500	0.67	B	1,560	1,000	1,110	1,500	3,400	0.46	A
				Project	32,500	37,500	0.87	D	1,750	1,310	1,430	1,680	3,400	0.51	A
			4-lanes	No Build	25,500	37,500	0.68	B	1,570	1,000	1,120	1,520	3,400	0.46	A
				Project	32,600	37,500	0.87	D	1,750	1,310	1,440	1,690	3,400	0.51	A
Max=maximum; #=segment number; V/C=volume to capacity ratio; LOS=Level of Service; NB=northbound; SB=southbound; EB=eastbound; WB=westbound															
		LOS D													
		LOS E or F													
		Source: Iteris 2020													

Intersection Analysis

As noted above, the County strives to maintain a peak hour LOS D at intersections. Although LOS is no longer required by CEQA to assess transportation impacts, the following provides an evaluation of the intersection function using the ICU methodology and the HCM methodology for intersections that are under Caltrans jurisdiction. As with the segment analysis, this evaluation has been done with the assumption of Ortega Highway as a two-lane and as a four-lane roadway.

Intersection Analysis with two-lane Ortega Highway

Using the peak hour traffic volumes and future lane configurations an ICU analysis was performed. Table 10 summarizes the intersection traffic conditions in the study area under the 2045 No Project and With Project conditions with Ortega Highway as a two-lane facility. Detailed ICU calculations are provided in the Traffic Impact Analysis provided in Appendix E.

All intersections are forecast to operate at LOS D or better in both the No Project and With Project conditions. Exhibits 17 and 18 depict the 2045 No Project AM and PM Peak Hour Intersection LOS, respectively. Exhibits 19 and 20 depict the 2045 With Project AM and PM Peak Hour Intersection LOS, respectively. The implementation of the Los Patrones extension improves the LOS at the majority of the study locations.

In addition to ICU analysis the four intersections in Caltrans' jurisdiction were analyzed using HCM methodology. Detailed HCM analysis worksheets are also provided in Appendix E. Table 11 provides the HCM delay data and LOS values for the 2045 No Project scenario and Table 12 provides the HCM data for the 2045 With Project scenario.

Two locations are identified as having potential deficiencies in the No Project scenario. Ortega Highway at Antonio Parkway is forecast to operate at LOS E in the AM peak hour. However, the reduction in volumes on Ortega Highway due to the LPPE eliminates the deficiency in the With Project scenario.

The second location is identified under both the No Project and With Project scenario. Oso Parkway and Los Patrones Parkway/SR-241 southbound ramp is forecast to operate at LOS F in the PM peak in 2045 No Project scenario. Implementation of the Project would reduce the delay and the intersection would operate at LOS E in the PM peak with the Project. Therefore, there is no new impact or more severe impact with the LPPE, which would require revisions to the FEIRs. This is due to heavy forecast volumes of eastbound right-turns 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. This would be a routine operational adjustment and would not require additional improvements.

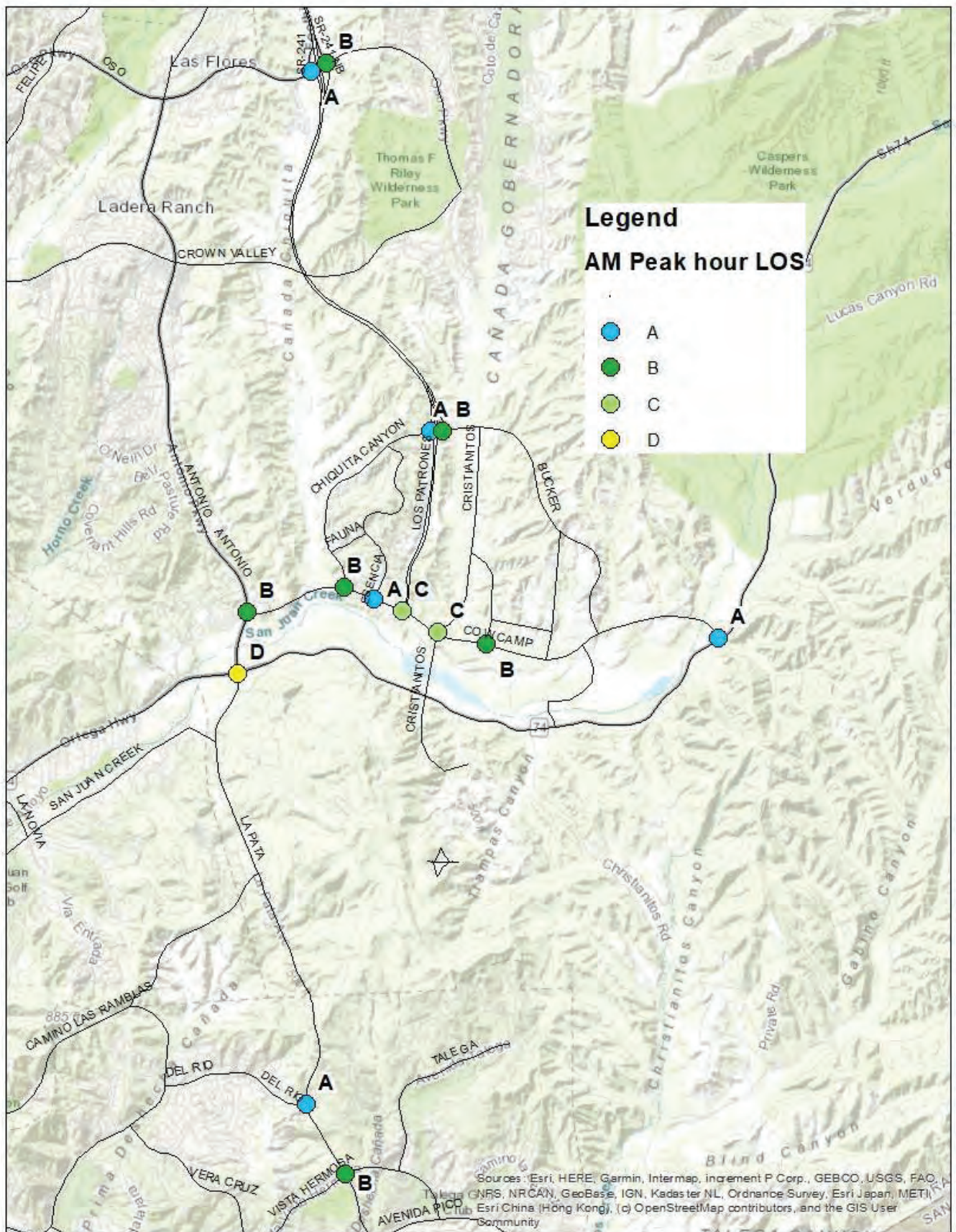
Cow Camp Road and Ortega Highway is assumed to operate as a 2-lane roundabout (i.e., two lanes entering and departing the roundabout). Even though this is the 2-lane Ortega Highway alternative with only one lane in each direction on the arterial it is assumed that the full 2045 configuration is built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

TABLE 10
FUTURE 2045 ARTERIAL ROADWAY INTERSECTION CAPACITY UTILIZATION ANALYSIS
(two-lane Ortega Highway)

#	Intersection Location	2045 No Project					2045 With Project					Δ In V/C	
		AM Peak Hour		PM Peak Hour		Deficient (Yes/No)	AM Peak Hour		PM Peak Hour		Deficient (Yes/No)		
		V/C /Delay	LOS	V/C /Delay	LOS		V/C /Delay	LOS	V/C /Delay	LOS			
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 and 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 and 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 Pkwy/Avenida La Pata	Project Intersection				No	0.77	C	0.77	0.69	B	0.69	B
12	PA5 Future Road / Los Patrones Pkwy NB Ramp	Project Intersection				No	0.19	A	0.11	0.20	A	0.13	A
13	PA5 Future Road / Los Patrones Parkway SB Ramp	Project Intersection				No	0.12	A	0.15	0.13	A	0.16	A
14	Cow Camp/Esencia	0.54	A	0.43	A	No	0.49	A	0.37	A	No	(0.05)	(0.06)
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

TABLE 10
FUTURE 2045 ARTERIAL ROADWAY INTERSECTION CAPACITY UTILIZATION ANALYSIS
(two-lane Ortega Highway)

#	Intersection Location	2045 No Project					2045 With Project					Δ In V/C	
		AM Peak Hour		PM Peak Hour		Deficient (Yes/No)	AM Peak Hour		PM Peak Hour		Deficient (Yes/No)		
		V/C /Delay	LOS	V/C /Delay	LOS		V/C /Delay	LOS	V/C /Delay	LOS			
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	A	0.54	A	No	0.68	B	0.67	B	No	0.07	0.13
#=intersection number; Δ= change; V/C=volume to capacity ratio; LOS=Level of Service; NB=northbound; SB=southbound; PA5=Planning Area 5; (0.XX)= reduction in V/C ratio (i.e., improvement compared to the No Project) Source: Iteris 2020													



Source: Iteris 2020

2045 No Project AM Peak Hour Intersection Level of Service (two-lane Ortega Highway)

Exhibit 17

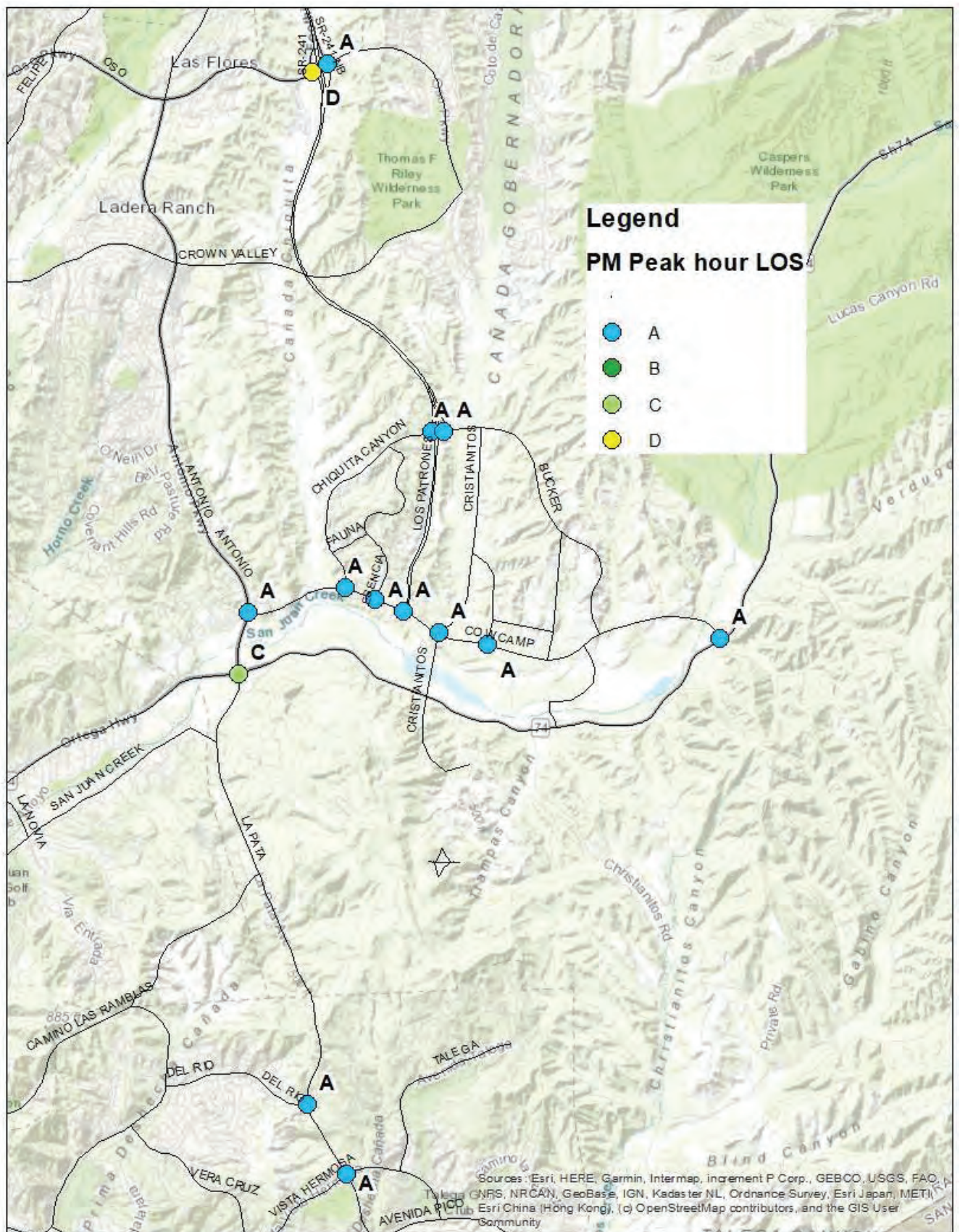
Los Patrones Parkway Extension



Map not to scale



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Source: Iteris 2020

2045 No Project PM Peak Hour Intersection Level of Service (two-lane Ortega Highway)

Exhibit 18

Los Patrones Parkway Extension



Map not to scale

PSOMAS

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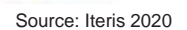


Exhibit 19

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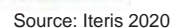


Exhibit 20

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TABLE 11
FUTURE 2045 NO PROJECT INTERSECTION HIGHWAY CAPACITY MANUAL LOS
(two-lane Ortega Highway)

#	Intersection Location	Control Type	AM Peak Hour		PM Peak Hour		Deficient (Yes/No)
			Delay	LOS	Delay	LOS	
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	A	No
9	Oso Parkway/Los Patrones Parkway and SR-241 SB Ramp	Signalized	34.5	C	110.8	F	Yes
10	Oso Parkway/Los Patrones Parkway and SR-241 NB Ramp	Signalized	51.2	D	18.5	B	No
<div>Deficient location</div> <div>LOS=level of service; SB=southbound; NB=northbound; SR=State Route</div> <div>Source: Iteris 2020</div>							

TABLE 12
FUTURE 2045 WITH PROJECT INTERSECTION HIGHWAY CAPACITY MANUAL LOS
(two-lane Ortega Highway)

#	Intersection Location	Control Type	AM Peak Hour		PM Peak Hour		Deficient (Yes/No)
			Delay	LOS	Delay	LOS	
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 and SR-241 SB Ramp	Signalized	7.2	A	76.2	E	Yes
10	Oso Parkway/Los Patrones Parkway and SR-241 NB Ramp	Signalized	50.3	D	18.5	B	No
<div>Deficient location</div> <div>LOS=level of service; SB=southbound; NB=northbound; SR=State Route</div> <div>Source: Iteris 2020</div>							

Intersection Analysis with four-lane Ortega Highway

Using the peak hour traffic volumes and future lane configurations an ICU analysis was performed. Table 13 summarizes the intersection traffic conditions in the study area under the 2045 No Project and With Project conditions with Ortega Highway as a four-lane facility. Detailed ICU calculations are provided in Traffic Impact Analysis, which is Appendix E to this Addendum.

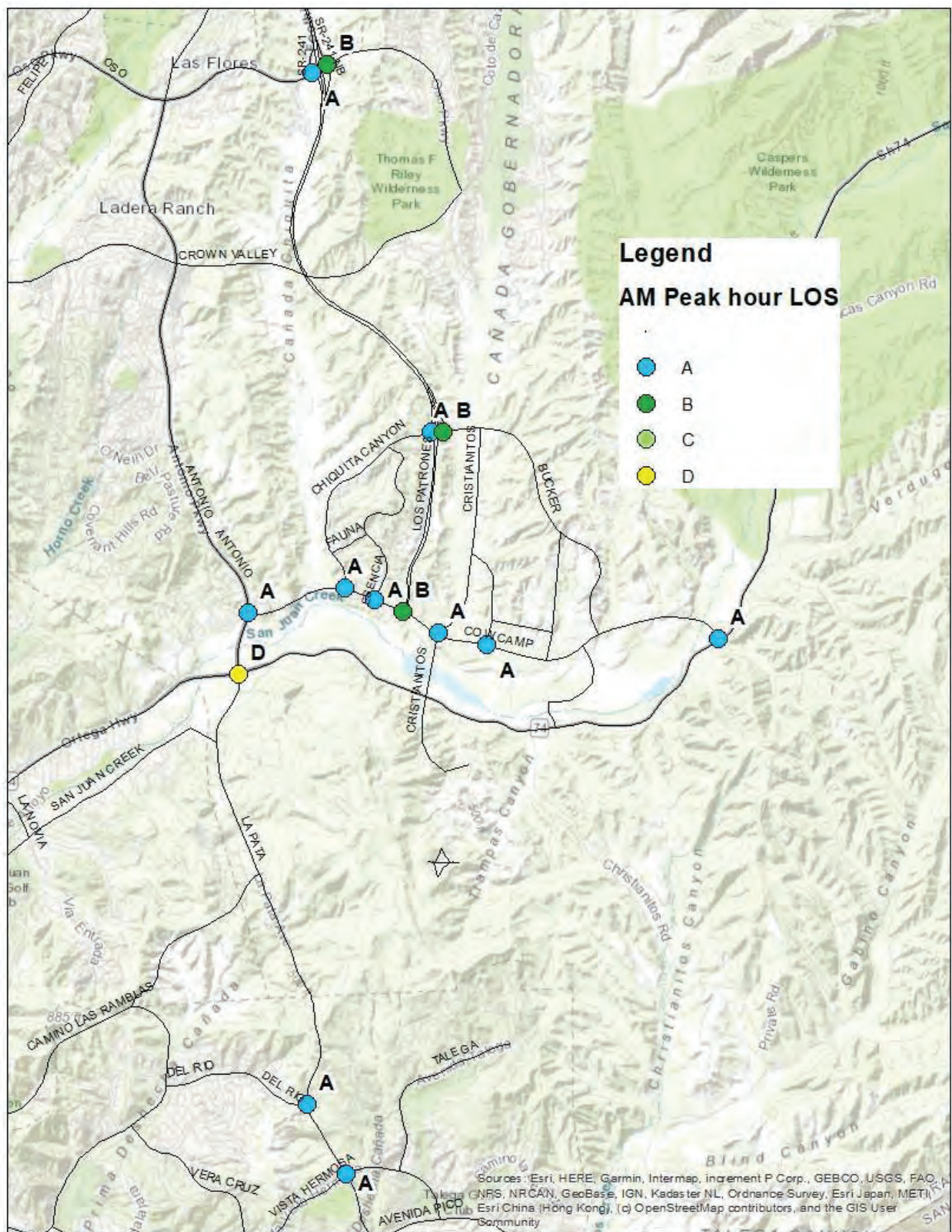
All intersections are forecast to operate at LOS D or better both the No Project and With Project conditions. Exhibits 21 and 22 depicts the 2045 No Project AM and PM Peak Hour Intersection LOS, respectively. Exhibits 23 and 24 depicts the 2045 With Project AM and PM Peak Hour Intersection LOS, respectively. The implementation of the Los Patrones extension improves the LOS at the majority of the study locations.

TABLE 13
FUTURE 2045 ARTERIAL ROADWAY INTERSECTION CAPACITY UTILIZATION ANALYSIS
(four-lane Ortega Highway)

ID	Intersection Location	2045 No Project					2045 With Project					Δ In V/C	
		AM Peak Hour		PM Peak Hour		Deficient (Yes/No)	AM Peak Hour		PM Peak Hour		Deficient (Yes/No)		
		V/C /Delay	LOS	V/C /Delay	LOS		V/C /Delay	LOS	V/C /Delay	LOS			
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/Avenida 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 Road/Esencia Drive	0.47	A	0.41	A	No	0.50	A	0.39	A	No	(0.02)	(0.04)
15	Cow Camp Road/ Los Patrones Parkway	0.66	B	0.52	A	No	No Project Only					N/A	N/A
15S	Cow Camp Road / Los Patrones Parkway SB Ramp	Project Intersection					0.65	B	0.65	B	No	N/A	N/A
15N	Cow Camp Road/ Los Patrones Parkway NB Ramp	Project Intersection					0.63	B	0.56	A	No	N/A	N/A

TABLE 13
FUTURE 2045 ARTERIAL ROADWAY INTERSECTION CAPACITY UTILIZATION ANALYSIS
(four-lane Ortega Highway)

ID	Intersection Location	2045 No Project					2045 With Project					Δ In V/C	
		AM Peak Hour		PM Peak Hour		Deficient (Yes/No)	AM Peak Hour		PM Peak Hour		Deficient (Yes/No)		
		V/C /Delay	LOS	V/C /Delay	LOS		V/C /Delay	LOS	V/C /Delay	LOS			
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
#=intersection number; Δ= change; V/C=volume to capacity ratio; LOS=Level of Service; NB=northbound; SB=southbound; PA5=Planning Area 5; (0.XX)=reduction in V/C ratio (i.e., improvement compared to the No Project)													
Source: Iteris 2020													

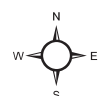


Source: Iteris 2020

2045 No Project AM Peak Hour Intersection Level of Service (four-lane Ortega Highway)

Exhibit 21

Los Patrones Parkway Extension



Map not to scale

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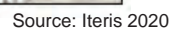


Exhibit 22

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Exhibit 23

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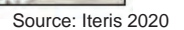


Exhibit 24

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The four intersections in Caltrans' jurisdiction were analyzed using HCM methodology. Detailed HCM analysis worksheets are provided in Appendix E. Table 14 provides the HCM delay data and LOS values for the 2045 No Project scenario and Table 15 provides the HCM data for the 2045 With Project scenario.

Two locations are identified as having potential deficiencies in the No Project scenario. Ortega Highway at Antonio Parkway is forecast to operate at LOS E in the AM peak and PM peak hours. However, the reduction in volumes on Ortega Highway due to the LPPE eliminates the deficiency in the With Project scenario.

The second location is identified under both the No Project and With Project scenario. Oso Parkway and Los Patrones Parkway/SR-241 southbound ramp is forecast to operate at LOS F in the PM peak in 2045 in the No Project scenario. Although the intersection would be deficient (LOS E) with implementation of the Project, the delay would be reduced compared to the No Project scenario. Therefore, there is no new impact or more severe impact with the LPPE, which would require revisions to the FEIRs. This deficiency is due to heavy forecast volumes of eastbound right-turns from Oso Parkway to southbound Los Patrones Parkway. As discussed above for the two-lane Ortega Highway evaluation, if the 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. This would be a routine operational adjustment and would not require additional improvements.

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

TABLE 14
FUTURE 2045 NO PROJECT INTERSECTION HIGHWAY CAPACITY MANUAL LOS
(four-lane Ortega Highway)

#	Intersection Location	Control Type	AM Peak Hour		PM Peak Hour		Deficient (Yes/No)
			Delay	LOS	Delay	LOS	
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 and SR-241 SB Ramp	Signalized	32.9	C	107.8	F	Yes
10	Oso Parkway/Los Patrones Parkway and SR-241 NB Ramp	Signalized	51.4	D	18.6	B	No
	Deficient location						
	LOS=level of service; SB=southbound; NB=northbound; SR=State Route						
	Source: Iteris 2020						

TABLE 15
FUTURE 2045 WITH PROJECT INTERSECTION HIGHWAY CAPACITY MANUAL LOS
(four-lane Ortega Highway)

#	Intersection Location	Control Type	AM Peak Hour		PM Peak Hour		Deficient (Yes/No)
			Delay	LOS	Delay	LOS	
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 and SR-241 SB Ramp	Signalized	7.2	A	76.4	E	Yes
10	Oso Parkway/Los Patrones Parkway and SR-241 NB Ramp	Signalized	52.1	D	18.5	B	No
Deficient location							
LOS=level of service; SB=southbound; NB=northbound; SR=State Route							
Source: Iteris 2020							

b) Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. The CEQA Guidelines Section 15064.3(b) pertains to using Vehicle Miles Traveled (VMT) as the appropriate metric for assessing transportation impacts. Incorporation of VMT as the metric for assessing transportation impacts is mandated by Senate Bill (SB) 743.

This section of the CEQA Guideline states: “vehicle miles traveled refers to the amount and distance of automobile travel attributable to a project. Other relevant considerations may include the effects of the project on transit and non-motorized travel. Except as provided in subdivision (b)(2) below (regarding roadway capacity), a project’s effect on automobile delay shall not constitute a significant environmental impact.”¹²⁰ Unlike delay-based LOS analyses, VMT is a regional effect not defined by roadway, intersection, or pathway.

For transportation projects, Section 15064.3(b)(2) of the CEQA Guidelines states: “Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements.”

For transportation projects, an increase in VMT is often assigned to induced land use growth. No new land uses are proposed and the circulation network is no more robust than what was originally assumed for the Ranch Plan. As discussed in Section 4.14, Population and Housing, FEIR 589 provided an extensive growth inducing analysis by evaluating not just growth potential in Orange County but in neighboring San Diego and Riverside counties. The Ranch Plan was found not to substantially influence growth outside the Ranch Plan limits, primarily due to the developed nature of the surrounding area and area in public ownership (i.e., MCB Camp Pendleton, Caspers Wilderness Park and the Cleveland National Forest). This modification to the alignment of the north-south roadway serving the Ranch Plan would not change the land use development pattern or approvals approved for the Ranch Plan; therefore, growth inducement is not anticipated with

¹²⁰ Section 15064.3(b)(1) pertains to assessing impacts for land development projects, which would not be applicable to the LPPE.

the modification of the alignment of the north-south serving roadway. Additionally, the LPPE would not provide redundant infrastructure that would provide greater roadway capacity allowing induced travel beyond what was evaluated in FEIR 584 and FEIR 589.

Lead agencies have discretion to develop and adopt their own, or rely on thresholds recommended by other agencies. In November 2020, the County of Orange approved the County's *Guidelines for Evaluating Vehicle Miles Traveled Under CEQA*, which outline the methodology for assessing impacts based on VMT and established a threshold for determining if an impact is significant based on VMT.

The County *Guidelines for Evaluating Vehicle Miles Traveled Under CEQA* do provide that the County may continue to use delay and LOS for transportation projects. Furthermore, to the extent that impacts have already been addressed at a programmatic level, the guidelines provide that the analysis may tier from that analysis. Both the Prima Deshecha Landfill and the Ranch Plan are approved projects with Program EIRs. The Ranch Plan is approved as a mixed use project in an effort to maximize internal capture rate of trips, which in turn reduces VMT. The approval for the Ranch Plan also established a trip cap on the development. Additionally, the VMT associated with the Ranch Plan development would be included in Connect SoCal (the RTP/SCS) approved by SCAG in September 2020. Although FEIR 575, FEIR 584, and FEIR 589 were all certified prior to the approval of SB 743, VMT would not be considered new information requiring substantial changes to the FEIRs.

c) Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR. As noted in the Transportation Element, arterial highways have been divided into classifications to address travel demand needs in terms of capacity and number of through lanes to aid in setting consistent design standards for unincorporated territory. These classifications and associated design standards are used to ensure that arterial highway facilities are designed with public safety and adequate carrying capacity in mind. The standards are contained in the County's Highway Design Manual. In addition, design for special intersection approaches have been identified to help address congestion problems. A concept of the "Maximum Feasible Intersection" has been introduced to establish a guideline for intersection enhancement that is compatible with travel demand requirements and operation capabilities of the highway system. As noted in the Transportation Element, traffic studies can also be used to identify intersections that may require enhancement above the standard plan specified for that facility.

Project design would comply with the County design criteria for a Primary Arterial Highway. For this analysis the roadway is assumed to fully meet design standards. A Primary Arterial Highway includes a median, which allows for greater separation and safety of opposing travel lanes. As noted in the Project Description, during design phase of the process, minor deviations to the standard plans may be implemented. These design exceptions are often used to reduce impacts and may include, but not be limited to, increasing the grade of the roadway, increasing the steepness of cut slopes, use of retaining walls to minimize grading, and reducing the design speed of the roadway. However, any design exception considered would be fully evaluated for safety. This is a standard engineering practice and is fully vetted through the County's Project Report process. The Project Report process would also be used to evaluate if given the hilly terrain, warning signs and various speed reduction treatments are necessary on the downhill approach to the Avenida La Pata intersection. These measures could include advanced traffic signal warning signage; speed reduction signage and beacons; or flashing speed limit beacon used with

appropriate signs to indicate that the posted speed is in effect. Standard Condition SC 4.6-6 addresses the need to provide adequate site distance at all street intersections.

The Project would not be incompatible with surrounding uses because the design concept assumes minimal interface with surrounding uses. The roadway would be physically separated from the current quarry operations. The trucks accessing the quarry would continue to use Cristianitos Road; therefore, there would not be a mixing of quarry vehicles and automobiles. Similarly, the roadway through the Prima Deshecha Landfill would not have any direct interface with landfill operations. The roadway would serve as a southern boundary of Zone 4. As noted in the Project Description and Section 4.4, Biological Resources, the roadway would incorporate exclusionary fencing along the roadway in the Habitat Reserve and culverts for facilitate wildlife movements; thereby reducing safety concerns associated with wildlife on the roadway. Therefore, the LPPE would not result in a new or substantially more severe significant impact associated with geometric design.

d) Would the project result in inadequate emergency access?

No New or More Severe Impacts/No Changes or New Information Requiring Preparation of an EIR.

The Project would enhance emergency access by providing an additional access point to and from the Ranch Plan Planned Community. The roadway would have minimal side conflict (i.e., access points from side streets or driveways), which would allow unimpeded access by emergency vehicles or evacuations in the case of emergency. The roadway would be designed to arterial highway standards and not impede access by emergency vehicles. As discussed in Section 4.15, Public Services, a future new fire station in Planning Area 5 is required to serve the planned land uses in Planning Area 5. The LPPE would allow the planned fire station in proximity to a high function roadway that would be central to development and better able to assist in times of emergency. Therefore, the LPPE would not result in a new or substantially more severe significant impact associated with emergency access.

Mitigation Program

Based on the information provided above, neither the proposed amendments to the GDP, the County of Orange Circulation Plan Map, the San Clemente *Mobility and Complete Streets Element*, and MPAH; nor the anticipated future impacts associated with construction and operation of the LPPE, would result in any new significant or substantially more severe transportation impacts requiring major revisions to FEIR 575, FEIR 584, or FEIR 589. No new mitigation measures are required.

FEIR 575 did not include any mitigation measures because no transportation impacts were identified for any component of the GDP. FEIR 589 identified 14 standard conditions and three mitigation measures. FEIR 584 referenced the measures in FEIR 589 but did not list the measures or suggest any changes to the measures. These measures are discussed below.

Three of the standard conditions associated with transportation and none of the mitigation measures in FEIR 589 would apply. The standard conditions are all associated with tentative tract maps; however, three of the standard conditions would be modified to address implementation of design measures and would be applicable to the LPPE if RMV constructs the roadway. Two mitigation measures pertain to payment of funds on a fair share basis for circulation improvements as part of the South County Road Improvement Program (SCRIP) (MM 4.6-1 and MM 4.6-2) and MM 4.6-3 pertains payment for freeway mainline improvements. As an infrastructure project, the

LPPE would not be required to pay into the road fee programs. Therefore, the mitigation measures would not be applicable.

For the LPPE, the following revisions has been made to SC 4.6-4, SC4.6-6, and 4.6-7 from FEIR 589:

- The approving entity has been updated from “Manager of Subdivision and Grading Services” to the “Director OCPW or designee”.
- The first sentence of SC 4.6-4 and SC 4.6-7 has been changed from “Prior to the recordation of a subdivision map, the subdivider shall . . .” to read, “If RMV constructs the roadway, prior to an offer of dedication, the applicant shall. . .”.
- The first sentence of SC 4.6-6 has been changed from “Prior to the issuance of any grading permits . . .” to read, “If RMV constructs the roadway, prior the issuance of any grading permits. . .”.

- | | |
|------------------------|--|
| SC 4.6-4
(FEIR 589) | <p>If RMV constructs the roadway, prior to an offer of dedication, the applicant shall design and construct the following improvements in accordance with plans and specifications meeting the approval of the Director OCPW or designee:</p> <ul style="list-style-type: none"> A. Streets, bus stops, on-road bicycle trails, street names, signs, striping and stenciling. B. The water distribution system and appurtenances shall also conform to the applicable laws and adopted regulations enforced by the County Fire Chief. C. Underground utilities (including gas, cable, electrical and telephone), streetlights, and mailboxes. |
| SC 4.6-6
(FEIR 589) | <p>If RMV constructs the roadway, prior to the issuance of any grading permits, the applicant shall provide adequate sight distance per Standard Plan 1117 at all street intersections, in a manner meeting the approval of the Director OCPW or designee. The applicant shall make all necessary revisions to the plan to meet the sight distance requirement such as removing slopes or other encroachments from the limited use area in a manner meeting the approval of the Manager, Director OCPW or designee.</p> |
| SC 4.6-7
(FEIR 589) | <p>If RMV constructs the roadway, prior to an offer of dedication, the applicant shall install all underground traffic signal conduits (e.g., signals, phones, power, loop detectors, etc.) and other appurtenances (e.g., pull boxes, etc.) needed for future traffic signal construction, and for future interconnection with adjacent intersections, all in accordance with plans and specifications meeting the approval of the Director OCPW or designee.</p> |

4.18 TRIBAL CULTURAL RESOURCES

Summary of Findings in Previous FEIRs

Tribal Cultural Resources was not a checklist question at the time that FEIR 575, FEIR 584, and FEIR 589 were prepared. This issue was added to the checklist in September 2016 and reflects the requirements of Assembly Bill (AB) 52, requiring consultation with California Native American tribal governments on projects that were initiated on or after July 1, 2015. The 2001 Prima Deshecha Landfill GDP, Southern Subregion HCP/MSAA/NCCP, and the Ranch Plan were initiated before that date. However, FEIR 575 identified that there were no known religious or sacred uses on the site and no impacts to unique cultural values were anticipated.

As noted in Section 4.5, Cultural Resources, because the cultural resources evaluation prepared for FEIR 584 and FEIR 589 was prepared consistent with the standards for CEQA, NEPA, and the requirements of Section 106 of the National Historic Preservation Act, there was consultation with the Native American Heritage Commission and the Juaneño Band of Mission Indians, Acjachemen Nation. Native American consultation was a part of the Section 106 process to determine the significance of resources. Maps and letters regarding the Ranch Plan Planned Community project were sent to three representatives of the Juaneño Band in February and March 2000.

Project Impact Analysis

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:

- 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.***

A tribal cultural resource is considered a site, feature, place, cultural landscape, sacred place, or object, which is of cultural value to a California Native American Tribe and is either eligible for the CRHR¹²¹ or a local register. As discussed above as part of Section 4.5, Cultural Resources, the results of the record search conducted for the FEIRs indicate that there are no previously recorded archaeological sites within the conceptual alignment for the LPPE and no CRHR-eligible sites in proximity to the LPPE alignment. Although this CEQA checklist question was not included in the previous documents, the issue is not new and was evaluated as part of the FEIR 584 and FEIR 589.

¹²¹ Section 5024.1 of the Public Resources Code established the California Register of Historic Resources, as “an authoritative guide in California to be used by state and local agencies, private groups, and citizens to identify the state’s historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change.”

The second component of this threshold is if the LPPE would impact “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 Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.” Subdivision (c) states:

A resource may be listed as an historical resource in the California Register if it meets any of the following National Register of Historic Places criteria:

- (1) Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage.
- (2) Is associated with the lives of persons important in our past.
- (3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
- (4) Has yielded, or may be likely to yield, information important in prehistory or history.

Based on information available through the record search at the SCCIC and the field surveys conducted as part of FEIR 575 and FEIR 589, there is no information available that indicates there are significant tribal resources on site that would be significant pursuant to criteria set forth in subdivision (c) of Public Resource Code Section 5024.1.

AB 52, which has been incorporated Public Resources Code (Section 21080.3.1(b)), provides for Tribal consultation with tribes that have formally requested in writing that the lead agency provide notification to the tribe of projects in the tribe’s area of traditional and cultural affiliation. This applies to projects for which a Notice of Preparation, Notice of Mitigated Negative Declaration or Notice of Negative Declaration is filed on or after July 1, 2015. This does not apply to addenda. FEIR 575, FEIR 584, and FEIR 589 were certified prior to July 1, 2015. However, as noted above, as part of the Section 106 process there was consultation with the NAHC and the Juaneño Band of Mission Indians, Acjachemen Nation.

Government Code Section 65352.3 also provides for tribal consultation in conjunction with amending general plans. Although not part of the CEQA process, the text of this section of the Government Code was evaluated to determine if applies to the LPPE. The specified purpose of consultation under Section 65352.3 is “for the purpose of preserving or mitigating impacts to places, features, and objects described in Sections 5097.9 and 5097.993 of the Public Resources Code that are located within the city or county’s jurisdiction”.

Section 5097.9 of the Public Resources Code only applies to resources on public property and, furthermore, exempts property owned by counties and cities. Thus, none of the properties traversed by the LPPE are affected by this provision. Section 5097.993 is intended to prevent unlawful and malicious injury to Native American sites that are listed, or eligible for listing, on the CRHR, and the section does not apply to acts taken in accordance with CEQA or NEPA. Thus, that section does not apply, particularly given the past efforts (including consultation with tribes) to identify and protect Native American resources occurring on lands within the Ranch Plan project area and the Prima Deshecha Landfill, including adopting several standard conditions and mitigation measures pursuant to CEQA and NEPA as part of the land use approvals for these projects, and which will continue to apply to the LPPE. Therefore, based on the information in FEIR 575, FEIR 584, and FEIR 589, and this assessment, there is no new information or circumstances that would suggest the need for further tribal consultation. The LPPE would not

result in new impacts, nor more severe impacts; and no new information of substantial importance has been revealed since the certification of FEIR 575, FEIR 584 and FEIR 589. Therefore, no major revisions to the FEIRs are required.

Mitigation Program

Based on the information provided above, neither the proposed amendments to the GDP, the County of Orange Circulation Plan Map, the San Clemente *Mobility and Complete Streets Element*, and MPAH; nor the anticipated future impacts associated with construction and operation of the LPPE would result in any new significant or substantially more severe impacts to tribal cultural resources thereby requiring major revisions to FEIR 575, FEIR 584, or FEIR 589. No new mitigation measures are required. Additionally, since the LPPE would not result in any new circumstances that would result in new impacts, no additional mitigation measures are required for this topical issue. The standard conditions of approval outlined in Section 4.5, Cultural Resources, would serve to address the potential impacts associated with Tribal Cultural Resources.

4.19 UTILITIES AND SERVICE SYSTEMS

Summary of Findings in Previous FEIRs

FEIR 575

FEIR 575 identified that the uses associated with the GDP would not result in a substantial demand for utilities and service systems. Although concerns were raised during the preparation of FEIR 575 that the landfill activities may disrupt the SDG&E and SCE transmission lines that traverse the site, the GDP demonstrated there would be no impact. The ultimate recreation activities would require the extension of infrastructure for the delivery of potable and recycled water to the site but would not have an adverse impact pertaining to water supply. The availability of recycled water would affect the feasibility of some of the GDP recreation uses, such as the golf course. The landfill activities currently rely on septic tank systems. The feasibility of reliance on septic tanks for the ultimate recreation opportunities would need to be further assessed and would likely require connection to a public sewer system. FEIR 575 indicated such improvements would be evaluated in separate environmental documentation when more precise uses and demands are known.

FEIR 575 also identified the need to redirect on-site flows and drainage areas with implementation of the landfill activities. The conceptual design for the landfill activities reflect a series of sedimentation/detention basins along the foot of the Zone 1 and Zone 4 landfill areas. The circulation improvements would not impact existing storm drain facilities and appropriate improvements would be incorporated into roadway design.

FEIR 575 identified the two oil pipelines, owned at the time by Santa Fe Pacific Pipeline Partners, in the immediate vicinity of Zone 4 that may need to be relocated due to landfill activities. The need to relocate the pipelines would be determined based on the precise design to be developed in a future master plan for Zone 4 landfill and the exact location and depth of the pipelines. These facilities are currently owned by KMEP.

FEIR 584 and FEIR 589

FEIR 589 identified the impacts associated with construction of a full network of utility services required to support the Ranch Plan Planned Community. This includes conveyance facilities, as well as a number of water reservoirs and pump stations. Most of these facilities are proposed within the footprint of the development areas; however, due to design requirements to accommodate gravity flows, some facilities are proposed in open space areas. The impacts of these facilities are addressed in FEIR 584 and FEIR 589 as part of the impact assessment for the overall planned community (i.e., included as part of the RMV Covered Activities in the SSHCP).

The Ranch Plan Planned Community requires the construction of a number of storm water facilities to accommodate the flows associated with development. This includes construction of basins to retain water during peak flows in order to avoid impacts off site. The footprint for these facilities is included in the acreage identified as part of the development footprint described in FEIR 584 and FEIR 589.

FEIR 589 determined that, using both the California Integrated Waste Management Board (subsequently named CalRecycle) and County Integrated Waste Management District (subsequently named OC Waste and Recycling) solid waste generation factors, there was sufficient capacity at the Prima Deshecha landfill to accommodate the projected daily tonnage generated by implementation of the Ranch Plan Planned Community.

FEIR 589 also identified the need to relocate a portion of the KMEP pipeline. No disruption of service would result from the relocation and the line would reconnect to the existing pipeline prior to entering Marine Corp Base Camp Pendleton. Short-term impacts associated with habitat removal were addressed as part of the evaluation of biological impacts.

No significant, unavoidable impacts to utilities and service systems were identified in FEIR 575, FEIR 584, and FEIR 589.

Project Impact Analysis

Utilities and service impacts have been previously analyzed as part of FEIR 575, FEIR 584, and FEIR 589, which were prepared and certified pursuant to State and County CEQA Guidelines. The following provides clarifications or information to validate that the previous documents provide adequate CEQA documentation for the proposed Project and serves as an Addendum to the FEIRs.

a) Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electrical power, natural gas, or telecommunication facilities, the construction or relocation of which could cause significant environmental effects?

No New or More Severe Impacts/ No Changes or New Information Requiring Preparation of an EIR. The Project site is within the service boundaries for the following service providers:

- Electrical Service: San Diego Gas and Electric
- Natural Gas: Southern California Gas Company
- Water and Wastewater: Santa Margarita Water District
- Telephone: AT&T
- Cable: Cox Communication

The LPPE, as a road project, would not generate a demand for potable water, wastewater treatment, natural gas, or telecommunications facilities; therefore, the Project would not require or result in the relocation or construction of new or expanded facilities for these service. However, as an arterial highway the roadway would be able to accommodate distribution and collection lines within the right-of-way. The anticipated infrastructure would be consistent with the network of facilities evaluated in FEIR 584 and FEIR 589 as being required to serve the RMV Covered Activities. The precise facilities that would be located in the roadway would be evaluated at the design phase of the Project. Since the facilities would be within the right-of-way, no additional environmental impacts would occur.

The LPPE would traverse the western boundary of the SDG&E Rancho Mission Viejo Substation. No impacts to this facility would occur. The possible future extension of SR-241 was considered during the design of the substation; therefore, the facilities have been designed to avoid any conflict with a future roadway extension. All distribution circuits leaving the substation are underground in Cow Camp Road. Additionally, FEIR 575 identifies a 200-foot wide SCE easement and a 150-foot wide SDG&E easement on the west side of Avenida La Pata within the Prima Deshecha Landfill. No impact on these easements or facilities (transmission towers) would occur because the LPPE would be on the eastside of the road and there is a buffer between the edge of the roadway and the location of the easements and towers. There is an SDG&E and AT&T line that crosses LPPE to serve two antenna/radio towers. Based on the final design these lines and the antenna/radio towers would likely need to be relocated. However, this level of detail would be

addressed during the design phase. Relocation of these type of facilities generally do not result in substantial impacts and are done with standard engineering practices.

Demand from the LPPE for electricity would be minimal and be associated with safety lighting at key locations along the roadway. This demand would not exceed existing capacity for the provision of electrical services and street lighting was a factor in the overall demand for electrical services associated with the Ranch Plan development evaluated in FEIR 589. Lighting would be constructed in conjunction with the roadway and be located with the road right-of-way. Therefore, it would not result in impacts beyond those identified for the roadway extension.

In conjunction with the design phase of the Project, a landscape plan would be developed. FEIR 589 identified that this western portion of Planning Area 5 landscaping would be irrigated with domestic water; however, the 2013 *Santa Margarita Water District Revised Plan of Works for Improvement Districts Nos. 4C/ 4E/ 5 & 6* identifies the extension of recycled water to this area. Restoration areas would be irrigated until the habitat is established. The allocation of domestic and recycled water for irrigation was included in the Water Supply Assessment prepared for FEIR 589. No new impacts are anticipated. As discussed in Section 2.2.4, Trampas Canyon Dam and Reservoir, SMWD has reconstructed the Trampas Canyon Dam and Reservoir to increase the available recycled water storage capacity to service the SMWD service area, including the Ranch Plan area.

In addition to the service providers identified above, FEIR 575 and FEIR 589 identified the potential need to relocate the portion of the KMEP pipeline with implementation of the landfill activities (Zone 4) and the Ranch Plan, respectively. FEIR 589 identified that within the easement there is a 10-inch and a 16-inch pipeline; however, the 10-inch line is inactive. The active 16-inch-diameter fuel pipeline serves the MCAS at Miramar, in San Diego County, from the refinery in Wilmington in the City of Los Angeles. The pipelines are located in a 10-foot easement on the northeastern edge of Prima Deshecha and extend into the RMV property. Utility relocations generally do not result in significant impacts because the replacement line is constructed prior to the removal of the existing facility. The precise length of pipeline needing to be relocated would be determined during roadway design in conjunction with the grading plans for the landfill. No offsite relocation of the facility is required. Sections of the KMEP pipeline have been relocated for the development of Planning Area 1 and the Avenida La Pata improvements. This impact to the pipeline has been identified in the FEIRs and no new significant or substantially more severe would result from the relocation of the pipeline.

Storm drains and drainage basins would be developed as a component of the LPPE. These facilities have been included in the conceptual plan that has been developed for the analysis in this Addendum to ensure the potential impacts associated with these type of facilities are evaluated. With the integration of the conceptual improvements, existing drainage patterns will essentially be maintained through the use of hydromodification basins, which would be designed to retain runoff volume and flow duration control. These drainage systems are included in the impact envelope; therefore, there are no major improvements to existing drainage systems required outside of the proposed disturbance limit line.

Based on this evaluation, no new significant or substantially greater impacts than what were addressed in FEIR 584 and FEIR 589 regarding utility infrastructure would result with the LPPE.

b) Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

No New or More Severe Impacts/ No Changes or New Information Requiring Preparation of an EIR. As noted above, the LPPE would not generate any new demand for water supplies

because it would not directly or indirectly provide for development that has not been assumed as part of the long-range planning for the area. At the time when the road is constructed, water distribution facilities would likely be integrated into the roadway, which is consistent with the assumptions in FEIR 589 and standard engineering practices of placing utilities in roadways.

FEIR 589 included an evaluation of water supply to comply with Senate Bill 610 (Chapter 643, Statutes of 2001) and Senate Bill 221 (Chapter 642, Statutes of 2001) amended California state law, effective January 1, 2002, to improve the link between information on water supply availability and certain land use decisions made by cities and counties. Both statutes require detailed information regarding water availability to be provided to the city or county decision makers prior to approval of specified large development projects. To satisfy this requirement, SMWD staff prepared a water supply assessment (WSA) for the Ranch Plan Planned Community, which was approved by the SMWD Board of Directors on June 25, 2003 (included as Appendix K to FEIR 589).

The California Urban Water Management Planning Act (*California Water Code*, Sections 10610–10656) requires urban water suppliers to develop urban water management plans. While generally aimed at encouraging water suppliers to implement water conservation measures, it also creates long-term planning obligations. In preparing their 20-year Urban Water Management Plans (UWMPs), water suppliers must directly address the subject of future population growth. The suppliers must also identify sources of supply to meet demand during normal, dry, and multiple-dry years. The Ranch Plan Planned Community was included in the SMWD 2015 UWMP, which was adopted by the SMWD Board of Directors on June 1, 2016. The UWMP outlines the SMWD water supplies through 2040. Through the 2015 UWMP, SMWD demonstrated there are sufficient water supplies available to meet the District's water demands for more than the next 20 years (through 2040), including demands during normal, single-dry and multiple-dry years.

All requirements for water supply assessments have been completed and the extension of the LPPE would not require any modification to the evaluation provided in FEIR 584 and FEIR 589. There would be no new significant or substantially greater impacts than what was addressed in FEIR 584 and FEIR 589.

c) Would the project result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

No New or More Severe Impacts/ No Changes or New Information Requiring Preparation of an EIR. As noted above, the LPPE would not generate wastewater because no new land uses are involved. The Project site is located in the SMWD's service area. As discussed in FEIR 589, the Ranch Plan Planned Community is located within SMWD Improvement Districts 4C, 4E, 5 and 6. In conjunction with the preparation of FEIR 589, SMWD prepared and approved a *Plan of Works* to identify the necessary improvements to serve the Ranch Plan. The *Plan of Works* identifies the general location, type and capacity of the proposed water and wastewater facilities and improvements. These improvements have been addressed in FEIR 589.

The *Plan of Works* that includes the Improvement Districts encompassing the Ranch Plan Planned Community was most recently updated in 2013. The current *Plan of Works* identifies a number of facilities in Planning Area 5. Prima Deshecha Landfill is not currently in an SMWD Improvement District; however, no new facilities serving the landfill are required in conjunction with the extension of Los Patrones Parkway. No impacts or conflicts with the existing and planned improvements would result from the LPPE that would interfere with the SMWD's long-term commitments to serve existing and future development.

Based on this evaluation no new significant or substantially greater impacts than what were addressed in FEIR 584 and FEIR 589 regarding wastewater infrastructure would result due to the Project.

- d) **Would the project 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) **Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?**

No New or More Severe Impacts/ No Changes or New Information Requiring Preparation of an EIR. The California Integrated Waste Management Act of 1989 (AB 939) requires cities and counties in the State of California to divert at least 50 percent of their waste stream from landfills. Agencies are to manage waste disposal through the implementation of the Source Reduction and Recycling Element (SRRE). Under the Source Reduction and Recycling Element, counties are required to demonstrate how counties would achieve the mandated diversion goals through the implementation of diversion programs. Several key bills that have been approved since the certification of the FEIRs that pertain to waste reduction goals are listed below.

- AB 341, approved in 2011, updates the California Integrated Waste Management Act of 1989. The original legislation required source reduction and recycling to divert 50 percent of all solid waste from landfill disposal by January 2000. This AB increases the policy goal of the State that not less than 75 percent of solid waste generated be source reduced, recycled, or composted by the year 2020.
- AB 1594, approved in 2014, requires as of January 1, 2020 that the use of green material used as alternative daily cover at landfills does not constitute diversion through recycling per the California Integrated Waste Management Act of 1989.
- SB 1383, approved in 2016 requires CalRecycle to consult with the Air Resources Board regarding the reduction of organic materials that are disposed of in landfills.
- AB 1826 is similar to SB 1383 in that it pertains to the recycling of organic waste. Also approved in 2016, AB 1826 requires businesses that generate four cubic yards or more of commercial solid waste per week to arrange for organic waste recycling services. Jurisdictions are required to implement a recycling program to divert organic waste from businesses subject to the law.

On a long-term basis, the LPPE would not generate substantial amounts of waste for disposal in a landfill. Therefore, it would not impair the ability of the County to meet the mandated waste reduction goals. As a roadway, the Project would not generate organic waste or solid waste beyond the periodic landscape maintenance materials and litter clean-up efforts. The landscape material would be classified as organics and would be composted. Litter along the roadside would not be such a substantial amount that would conflict with the applicable regulations.¹²²

Construction related solid waste would be generated during the building phase; however, SC 4.15-10 from FEIR 589 identifies the need to develop a Solid Waste Management Plan demonstrating how compliance with AB 939 would be achieved. *The Ranch Plan Solid Waste*

¹²² It should also be noted that the CR&R, the company that provides solid waste and recycling services to a number of the local municipalities in south Orange County (Dana Point, San Juan Capistrano, Laguna Hills, Laguna Niguel, Aliso Viejo, Rancho Santa Margarita, and San Clemente and unincorporated Orange County) has developed a state of the art processing facility for the region's organic waste to comply with the requirement that organic material is diverted from the local landfills. The facility is located in Perris, California. <http://crrwasteservices.com/sustainability/anaerobic-digestion/>.

Management Plan, which was approved by the Director of OC Planning and the Director of OCWR in 2006, requires reusing and recycling of construction debris to minimize the amount of inert construction waste in landfills. As part of the plan, all builders are required to divert at least 50 percent of all construction waste from the landfill and reduce the amount of refuse generated by construction of the Project. The Project would comply with federal, state, and local statutes and regulations related to solid waste.

The conceptual alignment for the extension of Los Patrones Parkway would have an impact on a portion of Zone 4 of the Prima Deshecha Landfill. The impacts to the landfill operations are discussed in Section 4.11. Land Use and Planning. These impacts (approximately 3.05 acres and 300,000 to 600,000 cy of refuse) would not impact the County's ability to comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

Based on this evaluation, no new significant or substantially greater impacts than what were addressed in the FEIRs regarding solid waste would result due to the Los Patrones extension project.

Mitigation Program

Based on the information provided above, neither the proposed amendments to the GDP, the County of Orange Circulation Plan Map, the San Clemente *Mobility and Complete Streets Element*, and MPAH; nor the anticipated future impacts associated with construction and operation of the LPPE would result in any new significant or substantially more severe impacts to utilities and service systems thereby requiring major revisions to FEIR 575, FEIR 584, or FEIR 589. No new mitigation measures are required.

FEIR 575 identified two mitigation measures applicable to the LPPE pertaining to utilities and service systems. FEIR 589 identified 11 standard conditions and 6 mitigation measures pertaining to public services, which included the utilities and service systems. As noted in Section 4.15, Public Services, all of the standard conditions and all but one of the mitigation measures pertain to approvals of Area Plans or tract maps and would not be applicable to the Project. As noted above, SC 4.15-2 through SC 4.15-3 pertained to Energy Resources (SDG&E and the Gas Company) and SC 4.15-5 through SC 4.15-8 pertained to water and wastewater. However, these measures pertain to the facilities developed to serve the approved land development uses and would not be applicable to roadway construction. SC 4.15-10 required the development of a *Solid Waste Management Plan* prior to the approval of the first master area plan. This standard condition has been complied with. Only MM 4.15-6, which pertains to the relocation of the KMEP Pipeline would be applicable to the LPPE.

The following revisions have been made to MM 4.15-6 for the LPPE:

- The timing of the verification is modified from "Prior to recordation of final tract map" to "Prior to approval of final design plans". The reference to "except for financing purposes" (shown in strike-out text) has been deleted because it is not applicable.
- The name of the pipeline has been updated from "Santa Fe Pipeline" to "KMEP Pipeline" to reflect the current reference to the facility.
- The second paragraph of the measure is deleted (shown in strike-out text) because the extension of the SR-241, as a state highway, is no longer being evaluated.

MM 4.15-6
(FEIR 589)

Prior to approval of final design plans where the relocation of the KMEP Pipeline is required, ~~except for financing purposes,~~ the project applicant shall coordinate with the pipeline owner, Kinder-Morgan, to ensure that no notable disruptions to the fuel pipeline that extends through the project site would occur as a result of project implementation.

~~Should an alignment for the SR-241 alignment be selected at the time of recordation of the final tract maps, the relocation will not place the pipeline within the right-of-way for the SR-241 extension, nor preclude the relocation of any portion of the pipeline currently within the right-of-way for the SR-241 alignment.~~

4.20 WILDFIRE

Summary of Findings in Previous FEIRs

Wildfire was not a separate topic in the CEQA checklist at the time FEIR 575, FEIR 584, and FEIR 589 were prepared. However, the impacts associated with wildfires were included in the discussion of hazards and hazardous materials in the FEIRs. In FEIR 589, in addition to the discussion of wildland fire hazard evaluated as part of the hazards discussion, fire protection was addressed in Section 4.15, Public Services, as part of the Public Services and Facilities evaluation. FEIR 584 discussed the *Wildland Fire Management Plan* as a component of the Adaptive Management Plan Element of the HRMP. The wildland fire analysis considered the likelihood of the following conditions when assessing the severity of wildland fires that may affect the area:

- The amount of natural vegetation that would provide fuel for a wildland fire,
- The topography of the area and accessibility for firefighting equipment,
- Water availability, and
- Weather elements

The analysis assumed the Ranch Plan site would likely remain as a Special Fire Management Zone area because of the extensive amount of open space associated with the Planned Community. Fire hazard modeling was done as part of the *Wildland Fire Management Plan*, which is contained in the Adaptive Management Program (Appendix J of FEIR 589 and Appendix N of FEIR 584). The modeling considered not only the vegetation density within the Ranch Plan Planned Community at the time of the analysis but recognized that as fire frequency is reduced the vegetation could become denser and the species composition would change. This means that fires would burn with more intensity and would potentially be more destructive. FEIR 584 and FEIR 589 identified that with implementation of the provisions in the *Wildland Management Plan*, and applicable OCFA conditions for development of projects within a Special Fire Protection Area, together with improved accessibility and water availability, impacts associated with wildland fires would be less than significant. Further, the FEIRs identified there are no designated evacuation routes within the Ranch Plan boundaries; therefore, implementation of the Planned Community would not impair an evacuation route.

Project Impact Analysis

Potential risks associated with wildland fires have been previously analyzed as part of FEIR 584 and FEIR 589, which were prepared and certified pursuant to State and County CEQA Guidelines. The following provides clarifications or information to validate that the previous documents provide adequate CEQA documentation for the proposed Project and serves as an Addendum to FEIR 584 and FEIR 589.

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

- a) **Substantially impair an adopted emergency response plan or emergency evacuation plan?**

No New or More Severe Impacts/ No Changes or New Information Requiring Preparation of an EIR. There is not an adopted emergency response plan or emergency evacuation plan for the area within the Ranch Plan Planned Community boundaries or the Prima Deshecha Landfill; however, the LPPE would not represent an obstacle for access by fire fighters and firefighting

equipment. Construction of the roadway would provide additional access to the area south of Ortega Highway, which currently only has limited ranch road access. The roadway would be constructed to arterial highway standards thereby facilitating access by OCFA or other firefighting equipment and would serve as a fire break.

- 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?**

No New or More Severe Impacts/ No Changes or New Information Requiring Preparation of an EIR. As noted above, the *Wildland Fire Management Plan* (WFMP) was developed in conjunction with OCFA to support FEIR 584 and FEIR 589. The risks associated with exposure of people or structures to a significant risk involving wildland fires, was fully addressed in FEIR 589. Modeling was done as part of the *Wildland Fire Management Plan*, which is contained in the Adaptive Management Program (Appendix J of FEIR 589 and Appendix N of FEIR 584). This information was used in the preparation of the *Ranch Plan Planned Community-Wide Fire Protection Program* approved by the Orange County Board of Supervisors in July 2007 and a Secured Fire Protection Agreement between the OCFA and RMV approved in March 2007.

The WFMP includes a *Short-Term Fire Management Plan* and a *Long-Term Strategic Life Protection Plan*, which would serve for routine fire protection and provide protection for wildland fires. Implementation of the Plan would provide measures intended to reduce the incidence and severity of wildfires (e.g., the use of prescribed burns to reduce fuel loads) and includes a "Strategic Fire Suppression Plan" intended to guide fire suppression actions that protect sensitive habitat areas from repeated wildfires (e.g., by identifying high priority "aggressive" fire suppression areas) and that minimize physical impacts from fire protection activities (e.g., the use of heavy fire suppression equipment).

As noted, RMV and OCFA have entered into a *Secured Fire Protection Agreement* to ensure adequate fire protection service is available to meet the demands of the Ranch Plan Planned Community. Subsequent to the certification of FEIR 589, the *Ranch Plan Planned Community-Wide Fire Protection Program* was prepared in cooperation with OCFA and approved by the Board of Supervisors on July 31, 2007. Although these programs are not directly associated with the LPPE, they would provide the framework and improvements that would protect against wildland fires. The LPPE would serve as an additional barrier to wildland fire by providing an effective fire break, as well as improved access. Compliance with these programs, and Unified Building Code and OCFA ordinances dealing with the wildland/urban interface, would reduce potential impacts to less than significant. To minimize potential fire risk during construction, through issuance of permits to access its property, RMV requires the implementation of construction safeguards provided in Chapter 35 of the California Fire Code to prevent accidental

ignitions during hot work such as welding and brush clearing.¹²³ This is consistent with the findings of FEIR 589. Therefore, the LPPE would not result in any new wildfire impacts, nor would it increase the severity of impacts previously analyzed in FEIR 589.

Mitigation Program

Based on the information provided above, neither the proposed amendments to the GDP, the County of Orange Circulation Plan Map, the San Clemente *Mobility and Complete Streets Element*, and MPAH; nor the anticipated future impacts associated with construction and operation of the LPPE would result in any new significant or substantially more severe wildfire impacts, thereby requiring major revisions to FEIR 575, FEIR 584, or FEIR 589. No new mitigation measures are required.

As identified in Section 4.15, Public Services, FEIR 589 identified one standard condition and three mitigation measures pertaining to fire protection. These measures pertain to approvals of Area Plans or tract maps and would not be applicable to the Project. It should be noted that MM 4.15-1 identified the need for a *Secured Fire Protection Agreement* and the *Ranch Plan Planned Community-Wide Fire Protection Program* as measures for routine and wildfire protection. These measures addressed Ranch-wide improvements and have been approved. Additionally, MM 4.14-15 is designed to reduce wildland fire hazard; however, it pertains to the approval of tentative tract maps and demonstrating compliance with OCFA conditions for development projects. This measure would not be applicable to the LPPE. No new mitigation measures are required.

¹²³ The U.S. Department of Labor Occupational Safety and Hazard Administration (OSHA) defines hot work as “any work that involves burning, welding, cutting, brazing, soldering, grinding, using fire- or spark-producing tools, or other work that produces a source of ignition” (OSHA 2019).

4.21 MANDATORY FINDINGS OF SIGNIFICANCE

- 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?

No New or More Severe Impacts/ No Changes or New Information Requiring Preparation of an EIR. A key consideration for determining if the Project would have the potential to substantially degrade the quality of the environment and cause a fish or wildlife population to drop below self-sustaining levels is the consideration of the SSHCP. As previously noted, the SSHCP was developed to provide long-term, large-scale protection of natural vegetation communities and wildlife diversity while allowing compatible land uses and appropriate development and growth. The Conservation Strategy of the plan “focuses on long-term protection and management of multiple natural communities that provide habitat essential to the survival of a broad array of wildlife and plant species” (County of Orange 2006). The SSHCP provides for a 32,000-acre Habitat Reserve (11,950 County of Orange-owned acres and 20,868 acres owned by RMV). All the LPPE site is within the SSHCP study area and has been evaluated in FEIR 575, FEIR 584, and FEIR 589. The Ranch Plan and the Prima Deshecha Landfill GDP are identified as Covered Activities as part of the SSHCP.

A substantial portion of the Project within the Ranch Plan traverses Planning Area 5. FEIR 584 and FEIR 589 assumed natural resources would all be removed within areas designated for development; therefore, these impacts were considered when establishing the Habitat Reserve design. Additionally, the Ranch Plan and the ITP issued by USFWS to RMV assumed a roadway crossing of San Juan Creek at Cristianitos Road, another SSHCP Covered Activity. Therefore, although the crossing is not in the precise location evaluated in the FEIRs, the nature of the impacts have been evaluated and have been assumed at the time of the approval of the SAMP, the MSAA, and the SSHCP (Section 4.4, Biological Resources provides a comparison of the LPPE impacts to those identified in the FEIRs). The impacts at Cristianitos Road would be avoided with implementation of the proposed Project.

As previously discussed, the current request for approval of amendments to the GDP, the Circulation Plan Map (Transportation Element), and the MPAH, incorporates the roadway into the future planning framework but does not constitute final approval of the construction of the roadway. This Addendum identifies the likely impacts that would result with Project implementation, including the anticipated future impacts associated with construction and operation. The Project would impact a portion of certain areas identified for open space (Habitat Reserve and SOS). This would require an amendment to the SSHCP Implementation Agreement, a process that was provided for to address plan changes. Although coordination with the USFWS has been initiated and a mitigation strategy is being developed, the approval of the SSHCP amendment may not be complete until the design phase. As part of the amendment process, USFWS would evaluate the mitigation strategy and would need to determine that with the replacement habitat there would not be a net loss of Habitat Reserve acres or a net loss of “Habitat Value” over the long term within the subregion. As such, SSHCP would continue to provide long-term, large-scale protection of natural vegetation communities and wildlife diversity while allowing compatible land uses and appropriate development and growth. This determination and completion of the regulatory process would be required prior to roadway construction, and therefore, any actual impacts. Similarly, the SAMP and MSAA would be amended at the time design plans are proposed and precise impacts can be quantified; however, the Project would be

designed and constructed consistent with the *Watershed Planning Principals*, which were developed for both the NCCP/MSAA/HCP and SAMP processes.¹²⁴

Although no actions by USFWS, CDFW, and Corps are necessary for the amendment to the GDP, Circulation Plan Map, and MPAH, the agencies will be required to issue permits/approvals prior to construction. Therefore, the Project would not have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of a rare or endangered plant or animal. This is consistent with the findings in FEIR 575, FEIR 584, and FEIR 589.

As discussed in Section 4.5, Cultural Resources, the alignment would not impact any known cultural resource sites (prehistoric or historic); however, the conditions placed on the Project for cultural monitors during ground disturbing activities would reduce the potential significant impacts to currently buried resources. Therefore, no important examples of the major periods of California history or prehistory would be eliminated by the construction of LPPE.

Based on this evaluation neither the GDP, Circulation Plan Map, and MPAH Amendment, nor the anticipated future impacts associated with construction and operation of the roadway would result in new significant or substantially greater impacts than what was addressed in FEIR 575, FEIR 584 and FEIR 589.

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)?

No New or More Severe Impacts/ No Changes or New Information Requiring Preparation of an EIR. Section 15130(b) of the State CEQA Guidelines notes that the elements necessary to provide an adequate discussion of significant cumulative impacts encompass either a summary of projections from an adopted general plan or related planning document or a listing of past, present, and probable future projects. FEIR 584 and FEIR 589 used both approaches. FEIR 575 identified a list of projects that would potentially contribute to cumulative impacts.

FEIR 584 and FEIR 589 considered the regional growth in the area using the OCP Projections because these demographic projections ensure consistency with the local and regional planning efforts, such as the Air Quality Management Plan, the Regional Transportation Plan, and Regional Growth Management Element. These projections (subsequently modified to reflect the reduced development associated with the Ranch Plan) were used as the basis for the evaluation of impacts; therefore, the traffic, air quality, and noise impacts identified for the RMV Covered Activities (i.e., Ranch Plan Planned Community) in the FEIRs were also a cumulative analysis. Though the OCP Projections have been updated since certification of FEIR 584 and FEIR 589, the overall projected growth in the subregion has not substantially changed. As noted in Section 4.14, Population and Housing, a comparison of the data for the five CAAs that were identified in FEIR 589 as the study area shows that the 2045 projections for housing and population are less than the 2025 projections evaluated in FEIR 589. The 2045 employment projections are only slightly greater than the 2025 projections in FEIR 589.

The listing of potential cumulative projects was developed based on contact with 18 agencies, the school district, and 2 water districts. A total of 66 projects were identified. Together with the OCP

¹²⁴ The MSAA has been issued to RMV for the Ranch Plan, which includes the Cristianitos Road crossing of San Juan Creek.

Projections, a comprehensive cumulative evaluation was provided. Due to the relatively built out nature of surrounding jurisdictions and extensive public land ownership surrounding the Ranch Plan, no large-scale new development not previously identified in FEIR 584 and FEIR 589 have been proposed. Therefore, the current cumulative setting is comparable to the cumulative analysis provided in the certified EIRs.

Though the cumulative projects may result in impacts, it needs to be recognized that all other cumulative projects would be subject to the same regulatory conditions to reduce impacts. Measures, such as compliance with regulations pertaining to handling of hazardous materials, development of water quality features, and compliance for the protection of natural resources would be applicable to all projects and would serve to minimize cumulative impacts. The following provides a discussion of the significant cumulative impacts identified in the FEIRs:

- **Aesthetics.** FEIR 584 and FEIR 589 identified the Ranch Plan as having project-specific impacts and contributing to cumulative significant impacts on visual quality and character. A similar finding was made in FEIR 575 for the Prima Deshecha Landfill GDP due to the impacts on topography and changes in visual character. The LPPE would contribute to the cumulative change in visual quality and character of the area addressed in the FEIRs; however, the nature of the impact would not be substantially different or greater than what was previously evaluated.
- **Agricultural Resources.** FEIR 584 and FEIR 589 identified the Ranch Plan as having project specific impacts and contributing to cumulative significant impacts on agricultural resources. Neither the Prima Deshecha Landfill GDP nor the Project would contribute to this project-specific or cumulative impact.
- **Air Quality.** FEIR 584 and FEIR 589 identified the Ranch Plan as having project-specific impacts and contributing to cumulative significant impacts on air quality. The construction of the LPPE could have short-term air quality impacts and contribute to the cumulative impact because construction could occur at the same time as other development in the Ranch Plan Planned Community.

The LPPE would modify the location of the arterial highway that provides a north-south connection, but would not provide expanded infrastructure. The proposed LPPE would not serve a different or expanded circulation demand. Therefore, the LPPE, as part of the Ranch Plan infrastructure, would contribute to the cumulative long-term air quality impacts. However, the modification of the alignment relative to the roadway network evaluated in FEIR 589 would not substantially change the construction effort and related emissions.

FEIR 575 identified that the GDP would not result in combined mobile source emissions that would exceed the SCAQMD thresholds; therefore, following the SCAQMD guidance for evaluating cumulative impacts, it would not contribute to significant cumulative air quality impacts.

- **Biological Resources.** FEIR 575 identified a significant project-specific and cumulative impact to biological resources due to the permanent loss of native plant communities and wildlife habitat due to landfill activities and roadway construction. This loss of habitat was identified as resulting in habitat fragmentation, displacement of wildlife, and interruption of wildlife movement. In addition to the planned communities in the area, a project that was identified as having a substantial contribution to potential cumulative impacts was the extension of SR-241 (identified as the Foothill Transportation Corridor).

FEIR 589 identified that biological impacts would be reduced to less than significant levels except for those impacts associated with two slope wetlands in the Chiquita sub-basin; wildlife linkages K and G; and fecal coliform pathogen impacts. However, the impacts on biological resources, except for the fecal coliform pathogen impacts, were reduced to less

than significant as part of the Settlement Agreements and concomitant adoption of the B-12 Alternative. In addition, since approval of the SSHCP, Planning Area 2 has been built without impacting the two slope wetlands, and wildlife linkage K has been substantially improved by the additional open space dedication associated with Trampas Reservoir.

FEIR 584 evaluated the biological impacts associated with all the Covered Activities in the NCCP/MSAA/HCP study area, including the Prima Deshecha Landfill GDP and the Ranch Plan and other known cumulative projects. The impacts identified in FEIR 575 and FEIR 589 were evaluated considering the large-scale conservation program and management program being implemented in conjunction with the SSHCP. In addition to the Habitat Reserve, a *Habitat Reserve Management Program* (HRMP) and an *Ongoing Management Program* are being implemented to provide for permanent management and monitoring of biological resources and hydrogeomorphic processes that provide habitat for the 32 proposed Covered Species and to maintain net habitat value over the long term within the subregion. With these programs, the significant project-related and cumulative biological impacts identified in FEIR 575 and FEIR 589 and the associated Findings of Fact and Statements of Overriding Consideration are reduced to less than significant.

- **Mineral Resources.** FEIR 584 and FEIR 589 identified that The Ranch Plan would have project specific impacts and contribute to cumulative significant impacts on mineral resources. The conceptual alignment for the LPPE traverses both locations of known sand and gravel resources. However, any future mineral resource extraction in San Juan Creek is precluded because this area has been identified for conservation. Although the LPPE alignment would traverse the western edge of the Lapeyre leasehold, the alignment would not impact the current ongoing quarry operation. However, the LPPE would traverse the western portion of the leasehold but would not have direct impacts on the current operation. Although the Project would not contribute to the loss of the ability to extract the aggregate resources, the significant project-specific and cumulative impact on mineral resources as identified in FEIR 584 and FEIR 589 would remain unchanged. The Prima Deshecha Landfill GDP would not contribute to this cumulative impact.
- **Water Quality.** FEIR 584 and FEIR 589 identified potential water quality impacts associated with certain pathogen indicators as significant and unavoidable. Although the site design, source control and treatment systems would provide an effective treatment for most pollutants associated with urbanization, it could not be said with certainty that post-development levels could meet REC-1 standards. In conjunction with certification of FEIR 589, the Orange County Board of Supervisors adopted a Finding of Fact and a Statement of Overriding Considerations for water quality impacts (pathogens) for both project-related and cumulative impacts. Based on the type of project (roadway), the LPPE would not contribute pathogens to the runoff; therefore, it would not contribute to this significant, unavoidable impact.
- **Transportation and Circulation.** FEIR 584 and FEIR 589 identified that the Ranch Plan would contribute to cumulative significant impacts on the circulation network. FEIR 575 identified that the Prima Deshecha Landfill GDP would not contribute to cumulative impacts on the circulation network because the GDP's contribution to increased traffic would be minor. The LPPE would redistribute trips but would not generate additional trips because it would not alter the allowed land uses. The LPPE would not result in any new intersections operating at a deficient level of service. The Project would provide improved access and serve the travel demand anticipated to be accommodated by Cristianitos Road and SR-241.

Based on this analysis, it has been determined that the LPPE would contribute to the cumulative impacts associated with the change in visual character and air quality emissions; however, these impacts were identified in FEIR 575 (visual only), FEIR 584, and FEIR 589 (visual and air quality).

Therefore, the LPPE would not create a new significant impact or a substantial increase in the severity of previously identified effects in the FEIRs.

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

No New or More Severe Impacts/ No Changes or New Information Requiring Preparation of an EIR. The LPPE has limited potential to adversely impact human beings. The only significant impact identified in that regard is air quality impacts related to construction activities; however, most of the site is not in close proximity to sensitive receptors (see Section 4.3, Air Quality). Additionally, these air quality impacts would be temporary in nature because they would only be associated with construction activities. All other impacts would be less than significant and would not result in substantial adverse impacts on humans. Therefore, these impacts have been fully analyzed as part of FEIR 575, FEIR 584, and FEIR 589 and do not represent new significant impacts or a substantial increase in the severity of previously identified effects.

SECTION 5.0 CONCLUSIONS

The County of Orange has determined, on the basis of substantial evidence in the light of the whole record, that (1) the amendment to the Prima Deshecha Landfill GDP, the Circulation Plan Map, and MPAH to include a southern extension of Los Patrones Parkway from Cow Camp Road to Avenida La Pata and delete Cristianitos Road as an arterial highway south of Cow Camp Road on the Circulation Plan Map, and MPAH, and the anticipated future impacts associated with construction and operation of the LPPE does not represent a substantial change from Prima Deshecha Landfill GDP, the SSHCP, and the Ranch Plan Planned Community evaluated in FEIR 575, FEIR 584, and FEIR 589, respectively; (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 575, FEIR 584, and FEIR 589 were certified as complete. The proposed amendments would not have any new or substantially more severe impacts than what was evaluated FEIR 575, FEIR 584 and 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 575, FEIR 584, and FEIR 589, when considered in conjunction with this Addendum, provide adequate documentation pursuant to the CEQA. Furthermore, this Addendum will be considered in determining whether additional CEQA documentation would be required for the eventual construction and operation of the LPPE.

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APPENDIX A

LOS PATRONES PARKWAY EXTENSION
MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MONITORING AND REPORTING PROGRAM

INTRODUCTION

The principal purpose of the MMRP is to ensure that the Board-approved mitigation program for the adopted Project are reported and monitored so as to ensure compliance with the measures' requirements. In general, Orange County OCPW is responsible for overseeing implementation and completion of the adopted measures. This includes the review of all monitoring reports, enforcement actions, and document disposition, unless otherwise noted in the attached MMRP Table.

This MMRP was developed using the measures in the extensive mitigation monitoring programs adopted in conjunction with the certification of FEIR 575, FEIR 584, and FEIR 589. These measures are associated with the implementation of the Prima Deshecha Landfill and construction of the development of the Ranch Plan Planned Community. As such, not all the measures identified in the FEIRs would be applicable to the LPPE. As part of this Addendum to FEIR 575, FEIR 584, and FEIR 589 each of the measures was evaluated to determine if it would be applicable to the LPPE Project. The Addendum identifies those measures found not to be applicable to the LPPE and explains any changes that have been made to the measure as it pertains to the LPPE. Although the Addendum has strike-out text to show some of the changes to the measures, the MMRP shows the measures as they are recommended for adoption (i.e., no strike-out text).

As previously mentioned in the Addendum, the designation of the LPPE on the GDP, Circulation Plan Map, and the OCTA MPAH, by itself would not have physical impacts because these are planning documents. However, to provide the decisionmakers with a comprehensive understanding of the environmental impacts that would result with roadway construction, the analysis in this Addendum identifies the reasonably foreseeable impacts resulting from implementation of the roadway improvements. Therefore, this MMRP identifies the measures that would be applicable to the future phase.

A number of the measures in FEIR 584 and FEIR 589 were taken from the County of Orange Standard Conditions of Approval. The measures are identified in the FEIRs with the preface SC. Although, these are requirements routinely applied to projects outside of the CEQA process, they have been incorporated into the MMRP to facilitate tracking.

Mitigation Measure		Implementing Action	Time of Verification	Responsible Party	Status
AESTHETICS					
MM 4.11-7 (FEIR 575)	During final design, the Deputy Director, Infrastructure Programs shall establish landscape standards for plantings in areas to be revegetated or screened from view. These guidelines shall illustrate all plant materials, sizes, species and quantities plus irrigation and preservation techniques. There shall be a variety of landscape types addressed, including revegetating graded slopes and earthen berms, and screening of landfill-operations structures and permanent recreation buildings. Roads and trail cuts shall be revegetated with natural grasses, shrubs and trees to blend with the landscape character of adjacent areas. Trees selected for planting shall comply with the appropriate state and local regulatory requirements for the protection of groundwater.	Establish landscape standards for plantings in areas to be revegetated.	During final design	Deputy Director, Infrastructure Programs	
MM 4.11-8 (FEIR 575)	During final design and construction, the Deputy Director, Infrastructure Programs shall ensure that plantings will be integrated with earthen berms and cut slopes to screen undesirable views. For these situations, the landscape design guidelines shall include grading guidelines which will address issues such as the areas where berms are recommended, the sizes of such berms, and recommended slope gradients to minimize soil erosion.	Ensure that plantings will be integrated with earthen berms and cut slopes.	During final design and construction	Deputy Director, Infrastructure Programs	
MM 4.11-9 (FEIR 575)	During final design, the Deputy Director, Infrastructure Programs shall ensure that the siting of permanent circulation and roadway structures does not place any structures along ridgelines so as not to interrupt the natural horizon line in the existing landscape.	Ensure roadway structures along ridgelines so as not to interrupt the natural horizon line in the existing landscape.	During final design	Deputy Director, Infrastructure Programs	
AIR QUALITY					
SC 4.7-1 (FEIR 589)	<p>All construction contractors shall comply with South Coast Air Quality Management District (SCAQMD) regulations, including Rule 403, Fugitive Dust, and Rule 402, Nuisance. All grading (regardless of acreage) shall apply best available control measures for fugitive dust in accordance with Rule 403. To ensure that the project is in full compliance with applicable SCAQMD dust regulations and that there is no nuisance impact off the site, the contractor would implement each of the following:</p> <ul style="list-style-type: none"> a. Moisten soil not more than 15 minutes prior to moving soil or conduct whatever watering is necessary to prevent visible dust emissions from traveling more than 100 feet in any direction. b. Apply chemical stabilizers to disturbed surface areas (i.e., completed grading areas) within five days of completing 	Construction methods as outlined in SCAQMD Rule 402 and Rule 403.	During construction	Contractor to implement; Project Manager to verify.	

Mitigation Measure		Implementing Action	Time of Verification	Responsible Party	Status
	<p>grading or apply dust suppressants or vegetation sufficient to maintain a stabilized surface.</p> <p>c. Water excavated soil piles hourly or cover with temporary coverings.</p> <p>d. Water exposed surfaces at least twice a day under calm conditions. Water as often as needed on windy days when winds are less than 25 miles per day or during very dry weather in order to maintain a surface crust and prevent the release of visible emissions from the construction site.</p> <p>e. Wash mud-covered tires and under-carriages of trucks leaving construction sites.</p> <p>f. Provide for street sweeping, as needed, on adjacent roadways to remove dirt dropped by construction vehicles or mud, which would otherwise be carried off by trucks departing from project sites.</p>				
SC 4.7-2 (FEIR 589)	<p>The contractor shall comply with the following measures, as feasible, to reduce NO_x and ROC from heavy equipment.</p> <p>a. Turn equipment off when not in use for more than five minutes.</p> <p>b. Maintain equipment engines in good condition and in proper tune as per manufacturers' specifications.</p> <p>c. Lengthen the construction period during smog season (May through October) to minimize the number of vehicles and equipment operating at the same time.</p>	Implement methods to reduce NO _x and ROC during construction	During construction	Contractor to implement; Project Manager to verify.	
MM 4.7-4 (FEIR 589)	<p>All construction staging areas and stockpile sites will be located as far as feasible from residential areas. This provision will apply to currently existing residential areas and to future residential developments that are completed prior to later development stages.</p> <p>A vegetation buffer zone, including trees and shrubs, will be placed between grading sites and residential areas or other locations where sensitive receptors can be reasonably expected.</p>	Placement of staging areas and planting of vegetation buffer	Developed during final design and implemented during construction.	Contractor to implement; Project Manager to verify.	

Mitigation Measure		Implementing Action	Time of Verification	Responsible Party	Status
BIOLOGICAL RESOURCE					
MM 4.5-9(b) (FEIR 575)	<p>The Director OCPW or designee shall ensure that, for the periods covering all site preparation, disturbance, or grading of native areas, a Resource Management Coordinator shall monitor wildlife habitat preservation. The purpose of this monitoring is to ensure that the Environmentally Sensitive Areas and Environmentally Restrictive Areas (i.e., area outside the grading limits) will not be adversely impacted during site preparation, grading, and construction of the circulation and roadway improvements.</p> <p>For the circulation improvements, the OCPW Project Manager will shall schedule regular progress and status meetings with the Resource Management Coordinator. These meetings shall commence at the beginning of grading for each roadway improvement, when native ground is scheduled for disturbance (e.g., grading and/or stockpiling activities, etc.) The OCPW Project Manager will attend these meetings and provide a status and progress report to the Director OCPW or designee. These meetings will be held throughout the site preparation, grading and construction periods for all the circulation and roadway improvements. The monitoring reports shall continue to be prepared and submitted by the Director OCPW or designee until the disturbance is completed.</p> <p>The monitor shall be onsite before, during, and after the completion of site preparation, grading and construction for all of the circulation improvements.</p>	Biological monitor during construction in Environmentally Sensitive Areas and Environmentally Restrictive Areas	Inclusion in contract specifications and implemented during construction.	Director OCPW or designee to verify requirement in contract specifications; OCPW Project Manager/Biological Monitor to confirm implementation during construction.	
MM 4.5-9(c) (FEIR 575)	Prior to any site preparation, grading, or construction activities in native areas, the Director OCPW or designee will ensure that focused surveys are conducted by a qualified biologist for those species that potentially occur onsite, as identified in the BRCP.	Conduct surveys per BRCP	Prior to site disturbance activities	Director OCPW or designee to verify that requirement is specified; Project Biologist to implement	
MM 4.5-9(d) (FEIR 575)	In conjunction with final design and prior to any site preparation or grading in native areas, the Director OCPW or designee will ensure that all special status species and special habitats within 300 feet of the grading limits shall be mapped on the grading plans by a qualified biologist.	Mapping of all special status species and special habitats within 300 feet of the grading limits	During final design and prior to site disturbance in native areas	Director OCPW or designee to verify that requirement is specified; Project Biologist to implement	

Mitigation Measure		Implementing Action	Time of Verification	Responsible Party	Status
MM 4.5-9(e) (FEIR 575)	Prior to any site preparation, grading, and construction activities, the Director OCPW or designee shall implement procedures for protecting special status and candidate species and special habitats identified and mapped on grading plans during site preparation, grading, construction, and maintenance activities for all of the circulation and roadway improvements affecting native areas.	Develop and implement procedures for protecting special status and candidate species and special habitats	Prior to site disturbance and throughout construction	Director OCPW or designee to verify procedures are developed; Project Biologist to implement	
MM 4.5-10(a) (FEIR 575)	During site preparation and grading for the circulation uses, the Director OCPW or designee shall phase these operations outside significant habitat areas during the nesting and breeding season for the Coastal California gnatcatcher. This measure will be overseen and conducted by a qualified biologist. During site preparation and grading for the circulation uses, the Director OCPW or designee shall phase these operations outside significant habitat areas during the nesting and breeding season for the least Bell's vireo. This measure will be overseen and conducted by a qualified biologist. Prior to activities that may impact potential vireo habitat, updated vireo surveys will be conducted by a qualified biologist.	Phase site preparation and grading operations outside significant habitat areas during the nesting and breeding season for the Coastal California gnatcatcher and the least Bell's vireo	During site preparation and grading	Director OCPW or designee to verify requirement is in contract specifications; Project Manager to confirm implementation	
MM 4.5-10(b) (FEIR 575)	The Director OCPW or designee shall ensure that grading and construction operations for the circulation uses are redirected temporarily around nesting sites for a distance of 500 feet for candidate and listed species of birds and a distance of 1,000 feet for raptors during nesting and breeding seasons between February 15 and July 15, or a distance and time period agreed upon by the USFWS. In the event that a coyote, bobcat, or mountain lion den is located, then grading and construction operations shall be redirected temporarily around the den for a distance of 1,000 feet. The nesting sites and dens should be resurveyed toward the end of the breeding seasons of these species to verify completion of the breeding cycle. Nests and dens that will be removed due the grading and/or construction operations shall be removed only during the non-breeding season.	Provisions in the construction specifications to allow construction to be temporarily redirected around nesting sites and dens during breeding season.	During construction	Director OCPW or designee to verify requirement is in contract specifications; Project Manager to confirm implementation	
MM 4.5-11 (FEIR 575)	The Director OCPW or designee shall ensure that during final design, the circulation component improvements continue to incorporate regulatory agency guidelines to reduce indirect impacts associated with noise, dust, night lighting, and blowing debris. Noise shall be controlled through the proper maintenance of the construction equipment, including trucks, bulldozers, and other mobile and fixed construction equipment. Dust shall be controlled at its source with standard wetting techniques consistent with applicable SCAQMD requirements. Low lighting	Provisions in the construction specifications requiring implementation of regulatory guidelines pertaining to indirect impacts on surrounding habitat	During final design	Director OCPW or designee to verify requirement is in contract specifications; Project Manager to confirm implementation	

Mitigation Measure		Implementing Action	Time of Verification	Responsible Party	Status
	alternatives and shielded lighting shall be employed to reduce indirect impacts on surrounding habitats.				
MM 4.9-22 (FEIR 589)	<p>Prior to issuance of a grading permit or authorization to proceed to a contractor, for construction of the LPPE from Cow Camp Road to PA 5, the applicant shall demonstrate to the satisfaction of the County's Director of OCPW or his/her designee that the design of the LPPE includes the following features to facilitate wildlife movement:</p> <ul style="list-style-type: none"> • The bridge shall have minimum height dimensions of 20 feet. • Chain link fencing of 10 feet in height shall be installed on the north and south approaches to the culvert for a distance of 100 feet to deter wildlife from accessing the roadway. • All lighting on the bridge, if required for public health and safety, shall be shielded to prevent spill-over effects. 	Implementation of design requirements for the portion of the LPPE from PA 2 to PA 5	During final design and verified in contract specifications prior to initiation of construction	Director OCPW or designee to verify requirement is in contract specifications	
MM 4.9-23 (FEIR 589)	<p>Prior to issuance of a grading permit or authorization to proceed to a contractor, for construction of the LPPE, the applicant shall demonstrate to the satisfaction of the County's Director of OCPW or his/her designee that the design for LPPE includes the following features to facilitate wildlife movement:</p> <ul style="list-style-type: none"> • The culvert that will be used as a wildlife crossings shall have minimum dimensions of 15 x 15 feet. • The bottom of the culvert shall be natural substrate. • Light shall be visible from one end of the culvert to the other. • Vegetation installed at either end of the culvert shall be native-low growing species to prevent predator-prey stalking. • Chain link fencing of 10 feet in height shall be installed on the north and south approaches to the bridge for a distance of 100 feet to deter wildlife from accessing the roadway. • If required for public health and safety, all lighting on the road above the culvert shall be shielded to prevent spill-over effects. 	Implementation of design requirements pertaining to wildlife movement.	During final design and verified in contract specifications prior to initiation of construction	Director OCPW or designee to verify requirement is in contract specifications	

Mitigation Measure		Implementing Action	Time of Verification	Responsible Party	Status
MM 4.9-26 (FEIR 589)	During construction, a construction monitoring program shall be implemented to mitigate for short-term noise impacts to nesting raptors, to the satisfaction of the County of Orange, Manager, Building and Safety. Indirect impacts shall be mitigated by limiting heavy construction (i.e., mass grading) within 300 feet of occupied raptor nests. Occupied raptor nests shall be marked as "Environmentally Sensitive Areas" on grading/construction plans and shall be protected with fencing consisting of T-bar posts and yellow rope. Signs noting the area as an "Environmentally Sensitive Area" will be attached to the rope at regular intervals.	Construction monitoring program shall be implemented to mitigate for short-term noise impacts	Implemented during construction	County of Orange, Manager, Building and Safety	
MM 4.9-27 (FEIR 589)	All plants identified by the California Exotic Pest Plant Council as an invasive risk in southern California shall be prohibited from development and fuel management zones adjacent to the RMV Open Space. The plant palette for fuel management zones adjacent to the RMV Open Space shall be limited to those species listed on the Orange County Fire Authority Fuel Modification Plant List. Plants native to Rancho Mission Viejo shall be given preference in the plant palette. Prior to issuance of fuel modification plan approvals, the County of Orange shall verify that: 1) plants identified by the California Exotic Pest Plant Council as an invasive risk in Southern California are not included in plans for fuel management zones adjacent to the RMV Open Space and, 2) the plant palette for fuel management zones adjacent to RMV Open Space is limited to those species listed on the Orange County Fire Authority Fuel Modification Plant List.	Verification that plant palette the County of Orange does not include listed exotics and plant palette for fuel management zones adjacent to RMV Open Space complies with OCFA Fuel Modification Plant List.	During final design and implemented during construction	Director of OCPW or designee	
MM 4.9-28 (FEIR 589)	In conjunction with final design, the Director of OCPW or designee, shall verify that lighting is shielded or directed away from RMV Open Space habitat areas through the use of low-sodium or similar intensity lights, light shields, native shrubs, berms or other shielding methods.	Shielding of lighting by open space	Final design and implemented during construction	Director of OCPW or designee	
MM 4.9-30 (FEIR 589)	Biological resources outside of the Proposed Project impact area shall be protected during construction. To ensure this protection, the Project Applicant shall prepare and implement a Biological Resources Construction Plan (BRCP) that provides for the protection of the resource and established the monitoring requirements. The BRCP shall contain at a minimum the following: <ul style="list-style-type: none"> Specific measures for the protection of sensitive amphibian, mammal, bird, and plant species during construction. 	Preparation of BRCP	Prior to initiation of construction	Director of OCPW or designee	

Mitigation Measure	Implementing Action	Time of Verification	Responsible Party	Status
<ul style="list-style-type: none"> • Identification and qualification of habitats to be removed. • Design of protective fencing around conserved habitat areas and the construction staging areas. • Specific construction monitoring programs for sensitive species required by Wildlife Agencies including, but not limited to, programs for the arroyo southwestern toad, western spadefoot toad, southwestern pond turtle, cactus wren, and coastal California gnatcatcher. Such measures shall be consistent with prior Section 7 consultations and 1600 agreements e.g., Arroyo Trabuco Golf Course. • Specific measures required by Wildlife Agencies (e.g., Arroyo Trabuco Golf Course) for the protection of sensitive habitats including, but are not limited to, erosion and siltation control measures, protective fencing guidelines, dust control measures, grading techniques, construction area limits, and biological monitoring requirements. <p>Provisions for biological monitoring during construction activities to ensure compliance and success of each protective measure. The monitoring procedures will (1) identify specific locations of wildlife habitat and sensitive species to be monitored; (2) identify the frequency of monitoring, monitoring methodology (for each habitat and sensitive species to be monitored); (3) list required qualifications of biological monitor(s); and (4) identify reporting requirements.</p>				
MM 4.9-35 (FEIR 589)	Prior to issuance of a grading permit for Planning Area 5, the Project Applicant shall demonstrate to the satisfaction of the OCPW Director or designee that all vernal pools in the Trampas Sub-basin have been avoided.	Mapping of vernal pools on grading plan to demonstrate avoidance	Prior to initiation of construction	Director of OCPW or designee
MM 4.9-42 (FEIR 589)	The project applicant shall obtain Section 404, 1600, and federal and state Endangered Species Act permits, as applicable.	Obtain permits for area not covered by the SAMP or MSAA, as applicable	Prior to initiation of construction	Confirmation by Director of OCPW or designee
Minimization Measure Appendix U (FEIR 584)	<p>Any populations or individuals special-status plants not avoided through final design will be addressed through implementation of SSHCP Appendix I, Translocation, Propagation and Management Plan for Special Status Plants. Implementation of Appendix I will address the following elements:</p> <ul style="list-style-type: none"> • Seed collection • Selection of receptor sites 	Development of a translocation program for special-status plants not avoided during final design	Prior to initiation of construction	Confirmation by Director of OCPW or designee

Mitigation Measure		Implementing Action	Time of Verification	Responsible Party	Status
	<ul style="list-style-type: none"> • Greenhouse propagation • Site preparation • Translocation of natural populations • Introduction of cultivated plants • Direct seeding at translocation site • Maintenance and Monitoring <p>The Translocation, Propagation and Management Plan for Special Status Plants will be developed for all special-status plant species known to occur in the Project Area (i.e., vernal barley, paniculate tarplant, and white rabbit-tobacco) and any other special-status plant species detected during pre-construction surveys.</p> <p>The Translocation, Propagation and Management Plan for Special Status Plants will be developed consistent with the provisions in Appendix I, which generally require seed shall be collected prior to project impacts to special-status species for use in the seed mix for restoration areas. Receiver sites will support suitable soils and other conditions suitable for the impacted species. In addition, where feasible, soils will be salvaged from development areas and appropriately transported to restoration areas to provide a seed bank. Implementation details of the salvage and relocation program shall be identified in the Final Plant Species Translocation, Propagation and Management Plan.</p>				
Minimization Measure Appendix U (FEIR 584)	Consistent with the requirements of Appendix U of the SSCHP, all temporary (restorable) impact areas to equivalent or better conditions compared to the time of the impact. A detailed Restoration Plan will be prepared for USFWS review and approval. The restoration plan will specify the amount and location of all vegetation communities that will be planted, along with the site preparation and planting methods, maintenance and monitoring methods, and performance standards that will be achieved for all restoration and revegetation areas. Restoration of RMV land shall be implemented, in accordance with the SSHCP Appendix H (Habitat Restoration Plan).	Restoration of temporary impacts with equivalent or better conditions	During construction	Director of OCPW or designee	

Mitigation Measure		Implementing Action	Time of Verification	Responsible Party	Status
CULTURAL RESOURCES					
SC 4.11-1 (FEIR 589)	<p>Prior to the issuance of any grading permit, the applicant shall provide written evidence to the County of Orange Manager, Building and Safety, that applicant has retained a County-certified archaeologist to observe grading activities and salvage and catalogue archaeological resources as necessary. The archaeologist shall be present at the pre-grade conference; shall establish procedures for archaeological resource surveillance; and shall establish, in cooperation with the applicant, procedures for temporarily halting or redirecting work to permit the sampling, identification, and evaluation of the artifacts as appropriate. If the archaeological resources are found to be significant, the archaeological observer shall determine appropriate actions, in cooperation with the project applicant, for exploration and/or salvage.</p> <p>Prior to the release of the grading bond, the applicant shall obtain approval of the archaeologist's follow-up report from the Manager, Building and Safety. The report shall include the period of inspection, an analysis of any artifacts found and the present repository of the artifacts. Applicant shall prepare excavated material to the point of identification. Applicant shall offer excavated finds for curatorial purposes to the County of Orange, or its designee, on a first refusal basis. These actions, as well as final mitigation and disposition of the resources shall be subject to the approval of the Manager, Building and Safety. Applicant shall pay curatorial fees if an applicable fee program has been adopted by the Board of Supervisor, and such fee program is in effect at the time of presentation of the materials to the County of Orange or its designee, all in a manner meeting the approval of the Manager, Building and Safety.</p>	Retaining a County-certified archaeologist	Prior to initiation of construction	County of Orange Manager, Building and Safety	
MM 4.11-1	Prior to the approval of final plans and specifications for the LPPE roadway design, the project applicant shall prepare a Cultural Resources Management (CRM) Plan to address the presence of cultural resources, evaluate the significance of any resource finds, provide final mitigation and monitoring program recommendations, and determine proper retention or disposal of resources. The CRM Plan shall be reviewed and approved by the County Director of Planning.	Preparation of a CRM	Prior to initiation of construction	County Director of Planning.	

Mitigation Measure		Implementing Action	Time of Verification	Responsible Party	Status
GEOLOGY AND SOILS					
MM 4.2-6(a) (FEIR 575)	Prior to the final design of any circulation uses on the site, the Deputy Director Infrastructure Programs shall conduct a comprehensive geotechnical study. The study should include detailed geologic mapping, exploratory drilling, logging and sampling, laboratory testing of soil and rock samples, engineering and slope stability analyses, and cut slope and landslide removal recommendations. The final recommendations of the geotechnical study shall be incorporated in the final design of the GDP circulation elements as appropriate.	Preparation of a comprehensive geotechnical study	During final design	Deputy Director, Infrastructure Programs	
MM 4.2-6(b)R (FEIR 575)	Where embankment fills associated with the extension of Los Patrones Parkway overlie landslide deposits, the Deputy Director Infrastructure Programs will ensure that the final design incorporates removal of all highly disturbed landslide debris prior to placement of fill. The final design of the LPPE regarding the removal of landslide debris will be consistent with the findings of the geotechnical study, described in MM 4.2-6a, above, to reduce adverse settlement and/or potential instability of the roadfill.	Removal of all highly disturbed landslide debris prior to placement of fill	During final design and implemented during construction	Deputy Director, Infrastructure Programs	
MM 4.2-6(c)R (FEIR 575)	Where unstable cut slopes are found along the LPPE, they will require some form of stabilization. Typical measures for stabilizing permanent unstable cut slopes in the various bedrock units and landslide debris include construction of low-angle (3:1 horizontal to vertical or less) cut slopes, buttress and/or stabilization fills, and structurally reinforced fills. Stabilization measures for temporary cut slopes associated with ingress and egress from the landfill may only require constructing the cut slopes at low angles. The Deputy Director Infrastructure Programs will ensure that the appropriate measure for stabilizing the permanent cut slopes along the LPPE will be determined during final design of the extension, based on the findings of the geotechnical study described in MM 4.2-6a, above.			Deputy Director, Infrastructure Programs	
MM 4.2-7R (FEIR 575)	The Deputy Director Infrastructure Programs shall incorporate the appropriate seismic design features in the final design of the LPPE, consistent with the geotechnical study described in MM 4.2-6a and with the current County of Orange seismic design practices and standard design practices for arterial roads.	Compliance with County seismic design requirements	During final design	Deputy Director, Infrastructure Programs	
SC 4.4-1 (FEIR 589)	Prior to the issuance of a grading permit, the applicant shall submit a geotechnical report to the Manager, Building and Safety for approval. The report shall meet the requirements outlined in the County of Orange Grading Code and Manual.	Preparation of a geotechnical study consistent with the OC Grading Code and Manual	Prior to initiation of construction	Manager, Building and Safety	

Mitigation Measure		Implementing Action	Time of Verification	Responsible Party	Status
SC 4.4-4 (FEIR 589)	Prior to issuance of grading permits, the Manager, Building and Safety shall determine that the proposed grading is consistent with the grading depicted within the approved planning application.	Confirmation grading is consistent with final design	Prior to initiation of construction	Manager, Building and Safety	
SC 4.4-5 (FEIR 589)	The proposed development shall be designed in compliance with the Uniform Building Code (UBC), accepted industry standards, and the County's earthquake safety Municipal Code requirements.	Compliance with County seismic design requirements	During final design	Deputy Director, Infrastructure Programs or designee	
HAZARDS AND HAZARDOUS MATERIALS					
MM 4.13.1-4R (FEIR 575)	The County's OCPW/Infrastructure Programs shall develop and implement on-site traffic operations procedures regarding on-site posted traffic speed limits and traffic controls for the LPPE extension.	Development of an on-site traffic operations procedures plan	During final design	Deputy Director, Infrastructure Programs or designee	
MM 4.13.1-5 (FEIR 575)	As part of the construction documents and operating procedures, OCPW/Infrastructure Programs shall ensure that construction activities for the circulation uses, which may temporarily bring construction equipment and ordinary vehicular traffic into closer contact, will be mitigated by traffic control consisting of limiting access of vehicular traffic to construction areas. The traffic control plans for the 2001 GDP construction areas shall be consistent with existing County of Orange traffic control policies and procedures.	Development of an on-site traffic operations procedures plan	During final design	Deputy Director, Infrastructure Programs or designee	
MM 4.13.3-3(a) (FEIR 575)	Prior to the opening of public access roads on-site, the OCPW/Infrastructure Programs shall coordinate with the Orange County Fire Authority on the placement of fire warning signs along public roadways through the site, warning motorists of potential fire hazards, fire conditions and other relevant information.	Fire warning signs	Prior to opening the roadway to the public	Deputy Director, Infrastructure Programs or designee in coordination with OCFA	
MM 4.13.3-4 (FEIR 575)	As part of the construction documents, the Deputy Director, Infrastructure Programs shall ensure that all construction contractors and employees engaged in construction for the circulation uses implement safe working practices regarding the potential for surface fires associated with construction equipment and personal vehicles. These practices, subject to the approval of the Orange County Fire Authority, shall include at a minimum, the installation of spark arresters on equipment which has the potential to emit sparks or glowing embers, avoiding parking vehicles in areas with high or very dry vegetation, restrictions on employee smoking and the use of open flames or fire in high hazard areas and other similar safe working practices.	Inclusion of fire safety provisions in the contract specifications	During final design	Deputy Director, Infrastructure Programs in coordination with OCFA	

Mitigation Measure		Implementing Action	Time of Verification	Responsible Party	Status
SC 4.14-2 (FEIR 589)	Prior to the issuance of a grading permit, the contractor shall submit to the Fire Chief a list of all hazardous, flammable and combustible liquids, solids or gases to be stored, used or handled on site. These materials shall be classified according to the Uniform Fire Code and a document submitted to the Fire Chief with a summary sheet listing the totals for storage and use for each hazard class.	Development of a Health and Safety Contingency Plan	Prior to initiation of construction	Deputy Director, Infrastructure Programs in coordination with OCFA	
MM 4.14-1 (FEIR 589)	<p>Prior to the issuance of a grading permit, the contractor shall develop an approved Health and Safety Contingency Plan (HSCP) in the event that unanticipated/ unknown environmental contaminants are encountered during construction. The plan shall be developed to protect workers, safeguard the environment, and meet the requirements of the California Code of Regulations (CCR), Title 8, General Industry Safety Orders–Control of Hazardous Substances.</p> <p>The HSCP should be prepared as a supplement to the Contractor's Site-Specific Health and Safety Plan, which should be prepared to meet the requirements of CCR Title 8, Construction Safety Orders.</p> <p>Specifically, the HSCP must:</p> <ol style="list-style-type: none"> 1. Describe the methods, procedures, and processes necessary to identify, evaluate, control, or mitigate all safety and health hazards associated with any soil, groundwater and/or air contamination that may be encountered during field construction activities. 2. Apply to all site construction workers, on-site subcontractors, site visitors, and other authorized personnel who are involved in construction operations. 3. Be approved by the Manager, Building and Safety and/or their appointed consultant team. <p>The HSCP will take effect only if materials affected by environmental contaminants are exposed during construction. This includes undocumented waste materials, contaminated soils, affected groundwater, and related substances that may be classified as hazardous or regulated materials, and/or materials that could endanger worker or public health. If affected materials are encountered, the HSCP will be implemented to reduce the potential exposure to the environment and workers at the site. All site workers will be required to perform work in a prescribed</p>	Develop an approved Health and Safety Contingency Plan	Prior to initiation of construction	Deputy Director, Infrastructure Programs	

Mitigation Measure		Implementing Action	Time of Verification	Responsible Party	Status
	manner to reduce the potential that they will endanger themselves, others, or the general public.				
MM 4.14-2 (FEIR 589)	During construction, if environmentally affected soil, groundwater, or other materials are encountered on-site, the project engineer shall be quickly mobilized to evaluate, assess the extent of, and mitigate the affected materials. The contractor or owner's consultant shall be responsible for implementing all applicable sampling and monitoring of the project. At present, applicable sampling and monitoring activities are expected to include air monitoring (both for personal protection and SCAQMD Rule 1166 compliance), collecting soil and groundwater samples for analysis, and documenting mitigation activities. Specific applicable sampling and monitoring requirements will vary, depending upon the nature, concentration, and extent of affected materials encountered.	Implement necessary testing in compliance with SCAQMD Rule 1166 should contamination be found during construction	During construction	Project Manager oversite of contractor implementing of testing	
MM 4.14-7 (FEIR 589)	Prior to issuance of a grading permit or approval of Area Plan for areas within Planning Areas 1, 3, and 5, whichever comes first, where soil staining has been identified, the applicant or leaseholder shall test the test the contaminated soils to assess their level of impact and a remediation plan shall be developed, if required pursuant to applicable laws and regulations. If significant contamination is encountered, the results of the testing/investigation shall be provided to OCHCA, or other appropriate agency, for direction and oversight of the remediation	Testing of locations with soil staining	Prior to initiation of construction	Deputy Director, Infrastructure Programs in coordination with OCHCA	
MM 4.14-9 (FEIR 589)	Prior to issuance of a grading permit or approval of an Area Plan, whichever comes first, for those locations within Planning Area 5 where the UST's were removed, and the overburden storage area where previously contaminated soil was relocated, the applicant or leaseholder shall conduct further investigation regarding the level of contamination. If contamination exists at a level that requires action pursuant to applicable laws and regulations, a remediation plan shall be prepared. If significant contamination is encountered, the results of the testing/investigation shall be provided to OCHCA, or other appropriate agency, for direction and oversight of the remediation.	Development of a remediation plan if deemed necessary due to contamination within the LPPE grading limits	Prior to initiation of construction	Deputy Director, Infrastructure Programs in coordination with OCHCA	
MM 4.14-13 (FEIR 589)	Prior to issuance of grading permits within each Planning Area, the Environmental Site Assessments (ESAs) will be updated for that grading permit area. If the Phase I Update identifies new actual or potential impacts, a Phase II ESA will be completed as necessary for the grading area by the landowner or subsequent project applicant. During the Phase II ESA, samples from potential areas	Prepare update of ESA	Prior to initiation of construction	Deputy Director, Infrastructure Programs	

Mitigation Measure		Implementing Action	Time of Verification	Responsible Party	Status
	of concern will be collected and submitted for laboratory analysis to confirm the nature and extent of potential impacts. If hazardous materials are identified during the site assessments, the appropriate response/remedial measures will be implemented including directives of the OCHCA and/or Regional Water Quality Control Board (RWQCB), as appropriate. If soil is encountered during site development that is suspected of being impacted by hazardous materials, work will be halted and site conditions will be evaluated by a qualified environmental professional. If requested by the qualified environmental professional, the results of the evaluation will be submitted to OCHCA and/or RWQCB, and the appropriate remedial measures will be implemented, as directed by OCHCA, RWQCB, or other applicable oversight agency, until all specified requirements of the oversight agencies are satisfied and a no-further-action status is attained.				
MM 4.14-14 (FEIR 589)	If as part of final roadway design, it is determined that the oil well located in Planning Area 5 would be disturbed by the roadway grading, then prior to issuance of a grading permit or authorization for the contractor to proceed, the applicant or County shall coordinate with the Department of Conservation, Division of Oil, Gas, and Geothermal Resources and remedial action in compliance with well abandonment procedures will be developed and completed as part of roadway construction.	Compliance with well abandonment procedures, if applicable	During final design	Deputy Director, Infrastructure Programs in coordination with Department of Conservation, Division of Oil, Gas, and Geothermal Resources, if applicable	
HYDROLOGY AND WATER QUALITY					
MM 4.3-2R (FEIR 575)	The OCPW/Infrastructure Programs shall ensure that the temporary and permanent grading associated with the LPPE comply with street drainage design criteria in the County's Local Drainage Manual.	Compliance with the County's Local Drainage Manual	During final design	Deputy Director, Infrastructure Programs	
MM 4.4-3(a) (FEIR 575)	The Deputy Director, Infrastructure Programs shall ensure that the final design of the GDP circulation and roadway improvements include features such as installation of grates in open drains and culverts to catch litter and elimination of bridge drains which drain directly into stream courses to minimize the potential water quality impacts of runoff from on-site roadways.	Incorporation of water quality measures to catch litter and minimize water quality impacts	During final design	Deputy Director, Infrastructure Programs	
MM 4.4-3(b) (FEIR 575)	Prior to the initiation of construction activities, the Deputy Director, Infrastructure Programs shall apply for updated NPDES permit conditions for each phase of circulation use construction.	Update of NPDES permit conditions	Prior to initiation of construction	Deputy Director, Infrastructure Programs	

Mitigation Measure		Implementing Action	Time of Verification	Responsible Party	Status
MM 4.4-4(a) (FEIR 575)	The Deputy Director, Infrastructure Programs shall ensure, as part of the construction documents for circulation and roadway improvements under the GDP, that the construction contractors implement erosion control measures conforming to County standards for all graded or cleared areas on the site.	Provisions in construction documents requiring construction contractors to implement erosion control measures in compliance with County standards.	Developed during final design and implemented during construction	Deputy Director, Infrastructure Programs	
MM 4.4-4(b)R (FEIR 575)	OCPW/Infrastructure Programs shall ensure as part of the construction documents for the circulation uses (i.e., LPPE) and normal facility operating practices, that silt loading to surface waters from the construction activities will be periodically tested and controlled, where necessary, by appropriate erosion control measures, siltation basins or other settling structures.	Provisions in construction documents for testing and control of silt loading to surface waters from the construction activities	Developed during final design and implemented during construction	Deputy Director, Infrastructure Program or designee	
MM 4.3-2R (FEIR 575)	The OCPW/Infrastructure Programs shall ensure that the temporary and permanent grading associated with the LPPE comply with street drainage design criteria in the County's Local Drainage Manual.	Grading complies with street drainage design criteria in the County's Local Drainage Manual.	During final design	Deputy Director, Infrastructure Program or designee	
SC 4.5-8 (FEIR 589)	<p>Water Quality Management Plan. Prior to the recordation of any final subdivision map (except those maps for financing or conveyance purposes only) or the issuance of any grading or building permit (whichever comes first), the applicant shall submit for review and approval by the Manager, Building and Safety, a Water Quality Management Plan (WQMP) specifically identifying Best Management Practices (BMPs) that will be used onsite to control predictable pollutant runoff. This WQMP shall identify, at a minimum, the routine structural and non-structural measures specified in the current Drainage Area Management Plan (DAMP). The WQMP may include one or more of the following:</p> <ul style="list-style-type: none"> • Discuss regional water quality and/or watershed programs (if available for the project); • Address Site Design BMPs (as applicable) such as minimizing impervious areas, maximizing permeability, minimizing directly connected impervious areas, creating reduced or "zero discharge" areas, and conserving natural areas; • Include the applicable Routine Source Control BMPs as defined in the DAMP; • Demonstrate how surface runoff and subsurface drainage shall be managed and directed to the nearest acceptable 	Submittal of satisfactory Water Quality Management Plan	Prior to initiation of construction	Manager, Building and Safety	

Mitigation Measure		Implementing Action	Time of Verification	Responsible Party	Status
	drainage facility (as applicable), via sump pumps if necessary.				
SC 4.5-9 (FEIR 589)	<p>Compliance with the WQMP. If constructed by RMV, prior to the offer of roadway dedication, the applicant shall demonstrate compliance with the WQMP in a manner meeting the satisfaction of the Manager, Inspection Services Division, including:</p> <ul style="list-style-type: none"> • Demonstrate that all structural Best Management Practices (BMPs) described in the project's WQMP have been implemented, constructed and installed in conformance with approved plans and specifications; • Demonstrate that the applicant has complied with all non-structural BMPs described in the project's WQMP; • Submit for review and approval an Operations and Maintenance (O&M) Plan for all structural BMPs for attachment to the WQMP. 	Verification of compliance with Water Quality Management Plan	Prior to roadway dedication	Manager, Inspection Services Division	
SC 4.5-10 (FEIR 589)	<p>Stormwater Pollution Prevention Plan. Prior to the issuance of any grading or building permits, the applicant shall demonstrate compliance under California's General Permit for Stormwater Discharges Associated with Construction Activity by providing a copy of the Notice of Intent (NOI) submitted to the State Water Resources Control Board and a copy of the subsequent notification of the issuance of a Waste Discharge Identification (WDID) Number or other proof of filing in a manner meeting the satisfaction of the Manager, Permit Intake. Projects subject to this requirement shall prepare and implement a Stormwater Pollution Prevention Plan (SWPPP). A copy of the current SWPPP shall be kept at the project site and be available for County review on request.</p>	Provision of Notice of Intent and verification of a copy of the Storm Water Pollution Prevention Plan (SWPPP); at the project site	Prior to initiation of grading	Manager, Permit Intake (Regional Water Quality Control Board)	
SC 4.5-11 (FEIR 589)	<p>Erosion and Sediment Control Plan. Prior to the issuance of any grading or building permit, the applicant shall submit a Erosion and Sediment Control Plan (ESCP) in a manner meeting approval of the Manager, Permit Intake, to demonstrate compliance with local and state water quality regulations for grading and construction activities. The ESCP shall identify how all construction materials, wastes, grading or demolition debris, and stockpiles of soil, aggregates, soil amendments, etc. shall be properly covered, stored, and secured to prevent transport into local drainages or coastal waters by wind, rain, tracking, tidal erosion or dispersion. The ESCP shall also describe how the applicant will ensure that all BMPs will be maintained during construction of any future public</p>	Submittal of satisfactory Erosion and Sediment Control Plan (ESCP); verification of copy of ESCP at project site	Prior to initiation of grading	Manager, Permit Intake	

Mitigation Measure		Implementing Action	Time of Verification	Responsible Party	Status
	rights-of-way. A copy of the current ESCP shall be kept at the project site and be available for County review on request.				
MM 4.5-6 (FEIR 589)	<p>Combined Flow and Water Quality Control System. All developments will be designed in order to achieve flow duration matching, address the water balance, and provide for water quality treatment through a combined flow and water quality control system (termed combined control system).</p> <p><u>Combined Control System Components</u></p> <p>The proposed combined control system will include one or more of the following components (see Exhibits 4.5-14, 15 and 16), each of which provides an important function to the system:</p> <ul style="list-style-type: none"> • Flow Duration Control and Water Quality Treatment (FD/WQ) Basin • Infiltration Basin • Storage Facility for Recycling Water for Non-Domestic Supply • Diversion Conduit to Export Excess Flows out of the Sub-basin. <p>The flow duration control and water quality treatment basin provides the initial flow and water quality treatment control functions to the system. The remaining components address the excess flows, alone or in combination with each other, generated during wet weather. Additional water quality treatment control is also provided in the infiltration basin. The following sub-sections describe each combined control system component in more detail.</p> <p>1. <u>Flow Duration Control and Water Quality Treatment (FD/WQ) Basin</u></p> <p>The flow duration control and water quality treatment (FD/WQ) basin will provide both flow control and water quality treatment in the same basin. Detention basins are the most common means of meeting flow control requirements. The concept of detention is to collect runoff from a developed area and release it at a slower rate than it enters the collection system. The reduced release rate requires temporary storage of the excess amounts in a basin with release occurring over a few hours or days. The volume of storage needed is dependent on (1) the size of the drainage area; (2) the extent of disturbance of the natural vegetation, topography and soils, and creation of impervious surfaces that drain to the</p>	Combined Flow and Water Quality System as set forth in the Master WQMP	During final design and implemented during construction	Director OCPW or designee	

Mitigation Measure	Implementing Action	Time of Verification	Responsible Party	Status
<p>stormwater collection system; (3) the desired detention capacity/time for water quality treatment purposes; and (4) how rapidly the water is allowed to leave the FD/WQ basin, i.e., the target release rates.</p> <p>The FD/WQ basin shall incorporate extended detention to provide water quality treatment for storm flows. The FD/WQ basin shall also incorporate wetland vegetation in a low flow channel along the bottom of the basin for the treatment of dry weather flows and small storm events.</p> <p>To the extent feasible depending on the topography and grade, the FD/WQ basin will be located in areas where there is a larger depth to groundwater and more infiltrative soils. The FD/WQ basin shall be designed to have two active volumes, a low flow volume and a high flow volume. The low flow volume is designed to capture small to moderate size storms, the initial portions of larger storms, and dry weather flows. The high flow volume is designed to store and release higher flows to maintain, to the extent possible, the pre-development runoff conditions.</p> <p>2. <u>Infiltration Basin</u></p> <p>The second element in the combined control system shall consist of a separate downstream, shallow basin designed to infiltrate stormwater where soils have a high infiltration capacity. The infiltration basin is sized to infiltrate all the flows released from the lower volume in the FD/WQ basin. Features of the proposed combined control system that shall guard against groundwater contamination include: (1) pretreatment of all runoff in a FD/WQ basin before it enters the infiltration basin, and (2) locating infiltration basins where there is at least 10 feet of separation to the groundwater.</p> <p>3. <u>Storage Facility for Recycling Water for Non-Domestic Supply</u></p> <p>The fourth possible element of the combined control system shall be storage of surface water flows for recycling where there is opportunity for reuse of water for irrigation, such as a golf course, residential common area, or local park. Diversion of outflows from the FD/WQ basin to non-domestic water supply reservoirs will be conducted if feasible and cost effective.</p>				

Mitigation Measure		Implementing Action	Time of Verification	Responsible Party	Status
	<p>4. <u>Diversion Conduit to Export Flows out of the Sub-basin</u></p> <p>The fifth possible element of the combined control system shall be the provision to export flows out of the sub-basin. This element provides an additional option that may be employed to better preserve the pre-development water balance within the sub-basin. Such diversions may be desirable where excess runoff could result in increased stormwater flows or increased base flows in sensitive streams. However, all diversions of drainage area are subject to approval by the County of Orange. The diversions would be for excess runoff only and would only be feasible for development bubbles that adjoin other sub-basins having less sensitive stream channels, or are close to San Juan Creek or Lower Cristianitos Creek, which have characteristics that allow them to handle additional flows without causing damage to the stream channel. In some locations, such as Cañada Chiquita, it may also be feasible to divert flows to the wastewater treatment plant for reclamation.</p>				
NOISE					
SC 4.8-1 (FEIR 589)	During construction, the project applicant shall ensure that all noise generating activities be limited to the hours of 7 a.m. to 8 p.m. on weekdays and Saturdays. No noise generating activities shall occur on Sundays and holidays in accordance with the County of Orange Noise Ordinance.	General note on approved grading plan	Prior to the issuance of grading permits and throughout construction	Deputy Director, Infrastructure Program or designee	
SC 4.8-2 (FEIR 589)	<p>A. Prior to the issuance of any grading permits, the project proponent shall produce evidence acceptable to the Manager, Building and Safety, that:</p> <ul style="list-style-type: none"> (1) All construction vehicles or equipment, fixed or mobile, operated within 1,000' of a dwelling shall be equipped with properly operating and maintained mufflers. (2) All operations shall comply with Orange County Codified Ordinance Division 6 (Noise Control) (3) Stockpiling and/or vehicle staging areas shall be located as far as practicable from dwellings. <p>B. Notations in the above format, appropriately numbered and included with other notations on the front sheet of the project's permitted grading plans, will be considered as adequate evidence of compliance with this condition.</p>	General note on approved grading plan	Prior to the issuance of grading permits and throughout construction	Deputy Director, Infrastructure Program or designee	

Mitigation Measure		Implementing Action	Time of Verification	Responsible Party	Status
TRANSPORTATION					
SC 4.6-4 (FEIR 589)	<p>If RMV constructs the roadway, prior to an offer of dedication, the applicant shall design and construct the following improvements in accordance with plans and specifications meeting the approval of the Director OCPW or designee:</p> <p>A. Streets, bus stops, on-road bicycle trails, street names, signs, striping and stenciling.</p> <p>B. The water distribution system and appurtenances shall also conform to the applicable laws and adopted regulations enforced by the County Fire Chief.</p> <p>C. Underground utilities (including gas, cable, electrical and telephone), streetlights, and mailboxes.</p>	Submittal of satisfactory improvements and utility plans with verification of subsequent construction/installation of improvements	Prior to an offer of dedication of the completed roadway	Director OCPW or designee	
SC 4.6-6 (FEIR 589)	If RMV constructs the roadway, prior to the issuance of any grading permits, the applicant shall provide adequate sight distance per Standard Plan 1117 at all street intersections, in a manner meeting the approval of the Director OCPW or designee. The applicant shall make all necessary revisions to the plan to meet the sight distance requirement such as removing slopes or other encroachments from the limited use area in a manner meeting the approval of the Manager, Director OCPW or designee.	Demonstrate adequate sight distance per Standard Plan 1117 at all street intersections	During final design and prior to the issuance of any grading permits	Director OCPW or designee	
SC 4.6-7 (FEIR 589)	If RMV constructs the roadway, prior to an offer of dedication, the applicant shall install all underground traffic signal conduits (e.g., signals, phones, power, loop detectors, etc.) and other appurtenances (e.g., pull boxes, etc.) needed for future traffic signal construction, and for future interconnection with adjacent intersections, all in accordance with plans and specifications meeting the approval of the Director OCPW or designee.	Installation of required underground traffic signal conduits in accordance with plans and specifications	Prior to an offer of dedication of the completed roadway	Director OCPW or designee	
UTILITIES AND SERVICE SYSTEMS					
MM 4.15-6 (FEIR 589)	Prior to approval of final design plans where the relocation of the KMEP Pipeline is required the project applicant shall coordinate with the pipeline owner, Kinder-Morgan, to ensure that no notable disruptions to the fuel pipeline that extends through the project site would occur as a result of project implementation.	Coordination with KMEP pipeline owner to ensure no disruptions in fuel delivery	Prior to approval of final design plans	Deputy Director, Infrastructure Programs or designee	

APPENDIX B
CONCURRENCE LETTERS ON THE MERITS OF THE PROJECT

CAPISTRANO UNIFIED SCHOOL DISTRICT
San Juan Capistrano, California

RESOLUTION NO. 1920-45

**RESOLUTION SUPPORTING RANCHO MISSION VIEJO, LLC'S REQUEST FOR
AMENDMENT TO THE MASTER PLAN OF ARTERIAL HIGHWAYS**

WHEREAS, on February 14, 2020, the developer Rancho Mission Viejo, LLC (RMV) submitted to the Orange County Public Works a Request for Amendment to the Master Plan of Arterial Highways (MPAH) in Southeast Orange County in the Ranch Plan Area of Rancho Mission Viejo—*Chiquita Canyon Road, Fauna Drive, Esencia Drive, Cow Camp Road, and Cristianitos Road* containing the following five requested Amendments:

1. Reduce Chiquita Canyon Drive from a Secondary Arterial Highway to a Divided Collector
2. Reduce Fauna Drive from a Secondary Arterial Highway to a Collector
3. Reduce Esencia Drive from a Secondary Arterial Highway to a Collector
4. Reduce Cow Camp Road from a Primary Arterial Highway (4 lanes) to a Primary Asymmetric Arterial Highway (3 lanes)
5. Realign Cristianitos Road from Cow Camp Road to Avenida La Pata (to the east away from San Juan Hills High School), to be renamed Los Patrones Parkway.

WHEREAS, RMV requested Amendments 1 through 4 because after the build out of Planning Areas 1 and 2, updated traffic modeling confirms that these roads do not have to be as expansive, as originally thought; and

WHEREAS, RMV requested Amendment 5 because the terminus of Cristianitos Road is no longer a logical termination, given TCA's withdrawal of the "Green Alignment" for the SR-241 toll extension; and

WHEREAS, the reclassification of the roads in Amendments 1 through 4 would not likely create significant impacts on the District's schools or operations; and

WHEREAS, Amendment 5 would realign Cristianitos Road into an extension of Los Patrones Parkway from Cow Camp Road to South of San Juan Hills High School, would move traffic away from San Juan Hills High School, and may provide an attractive alternative route for the SR-241 toll road extension instead of along Avenida La Pata or the other alternatives being considered in the South County Traffic Relief Effort; and

NOW, THEREFORE BE IT RESOLVED that the Board of Trustees of the Capistrano Unified School District hereby supports RMV's Request for Amendment of the MPAH because Amendments 1 through 4 reduce the classification of four road segments to a lower level, and

Amendment 5 would displace the Los Patrones Parkway extension away from San Juan Hills High School so that typical significant impacts of air quality, dust, noise, and traffic would be remote. This alignment would promote the safety, health, and learning environment at San Juan Hills High School and the need for potentially disruptive mitigation measures or conditions of approval may not be needed.


PASSED AND ADOPTED by the Board of Trustees of the Capistrano Unified School District on March 18, 2020, by the following vote:

AYES	(4)
NOES	(0)
ABSTAIN	(0)
ABSENT	(1)

I, Gila Jones, of the Capistrano Unified School District Board of Trustees, hereby certify that the above and foregoing Resolution was duly and regularly adopted by the said Board at the meeting on this 18th day of March 2020, by a roll call vote.



Gila Jones
Clerk of the Board of Trustees



Kirsten M. Vital
Superintendent
Secretary of the Board of Trustees



City of San Clemente City Manager

Robert C. Dunek, Interim City Manager

Phone: (949) 361-8321

dunekr@san-clemente.org

February 27, 2020

Mr. Shane Silsby, Director
Orange County Public Works
601 N. Ross Street
Santa Ana, CA 92701

Mr. Darrell Johnson, Chief Executive Officer
Orange County Transportation Authority
550 S. Main Street
Orange, CA 92868

BY ELECTRONIC EMAIL TO: SHANE.SILSBY@OCPW.OCGOV.COM AND DJOHNSON@OCTA.NET

RE: Support for Amendment to the Master Plan of Arterial Highways (MPAH), dated February 14, 2020

Dear Mr. Silsby and Mr. Johnson:

The City of San Clemente has reviewed the *Request for Amendment to the Master Plan of Arterial Highways (MPAH) in Southeast Orange County in the Ranch Plan Area of Rancho Mission Viejo – Chiquita Canyon Road, Fauna Drive, Esencia Drive, Cow Camp Road, and Cristianitos Road*, filed with the County on February 14, 2020, and are supportive of the application.

Over many years, we have witnessed the capacity of the County and OCTA to work with a broad network of stakeholders to execute and deliver meaningful traffic relief and we remain hopeful that this MPAH will lead to a positive result for mobility in South Orange County.

Sincerely,

Robert C. Dunek
Interim City Manager

cc: San Clemente City Council
Supervisor Lisa Bartlett
Mike Balsamo, Rancho Mission Viejo



February 27, 2020

Mr. Shane Silsby, Director
Orange County Public Works
601 N. Ross Street
Santa Ana, CA 92701

Mr. Darrell Johnson, Chief Executive Officer
Orange County Transportation Authority
550 S. Main Street
Orange, CA 92868

BY ELECTRONIC EMAIL TO: SHANE.SILSBY@OCPW.OCGOV.COM AND
DJOHNSON@OCTA.NET

**RE: Support for Amendment to the Master Plan of Arterial Highways (MPAH),
dated February 14, 2020**

Dear Mr. Silsby and Mr. Johnson:

The city of Dana Point has reviewed the *Request for Amendment to the Master Plan of Arterial Highways (MPAH) in Southeast Orange County in the Ranch Plan Area of Rancho Mission Viejo – Chiquita Canyon Road, Fauna Drive, Esencia Drive, Cow Camp Road, and Cristianitos Road*, filed with the County on February 14, 2020, and are supportive of the application.

Over many years, we have witnessed the capacity of the County and OCTA to work with a broad network of stakeholders to execute and deliver meaningful traffic relief and we remain hopeful that this MPAH will lead to a positive result for mobility in South Orange County.

Sincerely,

Mark Denny, City Manager
City of Dana Point

Cc: Matt Sinacori, Dana Point Director of Public Works
Mike Balsamo, Rancho Mission Viejo

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MEMBERS OF THE CITY COUNCIL

TROY BOURNE
 SERGIO FARIAS
 BRIAN L. MARYOTT
 DEREK REEVE
 JOHN TAYLOR

March 3, 2020

Mr. Shane Silsby, Director
 Orange County Public Works
 601 N. Ross Street
 Santa Ana, CA 92701

Mr. Darrell Johnson, Chief Executive Officer
 Orange County Transportation Authority
 550 S. Main Street
 Orange, CA 92868

BY ELECTRONIC EMAIL TO: SHANE.SILSBY@OCPW.OCGOV.COM AND
 DJOHNSON@OCTA.NET

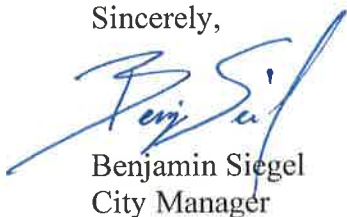
**RE: Support for Amendment to the Master Plan of Arterial Highways (MPAH),
 dated February 14, 2020**

Dear Mr. Silsby and Mr. Johnson:

The City of San Juan Capistrano has reviewed the *Request for Amendment to the Master Plan of Arterial Highways (MPAH) in Southeast Orange County in the Ranch Plan Area of Rancho Mission Viejo – Chiquita Canyon Road, Fauna Drive, Esencia Drive, Cow Camp Road, and Cristianitos Road*, filed with the County on February 14, 2020, and is supportive of the application.

Over many years, we have witnessed the capacity of the County and OCTA to work with a broad network of stakeholders to execute and deliver meaningful traffic relief and we remain hopeful that this MPAH will lead to a positive result for mobility in South Orange County.

Sincerely,



Benjamin Siegel
 City Manager

c: Supervisor Lisa Bartlett
 Tom Toman, San Juan Capistrano Director of Public Works
 Mike Balsamo, Rancho Mission Viejo

San Juan Capistrano: Preserving the Past to Enhance the Future

APPENDIX C
SPECIAL-STATUS WILDLIFE AND PLANT SPECIES TABLES

Table C-1
Special-Status Wildlife Species Analyzed for Potential to Occur in the LPPE Project Area

Scientific Name ^{1,2}	Common Name	Status Federal/State	Primary Habitat Associations	Occurrence in Rancho Mission Viejo Study Area ³	Occurrence in LPPE Project Area
<i>Invertebrates</i>					
<i>Bombus crotchii</i> ^{*^}	Crotch bumble bee	None/SC	Food plant genera include Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum. Grassland and scrub habitats.	Species known from the study area.	Moderate potential to occur in suitable grassland and scrub habitat.
<i>Branchinecta lynchi</i> [^]	Vernal pool fairy shrimp	FT/None	Vernal pools	Species does not occur within the study area.	No potential to occur due to lack of suitable vernal pool habitat.
<i>Branchinecta sandiagonensis</i> [^]	San Diego fairy shrimp	FE/None	Vernal pools	Occurs in the study area, including on Chiquita Ridge and along Radio Tower Road south of Ortega Highway.	No potential to occur due to lack of suitable vernal pool habitat.
<i>Euphydryas editha quino</i> [^]	Quino checkerspot butterfly	FE/None	Sparsely vegetated hilltops, ridgelines, occasionally rocky outcrops; host plant <i>Plantago erecta</i> and nectar plants must be present.	Species does not occur within subregion or expected within the study area.	No potential to occur.
<i>Euphyes vestris Harbisoni</i> [^]	Harbison's dun skipper	None/SAL	Restricted to springs and seeps within riparian, oak woodlands, and chaparral habitats supporting host plant <i>Carex spissa</i> .	Although no data points exist for this species, it potentially occurs within the study area due to the presence of <i>Carex spissa</i> .	Low potential to occur due to a general lack of suitable habitat.
<i>Streptocephalus Woottoni</i> [^]	Riverside fairy shrimp	FE/None	Vernal pools	Occurs in the study area, including on Chiquita Ridge and along Radio Tower Road south of Ortega Highway.	No potential to occur due to lack of suitable vernal pool habitat.
<i>Fish</i>					
<i>Eucyclogobius Newberryi</i> [^]	Tidewater goby	FE/SSC	Low-salinity waters in coastal wetlands.	Not expected, no suitable habitat present within the study area.	No potential to occur due to lack of suitable habitat and outside range.
<i>Gasterosteus aculeatus microcephalus</i> [^]	Partially armored threespine stickleback	None/SAL	Weedy permanent pools or backwaters, and in slow moving water along the margins of the stream.	Known to occur within San Juan Creek.	Known to occur within San Juan Creek.

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Scientific Name ^{1,2}	Common Name	Status Federal/State	Primary Habitat Associations	Occurrence in Rancho Mission Viejo Study Area ³	Occurrence in LPPE Project Area
<i>Gila orcuttii</i> [^]	Arroyo chub	None/SSC	Warm, fluctuating streams with slow-moving or backwater sections of warm to cool streams; substrates of sand or mud.	Known to occur within San Juan Creek and lower Cañada Gobernadora.	Known to occur within San Juan Creek.
<i>Oncorhynchus mykiss irideus</i> [^]	Southern steelhead DPS	FE/SSC	Adult phase primarily in ocean, occur in drainages of coastal watersheds with perennial flow. Spawn in meandering channels.	No current records for San Juan Creek, believed to be extirpated from this drainage.	Very low potential to occur.
<i>Amphibians</i>					
<i>Anaxyrus californicus</i> [^]	Arroyo toad	FE/SSC	Open, braided stream channels for breeding and adjacent stream terraces and uplands for foraging and wintering.	San Juan Creek, lower Gabino Creek, lower Cristianitos Creek, and Talega Creek.	Known to occur within San Juan Creek and occurrence location at bridge crossing.
<i>Rana draytoni</i> [^]	California red-legged frog	FT/SSC	Lowland streams, wetlands, riparian woodlands, livestock ponds; dense, shrubby or emergent vegetation associated with deep, still or slow-moving water; uses adjacent uplands.	Does not occur within the study area.	No potential to occur.
<i>Spea hammondi</i>	Western spadefoot	FC/SSC	Most common in grasslands, coastal sage scrub near rain pools or vernal pools; sometimes riparian habitats.	Vernal pools on Radio Tower Road, San Juan Creek from the Rancho Mission Viejo Headquarters to the confluence with Verdugo Canyon, a stock pond in upper Cristianitos Canyon, and Lower Gabino Canyon.	Moderate potential to occur in grassland habitat and floodplain of San Juan Creek.
<i>Taricha torosa</i> [^]	Coast Range newt	None/SSC (Monterey Co. south only)	Grassland, woodland, forest, but require ponds, reservoirs or slow-moving streams for reproduction.	Although not observed, potential to occur within suitable habitat in the study area.	Low potential to occur due to lack of suitable at bridge crossing and elsewhere in analysis area,

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Scientific Name ^{1,2}	Common Name	Status Federal/State	Primary Habitat Associations	Occurrence in Rancho Mission Viejo Study Area ³	Occurrence in LPPE Project Area
<i>Reptiles</i>					
<i>Anniella pulchra</i> <i>pulchra</i> [^]	Silvery legless lizard	None/SSC	Loose soils (sand, loam, humus) in coastal dune, coastal sage scrub, woodlands, and riparian habitats	Expected within San Juan Creek and other areas within the study area containing suitable habitat.	Moderate potential to occur in San Juan Creek.
<i>Arizona elegans</i> <i>occidentalis</i> [^]	Coastal (California) glossy snake	None/None	Grassland, chaparral, coastal sage scrub, woodlands in sandy and rocky substrates.	Observed in upland habitats adjacent to San Juan Creek. Expected elsewhere throughout the study area.	Moderate potential to occur in grassland, scrub, and riparian habitats, especially where associated with San Juan Creek or other drainages.
<i>Charina trivirgata</i>	Rosy boa	None/SAL	Rocky chaparral, coastal sage scrub, oak woodlands, desert and semi-desert scrub.	Although not observed within the study area, species is known from nearby Casper's Wilderness Park. Expected within the study area in rocky areas.	Moderate potential to occur in suitable habitat.
<i>Emys marmorata</i>	Western pond turtle	None/SSC	Slow-moving permanent or intermittent streams, ponds, small lakes, reservoirs with emergent basking sites; adjacent uplands used during winter.	Known to occur in San Juan Creek, the upper portion of Cristianitos Creek in a small stockpond, at Jerome's Lake in the upper portion of Gabino Canyon, and at a stock pond within the nursery north of Ortega Highway.	High potential to occur in San Juan Creek.
<i>Aspidoscelis tigris</i> <i>stejnegeri</i>	Coastal whiptail	None/SAL	Coastal sage scrub, chaparral, and woodland.	Known to occur throughout the study area within suitable habitat.	High potential to occur in suitable habitat.
<i>Aspidoscelis hyperythra</i>	Orangethroat whiptail	None/SSC	Coastal sage scrub, chaparral, grassland, juniper and oak woodland.	Known to occur throughout the study area within suitable habitat.	High potential to occur in suitable habitat.
<i>Coleonyx variegatus</i> <i>abbotti</i> [^]	San Diego banded gecko	None/SAL	Cismontane chaparral, coastal sage scrub, desert scrub; granite outcrops.	Although not observed within the study area, this secretive species may still occur within the study area in suitable habitat.	Low potential to occur due to lack of suitable granite outcrops in analysis area.

Table C-1
Special-Status Wildlife Species Analyzed for Potential to Occur in the LPPE Project Area

Scientific Name ^{1,2}	Common Name	Status Federal/State	Primary Habitat Associations	Occurrence in Rancho Mission Viejo Study Area ³	Occurrence in LPPE Project Area
<i>Crotalus ruber</i>	Red-diamond rattlesnake	None/SSC	Variety of shrub habitats where there is heavy brush, large rocks, or boulders.	Known to occur throughout the study area within suitable habitat.	High potential to occur.
<i>Diadophis punctatus similis</i>	San Diego ringneck snake	None/SAL	Moist habitats; woodland, forest, grassland, scrub, chaparral; typically found under debris.	Known to occur throughout the study area within suitable habitat.	High potential to occur in suitable habitat.
<i>Plestiodon skiltonianus interparietalis</i> .	Coronado Island skink	None/SSC	Grassland, riparian and oak woodland; found in litter, rotting logs, under flat stones.	Known to occur throughout the study area within suitable habitat although distinction from western skink is not clear.	Moderate potential to occur in suitable habitat.
<i>Lampropeltis zonata (pulchra)</i> (San Diego population) [^]	San Diego mountain kingsnake	None/SSC	Coniferous forest, oak- pine and riparian woodlands, chaparral, and scrub.	Although not observed, this species may still occur within the study area in suitable habitat.	Low potential to occur.
<i>Phrynosoma blainvillii</i>	Coast horned lizard	None/SSC	Coastal sage scrub, annual grassland, chaparral, oak and riparian woodland, coniferous forest.	Known to occur throughout the study area within suitable habitat.	High potential to occur in suitable habitat.
<i>Salvadora hexalepis virgulata</i>	Coast patch- nosed snake	None/SSC	Chaparral, coastal scrub, grassland, woodland, washes, sandy flats, rocky areas.	Although only observed in upper Cristianitos Canyon, this species is expected to occur throughout the study area within suitable habitat.	High potential to occur in suitable habitat.
<i>Thamnophis sirtalis sp.</i> [^]	South coast garter snake	None/SSC	Marsh and upland habitats near permanent water that have strips of riparian vegetation.	Although not observed, this species may still occur within the study area in suitable habitat.	Moderate potential to occur in San Juan Creek.
<i>Thamnophis hammondi</i> [^]	Two-striped garter snake	None/SSC	Streams, creeks, pools, streams with rocky beds, ponds, lakes, vernal pools.	Known to occur at Chiquita Canyon, San Juan Creek, Talega Canyon, and upper Gabino Canyon. May occur elsewhere the study area within suitable habitat.	Moderate potential to occur in San Juan Creek.

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Scientific Name ^{1,2}	Common Name	Status Federal/State	Primary Habitat Associations	Occurrence in Rancho Mission Viejo Study Area ³	Occurrence in LPPE Project Area
<i>Birds</i>					
<i>Accipiter cooperii</i>	Cooper's hawk	None/WL (nesting)	Riparian and oak woodlands, mountain canyons.	Known to occur in the study area for foraging and nesting.	High potential to forage; high potential to nest in suitable habitat.
<i>Accipiter striatus</i>	Sharp-shinned hawk	None/WL (nesting)	Nests in coniferous forests, ponderosa pine, black oak, riparian deciduous, mixed conifer, Jeffrey pine; winters in lowland woodlands and other habitats.	This species occurs in Orange County only as a migrant and winter visitor and does not breed here. This species is known to occur and is expected throughout the study area.	Moderate potential to occur as migrant and winter visitor.
<i>Agelaius tricolor</i>	Tricolored blackbird	BCC/ST (nesting colony)	Nests near fresh water, emergent wetland with cattails or tules; forages in grasslands, woodland, agriculture.	This species has been observed in Chiquita Canyon, lower Cañada Gobernadora, south of Ortega Highway, San Juan Creek, Trampas Canyon, Gabino Canyon, and mouth of Verdugo Canyon. This species may forage throughout the study area within suitable habitat.	Moderate potential to forage in analysis area; moderate potential to occur in suitable habitat in San Juan Creek, depending on formation of suitable wetlands.
<i>Aimophila ruficeps canescens</i>	Southern California rufous-crowned sparrow	None/WL	Grass-covered hillsides, coastal sage scrub, chaparral with boulders and outcrops.	Known to occur throughout the study area within suitable habitat.	High potential to occur in suitable habitat.
<i>Ammodramus savannarum</i>	Grasshopper sparrow	None/SSC (nesting)	Open grassland and prairie, especially native grassland with a mix of grasses and forbs.	Known to occur throughout the study area within suitable habitat.	Known to occur in Prima Deshecha SOS and high potential to occur in grassland elsewhere in Project area.
<i>Artemisiospiza belli belli</i>	Bell's sage sparrow	BCC/WL	Coastal sage scrub and dry chaparral along coastal lowlands and inland valleys.	Although not observed within the study area, this species may still occur within the study area in suitable habitat.	Moderate potential to occur in suitable habitat.
<i>Aquila chrysaetos</i> ⁴	Golden eagle	BCC/WL (nesting & wintering), FP	Open country, especially hilly and mountainous regions; grassland, coastal sage scrub, chaparral, oak savannas, open coniferous forest.	Suitable foraging habitat for this species occurs within the study area. Unlikely to nest within the study area.	Moderate potential to forage but no suitable nesting habitat is present.

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<i>Asio flammeus</i> [^]	Short-eared owl	None/SSC (nesting)	Grassland, prairies, dunes, meadows, irrigated lands, saline and freshwater emergent wetlands.	Although not observed, this species may still occur within the study area in suitable habitat. Not expected to nest in study area.	Moderate potential to forage in analysis area.
<i>Asio otus</i> [^]	Long-eared owl	None/SSC (nesting)	Riparian, live oak thickets, other dense stands of trees, edges of coniferous forest.	This species nests and forages within suitable habitat in the study area.	Moderate potential to forage in analysis area, but low potential to nest due to lack large, dense patches of riparian or woodland and forest habitat.
<i>Athene cunicularia</i>	Burrowing owl	BCC/SSC (burrow sites & some wintering sites)	Grassland, lowland scrub, agriculture, coastal dunes and other artificial open areas.	Species not believed to nest within the study area but may occur during the winter.	Moderate potential to occur in winter but low potential to nest.
<i>Baeolophus inornatus</i> ^{*^}	oak titmouse	BCC/SAL (nesting)	Oak woodlands and forests	Expected to occur in oak forest and woodland communities throughout study area.	High potential to occur in suitable habitat.
<i>Botarus lentiginosus</i> [^]	American bittern	None/SAL	Emergent habitat of freshwater marsh and vegetation borders of ponds and lakes.	Observed within Cañada Chiquita. Freshwater marsh area of Cañada Gobernadora currently provides potential nesting habitat for this species.	Low potential to occur in San Juan Creek due to lack freshwater marsh in vicinity of bridge crossing.
<i>Buteo swainsoni</i>	Swainson's hawk	BCC/ST (nesting)	Open grassland, shrublands, croplands.	Species known to occur within the area as a rare migrant. May periodically forage onsite during migration. No longer nests in Orange County.	May occasionally occur as migrant; no potential to nest.
<i>Buteo regalis</i>	Ferruginous hawk	BCC/WL (wintering)	Open, dry country, grasslands, open fields, agriculture.	Species known to occur within the study area during winter as a visitor for foraging. Does not nest in the region.	Moderate potential to forage in grassland during winter.
<i>Calypte costae</i>	Costa's hummingbird	None/SAL (nesting)	Occurs in desert wash, edges of desert riparian and valley foothill riparian, coastal scrub, desert scrub, desert succulent shrub, lower-	Known to nest throughout the study area within suitable habitat.	Moderate potential to occur.

Table C-1
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Scientific Name ^{1,2}	Common Name	Status Federal/State	Primary Habitat Associations	Occurrence in Rancho Mission Viejo Study Area ³	Occurrence in LPPE Project Area
			elevation chaparral, and palm oasis.		
<i>Campylorhynchus brunneicapillus sandiegensis</i>	Coastal cactus wren	BCC/SSC (San Diego & Orange Counties only)	Southern cactus scrub, maritime succulent scrub, cactus thickets in coastal sage scrub.	Known to occur throughout the study area within suitable habitat.	Moderate potential to occur in suitable habitat, although no historical records within analysis area.
<i>Charadrius montanus</i> [^]	Mountain plover	BCC/SSC (wintering)	Nests in open, shortgrass prairies or grasslands; winters in shortgrass plains, plowed fields, open sagebrush, and sandy deserts.	Moderate potential to occasionally occur in agriculture in study area during winter.	Moderate potential to occasionally occur in agriculture and grassland in analysis area during winter.
<i>Chondestes grammacus</i> [^]	Lark sparrow	None/SAL (nesting)	Grassland-shrub-woodland margins	Known to occur throughout the study area in suitable habitat.	Moderate potential to occur in grassland.
<i>Circus cyaneus</i>	Northern harrier	None/SSC (nesting)	Open wetlands (nesting), pasture, old fields, dry uplands, grasslands, rangelands, coastal sage scrub.	Known to occur within the study area and potentially nests within the study area.	High potential to forage but low potential to nest in analysis area due to lack of suitable open wetland habitat.
<i>Coccyzus americanus occidentalis</i> [^]	Western yellow-billed cuckoo	FT/SE	Dense, wide riparian woodlands and forest with well-developed understories.	Species has not been observed within study area, not expected.	Very low potential to occur due to lack of large, intact patches of riparian habitat.
<i>Elanus leucurus</i>	White-tailed kite	None/FP (nesting)	Open grasslands, savanna-like habitats, agriculture, wetlands, oak woodlands, and riparian.	Known to occur within San Juan Creek, Cañada Gobernadora, Gabino Canyon, and Richard and Donna O'Neill Conservancy.	High potential to forage and moderate potential to nest in analysis area.
<i>Empidonax traillii extimus</i>	Southwestern willow flycatcher	FE/SE (nesting)	Riparian woodlands along streams and rivers with mature, dense stands of willows or alders; may nest in thickets dominated by tamarisk.	Known to nest only in Cañada Gobernadora.	Moderate potential to forage in San Juan Creek within analysis area, but low potential to nest due to lack of suitable riparian habitat.
<i>Eremophila alpestris actia</i>	California horned lark	None/WL	Open habitats, grassland, rangeland, shortgrass prairie, montane meadows, coastal plains, fallow grain fields.	Known to occur throughout the study area in suitable habitat.	High potential to occur in grassland.

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<i>Falco columbarius</i> [^]	Merlin	None/WL (wintering)	Nests in open country, open coniferous forest, prairie; winters in open woodlands, grasslands, cultivated fields, marshes, estuaries and sea coasts.	This species occurs in Orange County only as a rare migrant and winter visitor. This species has been observed in the study area.	Moderate potential to forage in grassland during winter.
<i>Falco mexicanus</i>	Prairie falcon	BCC/WL (nesting)	Grassland, savannas, rangeland, agriculture, desert scrub, alpine meadows; nest on cliffs or bluffs.	Species known to occur within the area as an occasional winter visitor to forage. No longer nests in Orange County.	Moderate potential to forage in grassland during winter.
<i>Falco peregrinus anatum</i> [^]	American peregrine falcon	FD, BCC/SD, FP (nesting)	Nests on cliffs, buildings, bridges; forages in wetlands, riparian, meadows, croplands, especially where waterfowl are present.	Species known to occur within the area as an occasional winter visitor to forage. No potential to occur to nest within the study area.	Moderate potential to forage in grassland during winter.
<i>Haliaeetus leucocephalus</i> [^]	Bald eagle	FD, BCC/SE, FP & (nesting wintering)	Seacoasts, rivers, swamps, large lakes; winters at large bodies of water in lowlands and mountains.	No potential to occur.	No potential to occur.
<i>Icteria virens</i> [^]	Yellow-breasted chat	None/SSC (nesting)	Dense, relatively wide riparian woodlands and thickets of willows, vine tangles and dense brush.	Known to occur within Cañada Chiquita, Cañada Gobernadora, San Juan Creek, Cristianitos Creek, Blind Canyon, and Gabino Canyon	High potential to forage and nest in suitable riparian habitat.
<i>Ixobrychus exilis</i> [^]	Least bittern	BCC/SSC (nesting)	Dense emergent wetland vegetation, sometimes interspersed with woody vegetation and open water.	Has occurred within the study area, Cañada Gobernadora may provide suitable habitat for this species.	Moderate potential to forage suitable riparian habitat, but low potential to nest due to lack of suitable nesting habitat.
<i>Lanius ludovicianus</i>	Loggerhead shrike	BCC/SSC (nesting)	Open ground including grassland, coastal sage scrub, broken chaparral, agriculture, riparian, and open woodland.	Known to occur infrequently within the study area. Resident, migrant, and wintering populations expected.	Moderate potential to forage in grassland and open scrub.
<i>Larus californicus</i> [^]	California gull	None/WL (nesting colony)	Agriculture, water, beach, and marsh.	Known to occur within the study area.	Nesting colonies do not occur.

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<i>Nycticorax nycticorax</i> ^{*^}	Black-crowned night heron (nesting colony)	None/SAL (nesting colony)	Marshes, ponds, reservoirs, estuaries; nests in dense-foliaged trees and dense fresh or brackish emergent wetlands.	High potential to occur in study area but no known nesting colonies.	Nesting colonies do not occur.
<i>Pandion haliaetus</i> [^]	Osprey	None/WL (nesting)	Large waters (lakes, reservoirs, rivers) supporting fish; usually near forest habitats, but widely observed along the coast.	Known to occur along San Juan Creek and in the vicinity of the open water areas of the silica mining operations south of Ortega Highway.	Moderate potential to forage along San Juan Creek in analysis area.
<i>Pelecanus erythrorhynchos</i> [^]	American white pelican	None/SSC (nesting colony & communal roosts)	Open water.	Potential to occur within the study area in large water bodies.	Nesting colonies and communal roost sites do not occur.
<i>Phalacrocorax auritus</i> [^]	Double-crested cormorant	None/WL (nesting colony)	Lakes, rivers, reservoirs, estuaries, ocean; nests in tall trees, rock ledges on cliffs, rugged slopes.	Known to occur within the study area. Open water areas along San Juan Creek and at the silica mine south of Ortega Highway provide suitable habitat.	Nesting colonies do not occur.
<i>Piranga rubra</i> [^]	Summer tanager	None/SSC (nesting)	Nests in riparian woodland; winter habitats include parks and residential areas.	May occur within the study area but only as a rare migrant.	Not expected to occur due to lack of suitable habitat.
<i>Plegadis chihi</i> [^]	White-faced ibis	None/WL (nesting colony)	Nests in marsh; winter foraging in shallow lacustrine waters, muddy ground of wet meadows, marshes, ponds, lakes, rivers, flooded fields and estuaries.	Expected to occur within the study area in suitable habitat but only as a rare visitor.	Nesting colonies do not occur.
<i>Pooecetes gramineus affinis</i> ^{*^}	Oregon vesper sparrow	BCC/SSC (wintering)	Grasslands, open brushlands, meadows, stubblefields, and road edges in valleys and desert regions	Expected to occur within the study area in suitable habitat but as winter visitor	Moderate potential to occur occasionally in grassland as a winter visitor.
<i>Poliophtila californica californica</i>	Coastal California gnatcatcher	FT/SSC	Coastal sage scrub, coastal sage scrub-chaparral mix, coastal sage scrub-grassland ecotone, riparian in late summer.	Known to occur throughout the study area.	Occurs in the Project Area in SOS on Prima Deshecha in CSS restoration area and native grassland restoration area (ECORP 2019)

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<i>Progne subis</i> [^]	Purple martin (nesting)	None/SSC	Nests in tall sycamores, pines, oak woodlands, coniferous forest; forages over riparian, forest and woodland.	May occur within the study area but only as a rare migrant.	Low potential to occur due to lack of suitable habitat.
<i>Rynchops niger</i> [^]	Black skimmer	BCC/SSC (nesting colony)	Open water of ocean and coastal zone.	Not expected.	Nesting colonies do not occur.
<i>Selasphorus sasin</i> [^]	Allen's hummingbird	BCC/SAL (nesting)	In the region, breeds primarily in riparian and urban habitats. Migrants occur in a variety of woodland and scrub habitats.	Known to nest within the study area within suitable habitat.	Moderate potential to occur in suitable habitat
<i>Setophaga petechial</i> [^]	Yellow warbler	BCC/SSC (nesting)	Nests in lowland and foothill riparian woodlands dominated by cottonwoods, alders and willows; winters in a variety of habitats.	Known to occur within Cristianitos Creek, San Juan Creek, Cañada Gobernadora, and Cañada Chiquita.	High potential to forage and nest in riparian habitat in analysis area.
<i>Spinus lawrencei</i> [^]	Lawrence's goldfinch	BCC/SAL (nesting)	Riparian and woodland habitats in association with grasslands.	Known from one location but likely to occur throughout the study area within suitable habitat.	Moderate potential to occur in analysis area.
<i>Sphyrapicus ruber</i> [^]	Red-breasted sapsucker	None/SAL (nesting)	Riparian and woodland habitats.	Expected occur within the study area, but only as a winter visitor.	Moderate potential to occur in riparian habitat in winter.
<i>Thalasseus elegans</i> [^]	Elegant tern	None/WL (nesting colony)	Open water of ocean and coastal zone.	Not expected.	No potential to occur.
<i>Vireo bellii pusillus</i>	Least Bell's vireo	FE/SE (nesting)	Nests in southern willow scrub with dense cover within three to six feet of the ground; habitat includes willows, cottonwoods, baccharis, and wild blackberry.	Known to occur within Cañada Gobernadora, middle San Juan Creek, Chiquita Creek, and lower Cristianitos Creek.	High potential to forage and nest in riparian habitat within San Juan Creek in analysis area.
Mammals					
<i>Antrozous pallidus</i> [^]	Pallid bat	None/SSC	Arid habitats, including grasslands, shrublands, woodlands and forests; for roosting, prefers rocky outcrops, cliffs and crevices with access to open habitats for foraging.	Known to occur within Cañada Chiquita and Cristianitos Canyon. May occur throughout the study area within suitable habitat, but suitable roosting habitat likely limited.	Moderate potential to forage in analysis area, but low potential to roost due to lack of suitable habitat.
<i>Chaetodipus fallax fallax</i>	Northwestern San Diego pocket mouse	None/SSC	Coastal sage scrub, grassland, sage scrub-grassland ecotones,	Moderate potential to occur in suitable habitat within the southern	Moderate potential to occur in suitable habitat.

Table C-1
Special-Status Wildlife Species Analyzed for Potential to Occur in the LPPE Project Area

Scientific Name ^{1,2}	Common Name	Status Federal/State	Primary Habitat Associations	Occurrence in Rancho Mission Viejo Study Area ³	Occurrence in LPPE Project Area
			and sparse chaparral; rocky substrates, loams and sandy loams.	portion of the study area.	
<i>Chaetodipus californicus femoralis</i> [^]	Dulzura pocket mouse	None/SSC	Coastal sage scrub, chaparral, and riparian-scrub ecotone; more mesic areas.	Moderate potential to occur in suitable habitat within the southern portion of the study area.	Moderate potential to occur in suitable habitat.
<i>Corynorhinus townsendii</i> [^]	Townsend's big-eared bat	None/SSC	Mesic habitats characterized by coniferous and deciduous forests and riparian habitat, but also xeric areas; roosts in limestone caves and lava tubes, also man-made structures and tunnels.	Moderate potential to forage throughout the study area within suitable habitat, but suitable roosting habitat likely limited.	Moderate potential to forage in analysis area, but low potential to roost due to lack of suitable habitat.
<i>Dipodomys stephensi</i> [^]	Stephens' kangaroo rat	FE/ST	Primarily annual & perennial grasslands, but also occurs in coastal scrub & sagebrush with sparse canopy cover.	Not expected to occur; current range excludes Orange County but known from Riverside Co and Camp Pendleton	Does not occur.
<i>Euderma maculatum</i> [^]	Spotted bat	None/SSC	Foothills, mountains, desert regions of Southern California, including arid deserts, grasslands, and mixed conifer forests; roosts in rock crevices and cliffs; feeds over water and along washes.	Moderate potential to forage throughout the study area within suitable habitat, but suitable roosting habitat likely limited.	Moderate potential to forage in analysis area, but low potential to roost due to lack of suitable habitat.
<i>Eumops perotis californicus</i>	Western mastiff bat	None/SSC	Chaparral, coastal and desert scrub, coniferous and deciduous forest and woodland; roosts in crevices in rocky canyons and cliffs where the canyon or cliff is vertical or nearly vertical, trees and tunnels.	Known to occur within the areas of San Juan Creek and Cristianitos Canyon. May occur throughout the study area within suitable habitat.	Moderate potential to forage in analysis area, but low potential to roost due to lack of suitable habitat.

Table C-1
Special-Status Wildlife Species Analyzed for Potential to Occur in the LPPE Project Area

Scientific Name ^{1,2}	Common Name	Status Federal/State	Primary Habitat Associations	Occurrence in Rancho Mission Viejo Study Area ³	Occurrence in LPPE Project Area
<i>Lasionycteris noctivagans</i> ^{*^}	Silver-haired bat	None/SAL	Old growth forest, maternity roosts in trees, large diameter snags; hibernates in hollow trees, under sloughing bark, in rock crevices, and occasionally in buildings, mines and caves; forages in or near coniferous or mixed deciduous forest along streams.	Moderate potential to forage and roost in suitable woodland and forest habitats in the study area.	Moderate potential to forage in analysis area, but low potential to roost due to lack of suitable habitat.
<i>Lasiurus blossevillii</i> ^{*^}	Western red bat	None/SSC	Forages along open streams and rivers; roosts in tree canopy in forest, woodland, riparian, mesquite bosque and orchards, including fig, apricot, peach, pear, almond, walnut, and orange.	Moderate potential to forage and roost in suitable woodland and forest habitats in the study area.	Moderate potential to forage in analysis area, but low potential to roost due to lack of suitable habitat.
<i>Lasiurus cinereus</i> ^{*^}	Hoary bat	None/SAL	Forest, woodland riparian, and wetland habitats, also juniper scrub, riparian forest, and desert scrub in arid areas; roosts in tree foliage and sometimes cavities.	Moderate potential to forage and roost in suitable woodland and forest habitats in the study area.	Moderate potential to forage in analysis area, but low potential to roost due to lack of suitable habitat.
<i>Lepus californicus bennettii</i>	San Diego black-tailed jackrabbit	None/SSC	Arid habitats with open ground; grasslands, coastal sage scrub, agriculture, disturbed areas, and rangelands.	Although suitable habitat for this species is present throughout the study area, this species has not been observed within the study area.	Low potential to occur due to lack of historical observations.
<i>Macrotus californicus</i> [^]	California leaf-nosed bat	None/SSC	Riparian woodlands, desert wash, desert scrub; roosts in mines and caves, occasionally buildings.	Moderate potential to forage throughout the study area within suitable habitat, but suitable roosting habitat likely limited.	Moderate potential to forage in analysis area, but low potential to roost due to lack of suitable habitat.
<i>Myotis ciliolabrum</i> [^]	Western small-footed myotis	None/SAL	Arid woodlands and shrublands, but near water; roosts in caves, crevices, mines, abandoned buildings	Moderate potential to forage throughout the study area within suitable habitat, but suitable roosting habitat likely limited.	Moderate potential to forage in analysis area, but low potential to roost due to lack of suitable habitat.

Table C-1
Special-Status Wildlife Species Analyzed for Potential to Occur in the LPPE Project Area

Scientific Name ^{1,2}	Common Name	Status Federal/State	Primary Habitat Associations	Occurrence in Rancho Mission Viejo Study Area ³	Occurrence in LPPE Project Area
<i>Myotis thysanodes</i> ^{*^}	Fringed myotis	None/SAL	Primarily mountainous woodlands, including oak, pinyon-juniper, ponderosa pine, desert scrub, mesic coniferous forest, grassland, and sage-grass steppe; roosts in crevices in buildings, mines, rocks, cliff faces, and bridges, and large, decadent trees and snags	Moderate potential to forage in analysis area, but low potential to roost due to lack of suitable habitat.	Moderate potential to forage in analysis area, but low potential to roost due to lack of suitable habitat.
<i>Myotis volans</i> [^]	Long-legged myotis	None/SAL	Primarily mountainous coniferous forests, but also seasonally in riparian and desert habitats; roosts in crevices in cliffs, caves, mines, buildings, exfoliating tree bark, and snags.	Moderate potential to seasonally forage in analysis area, but low potential to roost due to lack of suitable habitat.	Moderate potential to seasonally forage in analysis area, but low potential to roost due to lack of suitable habitat.
<i>Myotis yumanensis</i> [^]	Yuma myotis	None/SAL	Riparian, arid scrublands and deserts, and forests associated with water (streams, rivers, tinajas); roosts in bridges, buildings, cliff crevices, caves, mines, and trees;	Moderate potential to forage and roost in suitable woodland and forest habitats in the study area.	Moderate potential to forage in analysis area, but low potential to roost due to lack of suitable habitat.
<i>Neotoma lepida intermedia</i> [^]	San Diego desert woodrat	None/SSC	Coastal sage scrub, chaparral, and pinyon-juniper woodland with rock outcrops, cactus thickets, dense undergrowth.	Known to occur throughout the study area within suitable habitat.	High potential to occur in suitable habitat in analysis area.
<i>Nyctinomops femorosaccus</i> [^]	Pocketed free-tailed bat	None/SSC	Desert habitats, roosts in rock crevices in cliffs	Low potential to forage and roost in the study area due to lack of suitable habitat.	Low potential to forage and roost in analysis area due to lack of suitable habitat.
<i>Onychomys torridus ramona</i> [^]	Southern grasshopper mouse	None/SSC	Grassland and sparse coastal sage scrub.	Suitable habitat for this species occurs throughout the study area, but has not been documented during various trapping studies.	Low potential to occur due to lack of documented occurrences in vicinity.

Table C-1
Special-Status Wildlife Species Analyzed for Potential to Occur in the LPPE Project Area

Scientific Name ^{1,2}	Common Name	Status Federal/State	Primary Habitat Associations	Occurrence in Rancho Mission Viejo Study Area ³	Occurrence in LPPE Project Area
<i>Perognathus longimembris pacificus</i>	Pacific pocket mouse	FE/SSC	Grassland and coastal sage scrub with sandy soils; along immediate coast.	Not expected within the study area, due to this species' range restriction to areas along the coast.	Not expected
<i>Puma concolor</i> [^]	Mountain lion	None/SC (Southern California / Central Coast ESU)	Large, connected terrestrial habitats with forests, oak woodlands, riparian, scrub, chaparral, and grassland.	Very wide ranging species known from the study area and adjacent park lands, National Forest, and Camp Pendleton	High potential to occur at very low density, especially along Linkage J in San Juan Creek, but lesser so along Linkage K.
<i>Taxidea taxus</i> [^]	American badger	None/SSC	Dry, open treeless areas, grasslands, and coastal sage scrub.	Known to occur throughout the study area within suitable habitat.	Moderate potential to occur in grassland habitat.

¹ Species in bold face are Covered Species under the SSHCP.

² Species with "*" are special-status species that were not analyzed in the FEIR 584/589; Species with "^" are special-status species that were not analyzed in FEIR 575.

³ Based on FEIR 589 and updated as necessary.

Federal Designations:

BCC - Fish and Wildlife Service Bird of Conservation Concern

FC - Federal Candidate Species (formerly Category 1 candidates)

FD - Federally-delisted

FE - Federally-listed Endangered

FSC - Federal Species of Concern (no longer used)

FT - Federally-listed Threatened

FPT - Proposed for listing as Federally Threatened

State Designations:

SSC - California Special Concern Species

SC - State Candidate for Listing as Threatened or Endangered

FP - California Department of Fish and Wildlife Fully Protected Species

SAL - Species tracked in CNDDDB and included in CDFW 2014 Special Animals List

SD - State-delisted

SE - State-listed Endangered

WL - Watch List

Source: Dudek 2020

Table C-2
Special-Status Plant Species Known or With Potential to Occur in the LPPE Project Area

Scientific Name ^{1,2}	Common Name	Status Federal/State/Rare Plant Rank	Primary Habitat Associations and Blooming Period	Occurrence in Rancho Mission Viejo Study Area ³	Occurrence in LPPE Project Area
<i>Abronia villosa</i> var. <i>aurita</i> [^]	Chaparral sand-verbena	None/None/List 1B.1	Chaparral, coastal sage scrub, sandy soils/annual herb/January-August.	No records in SSHCP database. Nearest record from the Alberhill quadrangle, but may be extirpated from Orange County.	Low potential to occur. Although there is coastal scrub habitat on site and sandy soils and the site is within the overall geographic range of the species, the nearest records of chaparral sand verbena are over 15 miles from the project site north of Newport Beach, at Lake Elsinore, and at Camp Pendleton North (CCH 2020).
<i>Allium munzii</i> ^{*^}	Munz's onion	FE/ST/List 1B.1	Chaparral, cismontane woodland, coastal sage scrub, pinyon and juniper woodland, Valley and foothill grassland, clay soils/perennial herb (bulbiferous)/March-May	No records in SSHCP database. Nearest record from the Alberhill quadrangle.	Not expected to occur. The species' known geographic range is east of the project site (CCH 2020).
<i>Ambrosia pumila</i> [^]	San Diego ambrosia	FE/None/1B.1/None	Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools; sandy loam or clay, often in disturbed areas, sometimes alkaline/perennial rhizomatous herb/Apr–Oct/65–1,360	No records in SSHCP database.	Not expected to occur. The species' known geographic range is south and east of the project site (CCH 2020).
<i>Arctostaphylos rainbowensis</i> ^{*^}	Rainbow manzanita	None/None/List 1B.1	Chaparral/perennial evergreen shrub/December-March.	No records in SSHCP database. Known from Margarita Peak and Sitton Peak quadrangles.	Not expected to occur. This species' known geographic range is east of the project site (CCH 2020).
<i>Artemisia palmeri</i> [^]	San Diego sagewort	None/None/List 4.2	Chaparral, coastal sage scrub, riparian, sandy soils/shrub/May-September.	No records in SSHCP database; Known from the San Clemente quadrangle.	Moderate potential to occur in suitable habitat.

Table C-2
Special-Status Plant Species Known or With Potential to Occur in the LPPE Project Area

Scientific Name ^{1,2}	Common Name	Status Federal/State/ Rare Plant Rank	Primary Habitat Associations and Blooming Period	Occurrence in Rancho Mission Viejo Study Area ³	Occurrence in LPPE Project Area
<i>Astragalus brauntonii</i> [^]	Braunton's milk-vetch	FE/None/List 1B.1	Closed-cone conifer forest, chaparral, coastal sage scrub, valley and foothill grassland, recent burns or disturbed areas/perennial herb/March-July.	No records in SSHCP database or the vicinity.	Not expected to occur due to lack of records in vicinity.
<i>Atriplex coulteri</i>	Coulter's saltbush	None/None/List 1B.2	Coastal bluff scrub, coastal sage scrub, valley and foothill needlegrass grasslands, alkaline or clay soils/perennial herb/March-October.	Coulter's saltbush is known from three general locations in the study area: Chiquita Canyon, upper Cristianitos Canyon and upper Gabino Canyon. Coulter's saltbush occurs in alkaline soils.	Low potential to occur. Not known from the Project area.
<i>Atriplex pacifica</i> [^]	South Coast saltscale	None/None/List 1B.2	Coastal bluff scrub, coastal sage scrub, alkali playas/annual herb/ March-October.	No records in SSHCP database. Known from San Clemente quadrangle.	Not expected to occur due to lack records in the vicinity.
<i>Atriplex parishii</i> [^]	Parish's brittlescale	None/None/List 1B.1	Alkali swales, sinks, depressions, and grasslands with heavy clay-alkali components/annual herb/June-October.	No records in SSHCP database or the vicinity.	Not expected to occur due to lack of records in vicinity.
<i>Atriplex serenana</i> var. <i>davidsonii</i> [^]	Davidson's saltscale	None/None/List 1B.2	Coastal bluff scrub, coastal sage scrub, alkaline soils/annual herb/April-October.	No records in SSHCP database or the vicinity.	Not expected to occur due to lack of records in vicinity.
<i>Berberis nevini</i> [^]	Nevin's barberry	FE/SE/List 1B.1	Chaparral, cismontane woodland, coastal sage scrub, riparian scrub, sandy or gravelly soils/shrub/March-April.	No records in SSHCP database or the vicinity.	Not expected to occur due to lack of records in vicinity.
<i>Bergerocactus emoryi</i> [^]	Golden-spined cereus	None/None/List 2B.2	Closed-cone conifer forest, chaparral, coastal sage scrub, sandy soils/shrub (stem succulent)/May-June.	No records in SSHCP database or the vicinity.	Not expected to occur due to lack of records in vicinity.

Table C-2
Special-Status Plant Species Known or With Potential to Occur in the LPPE Project Area

Scientific Name ^{1,2}	Common Name	Status Federal/State/ Rare Plant Rank	Primary Habitat Associations and Blooming Period	Occurrence in Rancho Mission Viejo Study Area ³	Occurrence in LPPE Project Area
<i>Brodiaea filifolia</i>	Thread-leaved brodiaea	FT/SE/List 1B.1	Coastal sage scrub, chaparral, grassland, vernal pools; heavy clay soils/perennial herb (bulbiferous)/ March-June.	Found in six general locations in the study area, excluding the translocated population at Forster Ranch: Chiquadora Ridge; Cristianitos Canyon; lower Gabino Canyon; Trampas Canyon; Talega ridgeline east of Northrup-Grumman; and just east of Trabuco Creek in the Arroyo Trabuco Golf Course project area.	High potential to occur. There is suitable chaparral, cismontane woodland, coastal scrub, and grassland vegetation present, as well as clay soils. There are SSHCP records within 0.5 miles of the project site.
<i>Brodiaea jolonensis</i> [^]	Mesa brodiaea	None/None/None	Grassland, foothill woodland, clay soils/perennial herb/April-May.	Two locations in Cristianitos Canyon. Not tracked in CNDDDB.	Not expected to occur due to lack of records in vicinity.
<i>Brodiaea santarosae</i> ^{*^}	Santa Rosa basalt brodiaea	None/None/List 1B.2	Valley and foothill grassland, basaltic/perennial herb)/May-June.	No records in SSHCP database. Known from Margarita Peak and Sitton Peak quadrangles.	Not expected to occur. The site is outside of the species' known elevation range.
<i>California macrophylla</i> ^{*^}	Round-leaved filaree	None/None/List 1B.1	Cismontane woodland, Valley and foothill grassland/annual herb/March-May.	No records in SSHCP database. Known from Alberhill quadrangle.	Not expected to occur due to lack of records in vicinity.
<i>Calochortus catalinae</i> [^]	Catalina mariposa lily	None/None/List 4.2	Coastal sage scrub, chaparral, Valley and foothill needlegrass grasslands in heavy soils/perennial herb (bulbiferous)/February-May.	Occurs on Chiquita Ridge, in Cañada Gobernadora, the northeast portion of the Talega development and the Saddleback Meadows area.	High potential to occur. There is suitable chaparral, cismontane woodland, coastal scrub, and grassland habitat present. There are SSHCP records within 0.5 miles of the project site.
<i>Calochortus plummerae</i> [^]	Plummer's mariposa lily	None/None/List 4.2	Chaparral, cismontane woodland, coastal sage scrub, lower montane conifer forest, valley and foothill grassland, granitic soils/perennial herb (bulbiferous)/May-June.	No records in SSHCP database. Known from Sitton Peak quadrangle.	Not expected to occur due to lack of records in vicinity.

Table C-2
Special-Status Plant Species Known or With Potential to Occur in the LPPE Project Area

Scientific Name ^{1,2}	Common Name	Status Federal/State/ Rare Plant Rank	Primary Habitat Associations and Blooming Period	Occurrence in Rancho Mission Viejo Study Area ³	Occurrence in LPPE Project Area
<i>Calochortus weedii</i> var. <i>intermedius</i>	Intermediate mariposa lily	None/None/ List 1B.2	Chaparral, coastal sage scrub, coastal sage scrub-grassland ecotone, purple needlegrass grasslands/perennial herb (bulbiferous)/May- July.	Weed's-Intermediate mariposa lily hybrids generally occurs in four main areas: Chiquita Canyon/Chiquadora Ridge, Cañada Gobernadora, Cristianitos Canyon/southern Trampas Canyon sub- basin, and La Paz Canyon.	High potential to occur. There is suitable chaparral, coastal scrub, and grassland habitat present. There are SSHCP records within 0.5 miles of the project site.
<i>Caulanthus</i> <i>simulans</i> [^]	Payson's jewel- flower	None/None /List 4.2	Chaparral, coastal sage scrub, sandy and granitic soils/annual herb/March-June.	No records in SSHCP database or the vicinity.	Not expected to occur due to lack of records in vicinity.
<i>Centromadia</i> <i>parryi</i> spp. <i>australis</i>	Southern tarplant	None/None/ List 1B.1	Alkali soils, sinks, depressions, and grasslands with heavy clay-alkali components/ annual herb/ May-November.	In Chiquita Canyon and the GERA site in Cañada Gobernadora.	Low potential to occur. Not known from the Project area.
<i>Centromadia</i> <i>pungens</i> spp. <i>laevis</i> [^]	Smooth tarplant	None/None/ List 1B.1	Chenopod scrub, meadows and seeps, playas, riparian woodland, valley and foothill grassland/annual herb/April- September.	No records in SSHCP database. Known from Alberhill quadrangle.	Not expected to occur due to lack of records in vicinity.
<i>Chaenactis</i> <i>glabriuscula</i> var. <i>orcuttiana</i> ^{**}	Orcutt's pincushion	None/None/ List 1B.1	Coastal bluff scrub (sandy), coastal dunes/annual herb/January-August	No records in SSHCP database. Known from Dana Point and San Juan Capistrano quadrangles.	Not expected to occur. No suitable coastal bluff or coastal dune habitat present.
<i>Choloropyron</i> <i>maritimum</i> spp. <i>maritimum</i> [^]	Salt marsh bird's- beak	FE/SE/List 1B.2	Coastal dunes, coastal saltwater marsh and swamp/annual herb/May-October.	No records in SSHCP database. Known from Alberhill quadrangle.	Not expected to occur. No suitable coastal bluff or coastal dune habitat present.
<i>Chorizanthe parryi</i> var. <i>Fernandina</i>	San Fernando Valley spineflower	FC/SE/List 1B.1	Coastal sage scrub, sandy soils/ annual herb/April-June.	No records in SSHCP database. Known Alberhill quadrangle, but very likely extirpated in county. Only known from two locations in Los Angeles County -	Not expected to occur due to lack of records in vicinity.

Table C-2
Special-Status Plant Species Known or With Potential to Occur in the LPPE Project Area

Scientific Name ^{1,2}	Common Name	Status Federal/State/ Rare Plant Rank	Primary Habitat Associations and Blooming Period	Occurrence in Rancho Mission Viejo Study Area ³	Occurrence in LPPE Project Area
				Laskey Mesa and Newhall Ranch.	
<i>Chorizanthe parryi</i> var. <i>parryi</i> [^]	Parry's spineflower	None/None/ List 1B.1	Chaparral, coastal sage scrub, sandy openings/annual herb/April-June.	No records in SSHCP database. Known from Alberhill quadrangle.	Not expected to occur due to lack of records in vicinity.
<i>Chorizanthe polygonoides</i> var. <i>longispina</i> ^{**^}	Long-spined spineflower	None/None/ List 1B.2	Chaparral, coastal sage scrub, meadows and seeps, valley and foothill grasslands, vernal pools/annual herb/April-July	No records in SSHCP database. Known from Alberhill, San Clemente and Sitton Peak quadrangles.	Not expected to occur due to lack of records in vicinity.
<i>Chorizanthe procumbens</i> [^]	Prostrate spineflower	None/None/ None	Chaparral, coastal sage scrub, pinyon-juniper woodland, valley needlegrass grassland; associated with weathered mesa soils and gabbroic clay/April-June.	No locations in SSHCP database, but found along Cristianitos Road south of RMV property.	Not tracked as a special-status species. Low potential to occur due to lack of appropriate soils.
<i>Clinopodium chandleri</i> [^]	San Miguel savory	None/None/ List 1B.2	Chaparral, oak woodlands, oak forest, shaded stream courses/perennial herb/March-July.	No records in SSHCP database. Known from Upper Hot Spring Canyon in CNF and Alberhill, Sitton Peak and Cañada Gobernadora quadrangles.	Low potential to occur in suitable habitat.
<i>Comarostaphylis diversifolia</i> spp. <i>diversifolia</i>	Summer holly	None/None/ List 1B.2	Chaparral/shrub (evergreen)/April-June.	No records in SSHCP database. Known from Dana Point, Sitton Peak and San Juan Capistrano quadrangles.	Low potential to occur in suitable habitat.
<i>Deinandra paniculata</i>	paniculate tarplant	None/None/List 4.2	Coastal scrub, Valley and foothill grassland, Vernal pools; usually vernal mesic, sometimes sandy/annual herb/(Mar)Apr–Nov(Dec)/80–3,080	Known from several areas in the study area	Observed within the project area by Bonterra Consulting in September 2005.

Table C-2
Special-Status Plant Species Known or With Potential to Occur in the LPPE Project Area

Scientific Name ^{1,2}	Common Name	Status Federal/State/ Rare Plant Rank	Primary Habitat Associations and Blooming Period	Occurrence in Rancho Mission Viejo Study Area ³	Occurrence in LPPE Project Area
<i>Dichondra occidentalis</i>	Western dichondra	None/None/ List 4.2	Coastal sage scrub, chaparral, burned areas/perennial herb (rhizomatous)/ March-July.	Occurs in upper/middle portion of Gabino Canyon and several small populations in Cristianitos Canyon.	Moderate potential to occur in suitable habitat.
<i>Dodecahema leptoceras</i> [^]	Slender-horned spineflower	FE/SE/List 1B.1	Chaparral, coastal sage scrub (alluvial fan)/annual herb/April-June.	No records in SSHCP database. Known from Alberhill quadrangle.	Not expected to occur due to lack of records in vicinity.
<i>Dudleya blochmaniae</i> ssp. <i>blochmaniae</i>	Blochman's dudleya	None/None/List 1B.1	Coastal bluff scrub, coastal sage scrub, Valley and foothill needlegrass grassland/perennial herb/April-June.	No records in SSHCP database. Known from San Clemente and Dana Point quadrangles.	Not expected to occur due to lack of records in vicinity.
<i>Dudleya cymosa</i> spp. <i>ovatifolia</i> [^]	Santa Monica Mountains dudleya	FT/None/List 1B.2	Chaparral, coastal sage scrub, volcanic substrates/perennial herb/March-June.	No records in SSHCP database. Known only from Santiago Peak quadrangle.	Not expected to occur due to lack of records in vicinity.
<i>Dudleya multicaulis</i>	Many-stemmed dudleya	None/None/ List 1B.2	Coastal sage scrub, chaparral, Valley needlegrass grasslands; mesic barrens and cobbly clay soils/ [perennial herb/April-July.	Known from several areas in the study area: Chiquita Ridge; Chiquadora Ridge; Cañada Gobernadora/Central San Juan east of Gobernadora Creek; Trampas Canyon/Cristianitos Canyon; and upper Gabino and La Paz canyons.	High potential to occur. There is suitable chaparral, coastal scrub, and grassland vegetation present, as well as clay soils. There are SSHCP records within 0.5 miles of the project site.
<i>Dudleya stolonifera</i> [^]	Laguna Beach dudleya	FT/ST/List 1B.1	Chaparral, cismontane woodland, coastal sage scrub, valley and foothill grassland, rocky areas/perennial herb/May-July.	No records in SSHCP database. Known from San Juan Capistrano quadrangle.	Low potential to occur in suitable habitat.
<i>Dudleya viscida</i> [^]	Sticky dudleya	None/None/ List 1B.2	Coastal bluff scrub, coastal sage scrub, chaparral; on shaded steep rocky cliffs and canyon walls/perennial herb/May-June.	No records in SSHCP database. Known from Cañada Gobernadora, Margarita Peak and Sitton Peak quadrangles.	Low potential to occur; no current records in the vicinity.

Table C-2
Special-Status Plant Species Known or With Potential to Occur in the LPPE Project Area

Scientific Name ^{1,2}	Common Name	Status Federal/State/ Rare Plant Rank	Primary Habitat Associations and Blooming Period	Occurrence in Rancho Mission Viejo Study Area ³	Occurrence in LPPE Project Area
<i>Echinodorus berteroi</i> [^]	Upright burhead	None/None/ None	Ponds and ditches/annual herb/August.	One location known from Upper Cristianitos. Not tracked in CNDDDB.	Not expected to occur due to lack of suitable habitat and lack of records in vicinity.
<i>Eleocharis parvula</i> [^]	Small spikerush	None/None/List 4.3	Saltmarsh/perennial herb/June-September.	No records in SSHCP database or the vicinity.	Not expected to occur due to lack of suitable habitat and lack of records in vicinity.
<i>Eryngium pendletonensis</i> ^{**^}	Pendleton button-celery	None/None/ List 1B.1	Coastal bluff scrub, Valley and foothill grassland, vernal pools, clay, vernal mesic/perennial herb/April-July.	No records in SSHCP database. Known from San Clemente quadrangle.	Not expected to occur due to lack of ponded habitat and lack of records in vicinity.
<i>Euphorbia misera</i> [^]	Cliff spurge	None/None/ List 2B.2	Sea bluffs, coastal sage scrub/shrub/December-August.	No records in SSHCP database. Known from Dana Point and San Juan Capistrano quadrangles.	Not expected to occur due to lack of suitable habitat and lack of records in vicinity.
<i>Harpagonella palmeri</i>	Palmer's grapplinghook	None/None/ List 4.2	Open patches of coastal sage scrub, coastal sage scrub-grassland ecotone, purple needlegrass grassland/annual herb/March-May.	Occurs on Chiquita Ridge, east of Gobernadora Creek and in Cristianitos Canyon.	High potential to occur. There is suitable chaparral, coastal scrub, and grassland vegetation present, as well as clay soils. There are SSHCP records within 0.5 miles of the project site.
<i>Hesperocyparis forbesii</i> ^{**^}	Tecate cypress	None/None/ List 1B.1	Closed-cone coniferous forest, chaparral, clay, gabbroic, metavolcanic/perennial evergreen tree.	No records in SSHCP database. Known from Alberhill and Santiago Peak quadrangles.	Not expected to occur due to lack of suitable habitat and lack of records in vicinity.
<i>Holocarpha virgata</i> ssp. <i>elongata</i> [^]	Graceful tarplant	None/None/ List 4.2	Coastal sage scrub, valley and foothill needlegrass grasslands, chaparral, and cismontane woodland/annual herb/July-November.	No records in SSHCP database or the vicinity.	Not expected to occur due to lack of records in vicinity.
<i>Hordeum intercedens</i>	Vernal barley	None/None/ List 3.2	Valley and foothills grasslands (saline flats and depressions), vernal pools/ annual herb/March-June.	Populations known from Cañada Gobernadora, Cristianitos Canyon, and the northeastern portion of the Talega development project area.	Occurs in project area. Suitable coastal scrub and grassland habitat present.

Table C-2
Special-Status Plant Species Known or With Potential to Occur in the LPPE Project Area

Scientific Name ^{1,2}	Common Name	Status Federal/State/ Rare Plant Rank	Primary Habitat Associations and Blooming Period	Occurrence in Rancho Mission Viejo Study Area ³	Occurrence in LPPE Project Area
<i>Horkelia cuneata</i> ssp. <i>puperula</i> ^{*^}	Mesa horkelia	None/None/ List 1B.1	Chaparral (maritime), coastal sage scrub, cismontane woodland/perennial herb/February-September.	No records in SSHCP database. Known from Alberhill and Sitton Peak quadrangles.	Low potential to occur in suitable habitat.
<i>Horkelia truncata</i> ^{*^}	Ramona horkelia	None/None/ List 1B.3	Chaparral, cismontane woodland, clay and gabbroic soils/perennial herb/May-June	No records in SSHCP database. Known from Margarita Peak quadrangle.	Not expected to occur. The site is outside of the species' known elevation range.
<i>Imperata brevifolia</i> ^{*^}	California satintail	None/None/ List 2B.1	Chaparral, coastal scrub, Mojavean desert scrub, meadows and seeps, riparian scrub/perennial rhizomatous herb/September-May.	No records in SSHCP database. Known from Cañada Gobernadora quadrangle.	Low potential to occur in suitable habitat.
<i>Isocoma menziesii</i> var. <i>decumbens</i> [^]	Decumbent goldenbush	None/None/ List 1B.2	Exposed areas on coastal bluffs, coastal bluff scrub/shrub/April-November.	No records in SSHCP database. Known from the Laguna Beach quadrangle.	Not expected to occur due to lack of suitable habitat and lack of records in vicinity.
<i>Juncus acutus</i> spp. <i>leopoldii</i> [^]	Southwestern spiny rush	None/None/ List 4.2	Coastal dunes, meadows and seeps (alkaline), saltwater marsh/perennial herb/May-June.	No records in SSHCP database or in vicinity.	Not expected to occur due to lack of suitable habitat and lack of records in vicinity.
<i>Lasthenia glabrata</i> spp. <i>coulteri</i> [^]	Coulter's goldfields	None/None/ List 1B.1	Saltwater marsh and swamps, playas, vernal pools/annual herb/February-June.	No records in SSHCP database. Known from Lake Elsinore, Newport Beach, Laguna Beach and Seal Beach quadrangles.	Not expected to occur due to lack of suitable habitat and lack of records in vicinity.
<i>Lepechinia cardiophylla</i> [^]	Heart-leaved pitcher sage	None/None/ List 1B.2	Chaparral above 1,000 feet, cismontane woodland, conifer forest/shrub/April-November.	No records in SSHCP database. Two populations known from Trabuco Peak in CNF. Known from Alberhill and Santiago Peak quadrangles.	Not expected to occur. The site is outside of the species' known elevation range.

Table C-2
Special-Status Plant Species Known or With Potential to Occur in the LPPE Project Area

Scientific Name ^{1,2}	Common Name	Status Federal/State/ Rare Plant Rank	Primary Habitat Associations and Blooming Period	Occurrence in Rancho Mission Viejo Study Area ³	Occurrence in LPPE Project Area
<i>Lepidium virginicum</i> var. <i>robinsonii</i> [^]	Robinson's pepper-grass	None/None/ List 4.3	Chaparral, coastal sage scrub/annual herb/January-July.	No records in SSHCP database. Known from Alberhill, El Toro, Margarita Peak and Santiago Peak, quadrangles.	Low potential to occur in suitable habitat.
<i>Lilium humboldtii</i> spp. <i>ocellatum</i> [^]	Ocellated Humboldt lily	None/None/ List 4.2	Oak woodland and stream courses in foothill-mountain transition zone/perennial herb (bulbiferous)/March-July.	Suitable habitat on Starr Ranch, Caspers Wilderness Park and in the CNF.	Not expected to occur due to lack of suitable habitat and lack of records in vicinity.
<i>Lilium parryi</i> ^{^*}	Lemon lily	None/None/ List 1B.2	Lower and upper montane coniferous forest, meadows and seeps, riparian forest/perennial herb (bulbiferous)/July-August	No records in SSHCP database. Known from Sitton Peak quadrangle.	Not expected to occur. The site is outside of the species' known elevation range.
<i>Microseris douglasii</i> ssp. <i>platycarpa</i>	Small-flowered microseris	None/None/ List 4.2	Cismontane woodland, coastal sage scrub, valley and foothill grassland, clays/annual herb/March-May.	Populations known from Cañada Gobernadora and Cristianitos Canyon.	Moderate potential to occur in suitable habitat.
<i>Diplacus clevelandii</i> [^]	Cleveland's bush monkeyflower	None/None/ List 4.2	Chaparral, lower montane conifer forest (often in disturbed areas)/perennial herb/May-July.	No records in SSHCP database or in vicinity.	Not expected to occur. The site is outside of the species' known elevation range.
<i>Erythranthe diffusa</i> [^]	Palomar monkeyflower	None/None/ List 4.3	Chaparral, lower montane conifer forest/annual herb/April- June.	No records in SSHCP database or vicinity.	Not expected to occur. The site is outside of the species' known elevation range.
<i>Monardella hypoleuca</i> spp. <i>lanata</i> [^]	Felt-leaved monardella	None/None/ List 1B.2	Chaparral, cismontane woodland/perennial herb/May-July.	No records in SSHCP database. Known from Alberhill, Sitton Peak and Santiago Peak quadrangles.	Not expected to occur. The site is outside of the species' known elevation range.
<i>Monardella macrantha</i> ssp. <i>hallii</i> [^]	Hall's monardella	None/None/ List 1B.3	Broad-leaved upland forest, chaparral, cismontane woodland, lower conifer forest, valley and foothill grassland/perennial herb/June-August.	No records in SSHCP database. Known from Alberhill, Sitton Peak, and Santiago Peak quadrangles.	Not expected to occur. The site is outside of the species' known elevation range.

Table C-2
Special-Status Plant Species Known or With Potential to Occur in the LPPE Project Area

Scientific Name ^{1,2}	Common Name	Status Federal/State/ Rare Plant Rank	Primary Habitat Associations and Blooming Period	Occurrence in Rancho Mission Viejo Study Area ³	Occurrence in LPPE Project Area
<i>Mucronea californica</i> [^]	California spineflower	None/None/ List 4.2	Chaparral, cismontane woodland, coastal dunes, coastal sage scrub, valley and foothill grassland, sandy soils/annual herb/March-August.	No records in SSHCP database or in vicinity.	Not expected to occur due to lack of records in vicinity.
<i>Myosurus minimus</i> spp. <i>apus</i> [^]	Little mouse-tail	None/None/ List 3.1	Vernal pools (alkaline)/annual herb/March-June.	No records in SSHCP database. Known from San Clemente quadrangle	Not expected to occur due to lack of suitable habitat and lack of records in vicinity.
<i>Nama stenocarpum</i> [^]	Mud nama	None/None/ List 2B.2	Marsh and swamps, lake margins and riverbanks/annual-perennial herb/January-July.	Known from vernal pool on Chiquita Ridge, and the margin of stockpiles located between Trampas and Cristianitos canyons and west of an RMV residence south of Ortega Highway.	Low potential to occur. Not known from the Project area.
<i>Nasturtium gambellii</i> [^]	Gambel's water cress	FE/ST/List 1B.1	Marsh and swamps (freshwater and brackish)/perennial herb/April-June.	No records in SSHCP database or vicinity.	Not expected to occur due to lack of suitable habitat and lack of records in vicinity.
<i>Navarretia fossalis</i> [^]	Spreading navarretia	FT/None/ List 1B.1	Chenopod scrub, shallow freshwater marsh and swamps, vernal pools/ annual herb/April-June.	No records in SSHCP database or vicinity.	Not expected to occur due to lack of suitable habitat and lack of records in vicinity.
<i>Navarretia prostrata</i> ^{^^}	Prostrate vernal pool navarretia	None/None/ List 1B.1	Coastal scrub, meadows and seeps, Valley and foothill grasslands (alkaline), vernal pools/annual herb/April-May.	No records in SSHCP database. Known from San Clemente quadrangle.	Not expected to occur due to lack of suitable habitat and lack of records in vicinity.
<i>Nemacaulis denudata</i> var. <i>denudata</i> [^]	coast woolly-heads	None/None/1B.2/None	Coastal dunes/annual herb/Apr-Sep/0-330	No records in SSHCP database.	Not expected to occur. No suitable coastal dune habitat present.
<i>Nolina cismontana</i> [^]	Chaparral nolina	None/None/ List 1B.2	Chaparral and coastal sage scrub; mostly associated with Cienega sandy loam and Cienega-Rock outcrop complex/shrub (evergreen)/May-July.	Occurs in two areas in study area: east of Live Oak Canyon Road and on the steep, south-facing slopes east of the Northrup-Grumman facility.	Low potential to occur in suitable habitat.

Table C-2
Special-Status Plant Species Known or With Potential to Occur in the LPPE Project Area

Scientific Name ^{1,2}	Common Name	Status Federal/State/ Rare Plant Rank	Primary Habitat Associations and Blooming Period	Occurrence in Rancho Mission Viejo Study Area ³	Occurrence in LPPE Project Area
<i>Ophioglossum californicum</i> [^]	California adder's-tongue	None/None/ List 4.2	Chaparral, valley and foothill grassland, vernal pools (margins)/ perennial herb/ December-May.	No records in SSHCP database or vicinity.	Not expected to occur due to lack of records in vicinity.
<i>Orcuttia californica</i> [^]	California Orcutt grass	FE/SE/List 1B.1	Vernal pools/annual herb/April-June.	No records in SSHCP database or vicinity.	Not expected to occur due to lack of suitable habitat and lack of records in vicinity.
<i>Pentachaeta aurea</i> ssp. <i>aurea</i>	Golden-rayed pentachaeta	None/None/ List 4.2	Cismontane woodland, coastal sage scrub, lower montane conifer forest, valley and foothill grassland/annual herb/March-May.	No records in SSHCP database or vicinity.	Not expected to occur due to lack of records in vicinity.
<i>Pentachaeta aurea</i> ssp. <i>allenii</i> ^{**^}	Allen's pentachaeta	None/None/ List 1B.1	Coastal sage scrub (openings), Valley and foothill grassland/annual herb/March-June.	No records in SSHCP database. Known from Dana Point, El Toro and San Juan Capistrano quadrangles.	Not expected to occur due to lack of records in vicinity.
<i>Phacelia keckii</i> [^]	Santiago Peak phacelia	None/None/ List 1B.3	Closed-cone conifer forest, chaparral/annual herb/May-June.	No records in SSHCP database. Known from Santiago Peak quadrangle.	Not expected to occur due to lack of suitable habitat and lack of records in vicinity.
<i>Piperia cooperi</i> [^]	Chaparral rein orchid	None/None/ List 4.2	Chaparral, cismontane woodland, valley and foothill grassland/annual herb/March-July.	One location known from Central San Juan subunit north of San Juan Creek.	Low potential to occur in suitable habitat.
<i>Polygata cornuta</i> var. <i>fishiae</i>	Fish's milkwort	None/None/ List 4.3	Chaparral, cismontane woodland, riparian woodland/shrub/ May-August.	Known only from Gabino Canyon.	Low potential to occur in suitable habitat.
<i>Pseudognaphalium leucocephalum</i> ^{**^}	White rabbit-tobacco	None/None/ List 2B.2	Chaparral, cismontane woodland, coastal sage scrub, riparian woodland, sandy, gravelly soils/perennial herb/ July-December.	No records in SSHCP database. Known from Cañada Gobernadora, Dana Point, Margarita Peak, San Clemente, San Juan Capistrano and Sitton Peak quadrangles.	Occurs in Project Area south of Ortega Highway north of PA 5 (T. Bomkamp pers. comm. 2020).
<i>Quercus dumosa</i> ^{**^}	Nuttall's scrub oak	None/None/ List 1B.1	Closed-cone coniferous forest, chaparral, coastal sage scrub, sandy,	No records in SSHCP database. Known from Dana Point and San	Low potential to occur in suitable habitat.

Table C-2
Special-Status Plant Species Known or With Potential to Occur in the LPPE Project Area

Scientific Name ^{1,2}	Common Name	Status Federal/State/ Rare Plant Rank	Primary Habitat Associations and Blooming Period	Occurrence in Rancho Mission Viejo Study Area ³	Occurrence in LPPE Project Area
			clay loam soils/perennial evergreen shrub/February- August	Juan Capistrano quadrangles.	
<i>Romneya coulteri</i>	Coulter's matilija poppy	None/None/ List 4.2	Coastal sage scrub and chaparral, dry washes, canyons, and mesic slopes/perennial shrub/March-July.	No records in SSHCP database, but one location known from upper Chiquita Canyon north of Oso Parkway.	Low potential to occur in suitable habitat.
<i>Sagittaria sanfordii</i> [^]	Sanford's arrowhead	None/None/List 1B.2	Chaparral, oak woodlands, oak forest, shaded stream courses/perennial herb/March-July.	No records in SSHCP database or in vicinity.	Low potential to occur in suitable habitat.
<i>Senecio aphanactis</i> [^]	Chaparral ragwort	None/None/ List 2B.2	Coastal sage scrub, cismontane woodland, alkaline soils/annual herb/ January-April.	No records in SSHCP database or in vicinity. Known from Dana Point headlands.	Low potential to occur in suitable habitat.
<i>Sidalcea neomexicana</i>	Salt Spring checkerbloom	None/None/ List 2B.2	Chaparral, coastal sage scrub, lower montane conifer forest, Mojavean Desert scrub, seeps, playas, alkaline-mesic areas/ perennial herb/ March-June.	Known from two slope wetlands in Chiquita Canyon and one slope wetland in Cañada Gobernadora.	Low potential to occur. Not known from the Project area.
<i>Suaeda esteroa</i> [^]	Estuary seablite	None/None List 1B.2	Saltmarsh/perennial herb/July-October.	No records in SSHCP database. Known from San Clemente quadrangle.	Not expected to occur due to lack of suitable habitat and lack of records in vicinity.
<i>Symphyotrichum defoliatum</i> ^{**^}	San Bernardino aster	None/ None/ 1B.2	Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Meadows and seeps, Marshes and swamps, Valley and foothill grassland(vernally mesic)/near ditches, streams, springs/ perennial rhizomatous herb/ July-November.	No records in SSHCP database. Known from Alberhill quadrangle	Not expected to occur due to lack of records in vicinity.

Table C-2
Special-Status Plant Species Known or With Potential to Occur in the LPPE Project Area

Scientific Name ^{1,2}	Common Name	Status Federal/State/ Rare Plant Rank	Primary Habitat Associations and Blooming Period	Occurrence in Rancho Mission Viejo Study Area ³	Occurrence in LPPE Project Area
<i>Tetracoccus dioicus</i> [^]	Parry's tetracoccus	None/None/ List 1B.2	Chaparral and coastal sage scrub on gabbroic soils/shrub (deciduous)/April-May.	No records in SSHCP database. Known from Sitton peak quadrangle.	Not expected to occur due to lack of suitable habitat and lack of records in vicinity.
<i>Verbesina dissita</i> [^]	Big-leaved crownbeard	FT/ST/List 1B.1	Maritime chaparral, coastal sage scrub/perennial herb/April-July.	No records in SSHCP database. Known from San Juan Capistrano quadrangle.	Low potential to occur in suitable habitat.
<i>Viguiera laciniata</i> [^]	San Diego County viguiera	None/None/ List 4.2	Chaparral, coastal sage scrub/shrub/February-June.	No records in SSHCP database or vicinity. Known from northern San Diego County near San Clemente.	Low potential to occur in suitable habitat.
<i>Xanthisma junceum</i> [^]	Rush-like bristleweed	None/None/ List 4.3	Chaparral, coastal sage scrub/ perennial herb/June-October.	No records in SSHCP database or in vicinity.	Low potential to occur in suitable habitat.

¹ Species in bold face are Covered Species under the SSHCP.

² Species with "*" are special-status species that were not analyzed in the Joint Programmatic EIR/EIS.

³ Based on FEIR 589 and updated as necessary.

Federal Designations:

FE - Federally-listed Endangered

FSC - Federal Species of Concern (no longer used)

FT - Federally-listed Threatened

State Designations:

SE - State-listed Endangered

ST - State-listed Threatened

California Rare Plant Ranks

1A: Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere

1B: Plants Rare, Threatened, or Endangered in California and Elsewhere

2A: Plants Presumed Extirpated in California, But More Common Elsewhere

2B: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere

3: Plants About Which More Information is Needed - A Review List

4: Plants of Limited Distribution - A Watch List

Threat Rank Extension

0.1-Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)

0.2-Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

0.3-Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Source: Dudek 2020

APPENDIX D
JURISDICTIONAL DELINEATION

PROJECT NUMBER: 02390066PA3&4

TO: Laura Coley Eisenberg
cc: Mike Howard, Dudek
Kathleen Brady, Psomas

FROM: Tony Bomkamp

DATE: July 6, 2020

SUBJECT: Jurisdictional Delineation and Impact Analysis for Los Patrones Parkway Extension, Rancho Mission Viejo, Orange County

On June 23, 2020 I conducted a site visit to conduct a jurisdictional delineation of the proposed alignment for the Los Patrones Parkway Extension (LPPE) where it crosses San Juan Creek to determine the limits of the jurisdiction of 1) the U.S. Army Corps of Engineers (Corps) pursuant to Section 404 of the federal Clean Water Act, the California Department of Fish and Wildlife (CDFW) pursuant to Section 1602 of the California Fish and Game Code, and 3) the San Diego Regional Water Quality Control Board (SDRWQCB) pursuant to Section 401 of the federal Clean Water Act and for non-federal waters pursuant to the Porter Cologne Act. Exhibits 1 and 2 are the Regional and Vicinity Maps for the site and Exhibits 3A and 3B depict Corps, CDFW, and SDRWQCB jurisdiction for the LPPE San Juan Creek crossing.

The SAMP and MSAA provide for the construction of certain infrastructure projects in the Habitat Reserve/Aquatic Resource Conservation Areas, including a north-south arterial termed “Cristianitos Road”, depicted on SAMP Figure 8-1 and MSAA Exhibit D (SSHCP Figure 187-R) and described in the SAMP and MSAA as:

Cristianitos Road. The existing Cristianitos Road between Avenida Pico and the development area in Trampas Canyon would remain a private ranch road. From the proposed PA 5 Trampas Canyon development area to the proposed development area in the Gobernadora sub-basin, a new north-south primary arterial highway would cross San Juan Creek and Cow Camp Road, and connect to the proposed SR-241, in a “with SOCTIIP” and Oso Parkway in a “without SOCTIIP” scenario.

At this time, a portion of the new “north-south arterial” between Cow Camp Road and Oso Parkway in Chiquita Canyon has been built and is operational (i.e., Los Patrones Parkway, previously termed “F” Street). To better address regional traffic needs, the alignment of the north-south primary arterial described above has been modified to shift the alignment to the west and

extend Los Patrones Parkway from PA 2 to PA 5, rather than extending a north-south road from PA 3 to PA 5. This westerly shift has reduced the potential impacts to San Juan Creek, the majority of which are temporary construction impacts with the only permanent impacts associated with installation of two support piers. Exhibit 4 depicts the alignment considered in the SAMP, SSHCP and MSAA as well as the currently proposed alignment.

This Technical Memorandum also addresses Drainages between (and south of) San Juan Creek and north of Planning Area 5 previously delineated as part of the SAMP and MSAA, but not included in the original impact assessment as depicted on Exhibits 5A, 5B, and 5C. Finally, this Technical Memorandum addresses impacts to a single ephemeral drainage to the west of Planning Area 5 within the County of Orange Prima Deshecha Landfill depicted on Exhibit 6A and 6B.

LOS PATRONES PARKWAY EXTENSION PROJECT DESCRIPTION

The proposed LPPE alignment would extend south from the current southern roadway terminus at Cow Camp Road on the eastern edge of the Village of Esencia (Planning Area 2) within the Ranch Plan Planned Community, cross San Juan Creek and Ortega Highway (SR-74) on bridge structures, and extend to Planning Area 5 as depicted on Exhibit 4. The alignment also extends through the western edge of the Lapeyre Industrial Sands quarry operations and continuing in Planning Area 5 west of the SMWD Trampas Canyon Dam and Reservoir. The proposed alignment then crosses the ridge out of Planning Area 5 and enters the Prima Deshecha Landfill site. Within the Prima Deshecha Landfill site, the alignment traverses open space and as it nears Avenida La Pata, enters an area designated for future landfill activities. The alignment traverses property owned by RMV and the County of Orange (the Prima Deshecha Landfill).

SAN JUAN CREEK CROSSING

The LPPE bridge structure that would cross San Juan Creek is 100 feet wide and there would be one pair of bridge piers within the areas of Corps, CDFW and SDRWQCB jurisdiction; however, the final location has not been determined. As such, one of the three vegetation alliances described below would be subject to 0.08 acre of permanent impact.¹ Construction of the bridge would require temporary impacts extending 100 feet on either side of the bridge as depicted on Exhibits 3A, 3B, and 3C. As discussed below, temporary impacts would be restored in place and in-kind following completion of construction.

¹ Note, that in Tables 1 – 3 below, the 0.08 acre impact associated with the Bridge piers has been assigned to the wetland category, which is the most conservative approach. Should the impacts upon final design avoid the wetlands and impact mulefat scrub, impacts would be identical and mitigated within the Gobernadora Ecological Restoration Area. Impacts to floodplain scrub would be mitigated through giant reed eradication in San Juan Creek.

Where the LPPE crosses San Juan Creek the low-flow channel supports emergent marsh wetland dominated by southern cattail (*Typha domengensis*, OBL), Olney's bulrush (*Schoenoplectus americanus*, OBL), and tall nutsedge (*Cyperus eragrostis*, FACW). Immediately south of the main channel is a scarp, rising approximately six to eight feet to a terrace dominated by a monoculture of mulefat scrub (*Baccharis salicifolia*, FAC), with a few scattered Goodding's black willow (*Salix gooddingii*, FACW). North of the mulfat is sandy wash sparsely vegetated by alluvial scrub species including scalebroom (*Lepidospartum squamatum*, FACU), California buckwheat (*Eriogonum fasciculatum*, UPL) and non-native grasses and herbs including red brome (*Bromus madritensis rubens*) and tocalote (*Centaurea melitensis*, UPL). South of the Creek is a mosaic of mulefat scrub, unvegetated sandy wash, and sparsely vegetated floodplain scrub as depicted on Exhibits 3A, 3B, and 3C.

DRAINAGES SOUTH OF SAN JUAN CREEK

Drainages 5-1A, 5-2, 5-3 and 5-4 are south of San Juan Creek and south of Ortega Highway, and south of Planning Area 5. As summarized in the Tables 1, 2 and 3 below, Drainage 5-2 is subject to Corps jurisdiction with Drainages 5-3 and 5-4 considered isolated. Drainages 5-2, 5-3 and 5-4 are subject to both CDFW and SDRWCQB jurisdiction.

DRAINAGES WEST OF PLANNING AREA 5 (PRIMA DESHECHA)

Drainages west of Planning Area 5 consist of ephemeral drainages that traverse areas of upland coastal sage scrub and areas of non-native grasslands with a substantial component of artichoke thistle (*Cynara cardunculus*, UPL). The project impacts the lower reach of a single ephemeral drainage as summarized in the Tables 1, 2 and 3 below.

IMPACTS

The project will impact drainages subject to Corps, CDFW, and SDRWQCB jurisdiction. The area of total jurisdiction for each agency varies and the impacts are summarized for each agency below in Table 1 – 3.

Corps Jurisdiction

Permanent impacts to Corps jurisdiction total 0.15 acre of which 0.08 acre consists of wetlands and 0.07 acre of ephemeral streambed. Construction of the project would also result in temporary impacts to 0.62 acre of wetlands, 1.51 acres of non-wetland riparian habitat and 1.29 acres of ephemeral streambed. Permanent and temporary impacts are summarized in Table 1 below.

Table 1: Impacts to Corps Jurisdiction

Feature	Permanent Impacts (acres)	Temporary Impacts (acres)
Road Gap 13/2-14 Ephemeral	0.002	0.0
San Juan Creek Wetlands	0.08	0.54
San Juan Creek Non-Wetland Riparian	0.0	1.51
San Juan Creek Non-Wetland Non-Riparian	0.0	1.29
Drainage 5-2 Ephemeral	0.05	0.0
Prima Deshecha Drainage Ephemeral	0.02	0.0
Total	0.15	3.34

CDFW Jurisdiction

Permanent impacts to CDFW jurisdiction total 0.96 acre of which 0.78 acre consists of coast live oak riparian forest, 0.08 of southern cattail riparian, and 0.10 acre of ephemeral streambed. Construction of the project would also result in temporary impacts to 2.13 acre of riparian habitat including 0.54 acre of cattail wetlands, and 1.51 acres of mulefat scrub and 1.29 acres of ephemeral streambed. Permanent and temporary impacts are summarized in Table 2 below.

Table 2: Impacts to CDFW Jurisdiction

Feature	Permanent Impacts (acres)	Temporary Impacts (acres)
Road Gap 13/2-14 Coast Live Oak Riparian	0.04	0.0
San Juan Creek Southern Cattail Riparian	0.08	0.54
San Juan Creek Mulefat Scrub Riparian	0.0	1.51
San Juan Creek Non-Riparian Ephemeral	0.0	1.29
Drainage 5-2 Coast Live Oak Riparian	0.69	0.0
Drainage 5-3 Unvegetated Ephemeral	0.03	0.0
Drainage 5-4 Coast Live Oak Riparian	0.05	0.0
Drainage 5-4 Unvegetated Ephemeral	0.03	0.0
Prima Deshecha Drainage Ephemeral	0.04	0.0
Total	0.96	3.34

SDRWQCB Jurisdiction

Permanent impacts to SDRWQCB jurisdiction total 0.21 acre of which 0.08 acre consists of wetlands and 0.13 acre of ephemeral streambed. Construction of the project would also result in temporary impacts to 0.54 acre of wetlands, 1.51 acres of non-wetland riparian habitat and 1.29 acres of ephemeral streambed. Permanent and temporary impacts are summarized in Table 3 below.

Table 3: Impacts to SDRWQCB Jurisdiction		
Feature	Permanent Impacts (acres)	Temporary Impacts (acres)
Road Gap 13/2-14 Ephemeral	0.002	0.0
San Juan Creek Wetlands	0.08	0.62
San Juan Creek Non-Wetland Riparian	0.0	1.51
San Juan Creek Non-Wetland Non-Riparian	0.0	1.29
Drainage 5-2 Ephemeral	0.05	0.0
Drainage 5-3 Ephemeral	0.03	0.0
Drainage 5-4 Ephemeral	0.03	0.0
Prima Deshecha Drainage Ephemeral	0.02	0.0
Total	0.21	3.34

MITIGATION

Mitigation for permanent impacts consist of three components, specific to each of the types of resources subject to impacts. Mitigation for temporary impacts are limited to areas under the San Juan Creek Bridge and will be mitigated in place by habitat type following completion of construction as required by the SAMP and MSAA.

Permanent Impacts

Corps Jurisdiction

Permanent impacts to Corps jurisdiction include 1) impacts to ephemeral drainages totaling 0.07 acre and 2) impacts to wetlands associated with a single pair of San Juan Creek Bridge piers totaling up to 0.08 acre. Impacts to ephemeral drainages will be mitigated through removal of giant reed within San Juan Creek in accordance with the SAMP. Permanent loss of 0.08 acre of wetland habitat would be mitigated through credits within the Gobernadora Ecological Restoration Area, in accordance with the SAMP.

Temporary impacts of 3.34 acre within San Juan Creek as summarized in Table 1 above, would be mitigated in place and in-kind following construction of the Bridge. RMV will prepare a Habitat Mitigation and Monitoring Plan (HMMP) in accordance with the requirements of the SAMP that addresses restoration of the areas subject to temporary impacts.

CDFW Jurisdiction

Permanent impacts to CDFW jurisdiction include 1) impacts to coast live oak riparian forest totaling 0.78 acres, 2) impacts to wetlands associated with a single pair of San Juan Creek Bridge piers totaling 0.08 acre, and 3) impacts to ephemeral drainages totaling 0.10 acre. Impacts to ephemeral drainages will be mitigated through removal of giant reed within San Juan Creek in accordance with the MSAA. Permanent loss of 0.08 acre of wetland habitat would be mitigated through credits within the Gobernadora Ecological Restoration Area, in accordance with the MSAA. Impacts to coast live oak riparian forest will be mitigated through preservation within the Habitat Reserve as required by the MSAA.

Temporary impacts of 3.34 acre within San Juan Creek as summarized in Table 1 above, would be mitigated in place and in-kind following construction of the Bridge. RMV will prepare a Habitat Mitigation and Monitoring Plan (HMMP) in accordance with the requirements of the SAMP that addresses restoration of the areas subject to temporary impacts.

SDRWQCB Jurisdiction

Permanent impacts to SDRWQCB jurisdiction include 1) impacts to ephemeral drainages totaling 0.13 acre and 2) impacts to wetlands associated with a single pair of San Juan Creek Bridge piers totaling up to 0.08 acre. Impacts to ephemeral drainages will be mitigated through removal of giant reed within San Juan Creek. Permanent loss of 0.08 acre of wetland habitat would be mitigated through credits within the Gobernadora Ecological Restoration Area.

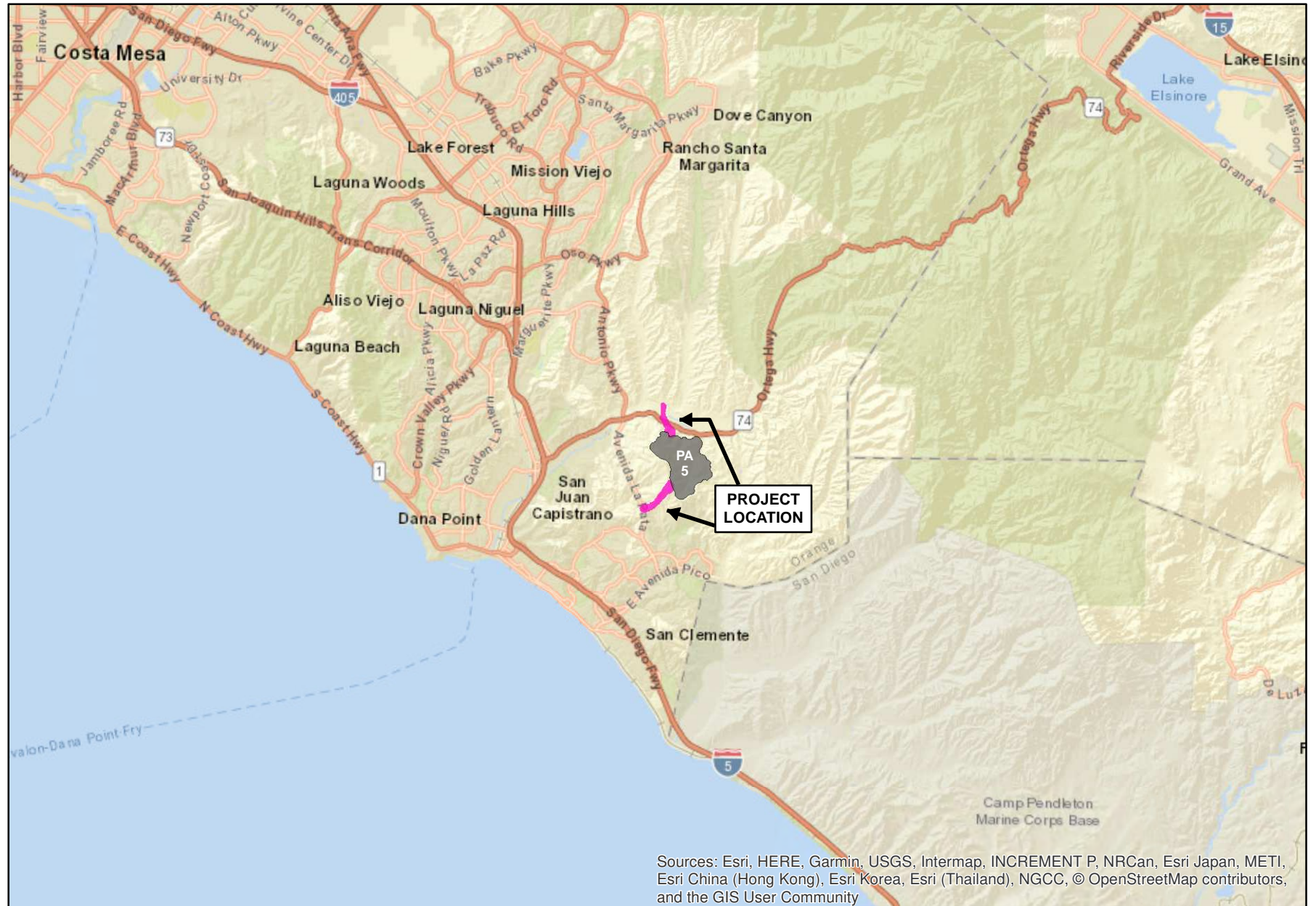
Temporary impacts of 3.34 acre within San Juan Creek as summarized in Table 1-3 above, would be mitigated in place and in-kind following construction of the Bridge. RMV will prepare a Habitat Mitigation and Monitoring Plan (HMMP) that addresses restoration of the areas subject to temporary impacts.

With the proposed mitigation, all impacts would be reduced to less than significant.

Source: ESRI World Street Map



0
2
4
8
Miles



LOS PATRONES PARKWAY EXTENSION

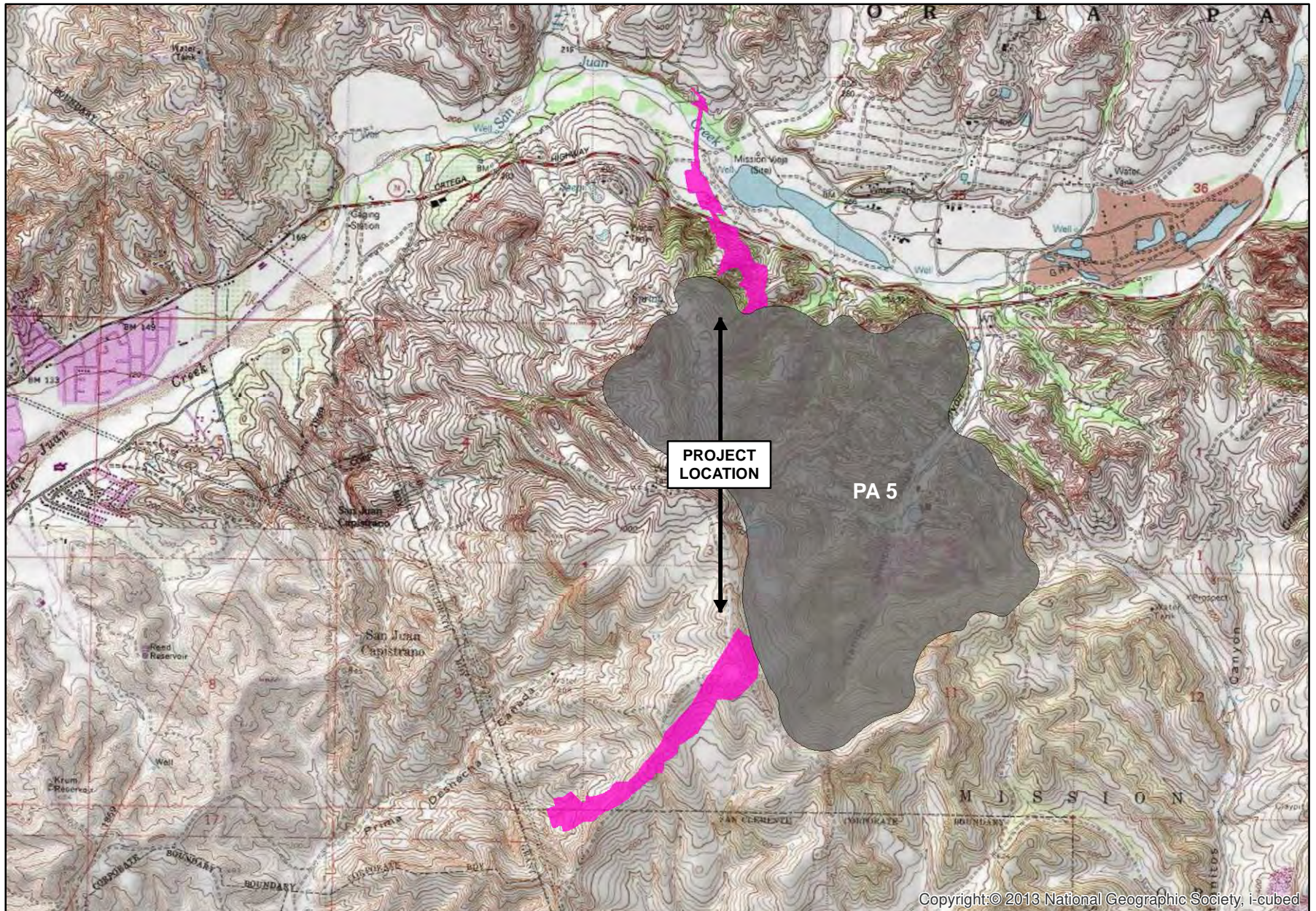
Regional Map

GLENN LUKOS ASSOCIATES



Exhibit 1

Adapted from USGS Canada Gobernadora and San Clemente, CA quadrangles



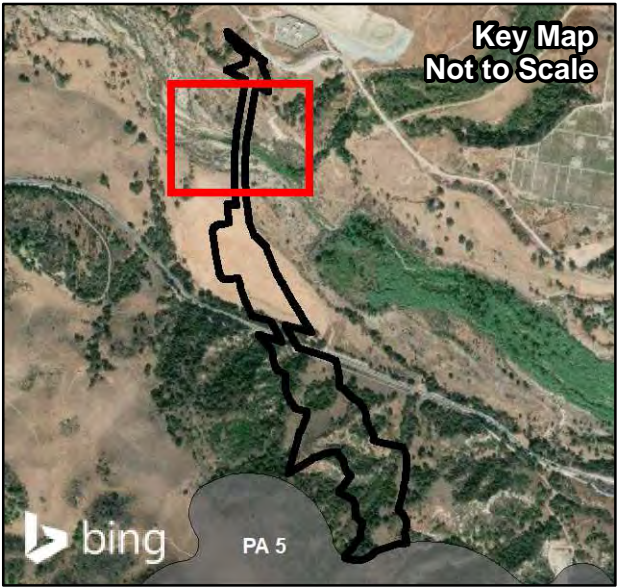
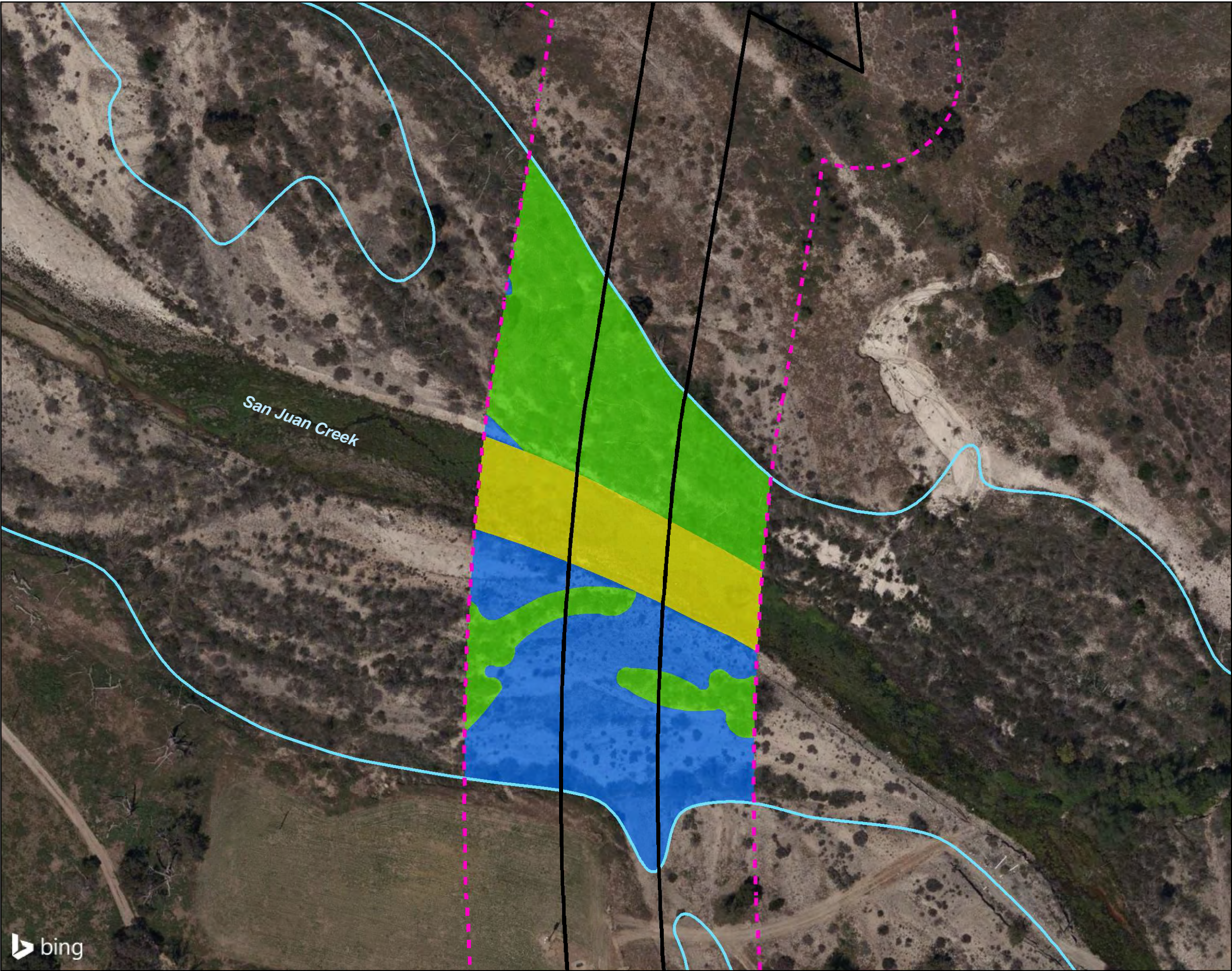
LOS PATRONES PARKWAY EXTENSION

Vicinity Map

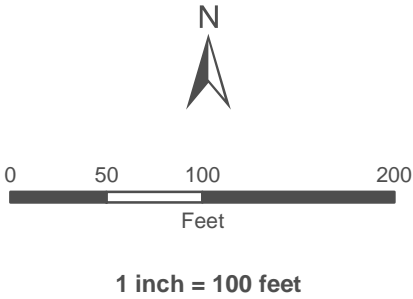
GLENN LUKOS ASSOCIATES



Exhibit 2



- Proposed LPP Extension
- Temporary Impact Area
- 10 Year Floodplain Limits
- Riparian
- Wetland
- Non-Wetland Waters

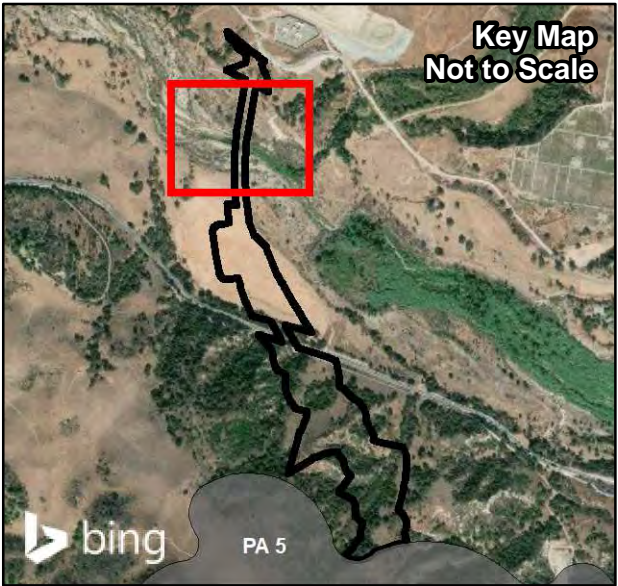
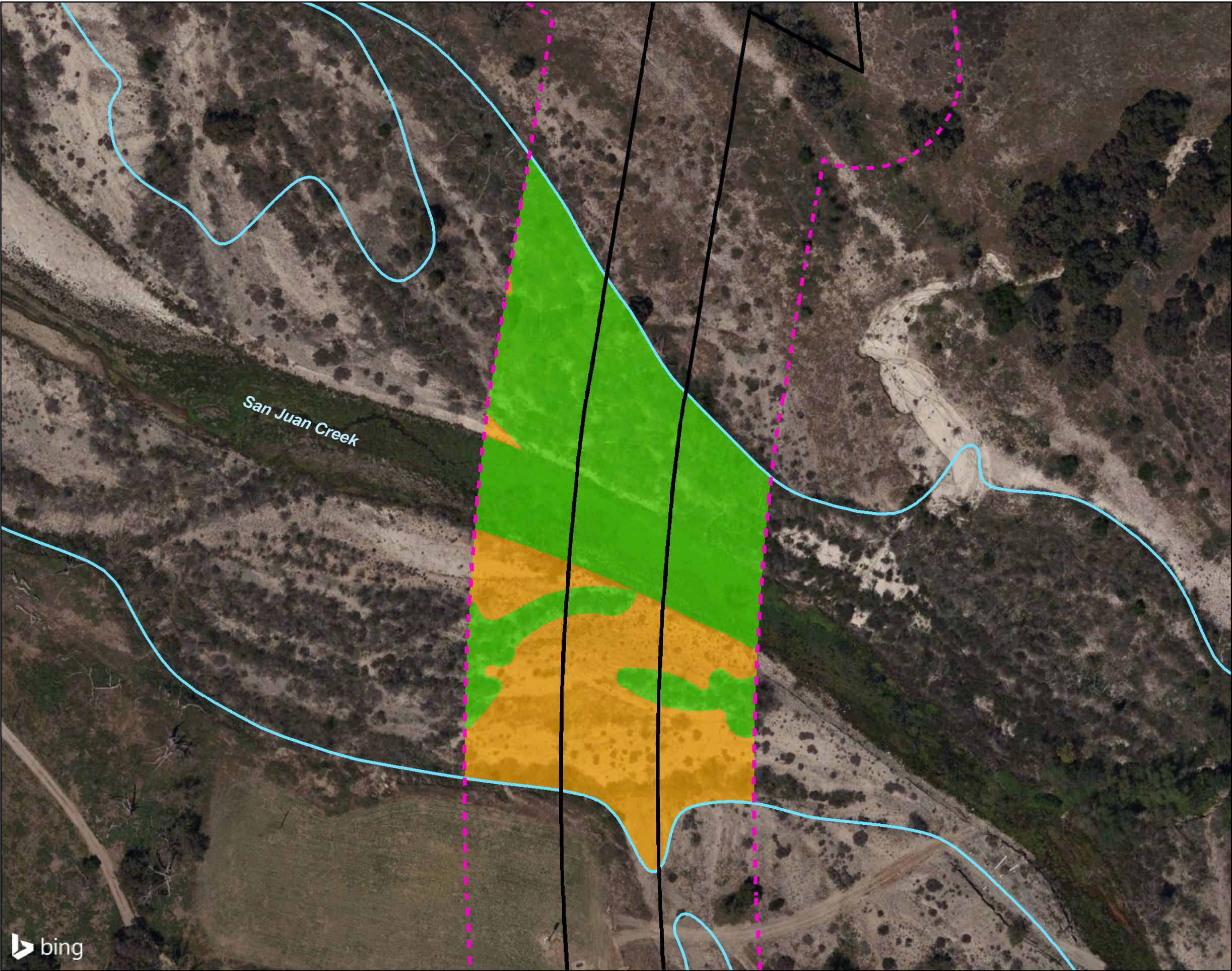


Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD83
Map Prepared by: B. Gale, GLA
Date Prepared: July 6, 2020

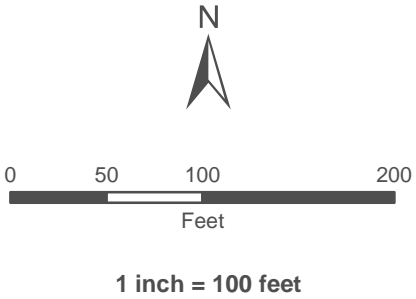
**LOS PATRONES
PARKWAY EXTENSION**
LPP Extension - Corps/RWQCB Jurisdictional Delineation

GLENN LUKOS ASSOCIATES

Exhibit 3A



- Proposed LPP Extension
- Temporary Impact Area
- 10 Year Floodplain Limits
- Riparian
- Non-Riparian Streambed

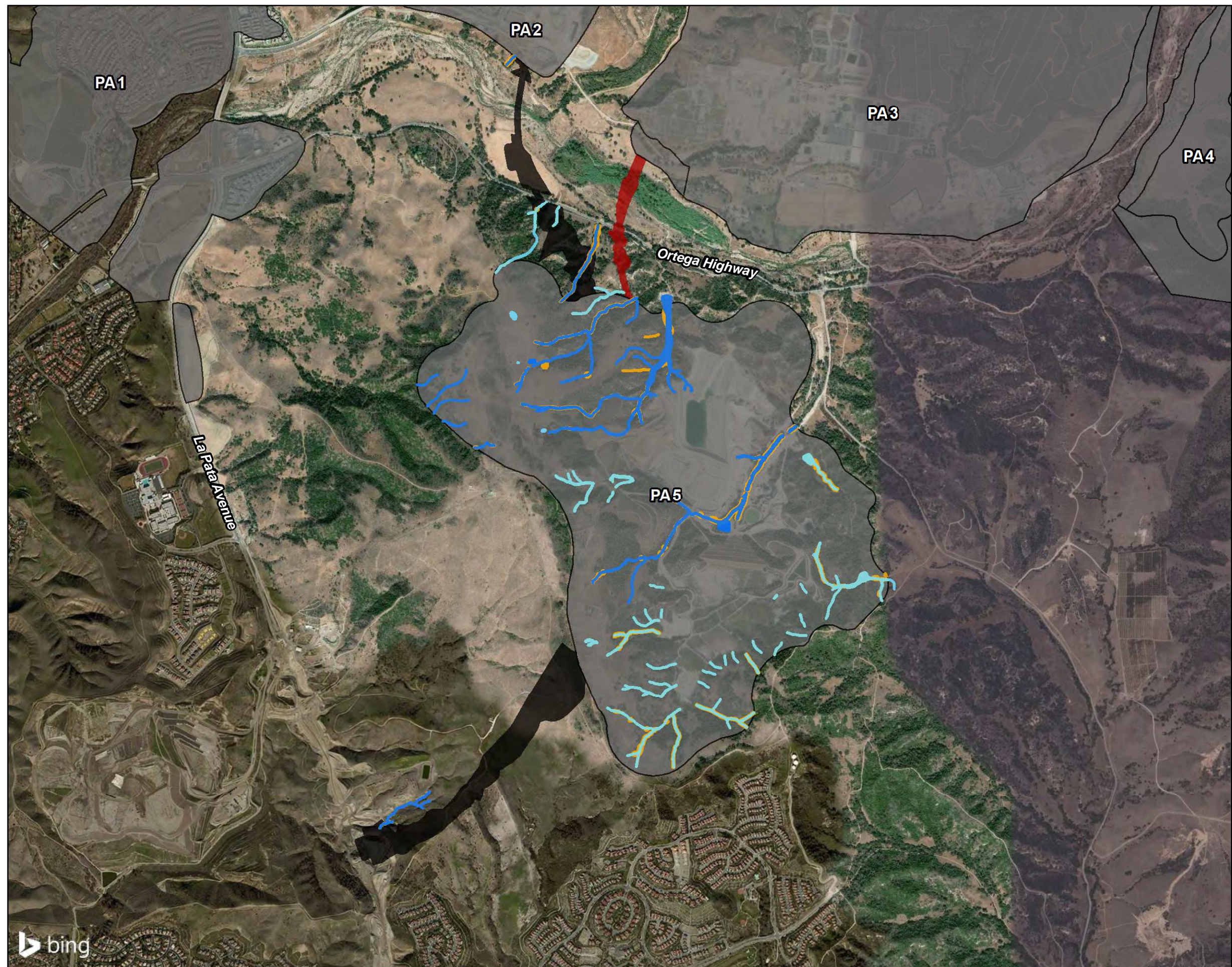


Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD83
Map Prepared by: B. Gale, GLA
Date Prepared: July 6, 2020

**LOS PATRONES
PARKWAY EXTENSION**
LPP Extension - CDFW Jurisdictional Delineation

GLENN LUKOS ASSOCIATES

Exhibit 3B



- Proposed LPP Extension
- Cristianitos Road
- Corps/RWQCB/CDFW Jurisdiction
- RWQCB/CDFW Jurisdiction
- CDFW Jurisdiction



0 950 1,900 3,800
Feet

1 inch = 1,900 feet

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD83
Map Prepared by: B. Gale, GLA
Date Prepared: July 7, 2020

LOS PATRONES PARKWAY EXTENSION

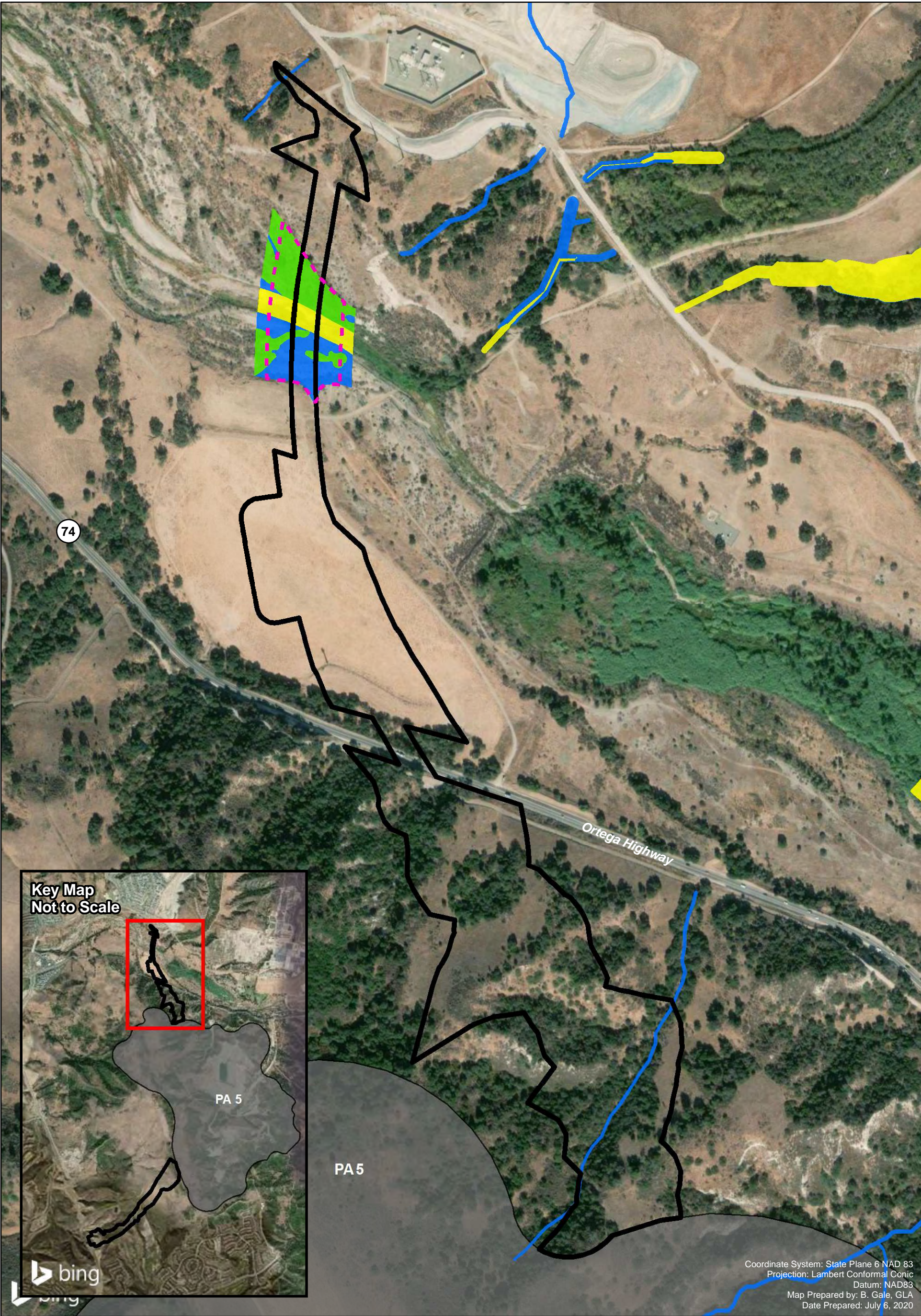
Los Patrones Parkway Alternatives

GLENN LUKOS ASSOCIATES



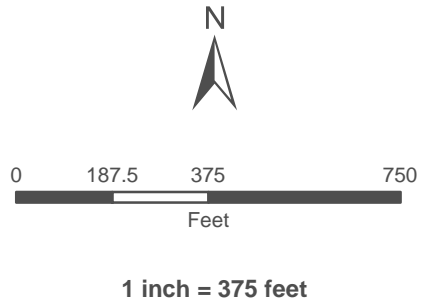
Exhibit 4

X:\00 - 0362 ONLY\0239-66PA3&4\239-66_GIS\LPPEExtension\2020_Delineation\236-66_LPPEExtension_Alternatives.mxd



Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD83
Map Prepared by: B. Gale, GLA
Date Prepared: July 6, 2020

- Proposed LPP Extension
- Temporary Impact Area
- Riparian
- Wetland
- Non-Wetland Waters

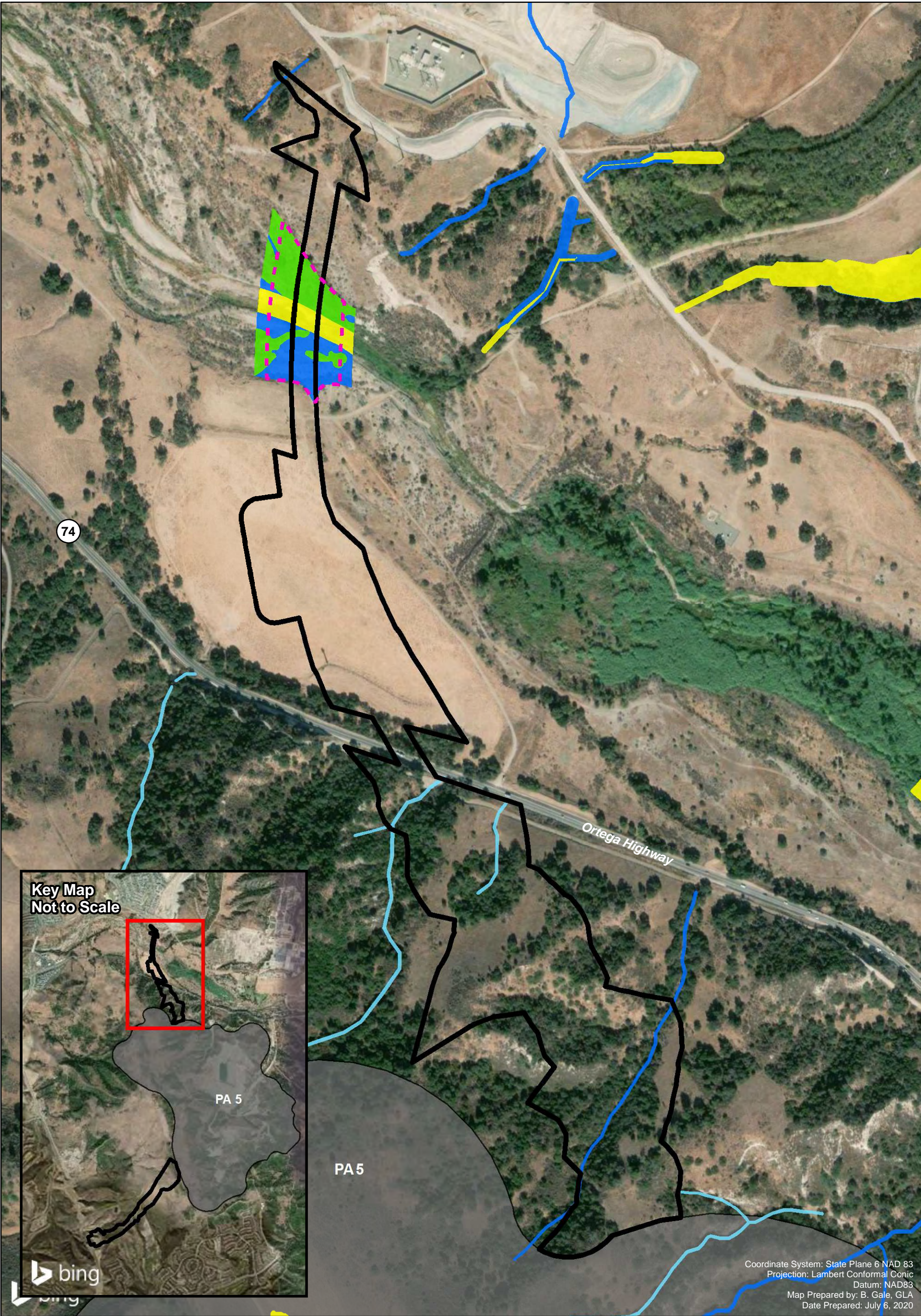


**LOS PATRONES
PARKWAY EXTENSION**

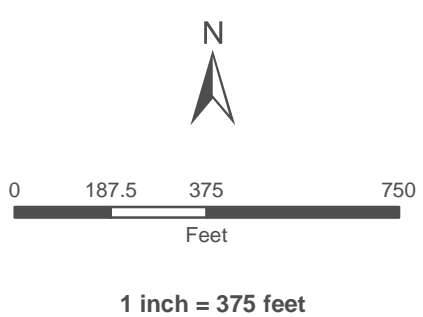
LPP Extension - Corps Jurisdictional Delineation

GLENN LUKOS ASSOCIATES

Exhibit 5A



- Proposed LPP Extension
- Temporary Impact Area
- Riparian
- Wetland
- Non-Wetland Waters
- Non-Wetland Waters (RWQCB Only)

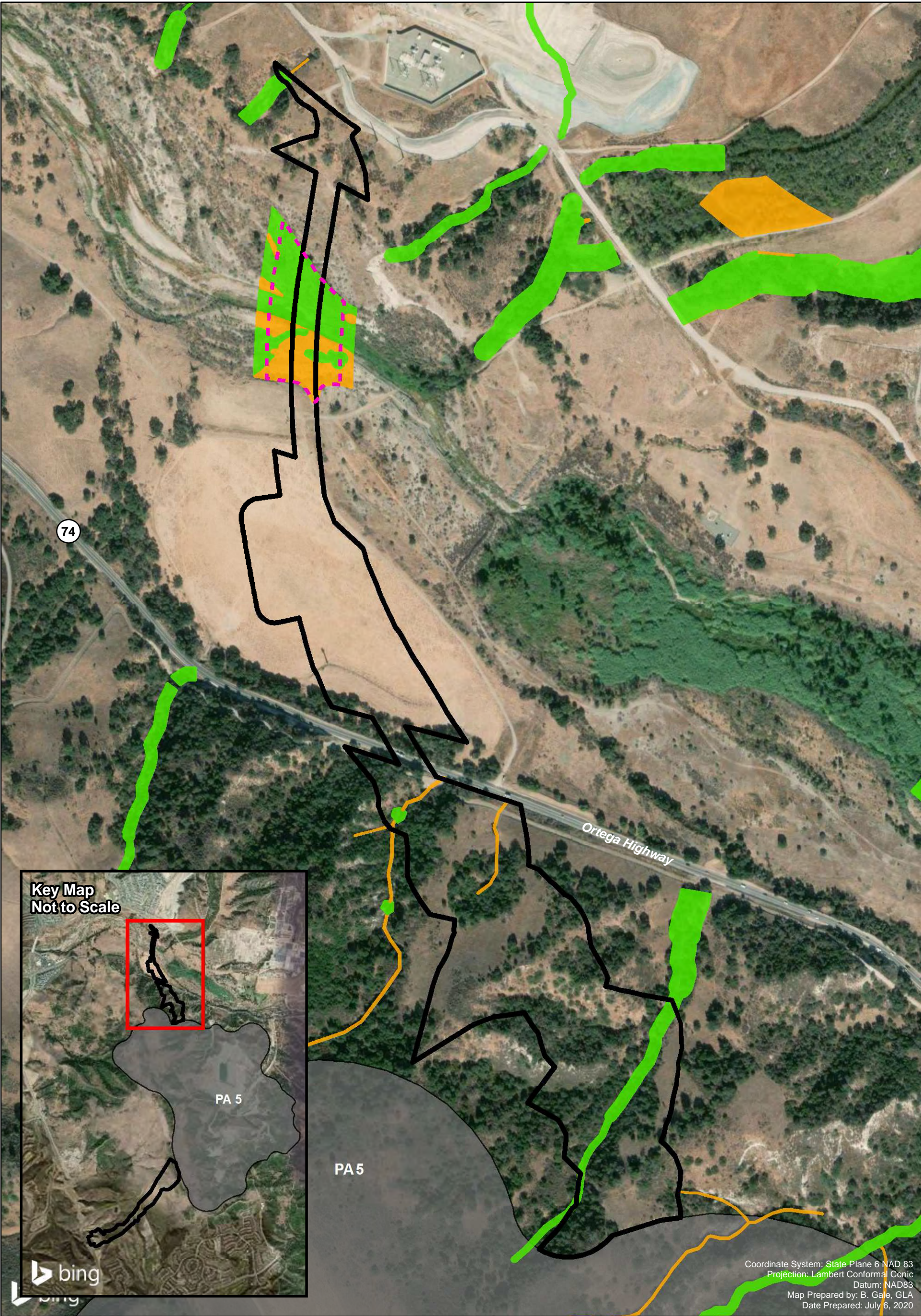


**LOS PATRONES
PARKWAY EXTENSION**

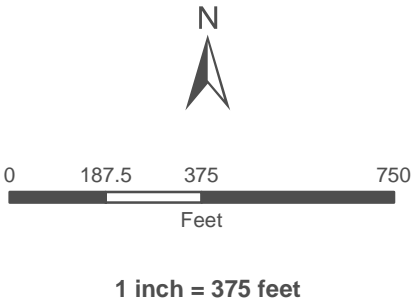
LPP Extension - RWQCB Jurisdictional Delineation

GLENN LUKOS ASSOCIATES

Exhibit 5B



- Proposed LPP Extension
- Temporary Impact Area
- Riparian
- Non-Riparian Streambed





**LOS PATRONES
PARKWAY EXTENSION**

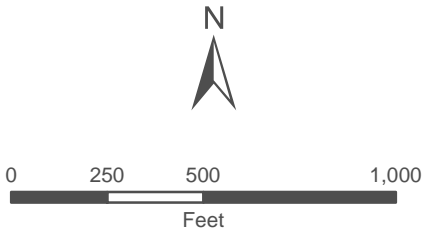
LPP Extension - CDFW Jurisdictional Delineation

GLENN LUKOS ASSOCIATES

Exhibit 5C



-  Proposed LPP Extension
-  Non-Wetland Waters



1 inch = 500 feet

LOS PATRONES PARKWAY EXTENSION



LPPE (Prima Deshecha) - Corps/RWQCB Jurisdictional Delineation

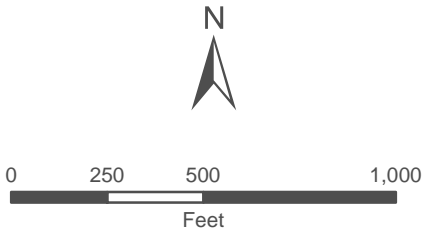
GLENN LUKOS ASSOCIATES



Exhibit 6A



-  Proposed LPP Extension
-  Non-Riparian Streambed



1 inch = 500 feet

**LOS PATRONES
PARKWAY EXTENSION**

LPPE (Prima Deshecha) - CDFW Jurisdictional Delineation

GLENN LUKOS ASSOCIATES



Exhibit 6B

APPENDIX E
TRAFFIC IMPACT STUDY



County of Orange MPAH Amendments in Rancho Mission Viejo Traffic Impact Study FINAL



October 21, 2020

Submitted to: OC Public Works



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
Final	10/21/2020	1.4

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- Appendix A – ICU Analysis Worksheets
- Appendix B – HCM Analysis Worksheets

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).

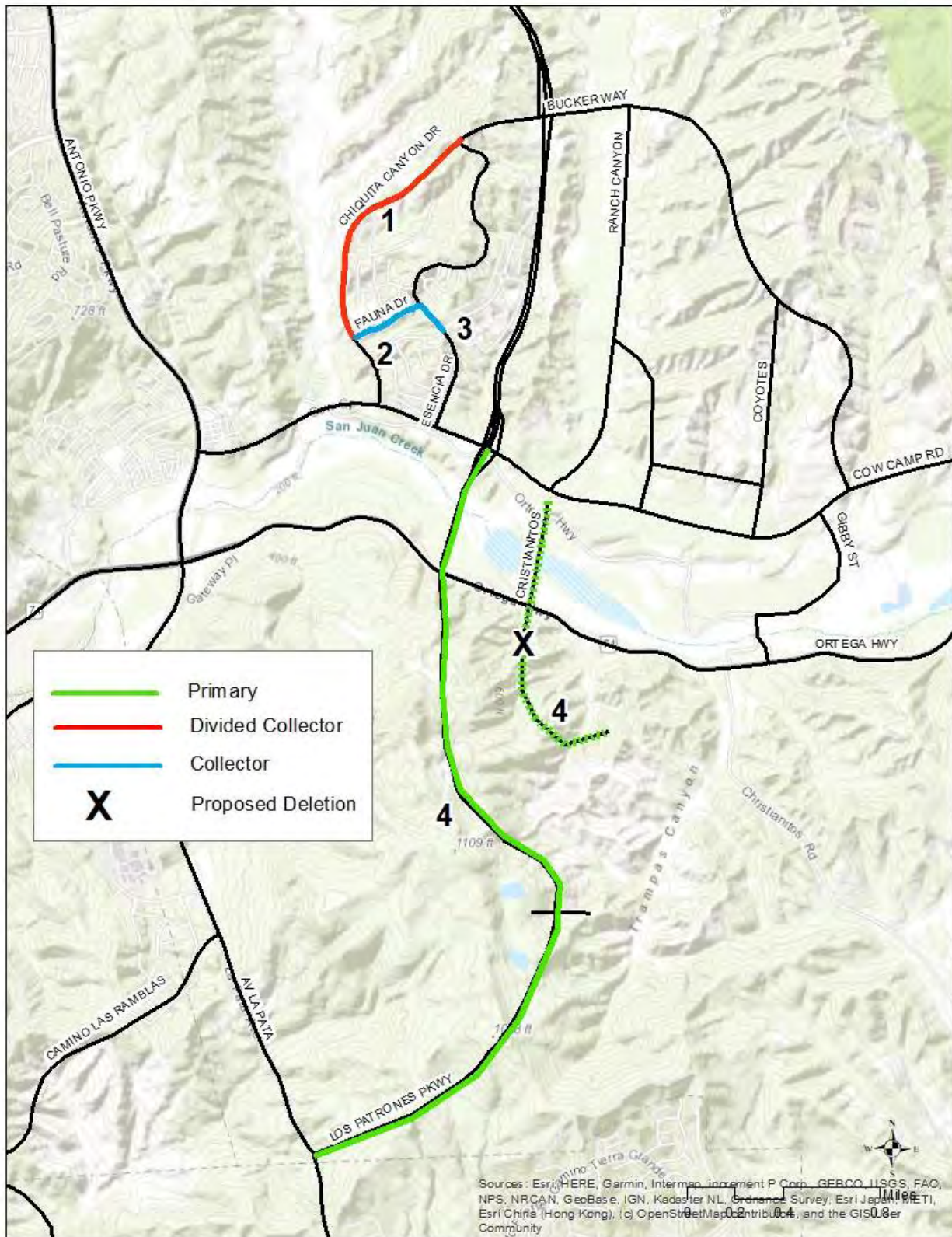
Traffic operations analysis was conducted at selected intersections and arterial segments. The proposed amended designations represented in the 2045 With Project scenario are summarized in **Table 1-1** and **Figure 1-1**.

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 Buckner Way	Primary	Primary
17	Cow Camp Road	Buckner Way to Ortega Highway	Primary	Primary)
18	Coyotes	South of Buckner 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	Buckner Way	Los Patrones Parkway SB and NB On-Ramps	Secondary	Secondary
27	Buckner Way	Los Patrones Parkway NB On-Ramp to Ranch Canyon	Secondary	Secondary
28	Buckner Way	Coyotes to Cow Camp Road	Secondary	Secondary
29	Legado Road	North of Cow Camp Road	Secondary	Secondary
30	Los Patrones Parkway NB [1]	North of Chiquita Canyon Drive Ramps	Secondary	Secondary
31	Los Patrones Parkway SB [1]	North of Chiquita Canyon Drive Ramps	Secondary	Secondary
32	Los Patrones Parkway NB [1]	South of Chiquita Canyon Drive Ramps	Secondary	Secondary
33	Los Patrones Parkway SB [1]	South of Chiquita Canyon Drive Ramps	Secondary	Secondary
34	Ortega Highway	West of Cow Camp Road	Primary [2]	Primary [2]
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 [2]	Primary [2]

#	Arterial	Extent	Facility Type	
			Without Project	With Project
40	Ortega Highway	West of Caspers Park Road	Primary [2]	Primary [2]
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] 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.

[2] 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

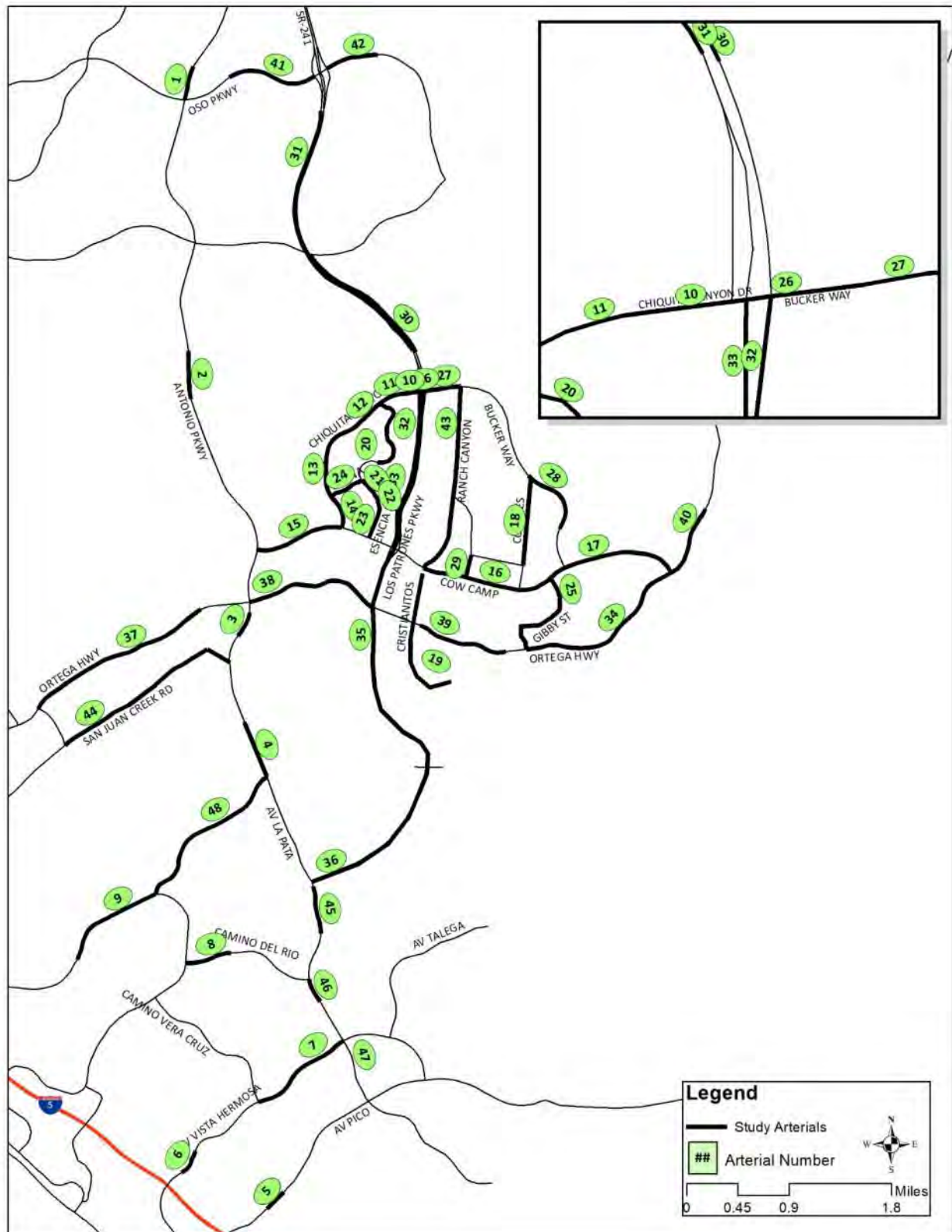
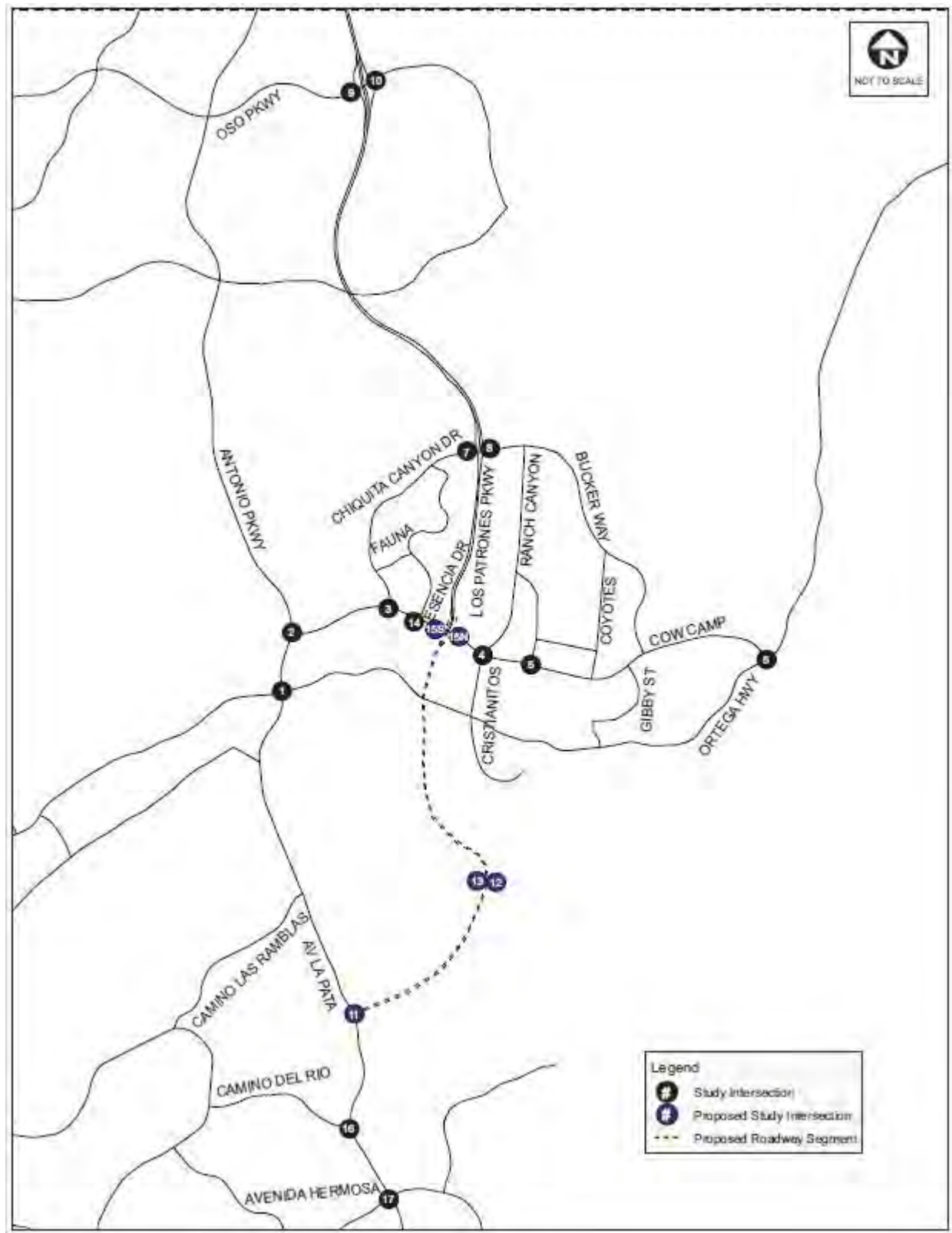


Figure 1-3: Study Intersections



n

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

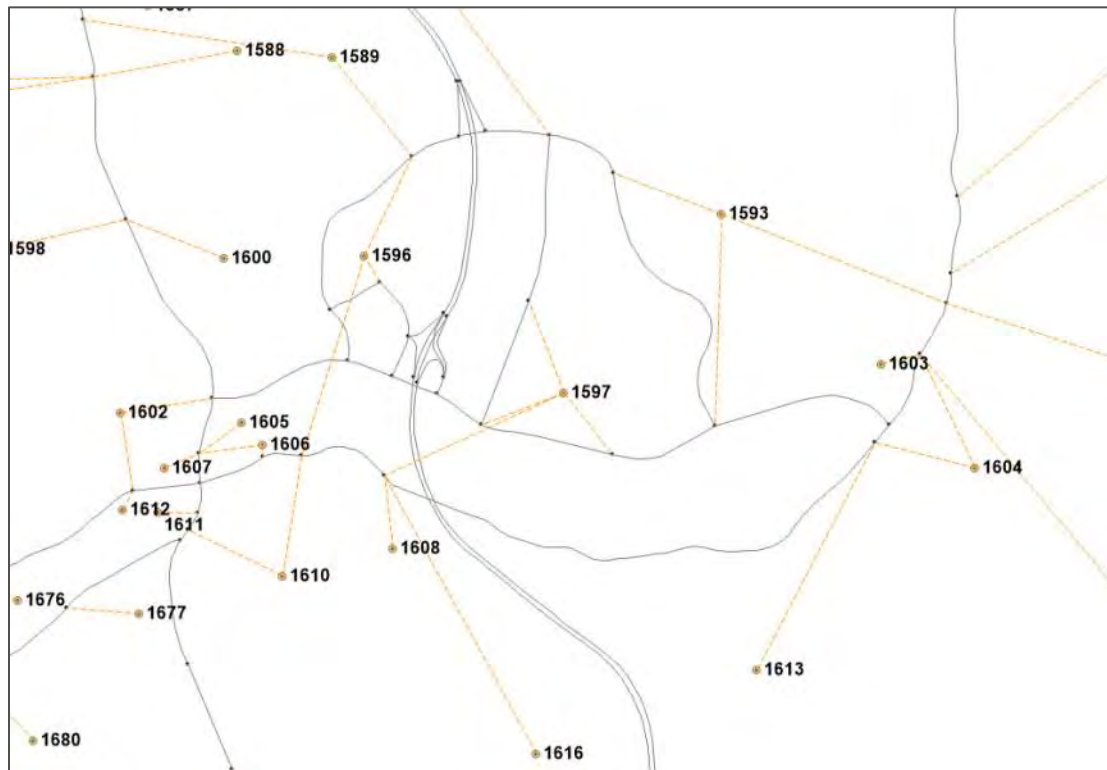


Figure 2-2: Revised OCTAM Traffic Analysis Zone (TAZ) System

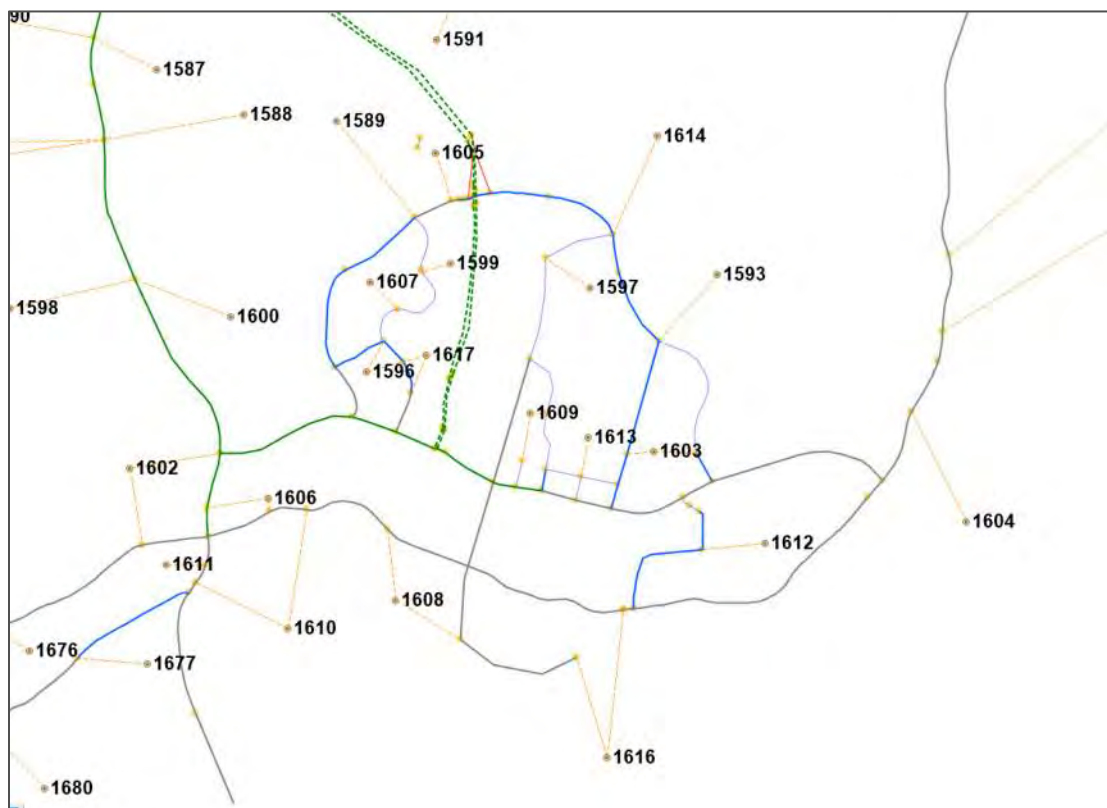


Table 2-1: OCTAM Traffic Analysis Zone (TAZ) Splits

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	<ul style="list-style-type: none"> Free flowing, virtually no delay. Minimal traffic. 	≤ 0.60
B	<ul style="list-style-type: none"> Free flow and choice of lanes. Delays are minimal. All cars clear intersection easily. 	> 0.60 to 0.70
C	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Free flowing, virtually no delay. Minimal traffic. 	≤ 10.0	≤ 10.0
B	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Good operation. Delays starting to become a factor but still within acceptable limits. 	> 20.0 to 35.0	> 15.0 to 25.0
D	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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
21	Esencia Drive between Andaza Street and Fauna Drive	Collector	2	12,500	2,500	0.20	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)

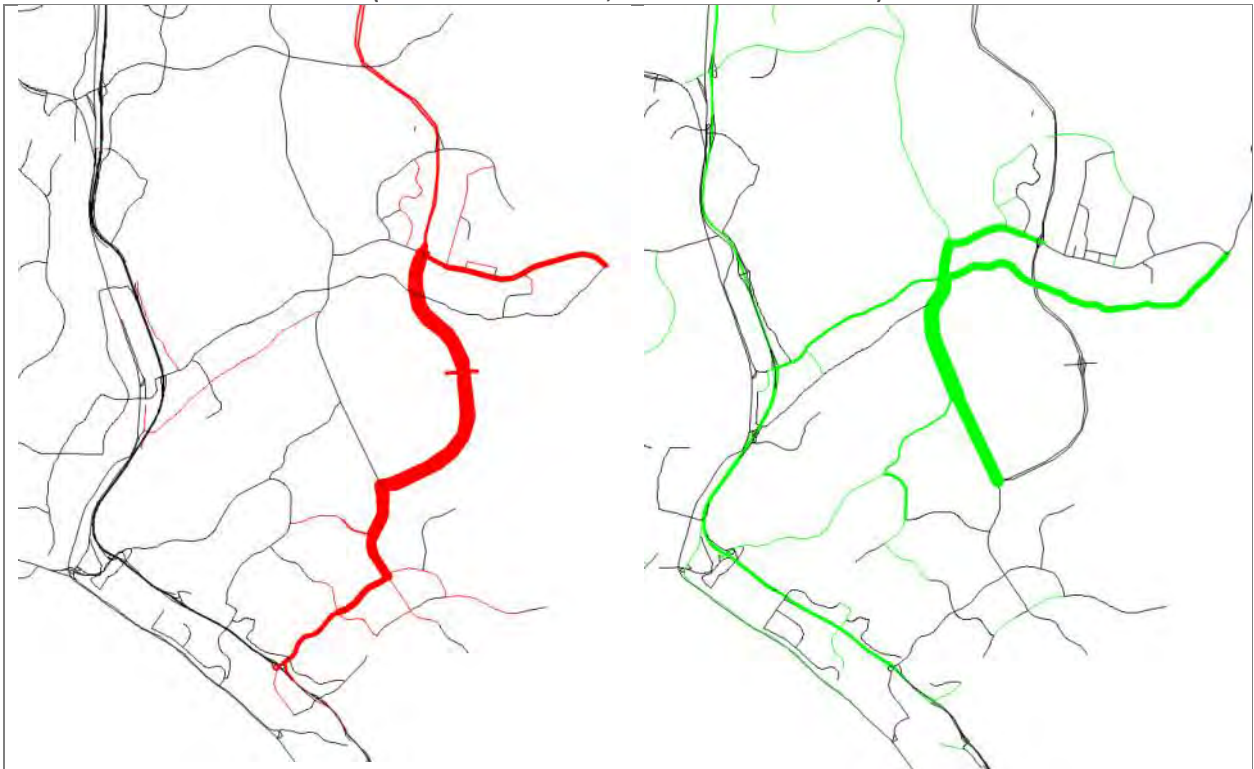


Table 5-1 and **Table 5-2** summarizes the weekday daily volumes, V/C ratios, and LOS for Future Year No Project and With Project scenarios, respectively.

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 Buckner Way	Primary	21,100	0.56	A
17	Cow Camp Road	Buckner Way to Ortega Highway	Primary	17,300	0.46	A
18	Coyotes	South of Buckner 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	Buckner Way	Los Patrones Parkway SB and NB On-Ramps	Secondary	15,700	0.63	B
27	Buckner Way	Los Patrones Parkway NB On-Ramp to Ranch Canyon	Secondary	19,800	0.79	C
28	Buckner 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 and 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.

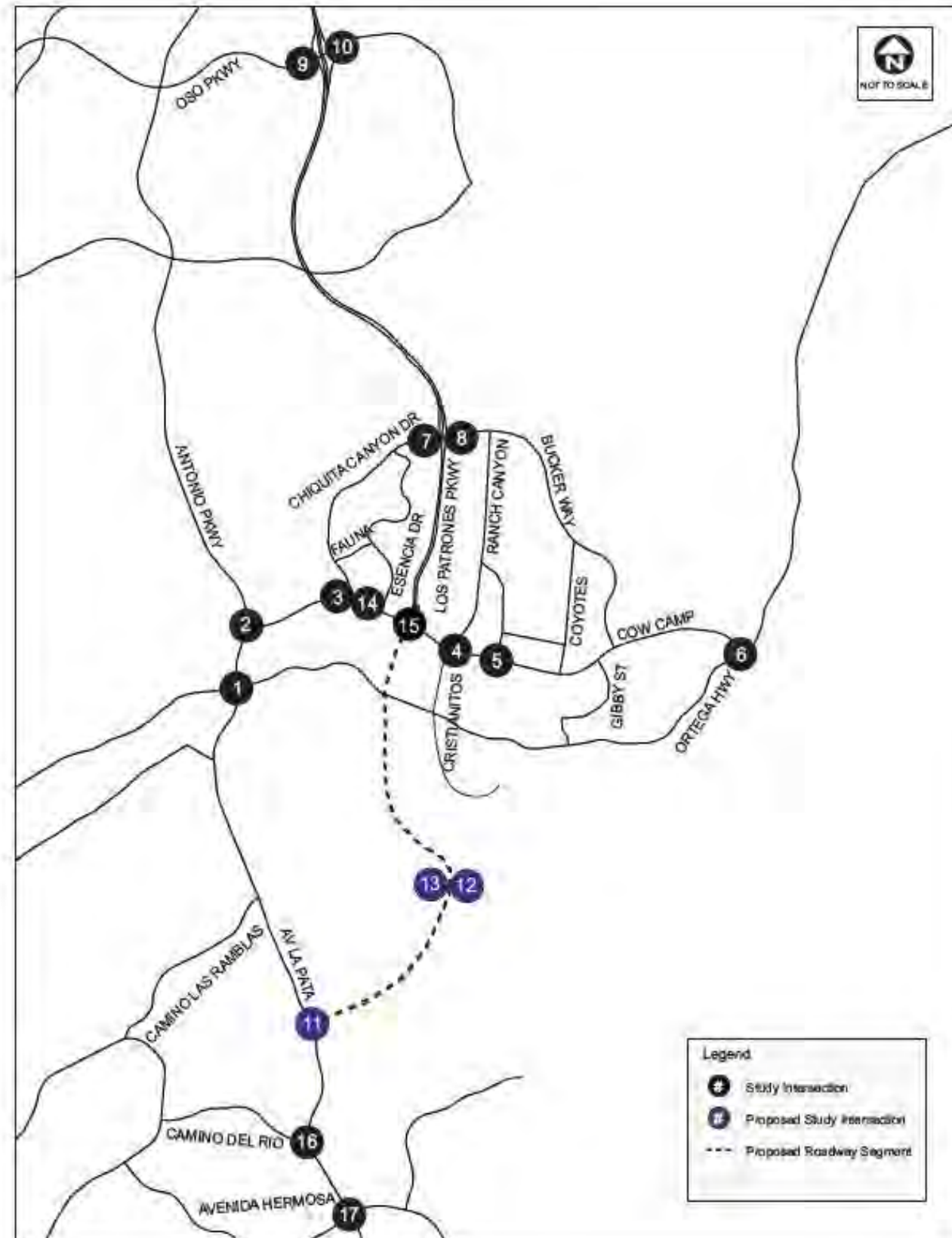
Table 5-5: Future Year 2045 (Ortega Highway 2-Lanes) Intersection ICU LOS Summary

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:

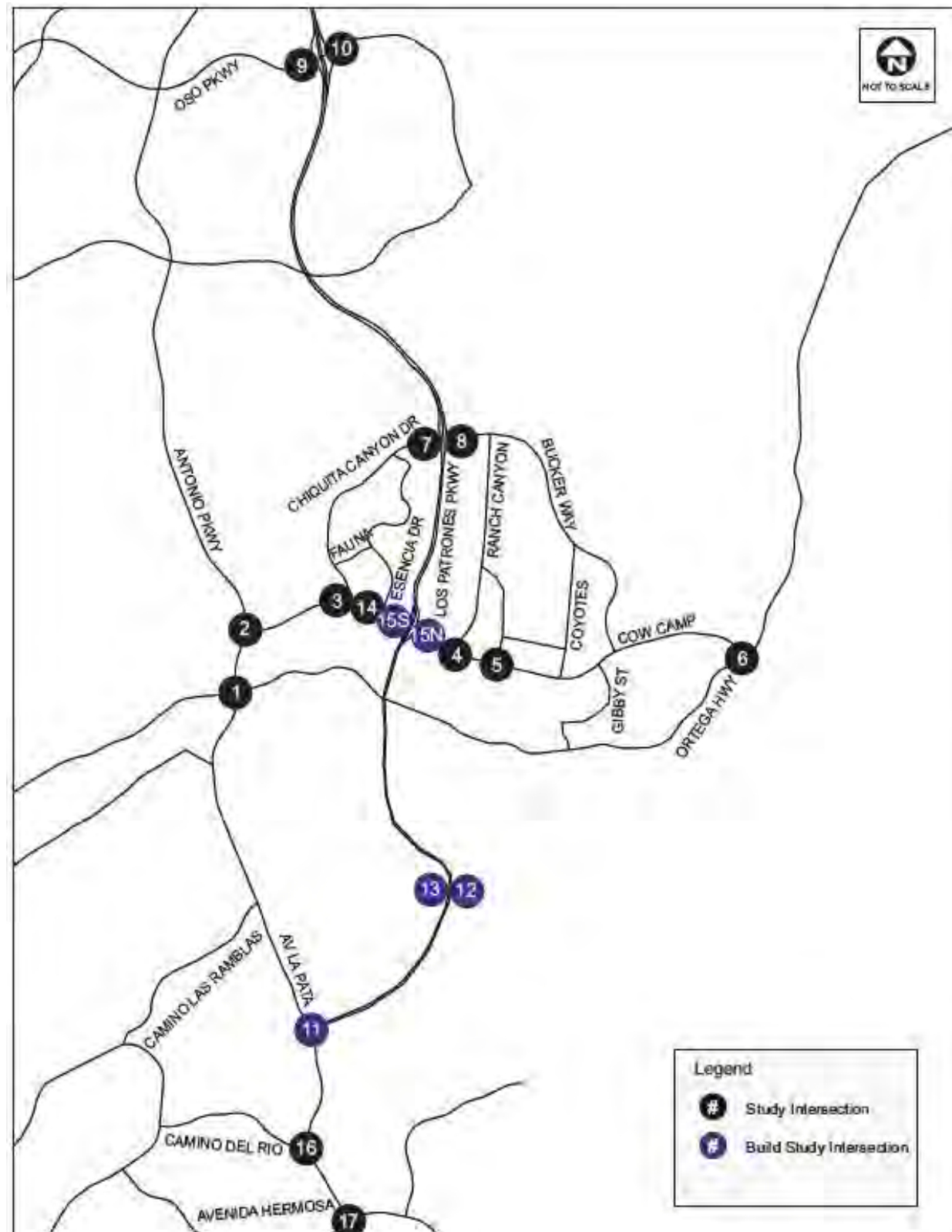
1. V/C or volume-to-capacity ratios are calculated for County intersections using the ICU methodology. Delays are calculated for Caltrans intersection using the HCM methodology.
2. LOS D is the County's and Caltrans' lowest acceptable LOS for arterial intersections.

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



1. Ortega Highway & Antonio Parkway <div><div><div>510/330</div><div>1930/1750</div><div>20/50</div></div><div><div>60/30</div><div>340/310</div><div>350/230</div></div></div> <div><div><div>290/480</div><div>300/330</div><div>300/300</div></div><div><div>220/350</div><div>1200/1805</div><div>100/100</div></div></div>	2. Cow Camp Road & Antonio Parkway <div><div><div>670/780</div><div>380/340</div></div><div><div>820/1050</div><div>1780/710</div></div></div> <div><div><div>610/2550</div><div>740/420</div></div></div>	3. Cow Camp Road & Chiquita Canyon Drive <div><div><div>650/330</div><div>10/10</div></div><div><div>5/10</div><div>2050/1320</div><div>10/10</div></div></div> <div><div><div>190/540</div><div>1050/1820</div><div>5/10</div></div><div><div>55</div><div>55</div><div>55</div></div></div>	4. Cow Camp Road & Ranch Canyon <div><div><div>130/170</div><div>10/20</div><div>10/10</div><div>10/10</div></div><div><div>10/10</div><div>2240/1070</div><div>30/30</div></div></div> <div><div><div>180/120</div><div>850/2000</div><div>30/200</div></div><div><div>20/60</div><div>10/10</div><div>240/50</div></div></div>	5. Cow Camp Road & Ledago Road <div><div><div>440/150</div><div>30/10</div></div><div><div>10/30</div><div>1300/780</div></div></div> <div><div><div>100/370</div><div>870/1200</div></div></div>	6. Cow Camp Road & Ortega Highway <div><div><div>940/530</div><div>80/480</div></div><div><div>500/690</div><div>10/10</div></div></div> <div><div><div>620/440</div><div>10/10</div></div></div>
7. Chiquita Canyon Drive & Los Patrones Parkway SB Ramp <div><div><div>230/370</div><div>600/850</div></div><div><div>180/220</div></div></div> <div><div><div>420/480</div></div></div>	8. Chiquita Canyon Drive & Los Patrones Parkway NB Ramp <div><div><div>720/620</div><div>180/220</div></div></div> <div><div><div>290/260</div><div>720/880</div></div></div>	9. Oso Parkway & Los Patrones Parkway SB Ramp <div><div><div>40/600</div><div>40/230</div></div><div><div>1310/1050</div><div>60/40</div></div></div> <div><div><div>890/530</div><div>890/810</div></div></div>	10. Oso Parkway & Los Patrones Parkway NB Ramp <div><div><div>280/30</div><div>630/430</div></div></div> <div><div><div>740/20</div><div>290/740</div></div><div><div>40/50</div><div>730/670</div></div></div>	11. Los Patrones & La Pata	12. PA5 Future Road & Los Patrones Parkway NB Ramp
13. PA5 Future Road & Los Patrones Parkway SB Ramp	14. Cow Camp & Esencia <div><div><div>150/60</div><div>140/50</div></div><div><div>50/120</div><div>1900/1280</div><div>5/10</div></div></div> <div><div><div>40/130</div><div>1000/1680</div><div>5/10</div></div><div><div>5/10</div><div>5/10</div><div>5/10</div><div>5/10</div></div></div>	15. Cow Camp & Los Patrones Parkway <div><div><div>60/420</div><div>60/640</div></div><div><div>730/330</div><div>1890/650</div></div></div> <div><div><div>640/60</div><div>1140/1730</div></div></div>	16. La Pata & Camino Del Rio <div><div><div>120/90</div><div>780/770</div></div><div><div>140/70</div><div>220/280</div></div></div> <div><div><div>870/140</div><div>120/220</div></div></div>	17. La Pata & Avenida Hermosa <div><div><div>280/300</div><div>390/190</div><div>20/20</div></div><div><div>620/610</div><div>140/310</div><div>50/10</div></div></div> <div><div><div>10/20</div><div>160/510</div><div>80/50</div></div><div><div>10/20</div><div>160/510</div><div>80/50</div></div></div>	

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



<p>1. Ortega Highway & Antonio Parkway</p> <p>450/330 1200/530 10/20</p> <p>50/10 340/300 270/50</p> <p>330/540 240/330 320/170</p> <p>80/210 570/1480 70/130</p>	<p>2. Cow Camp Road & Antonio Parkway</p> <p>680/600 370/480</p> <p>680/970 1220/280</p> <p>430/1790 680/420</p>	<p>3. Cow Camp Road & Chiquita Canyon Drive</p> <p>590/300 10/10</p> <p>10/10 1870/940 5/10</p> <p>150/490 660/1480 5/10</p> <p>5/5 5/5 5/5</p>	<p>4. Cow Camp Road & Ranch Canyon</p> <p>180/200 10/10</p> <p>10/10 2340/1250</p> <p>210/140 870/2120</p>	<p>5. Cow Camp Road & Ladaga Road</p> <p>480/180 30/10</p> <p>10/30 1340/910</p> <p>110/390 870/1250</p>	<p>6. Cow Camp Road & Ortega Highway</p> <p>580/680 420/340</p> <p>680/950 10/10</p> <p>340/390 10/10</p>
<p>7. Chiquita Canyon Drive & Los Patrones Parkway SB Ramp</p> <p>230/370 990/660</p> <p>170/220</p> <p>430/480</p>	<p>8. Chiquita Canyon Drive & Los Patrones Parkway NB Ramp</p> <p>890/810 170/220</p> <p>310/280 710/880</p>	<p>9. Oso Parkway & Los Patrones Parkway SB Ramp</p> <p>40/530 30/230</p> <p>1190/1000 80/50</p> <p>980/520 630/630</p>	<p>10. Oso Parkway & Los Patrones Parkway NB Ramp</p> <p>270/30 640/430</p> <p>730/20 280/720</p> <p>50/70 830/620</p>	<p>11. Los Patrones & La Pata</p> <p>100/500 10/10</p> <p>10/10 1090/1090</p> <p>1050/1070 410/400</p>	<p>12. PA5 Future Road & Los Patrones Parkway NB Ramp</p> <p>130/30 90/40</p> <p>90/30 20/140</p> <p>1050 30/60 10/50</p>
<p>13. PA5 Future Road & Los Patrones Parkway SB Ramp</p> <p>10/110 30/60</p> <p>100/60 50/40</p> <p>50/80 60/20</p>	<p>14. Cow Camp & Essencia</p> <p>140/80 150/80</p> <p>80/180 1530/890 5/10</p> <p>40/130 820/1350 5/10</p> <p>5/10 5/10 5/10</p>	<p>15. Cow Camp & Los Patrones Parkway SB Ramp</p> <p>20/150 340/300</p> <p>1590/920 610/400</p> <p>720/1350 90/100</p>	<p>16. Cow Camp & Los Patrones Parkway NB Ramp</p> <p>390/230 2110/1220</p> <p>180/20 880/1830</p> <p>390/840 100/100</p>	<p>16. La Pata & Camino Del Rio</p> <p>210/220 1170/1290</p> <p>210/170 200/250</p> <p>1240/1640 120/180</p>	<p>17. La Pata & Avenida Hermosa</p> <p>780/790 610/300 350/340</p> <p>310/340 380/180 20/20</p> <p>780/730 140/290 50/10</p> <p>10/20 220/800 60/50</p>

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

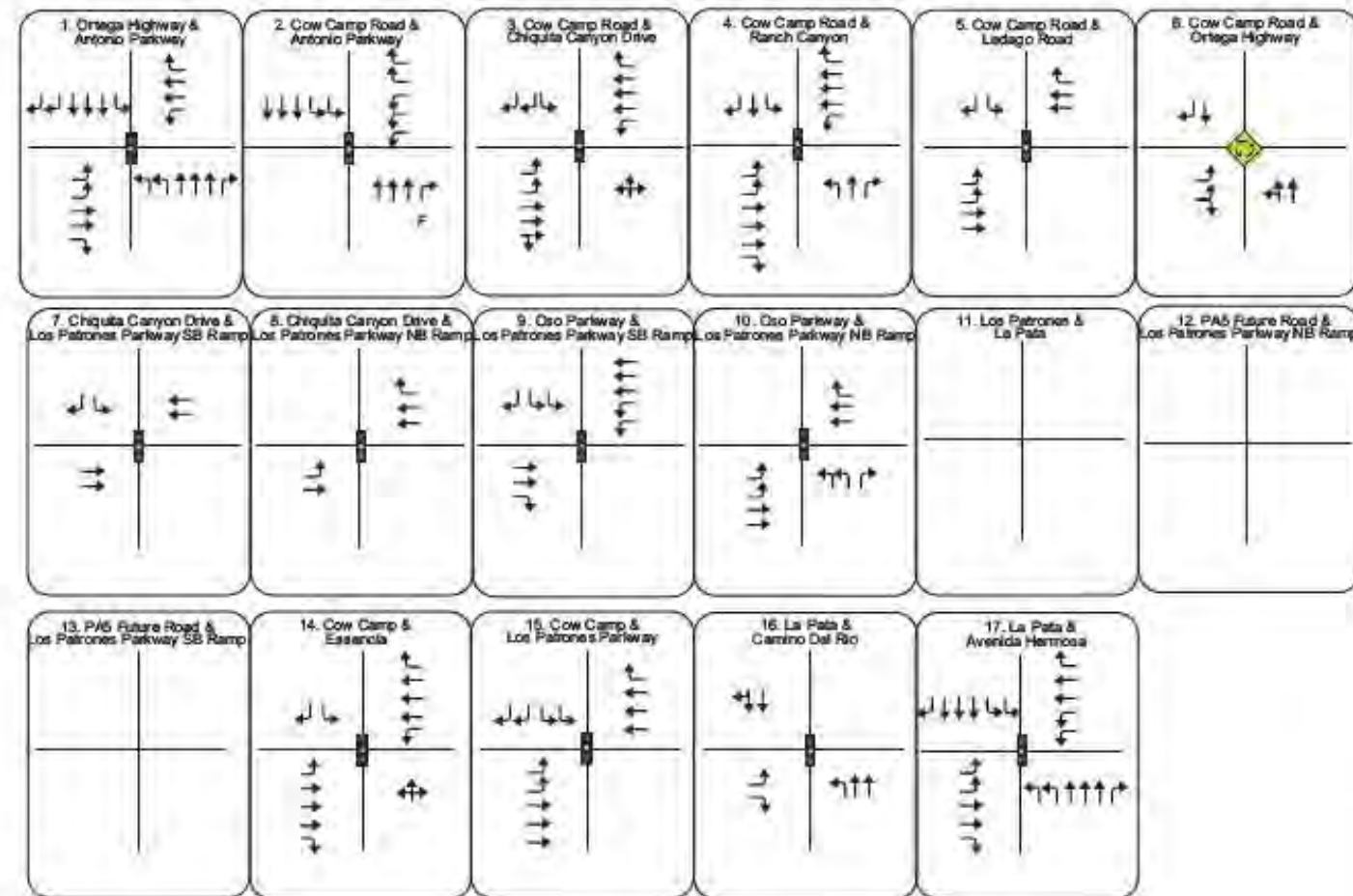
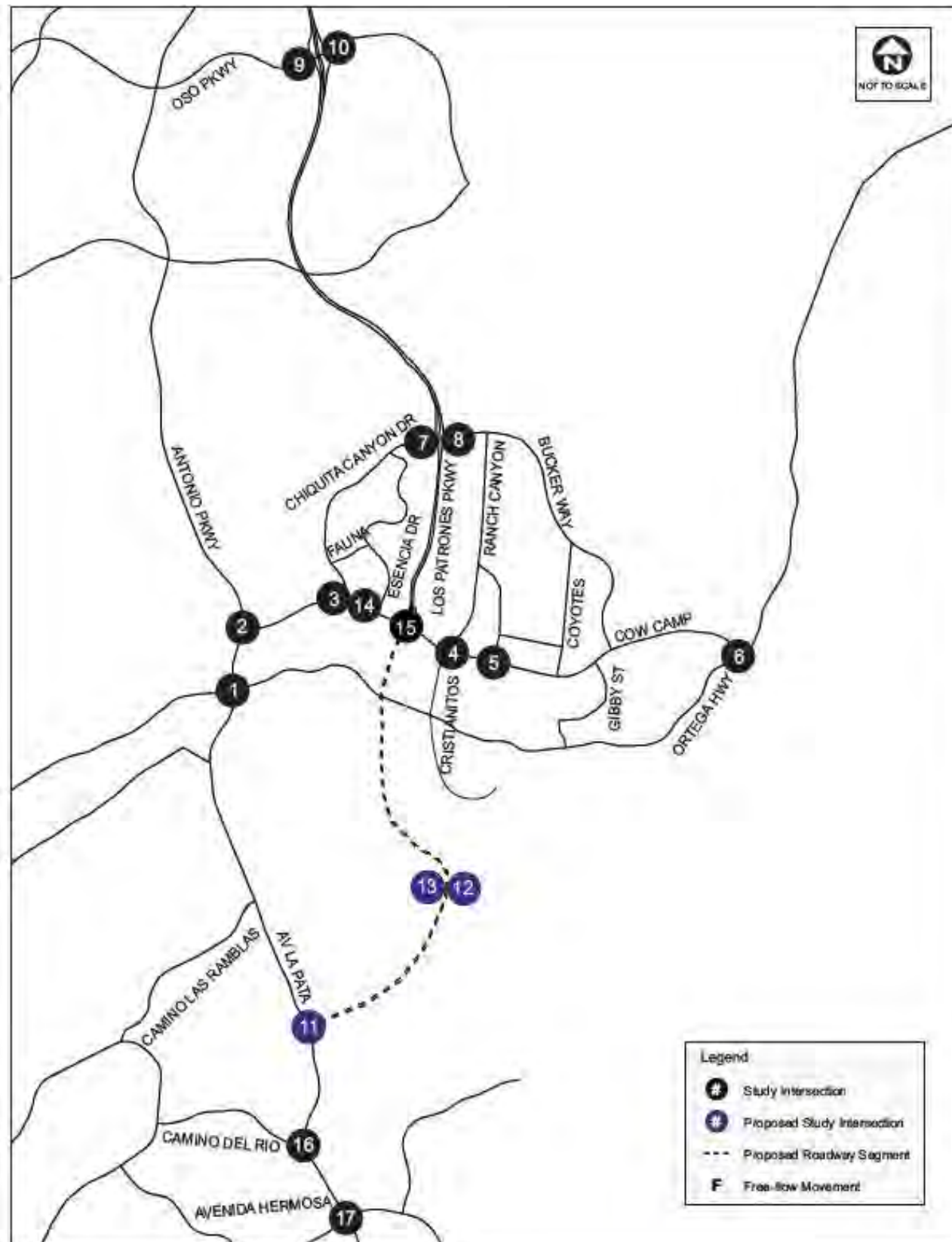


Figure 5-5: Future Year (2-Lane Ortega Highway) With Project Intersection Lane Configurations

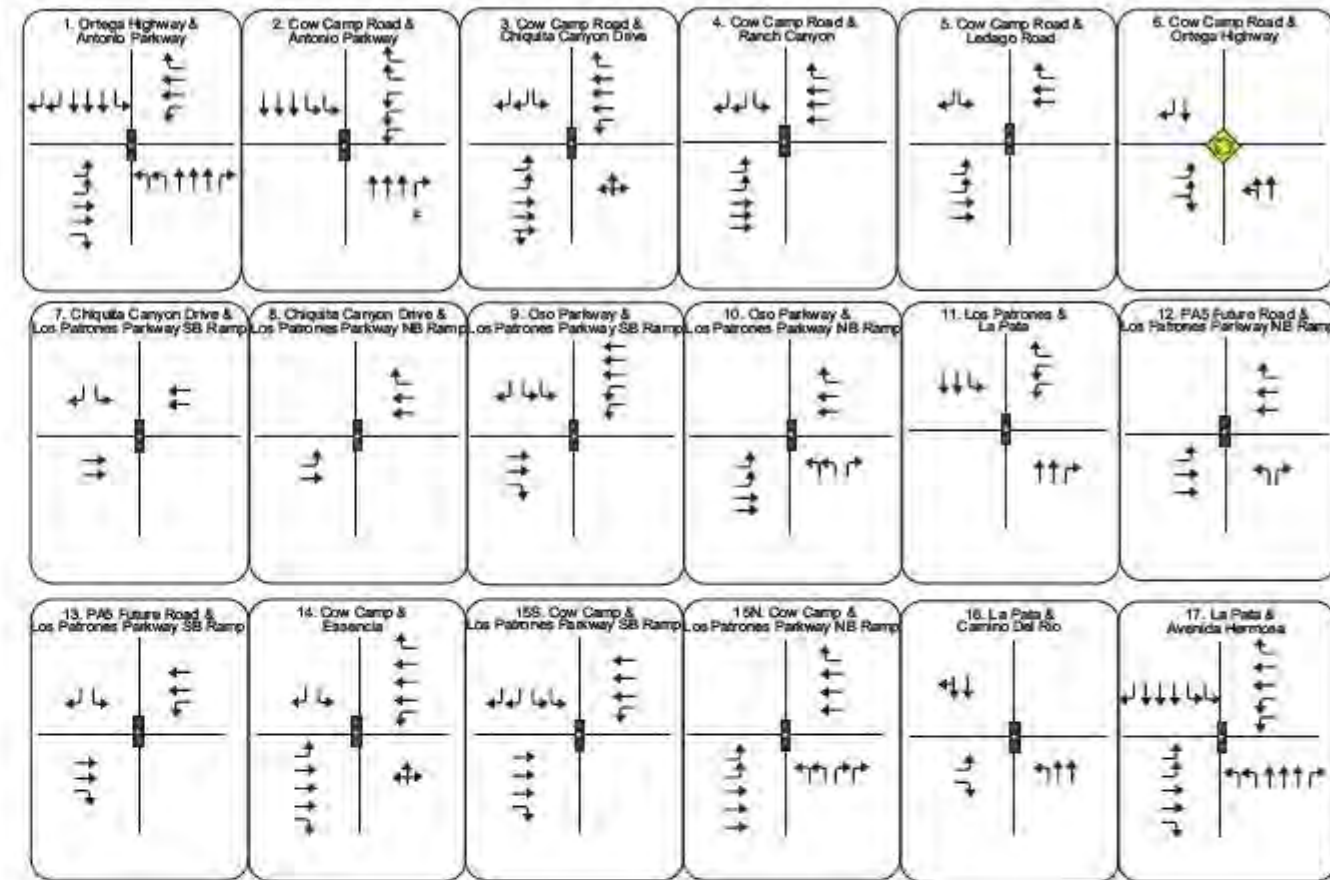
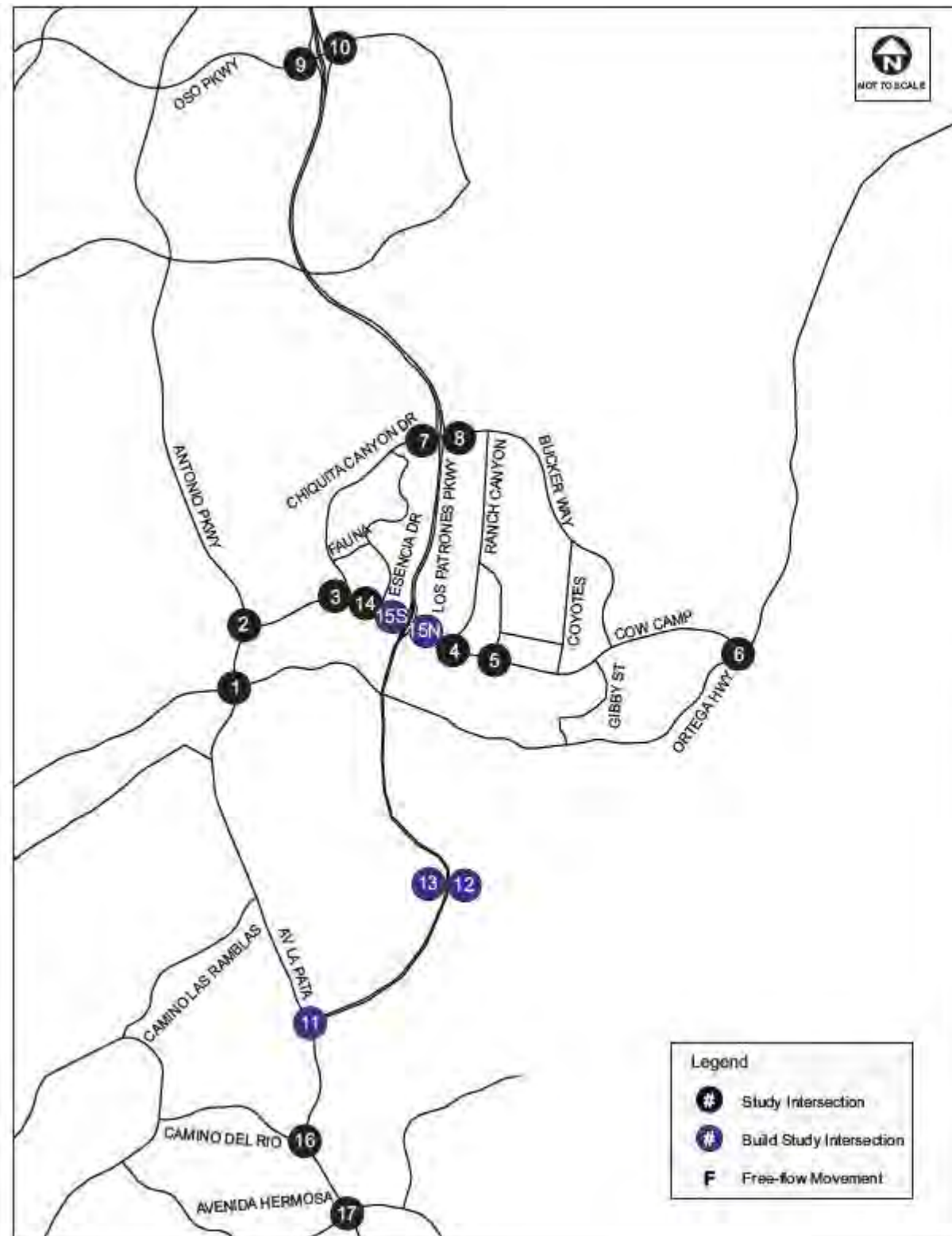


Figure 5-7: Future Year (2-Lane Ortega Highway) No Project PM Peak Hour Intersection ICU LOS

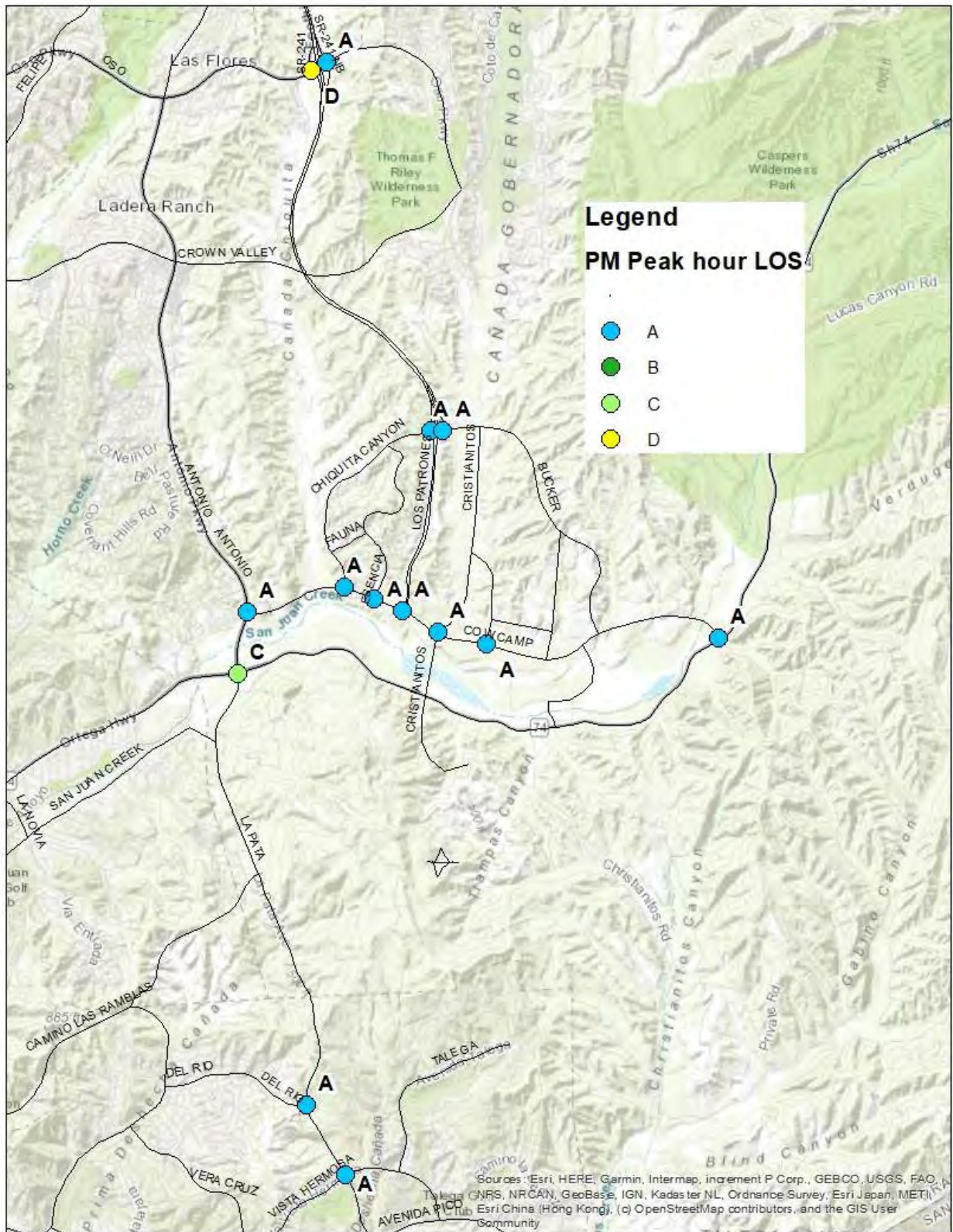
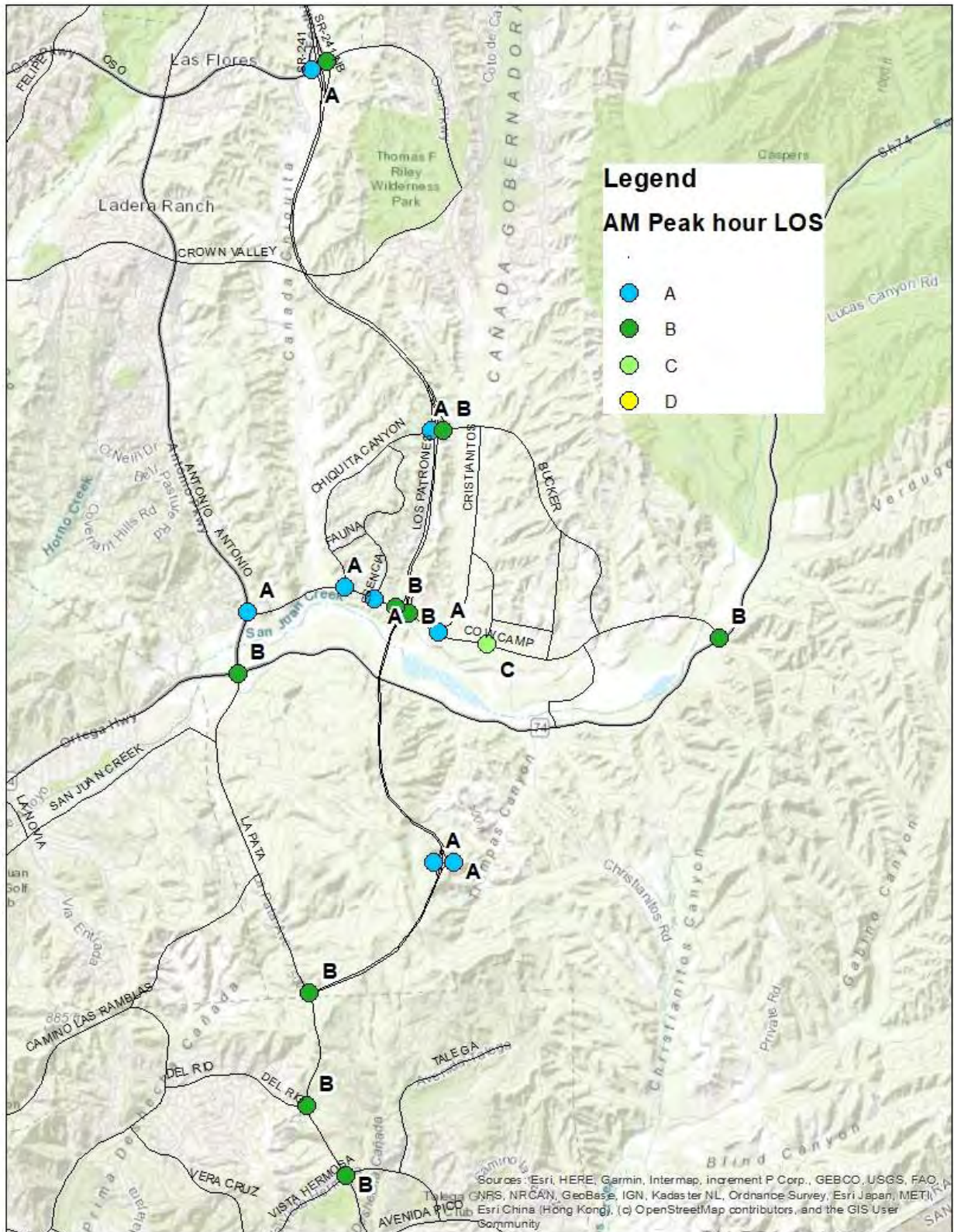


Figure 5-8: Future Year (2-Lane Ortega Highway) With Project AM Peak Hour Intersection ICU LOS



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? (Yes/No)
			Delay	LOS	Delay	LOS	
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? (Yes/No)
			Delay	LOS	Delay	LOS	
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 deficiency 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)

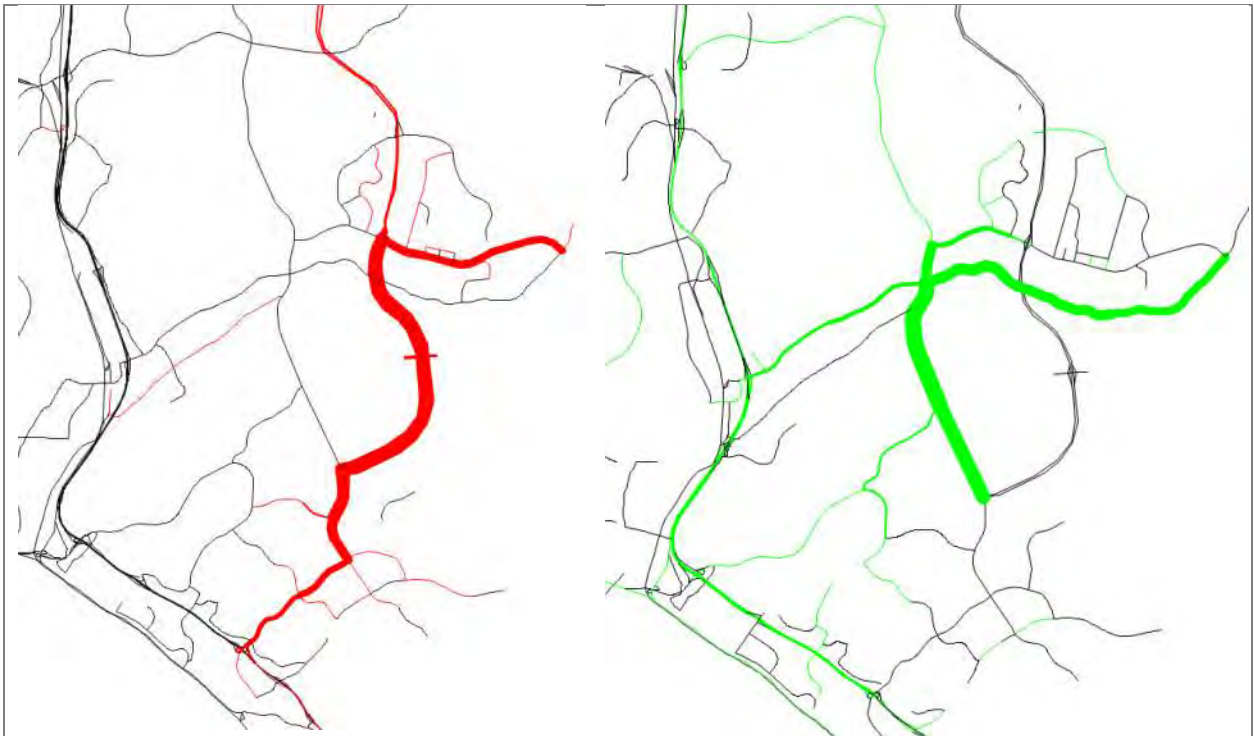


Table 6-1 and **Table 6-2** summarize the weekday daily volumes, V/C ratios, and LOS under Future Year No Project and With Project scenarios, respectively.

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**.

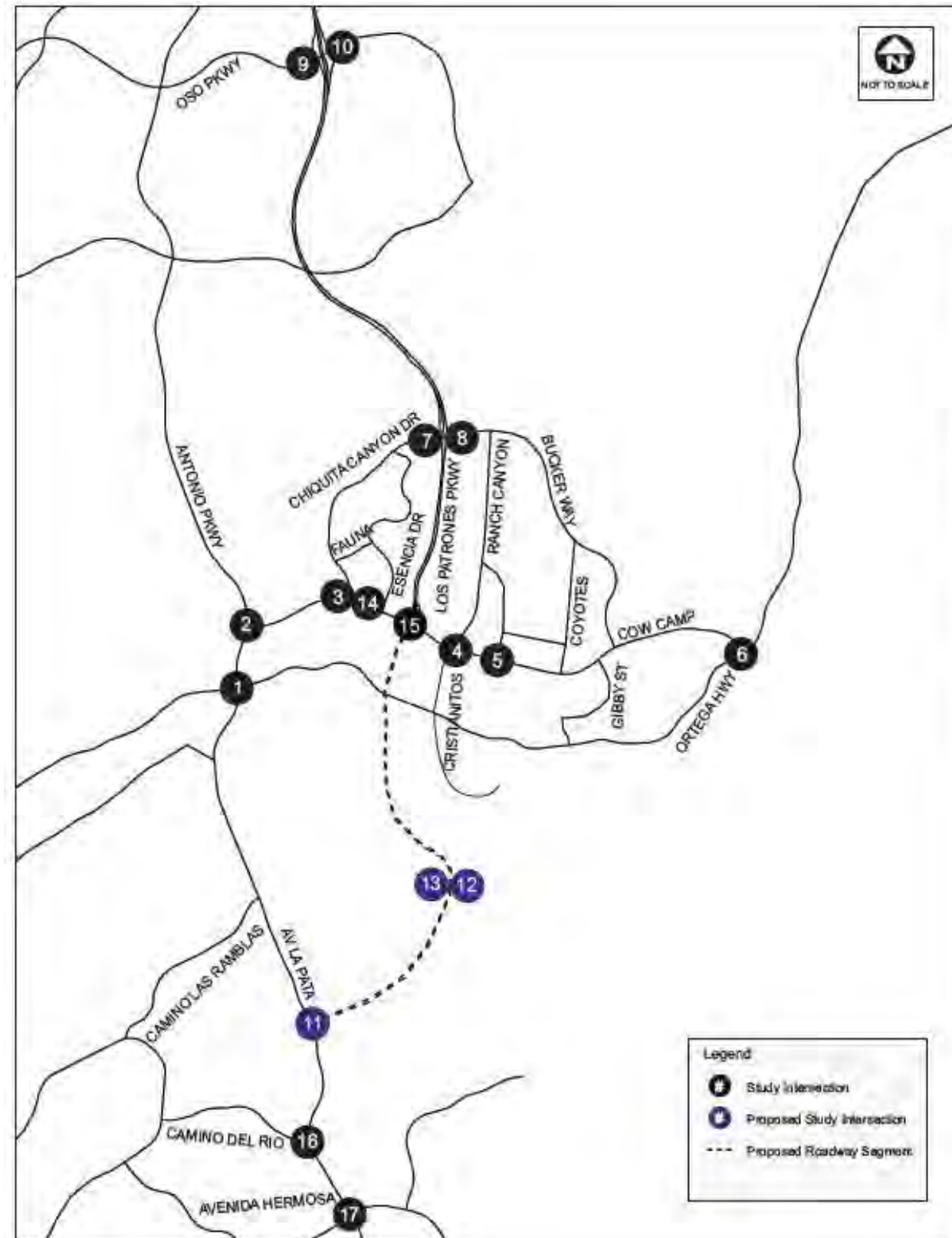
Table 6-5: Future Year 2045 (4-Lane Ortega Highway) Intersection ICU LOS Summary

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			
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						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:

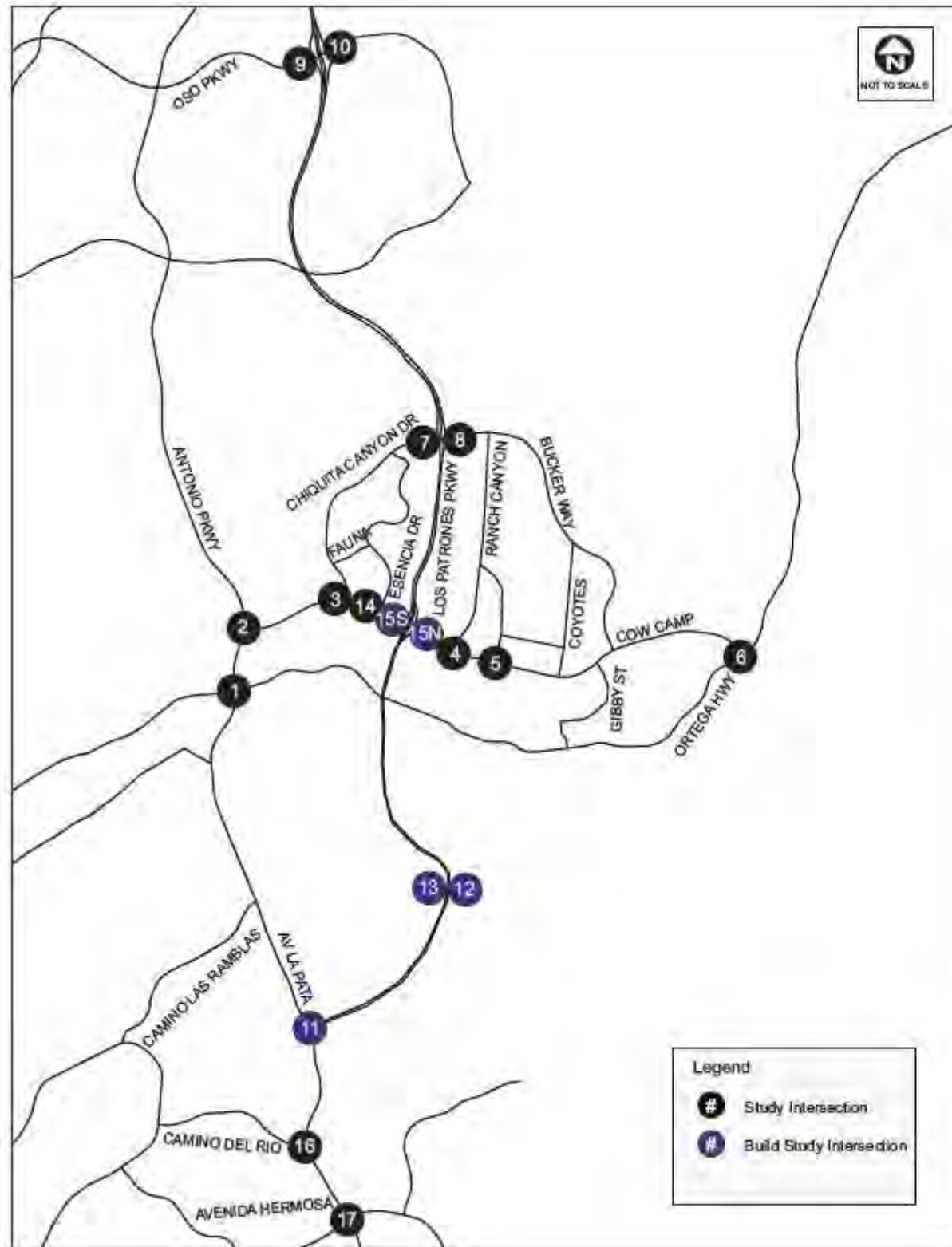
1. V/C or volume-to-capacity ratios are calculated for County intersections using the ICU methodology. Delays are calculated for Caltrans intersection using the HCM methodology.
2. LOS D is the County's and Caltrans' lowest acceptable LOS for arterial intersections.

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



<p>1. Ortega Highway & Antonio Parkway</p> <p>450/450 1830/1150 20/130</p> <p>110/70 480/540 520/330</p> <p>290/540 360/510 290/40</p> <p>1340/1805 100/80 200/680</p>	<p>2. Cow Camp Road & Antonio Parkway</p> <p>880/080 340/1080 710/880</p> <p>580/700 1200/870</p> <p>880/660 570/70</p>	<p>3. Cow Camp Road & Chiquita Canyon Drive</p> <p>650/320 01/01 10/10</p> <p>1740/1250 5/10</p> <p>170/540 1040/1510 5/10</p> <p>5/10 5/10 5/10</p>	<p>4. Cow Camp Road & Ranch Canyon</p> <p>300/170 1020 01/01</p> <p>10/10 2000/1010 30/30</p> <p>180/130 830/1750 20/120</p> <p>200/0 10/0 140/30</p>	<p>5. Cow Camp Road & Ledago Road</p> <p>380/150 01/30 10/30</p> <p>1120/700</p> <p>100/310 980/1000</p>	<p>6. Cow Camp Road & Ortega Highway</p> <p>840/580 720/490</p> <p>490/880 10/10</p> <p>5800/10 10/10</p>
<p>7. Chiquita Canyon Drive & Los Patrones Parkway SB Ramp</p> <p>230/370 800/680</p> <p>180/210</p> <p>420/470</p>	<p>8. Chiquita Canyon Drive & Los Patrones Parkway NB Ramp</p> <p>710/620 180/210</p> <p>300/280 720/970</p>	<p>9. Oso Parkway & Los Patrones Parkway SB Ramp</p> <p>800/0 02/01 10/210</p> <p>1290/1050 80/40</p> <p>990/530 690/800</p>	<p>10. Oso Parkway & Los Patrones Parkway NB Ramp</p> <p>280/30 630/430</p> <p>740/20 290/740</p> <p>40/50 710/680</p>	<p>11. Los Patrones & La Pata</p>	<p>12. PA5 Future Road & Los Patrones Parkway NB Ramp</p>
<p>13. PA5 Future Road & Los Patrones Parkway SB Ramp</p>	<p>14. Cow Camp & Esencia</p> <p>80/80 09/30 50/120</p> <p>1590/1190 5/10</p> <p>40/130 1000/1370 5/10</p> <p>5/10 5/10 5/10</p>	<p>15. Cow Camp & Los Patrones Parkway</p> <p>80/430 03/00 450/630</p> <p>700/10 1580/880</p> <p>580/10 1140/1430</p>	<p>16. La Pata & Camino Del Rio</p> <p>2080 720/990 1-1</p> <p>140/40 210/250</p> <p>950/1000 130/220</p>	<p>17. La Pata & Avenida Hermosa</p> <p>680/610 540/220 310/300</p> <p>270/310 390/190 20/20</p> <p>620/620 140/310 50/10</p> <p>10/20 160/510 80/50</p>	

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



1. Ortega Highway & Antonio Parkway <div> <div> <div>580/380</div> <div>1200/650</div> <div>70/20</div> <div>390/240</div> <div>240/30</div> </div> <div> <div>450/540</div> <div>270/250</div> <div>350/170</div> <div>80/20</div> <div>50/30</div> </div> </div>	2. Cow Camp Road & Antonio Parkway <div> <div>700/720</div> <div>300/830</div> <div>710/830</div> <div>920/470</div> </div> <div> <div>450/1100</div> <div>680/50</div> </div>	3. Cow Camp Road & Chiquita Canyon Drive <div> <div>580/300</div> <div>10/10</div> <div>10/10</div> <div>1650/940</div> <div>5/10</div> </div> <div> <div>150/490</div> <div>660/1470</div> <div>5/10</div> <div>5/5</div> <div>5/5</div> </div>	4. Cow Camp Road & Ranch Canyon <div> <div>150/190</div> <div>10/10</div> <div>10/10</div> <div>2330/1270</div> </div> <div> <div>210/140</div> <div>1090/2150</div> </div>	5. Cow Camp Road & Ledago Road <div> <div>480/160</div> <div>30/10</div> <div>10/30</div> <div>1330/930</div> </div> <div> <div>110/400</div> <div>890/1260</div> </div>	6. Cow Camp Road & Ortega Highway <div> <div>1000/700</div> <div>560/360</div> </div> <div> <div>710/1000</div> <div>10/10</div> <div>380/480</div> </div>
7. Chiquita Canyon Drive & Los Patrones Parkway SB Ramp <div> <div>230/370</div> <div>590/660</div> <div>170/220</div> </div> <div> <div>430/470</div> </div>	8. Chiquita Canyon Drive & Los Patrones Parkway NB Ramp <div> <div>700/810</div> <div>170/220</div> </div> <div> <div>310/260</div> <div>710/670</div> </div>	9. Oso Parkway & Los Patrones Parkway SB Ramp <div> <div>40/590</div> <div>30/230</div> <div>1190/1000</div> <div>80/50</div> </div> <div> <div>990/510</div> <div>630/690</div> </div>	10. Oso Parkway & Los Patrones Parkway NB Ramp <div> <div>270/30</div> <div>640/430</div> </div> <div> <div>740/20</div> <div>280/720</div> <div>60/70</div> <div>630/620</div> </div>	11. Los Patrones & La Pata <div> <div>400/490</div> <div>10/10</div> <div>1070/1090</div> <div>10/10</div> </div> <div> <div>1100/1070</div> <div>390/400</div> </div>	12. PAB Future Road & Los Patrones Parkway NB Ramp <div> <div>110/30</div> <div>80/40</div> </div> <div> <div>80/30</div> <div>20/120</div> <div>10/50</div> <div>30/80</div> </div>
13. PAB Future Road & Los Patrones Parkway SB Ramp <div> <div>10/100</div> <div>20/80</div> <div>90/60</div> <div>50/40</div> </div> <div> <div>50/80</div> <div>60/20</div> </div>	14. Cow Camp & Essencia <div> <div>140/60</div> <div>200/60</div> <div>80/160</div> <div>1510/890</div> <div>5/10</div> </div> <div> <div>40/130</div> <div>820/1350</div> <div>5/10</div> <div>5/10</div> <div>5/10</div> </div>	15S. Cow Camp & Los Patrones Parkway SB Ramp <div> <div>20/150</div> <div>350/320</div> <div>1570/920</div> <div>60/410</div> </div> <div> <div>720/1350</div> <div>90/90</div> </div>	15N. Cow Camp & Los Patrones Parkway NB Ramp <div> <div>410/240</div> <div>2080/1220</div> </div> <div> <div>180/20</div> <div>900/1850</div> <div>400/640</div> <div>90/100</div> </div>	16. La Pata & Camino Del Rio <div> <div>200/240</div> <div>1060/1370</div> </div> <div> <div>220/160</div> <div>200/230</div> <div>1310/500</div> <div>120/190</div> </div>	17. La Pata & Avenida Hermosa <div> <div>780/790</div> <div>046/350</div> <div>310/340</div> <div>330/180</div> <div>20/20</div> </div> <div> <div>780/740</div> <div>140/290</div> <div>50/10</div> <div>10/20</div> <div>220/610</div> </div>

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

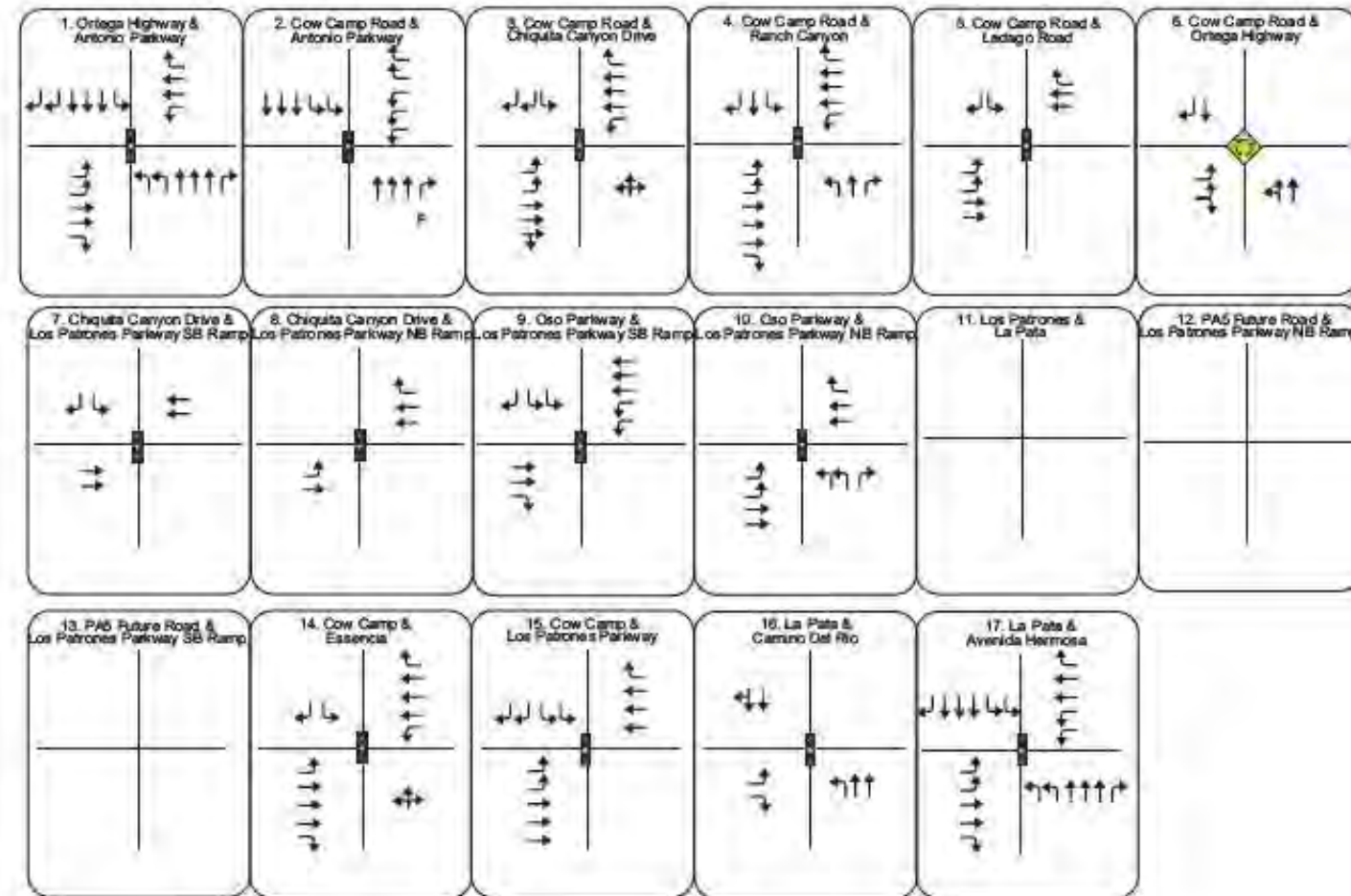
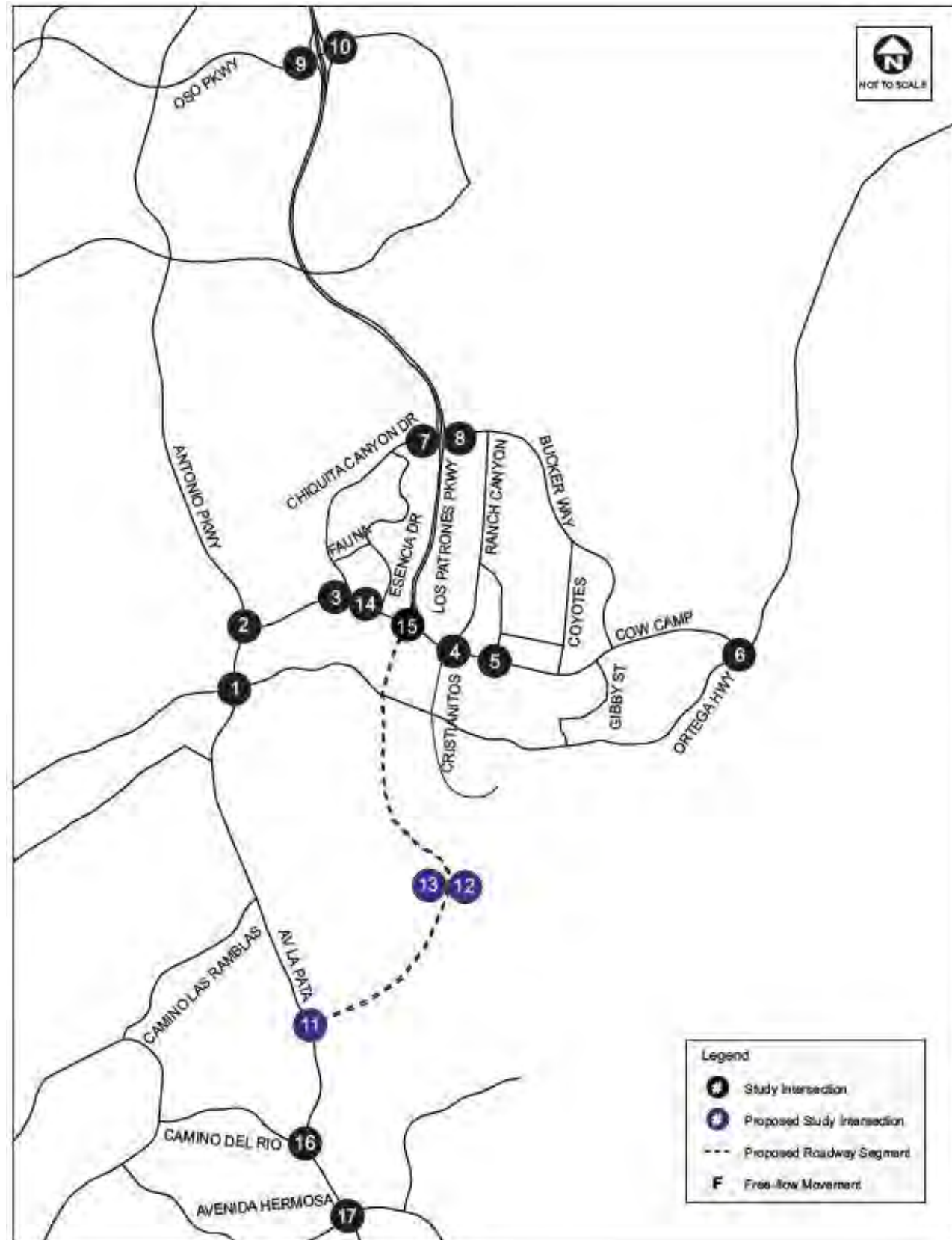


Figure 6-5 Future Year (4-Lane Ortega Highway) With Project Intersection Lane Configurations

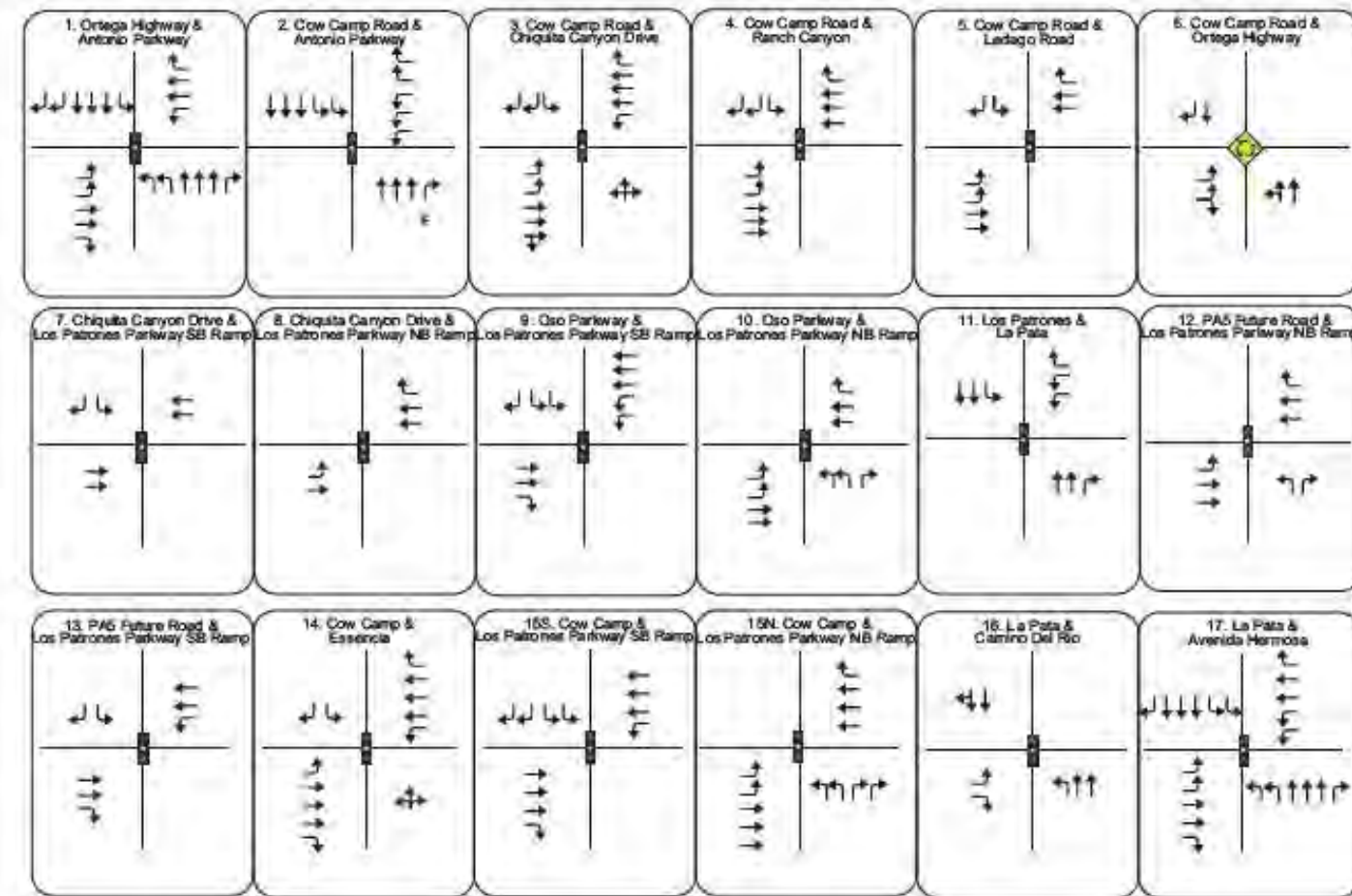
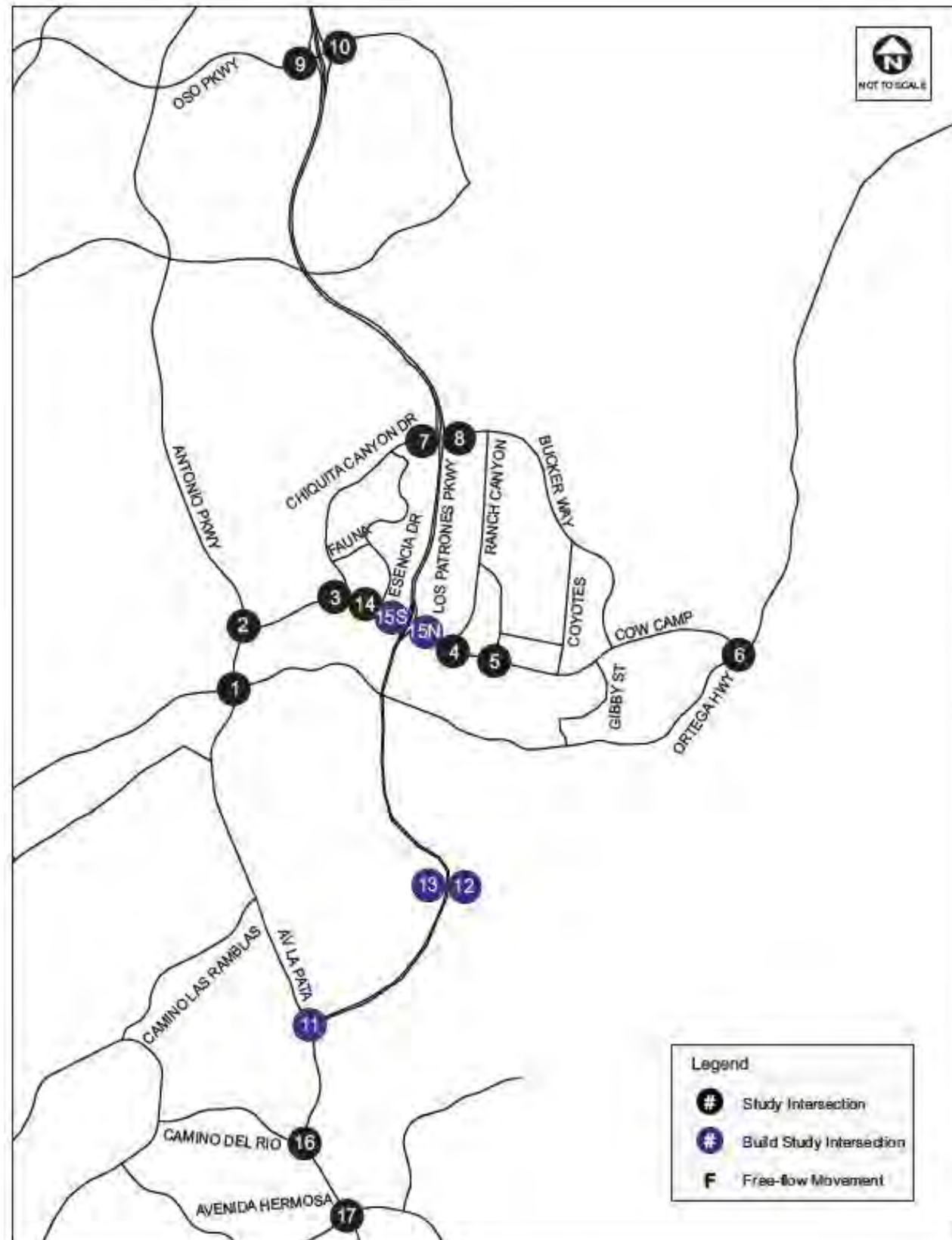


Figure 6-8: Future Year (4-Lane Ortega Highway) With Project AM Peak Hour Intersection V/C Ratio

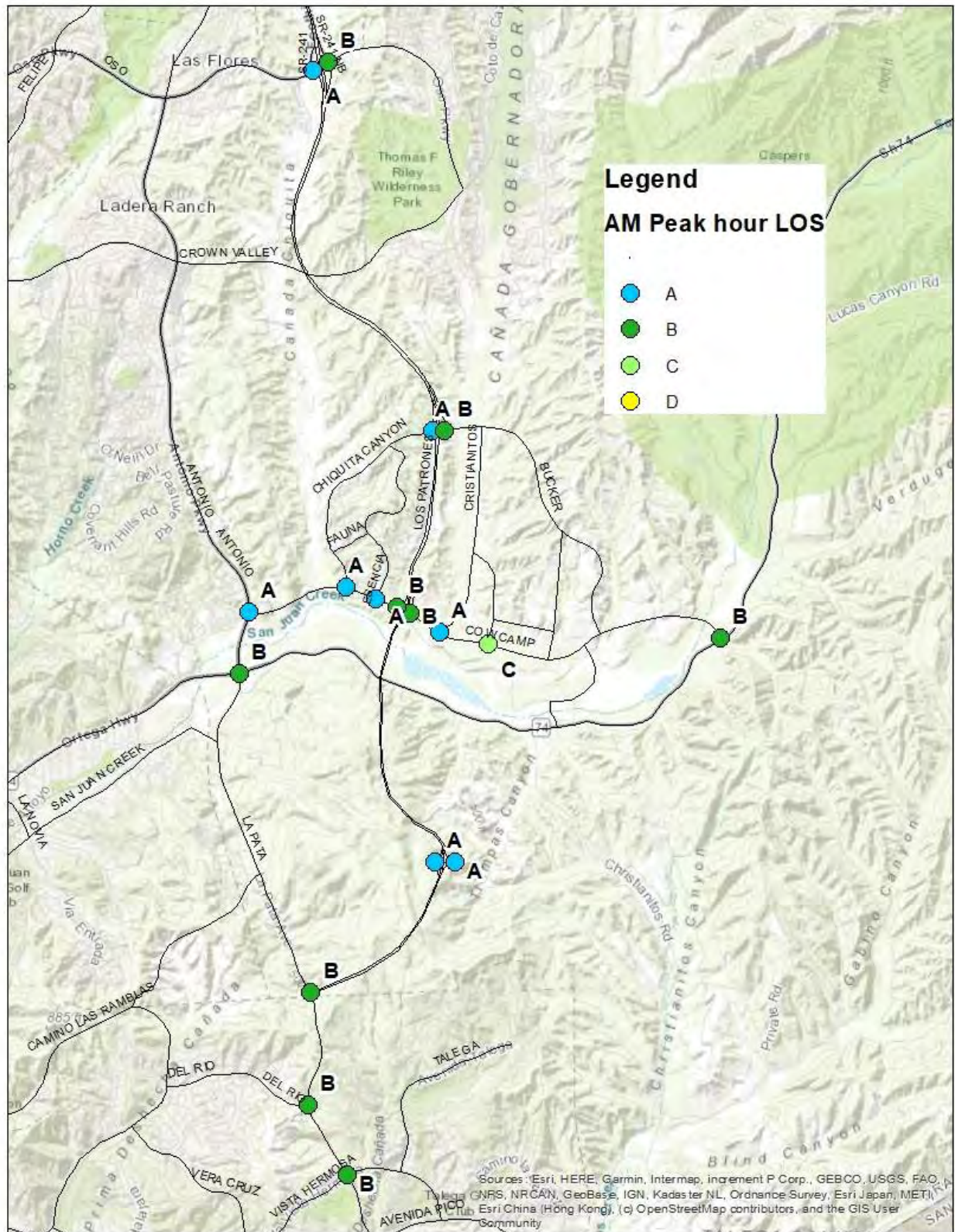
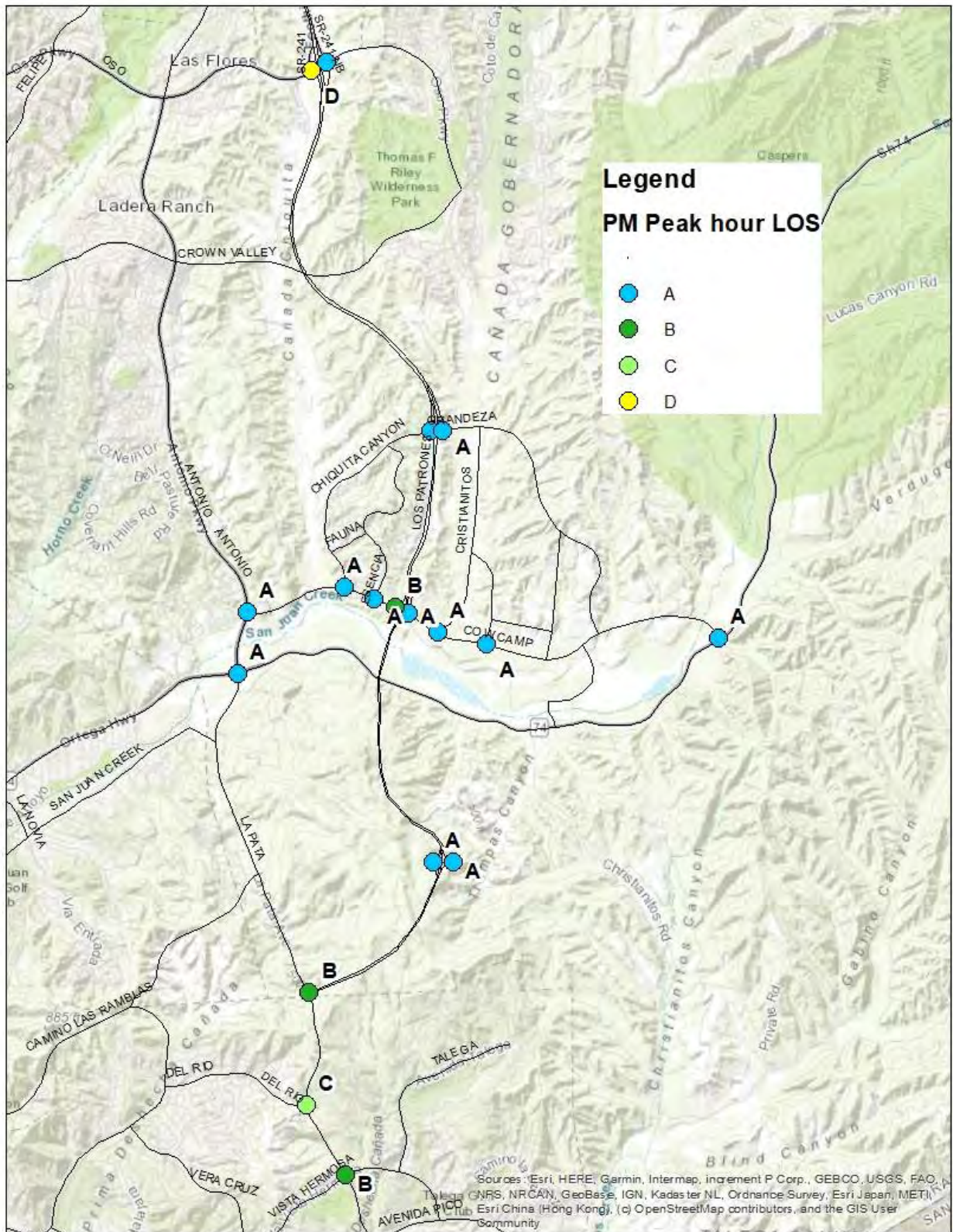


Figure 6-9: Future Year (4-Lane Ortega Highway) With Project PM Peak Hour Intersection V/C Ratio



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? (Yes/No)
			Delay	LOS	Delay	LOS	
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? (Yes/No)
			Delay	LOS	Delay	LOS	
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 deficiency 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

OCTA's 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

ID	Segment	Between	Ortega	Scenario	Daily				AM Peak		PM Peak Hour		Max Peak Hour		
					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								
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR			
			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:		3								
Intersection:		Cow Camp Road/Chiquita Canyon Drive								
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR			
			CAPACITY	VOLUME	V/C		CAPACITY	VOLUME	V/C	
NBL	1.0		1,700	5	0.01	*	1,700	5	0.01	*
NBT				5				5		
NBR				5				5		
SBL	1.0		1,700	10	0.01	*	1,700	10	0.01	*
SBT	2.0		3,400	650	0.19	*	3,400	330	0.10	
SBR										
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									
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR		
			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								
MOVEMENT	LANES	Free?	AM PEAK HOUR			PM PEAK HOUR				
			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								
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR			
			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								
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR			
			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:		9								
Intersection:		Oso Parkway/Los Patrones Parkway & SR-241 SB Ramp								
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR			
			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									
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR				
			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								
MOVEMENT	LANES	Free?	AM PEAK HOUR			PM PEAK HOUR		
			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								
MOVEMENT	LANES	Free?	AM PEAK HOUR			PM PEAK HOUR		
			CAPACITY	VOLUME	V/C	CAPACITY	VOLUME	V/C
NBL								
NBT								
NBR								
SBL								
SBT								
SBR								
EBL								
EBT								
EBR								
WBL								
WBT								
WBR								
</								

Project: South County MPAH										
Scenario: 2045 No Project (2L Ortega Hwy)										
ID: 14										
Intersection: Cow Camp/Essencia										
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR			
			CAPACITY	VOLUME	V/C		CAPACITY	VOLUME	V/C	
NBL	1.0		1,700	5	0.01	*	1,700	10	0.02	*
NBT				5				10		
NBR				5				10		
SBL	1.0		1,700	140	0.08	*	1,700	50	0.03	*
SBT	1.0		1,700	150	0.09	*	1,700	60	0.04	
SBR										
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:		16								
Intersection:		La Pata/Camino Del Rio								
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR			
			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									
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR		
			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								
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR			
			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									
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR				
			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								
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR			
			CAPACITY	VOLUME	V/C		CAPACITY	VOLUME	V/C	
NBL	1.0		1,700	5	0.01	*	1,700	5	0.01	*
NBT				5				5		
NBR				5				5		
SBL	1.0		1,700	10	0.01	*	1,700	10	0.01	*
SBT	2.0		3,400	590	0.17	*	3,400	300	0.09	
SBR										
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								
MOVEMENT	LANES	Free?	AM PEAK HOUR			PM PEAK HOUR				
			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: 6 Intersection: Cow Camp Road/Ortega Highway									
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR		
			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								
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR			
			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				

[illegible]

Project:		South County MPAH								
Scenario:		2045 With Project (2L Ortega Hwy)								
ID:		9								
Intersection:		Oso Parkway/Los Patrones Parkway & SR-241 SB Ramp								
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR			
			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								
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR			
			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								
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR			
			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									
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR				
			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							
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR		
			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									
MOVEMENT	LANES	Free?	AM PEAK HOUR			PM PEAK HOUR			
			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								
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR			
			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								
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR			
			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								
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR			
			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									
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR		
			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								
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR			
			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: 3 Intersection: Cow Camp Road/Chiquita Canyon Drive									
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR		
			CAPACITY	VOLUME	V/C		CAPACITY	VOLUME	V/C
NBL	1.0		1,700	5	0.01	*	1,700	5	0.01
NBT				5				5	
NBR				5				5	
SBL	1.0		1,700	10	0.01	*	1,700	10	0.01
SBT	2.0		3,400	650	0.19	*	3,400	320	0.09
SBR									
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									
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR		
			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								
MOVEMENT	LANES	Free?	AM PEAK HOUR			PM PEAK HOUR				
			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							
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR		
			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								
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR			
			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						
MOVEMENT	LANES	Free?	AM PEAK HOUR			PM PEAK HOUR		
			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								
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR			
			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								
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR			
			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								
MOVEMENT	LANES	Free?	AM PEAK HOUR			PM PEAK HOUR		
			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								
MOVEMENT	LANES	Free?	AM PEAK HOUR			PM PEAK HOUR		
			CAPACITY	VOLUME	V/C	CAPACITY	VOLUME	V/C
NBL								
NBT								
NBR								
SBL								
SBT								
SBR								
EBL								
EBT								
EBR								
WBL								
WBT								
WBR								

Project:		South County MPAH						
Scenario:		2045 No Project (4L Ortega Hwy)						
ID:		13						
Intersection:		PA5 Future Road / Los Patrones Parkway SB Ramp						
MOVEMENT	LANES	Free?	AM PEAK HOUR			PM PEAK HOUR		
			CAPACITY	VOLUME	V/C	CAPACITY	VOLUME	V/C
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									
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR		
			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:		16								
Intersection:		La Pata/Camino Del Rio								
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR			
			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									
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR		
			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									
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR		
			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									
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR				
			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									
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR		
			CAPACITY	VOLUME	V/C		CAPACITY	VOLUME	V/C
NBL	1.0		1,700	5	0.01	*	1,700	5	0.01
NBT				5				5	
NBR				5				5	
SBL	1.0		1,700	10	0.01	*	1,700	10	0.01
SBT	2.0		3,400	590	0.17	*	3,400	300	0.09
SBR									
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:		5								
Intersection:		Cow Camp Road/Ledago Road								
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR			
			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									
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR		
			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								
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR			
			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:		9								
Intersection:		Oso Parkway/Los Patrones Parkway & SR-241 SB Ramp								
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR			
			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								
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR			
			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							
MOVEMENT	LANES	Free?	AM PEAK HOUR			PM PEAK HOUR			
			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									
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR				
			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								
MOVEMENT	LANES	Free?	AM PEAK HOUR			PM PEAK HOUR		
			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								
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR			
			CAPACITY	VOLUME	V/C		CAPACITY	VOLUME	V/C	
NBL	1.0		1,700	5	0.01	*	1,700	10	0.02	*
NBT				5				10		
NBR				5				10		
SBL	1.0		1,700	200	0.12	*	1,700	90	0.05	*
SBT	1.0		1,700	140	0.08	*	1,700	60	0.04	
SBR										
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								
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR			
			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								
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR			
			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									
MOVEMENT	LANES	Free?	AM PEAK HOUR				PM PEAK HOUR		
			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

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	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.

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	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									

HCM 6th Roundabout 6: Ortega Hwy & Cow Camp Rd

09/28/2020

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

Queues













9: Oso Pkwy & Los Patrones Pkwy SB Ramps

09/28/2020

	→	↘	↙	←	↘	↙
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						

HCM 6th Signalized Intersection Summary9: Oso Pkwy & Los Patrones Pkwy SB Ramps

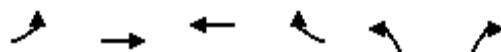
09/28/2020

												
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									

Queues

10: Los Patrones NB Ramps

09/28/2020



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.

HCM 6th Signalized Intersection Summary

10: Los Patrones NB Ramps













09/28/2020

												
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												

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.

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)	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			
Approach Delay, s/veh	50.3				53.1				43.0			
Approach LOS	D				D				D			
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											

HCM 6th Roundabout 6: Ortega Hwy & Cow Camp Rd

09/28/2020

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

Queues

9: Oso Pkwy & Los Patrones Pkwy SB Ramps

09/28/2020



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.

HCM 6th Signalized Intersection Summary

9: Oso Pkwy & Los Patrones Pkwy SB Ramps

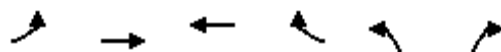
09/28/2020

												
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									

Queues

10: Los Patrones NB Ramps

09/28/2020


























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						

HCM 6th Signalized Intersection Summary

10: Los Patrones NB Ramps













09/28/2020

												
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											

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)	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.

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)	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									

HCM 6th Roundabout 6: Ortega Hwy & Cow Camp Rd

09/28/2020

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

Queues

9: Oso Pkwy & Los Patrones Pkwy SB Ramps


09/28/2020



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						

HCM 6th Signalized Intersection Summary9: Oso Pkwy & Los Patrones Pkwy SB Ramps

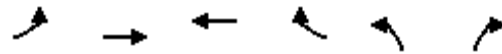
09/28/2020

												
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									

Queues

10: Los Patrones NB Ramps

09/28/2020



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.

HCM 6th Signalized Intersection Summary

10: Los Patrones NB Ramps













09/28/2020

													
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													

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)	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.

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)	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									

HCM 6th Roundabout

6: Ortega Hwy & Cow Camp Rd

09/28/2020

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

Queues

9: Oso Pkwy & Los Patrones Pkwy SB Ramps

09/28/2020















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.

HCM 6th Signalized Intersection Summary9: Oso Pkwy & Los Patrones Pkwy SB Ramps

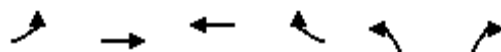
09/28/2020

												
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											

Queues

10: Los Patrones NB Ramps

09/28/2020


























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						

HCM 6th Signalized Intersection Summary

10: Los Patrones NB Ramps













09/28/2020

												
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			
Approach Delay, s/veh	43.7				198.9				34.9			
Approach LOS	D				F				C			
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												

HCM 6th Roundabout

6: Ortega Hwy & Cow Camp Rd

09/28/2020

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

Queues

9: Oso Pkwy & Los Patrones Pkwy SB Ramps


09/28/2020



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						

HCM 6th Signalized Intersection Summary9: Oso Pkwy & Los Patrones Pkwy SB Ramps

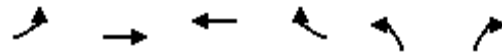
09/28/2020

												
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									

Queues

10: Los Patrones NB Ramps

09/28/2020



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.

HCM 6th Signalized Intersection Summary

10: Los Patrones NB Ramps













09/28/2020

												
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											

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)	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.

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)	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											

HCM 6th Roundabout

6: Ortega Hwy & Cow Camp Rd

09/28/2020

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

Queues

9: Oso Pkwy & Los Patrones Pkwy SB Ramps

09/28/2020















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.

HCM 6th Signalized Intersection Summary9: Oso Pkwy & Los Patrones Pkwy SB Ramps

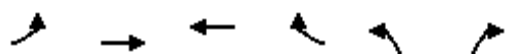
09/28/2020

												
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			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											

Queues

10: Los Patrones NB Ramps

09/28/2020






















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						

HCM 6th Signalized Intersection Summary

10: Los Patrones NB Ramps













09/28/2020

												
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											

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)	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.

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)	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											

HCM 6th Roundabout

6: Ortega Hwy & Cow Camp Rd

09/28/2020

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

Queues

9: Oso Pkwy & Los Patrones Pkwy SB Ramps

09/28/2020















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						

HCM 6th Signalized Intersection Summary

9: Oso Pkwy & Los Patrones Pkwy SB Ramps

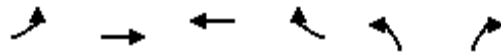
09/28/2020

												
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(l)	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									

Queues

10: Los Patrones NB Ramps

09/28/2020



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.

HCM 6th Signalized Intersection Summary

10: Los Patrones NB Ramps













09/28/2020

												
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											

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)	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.

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)	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											

HCM 6th Roundabout

6: Ortega Hwy & Cow Camp Rd

09/28/2020

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

Queues

9: Oso Pkwy & Los Patrones Pkwy SB Ramps

09/28/2020















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.

HCM 6th Signalized Intersection Summary9: Oso Pkwy & Los Patrones Pkwy SB Ramps

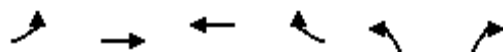
09/28/2020

												
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									

Queues

10: Los Patrones NB Ramps

09/28/2020


























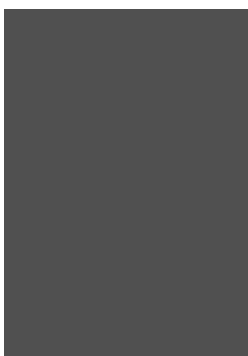
Lane Group	EBL	EBT	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	22	783	467	33	674	76
v/c Ratio	0.09	0.69	0.49	0.07	0.35	0.08
Control Delay	34.9	24.8	24.9	0.3	10.4	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.9	24.8	24.9	0.3	10.4	2.7
Queue Length 50th (ft)	4	157	84	0	78	0
Queue Length 95th (ft)	17	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						

HCM 6th Signalized Intersection Summary

10: Los Patrones NB Ramps

09/28/2020

												
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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